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Section I International Affairs & Section II Regional Development, Integration and Globalization

Drivers for Development Triggered by the Trilogy Tourism-Underwater Cultural Heritage-Environmental Protection, in Maritime Spatial Planning

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Abstract

Maritime Spatial Planning (MSP) is considered a process by which public authorities analyze and organize human activities in marine areas to achieve ecological, economic, and social objectives and aim to identify and encourage multiple uses, under the legislation and relevant national policies of the Member States. The purpose of this article is to analyze the stakeholders' perception grouped in public entities of local interest and entities in education and research on the political, economic, and social factors triggered by the trilogy Tourism - Underwater Cultural Heritage - Environmental Protection in Constanța - 2 Mai. The analysis carried out in this study is based on data collected from the stakeholders and took into account the statistical description of some elements from the DABI catalogue, more precisely from the Drivers category that can promote or prevent the implementation of the combination Tourism - Underwater Cultural Heritage - Environmental Protection or may positively or negatively influence the implementation of this combination.

Key words: DABI, combination Tourism – Underwater Cultural Heritage – Environment, Romanian coastal area, Maritime Spatial Planning (MSP)

J.E.L. classification: O20, R10

1. Introduction

Maritime Spatial Planning (MSP) has become a topic of great interest to maritime countries in recent years and is considered in the broadest sense, as defined in Directive 2014/89/EU, as a process by which public authorities analyze and organize human activities in marine areas to achieve environmental, economic, and social objectives, the coastal and maritime sectors with significant potential for sustainable growth. Thus, MSP is one of the key tools for achieving a sustainable "Blue Growth" that promotes a collaborative and inclusive approach to the maritime economy (EASME, 2018, p.9), providing knowledge, legal and economic security (Salas-Leiton, Vieira and Guilhermino, 2021, p.2). Regarding the 19 recital of the MSP Directive, maritime spatial planning aims to identify and encourage multiple uses under the relevant national legislation and policies of the Member States, as an important facilitator for encouraging the development of maritime sectors (Schultz-Zehden, Weig and Lukic, 2019, p.134). Its ultimate goal is to encourage economic growth related to the maritime sectors in a sustainable way (Frazão Santos *et al*, 2014, p.62).

Each Member State of the European Union shall draw up and implement, based on the legal framework, a maritime spatial plan, being responsible and competent to design and determine the format and content of the plan for its marine waters (Directive 2014/89/EU). In this context, the role of the European Commission is to support these states, in their planning efforts, with concrete tools

and funding sources. In this sense, Romania, in partnership with Bulgaria, is carrying out the MARSPLAN BS-II project (2019-2021) which aims to develop a common MSP strategy that should lead to the elaboration of maritime spatial plans for both countries in 2021. That is why all parties involved must make a special effort to play crucial roles that will help build an inclusive and reliable MSP (Salas-Leiton, Vieira and Guilhermino, 2021, p.2) because without an existing MSP, the increased risk of spatial conflicts between the expansion of maritime uses, including the protection of the marine environment, can lead to a suboptimal combination of growth and sustainability (COM/2010/0771 final).

Thus, to achieve the objectives of the MARSPLAN BS-II project on maritime spatial planning and to establish a long-term mechanism for cross-border cooperation in the Black Sea basin with MSP, several precise tasks related to the development of maritime spatial planning plans in Bulgaria and Romania have been carried out, namely:

- development of the joint MSP strategy for the cross-border area of Bulgaria and Romania, addressing the concept of multiple-use (MU);
- ensuring the active participation of stakeholders in the national and cross-border MSP process and the exchange of best practices on the Black Sea in Romania and Bulgaria.

In this regard, several analyses, studies, and researches on multi-use have been developed in preparing the Black Sea Maritime Development Plan (MSP) (MARSPLAN - BS Projects; Stancheva and Stanchev, 2020), in an integrative approach, as it is necessary for the MSP to facilitate cross-border cooperation (Friess and Grémaud-Colombier, 2019, p.5).

2. Literature review

Maritime Spatial Planning (MSP) and the development of the multiple-use concept (MU) have recently emerged as a tool for the efficient management of the multiple activities that take place in the maritime space to achieve the goals of sustainable development. The idea of multiple-use (MU) of marine space (Douvere and Ehler, 2009, p.79) has been promoted as a viable approach to effective planning and mitigation of marine user conflicts (Onyango *et al*, 2020, p.77) and involves authorities, economic operators and other stakeholders at different levels (Directive 2014/89/EU). The expected benefits of such a coordinated approach to MSP inspire predictability and transparency throughout the process (Abramic *et al*, 2018, p.24).

Multiple-use (MU) has been defined as "an intentional shared use of resources in close geographical proximity", an umbrella term covering a multitude of use combinations in the marine field (MUSES project, 2016, p.14). In the literature related to multiple-use, several definitions and terms have been developed that refer to different types of cross-sectoral interactions by referring to ecological notions (Depellegrin *et al*, 2019, p.613). Thus, MU is defined by Kite-Powell (2017, p.233) as the co-location of complementary maritime uses, Kyvelou and Ierapetritis (2019, p.8) emphasizing that co-location is a smart and attractive choice for marine planners and stakeholders.

Several European Union-funded projects have also provided models for combining coastal activities in terms of economic potential and environmental impact (Munteanu, 2021, p.62). Various uses in the maritime space have been promoted, such as tourism, renewable energy, fishing, aquaculture, offshore energy, oil, and gas, uses relevant to local sea basin conditions. However, in EU sea basins, MUs are at an early stage of development, and the existing ones are mainly related to aquaculture and environmental protection, combined with fishing, tourism, and underwater cultural heritage (Przedrzymirska *et al*, 2021, p.6). Thus, the following recommended multi-use combinations were analyzed: Tourism – Fisheries – Environmental Protection, Tourism – Aquaculture, Tourism – Underwater Cultural Heritage – Environmental Protection, Offshore Wind Farm – Tourism, Offshore Wind Farm – Aquaculture, Offshore Wind Farm – Fisheries, Oil – Gas Decommissioning – Repurposing, Offshore Wind – Marine Renewable Energy Generation, Wave Energy – Aquaculture (Schultz-Zehden *et al*, 2018, p.40), the selected sectors being relevant for blue growth.

Within the MARSPLAN-BS-II project, the combination of Tourism – Underwater Cultural Heritage – Environmental Protection (Marine Protected Areas) in the Romania-Bulgaria cross-border area defined as the combination of tourist and recreational activities with the protection of underwater archeological sites and adjacent marine ecosystems was analyzed.

Coastal and maritime tourism is the most significant economic sector in the coastal zone due to its activities and associated benefits, some tourism activities have an impact on other areas of activity. The Romanian coastal area has a rich natural and cultural tourist potential, quite equally distributed throughout its territory.

Underwater Cultural Heritage (UCH) is defined by the UNESCO Convention for the Protection of the Underwater Cultural Heritage (2001) as all traces of human existence of a cultural, historical, or archaeological nature (sites, structures, buildings, artifacts, and human remains, together with their archaeological and natural context; ships, aircraft, other vehicles or any part thereof, cargo or other contents, together with their archaeological and natural context; and prehistoric objects) that have been partially or completely underwater, periodically or continuously, for at least 100 years.

Marine protected areas are a key component of integrated coastal and marine management. The European Union promotes the development of the Natura 2000 network of protected areas as the main tool for nature conservation; in Romania there are 9 sites of community importance belonging to the marine and coastal area, being known that this area has special importance for the variety of natural habitats and the diversity of flora and fauna.

As stated in the 19 recital of the European MSP Directive, the main purpose of maritime spatial planning is to promote sustainable development and to identify the use of maritime space for different maritime uses, as well as to manage spatial uses and conflicts in marine areas. Thus, to promote sustainable development effectively, stakeholders, authorities, and the public must be consulted because neglecting the crucial role and importance of local stakeholders in MSP can become an obstacle rather than an opportunity (Laskowicz, 2021, p.15).

MSP reflects the paradigm shift from authoritarian governance to governance that includes societal actors (Luhtala *et al*, 2021, p.1), as stakeholders generate important information in maritime spatial planning decision-making on the complexity of human influence on marine resources. In their paper, Dell'Ovo *et al* (2021, p.3) consider that in planning activities, the involvement of the public and stakeholders in the decision-making process allows approaches that are no longer technocratic, but rather participatory. Thus, the maritime spatial planning document, resulting from the cooperation between central and local public administration authorities, in consultation with academia and the scientific community, professional associations, the business community, and the non-governmental sector, will be able to identify and regulate the spatial distribution of activities of any kind, current, and future, in marine spaces.

3. Research methodology

The purpose of this article is to analyze the perception of stakeholders, namely public entities of local interest and entities in education and research on certain drivers (political, economic, and social) triggered by the trilogy Tourism – Underwater Cultural Heritage – Environmental Protection in the Constanța - 2 Mai area.

To achieve the objectives of the MARSPLAN-BS-II project, a questionnaire was developed by all partners involved under the coordination of the National Institute for Research and Development on Marine Geology and Geoecology - GeoEcoMar. The questionnaire was applied online to MSP stakeholders to collect the most up-to-date information and exploit the documented knowledge and data.

The implementation team of the MARSPLAN-BS II project identified several potential factors that promote or hinder the implementation of the studied combination. According to the DABI (Drivers-Added values-Barriers-Impacts) methodology (Zaucha *et al*, 2016, p.1), the information came from the office analysis, the DABI framework providing a systematic approach and a useful tool for broad-spectrum mapping and analysis of factors relevant to the application of MU (Onyango *et al*, 2020, p.90). Each of the 4 templates includes several factors grouped according to different criteria that take into account key aspects of maritime spatial planning, such as policies, administrative/legal issues, environmental and socio-economic constraints, technical capabilities, and knowledge gaps. A semi-quantitative scoring system with 4 levels was applied when noting the factors: high priority (+3); medium priority (+2); low priority (+1); absent or irrelevant factor (0).

The empirical analysis in this article is based on data collected from stakeholders grouped into two categories: "public entities of local interest" and "entities in education and research" and took into account the statistical description of the elements in the DABI catalogue by selecting the promoters factors category (Drivers). Data processing, systematization of results, and obtaining indicators used for statistical analysis were performed using the *Statistical Program for the Social Sciences* (SPSS).

4. Findings

For the analysis undertaken, from the statistical description of the elements from the DABI catalogue, the category of factors related to policies and economic and social promoters was selected. Table 1 shows the policy drivers that are mainly supported by the Maritime Planning Directive, but also by other strategic documents.

Regarding the assessment of the two types of entities surveyed *in terms of policy drivers*, 63.2% of them give high priority to *the existence of strategic documents at the regional and Community level for sustainable development*, 28.9% a medium priority and 7.9% low, while for *the support of the Black Sea Commission through the strategic documents prepared* 55.3% of the entities consider it a high priority, 34.2% medium priority, 2.6% low priority and 7.9% do not know. The obtained results reflect the fact that stakeholders are aware of the complex importance of national, sectoral, and regional documents, strategies, and programs in line with the principles and practices of sustainable development. It is well known that the European Union supports the promotion of regional cooperation and sustainable development in the Black Sea region by annually allocating funds to projects.

However, a ranking of policy drivers shows that almost 70% of the surveyed entities give high priority to European directives on the marine environment (2014/89/EU, 2008/56/EC, and 92/43/EEC). It is obvious that 90% of education and research entities give high priority because they are connected to regulations and have a fundamental application, while for public entities of local interest these factors are of high interest in a proportion of 60%. The opinion of the interviewed stakeholders is supported by the fact that EU marine directives establish a set of environmental objectives and associated indicators, which must be taken into account when assessing the status of the EU maritime space (Lillebø *et al*, 2017, p.131), as MSP is considered an important tool for the sustainable development of marine areas and coastal regions and the restoration of Europe's seas to the optimum level of environmental health (Friess and Grémaud-Colombier, 2019, p.1).

Table no. 1 Promoting policy factors

Factor	Scale	Public entities of local interest	Education and research entities	Total
D.1.1.1. The existence of strategic documents at	Absent or	3	0	3
the regional and Community level for sustainable	irrelevant	10.7%	0.0%	7.9%
development (e.g. The Blue Growth Strategy,	factor			
The Black Sea Strategic Research and Innovation	Medium	9	2	11
Agenda, The South-East Development Strategy)	priority	32.1%	20.0%	28.9%
	High	16	8	24
	priority	57.1%	80.0%	63.2%
D.1.1.2. The support from the Black Sea	Absent or	2	1	3
Commission through the strategic documents	irrelevant	7.1%	10.0%	7.9%
developed (e.g. The Strategic Action Plan).	factor			
	Medium	11	2	13
	priority	39.3%	20.0%	34.2%
	High	14	7	21
	priority	50.0%	70.0%	55.3%
	Low	1	0	1
	priority	3.6%	0.0%	2.6%

D.1.1.3. Directive 2014/89/EU of the European	Absent or	3	0	3
Parliament and Council on 23rd July 2014	irrelevant	10.7%	0.0%	7.9%
establishing a framework for maritime spatial	factor			
planning.	Medium	7	1	8
	priority	25.0%	10.0%	21.1%
	High	17	9	26
	priority	60.7%	90.0%	68.4%
	Low	1	0	1
	priority	3.6%	0.0%	2.6%
D.1.1.4. Directive 2008/56/EC of the European	Absent or	3	0	3
Parliament and Council on 17th June 2008	irrelevant	10.7%	0.0%	7.9%
establishing a framework for Community action	factor			
in the field of marine policy ("Marine Strategy"	Medium	7	1	8
Framework-Directive)	priority	25.0%	10.0%	21.1%
	High	17	9	26
	priority	60.7%	90.0%	68.4%
	Low	1	0	1
	priority	3.6%	0.0%	2.6%
D.1.1.5. Council Directive 92/43/EEC on 21st	Absent or	3	0	3
May 1992 on the conservation of natural habitats	irrelevant	10.7%	0.0%	7.9%
and wild fauna and flora	factor			
	Medium	6	1	7
	priority	21.4%	10.0%	18.4%
	High	19	9	28
	priority	67.9%	90.0%	73.7%

Source: Own processing

Ensuring viable, long-term economic operations provides socio-economic benefits for all stakeholders in the Black Sea coastal area, without neglecting the optimal use of environmental resources.

Regarding *the economic drivers*, public entities of local interest and education and research entities attach less importance than the previous factors, because a small number of the surveyed stakeholders are involved in economic activities in the coastal area (Table 2).

Thus, according to the analysis based on the questionnaire, regardless of the type of entity, the increased demand for diving activities in submerged sites/wrecks due to the increased interest of divers and tourism operators is perceived by only 34.2% as a high priority, 47.4% as an average priority, 10.5% as a low priority, and 7.9% said they did not know. Although it is quite an expensive economic activity, the diving activity in the Black Sea is more and more requested by those who are passionate about adventure, exploration and who want to live new experiences in a totally different environment from the daily one.

Although coastal attractions have made coastal tourism one of the fastest-growing areas of contemporary tourism in the world (Chen, Kim, and Mueller, 2021, p.1), the growing interest in diversifying the tourism sector (e.g. new tourism offerings) is appreciated by 42.1% of the entities as a high priority, by 47.4% as a medium priority, by 2.6% as a low priority, and 7.9% do not know. This opinion of the stakeholders is supported by the fact that, in coastal tourism, the water/sea element is prevailing and is considered to be the main advantage (Papageorgiou, 2016, p.45).

Also, the existence of initiatives and the demand for the extension of the tourist season by carrying out other recreational activities in the coastal area is perceived by only 44.7% of entities as a high priority, 39.5% consider it a medium priority, 10.5% low priority, and 5.3% I do not know. Tourism in the Romanian coastal area is one of the most important economic activities and, although it is seasonal, it is an important source for generating jobs, income, and better living conditions. The option of extending the summer season through smart investments in tourism infrastructure can add extra value.

Increasing eco-tourism options as opportunities for blue growth is considered a high priority by 55.3% of the surveyed entities, 31.6% consider it a medium priority, 5.2% low priority, and 7.9% do not know. Stakeholders' opinions on the development of the blue business are supported by the fact that maritime spatial planning (MSP) affects the premises of business operations in marine and

coastal areas (Luhtala *et al*, 2021, p.2) and may eventually lead to streamlined processes, ultimately generating negative economic effects on businesses and communities (Schultz-Zehden, Weig and Lukic, 2019, p.135). Despite these considerations, however, 70.0% of education and research entities opt for a high priority for blue growth in the study area.

The increase in the number of target groups interested in visiting the sites of Underwater Cultural Heritage and Marine Protected Areas is estimated by 50.0% as a high priority, 39.5% a medium priority, 2.6% low priority, whereas 7.9% do not know. From the data analysis, it is observed that there is interest from the entities regarding the development of tourism with the maintenance of essential ecological processes that contribute to the conservation of natural heritage and biodiversity, this being a key element in the sustainable development of the Romanian coastal area.

Table no. 2 Economic promoting factors

Table no. 2 Economic promoting factors					
Factor	Scale	Public	Education	Total	
		entities of	and		
		local	research		
		interest	entities		
D.1.2.1. The increased demand for diving	Absent or	3	0	3	
activities in submerged sites/wrecks due to	irrelevant	10.7%	0.0%	7.9%	
increased interest from divers and tour	factor				
operators.	Medium	12	6	18	
-F	priority	42.9%	60.0%	47.4%	
	High	10	3	13	
	priority	35.7%	30.0%	34.2%	
	Low	3	1	4	
	priority	10.7%	10.0%	10.5%	
D.1.2.2. The increased interest in diversifying	Absent or	3	0	3	
the tourism sector (e.g. new tourist offers).	irrelevant	10.7%	0.0%	7.9%	
,	factor				
	Medium	13	5	18	
	priority	46.4%	50.0%	47.4%	
	High	11	5	16	
	priority	39.3%	50.0%	42.1%	
	Low	1	0	12.170	
	priority	3.6%	0.0%	2.6%	
D.1.2.3. The existence of initiatives and demand	Absent or	2	0.078	2.070	
	irrelevant	7.1%	0.0%	5.3%	
for the extension of the tourism season by carrying out other recreational activities in the coastal area.		7.1%	0.0%	3.3%	
	factor	0		1.5	
	Medium	9	6	15	
	priority	32.1%	60.0%	39.5%	
	High	14	3	17	
	priority	50.0%	30.0%	44.7%	
	Low	3	1	4	
	priority	10.7%	10.0%	10.5%	
D.1.2.4. Increasing eco-tourism options as	Absent or	3	0	3	
opportunities for blue growth (Blue Growth).	irrelevant	10.7%	0.0%	7.9%	
	factor				
	Medium	9	3	12	
	priority	32.1%	30.0%	31.6%	
	High	14	7	21	
	priority	50.0%	70.0%	55.3%	
	Low	2	0	2	
	priority	7.1%	0.0%	5.3%	
D.1.2.5. Increasing the number of target groups	Absent or	3	0.070	3.570	
interested in visiting the sites of the Underwater Cultural Heritage and Marine Protected Areas.	irrelevant	10.7%	0.0%	7.9%	
	factor	10.770	0.070	7.970	
	Medium	1.1	4	1.5	
		11 39.3%	40.0%	15 39.5%	
	priority	39.3%	40.0%	39.3%	

	High priority	13 46.4%	6 60.0%	19 50.0%
	Low	1	0	1
	priority	3.6%	0.0%	2.6%
C O				

Source: Own processing

Regarding *the social drivers* (Table 3), 60.5% of public entities of local interest and education and research entities consider that *increasing the interest in promoting and protecting the underwater cultural heritage and Marine Protected Areas* is a high priority, 26.3% a medium priority, 5.3% low priority and 7.9% don't know. Given the tourism potential of the coastal zone, there is a need to raise awareness of the attractiveness of this tourism product, to increase the number of tourists and thus the revenue generated provided that the ability of marine ecosystems to respond to human-induced changes is not compromised, as MSP aims to reduce or avoid conflicts between a variety of economic and non-economic functions (EASME, 2018, p.6).

The ability to identify new itineraries with multiple interconnections with land and coastal historical sites, creating opportunities for socio-economic growth of the study area (e.g. connections with History Museums) is appreciated by 50.0% of entities as a high priority, of 34.2% a medium priority, of 7.9% low priority, whereas 7.9% do not know. Although it is considered that even if UCH is a resource of great socio-cultural value and has very few direct or extractive uses of economic importance (Papageorgiou, 2018, p.201), stakeholders still appreciate that Romania's underwater cultural heritage can be highly capitalized for tourist purposes.

Table no. 3 Social promoting factors

Factor	Scale	Public entities of local interest	Education and research entities	Total
D.1.3.1. Increasing the interest in promoting and protecting underwater cultural heritage and Marine Protected Areas.	Absent or irrelevant factor	3 10.7%	0.0%	3 7.9%
and Marine Protected Pricas.	Medium priority	6 21.4%	4 40.0%	10 26.3%
	High priority Low	17 60.7% 2	60.0%	23 60.5% 2
D.1.3.2. The possibility to identify new	priority Absent or irrelevant	7.1%	0.0% 0 0.0%	5.3%
itineraries with multiple interconnections with terrestrial and coastal historical sites, creating opportunities for socio-economic growth of the study area (for example, connections with the History Museums)	factor Medium	10.7%	3	7.9%
	priority High priority	35.7% 12 42.9%	30.0% 7 70.0%	34.2% 19 50.0%
	Low priority	3 10.7%	0 0.0%	3 7.9%
D.1.3.3. Clusters, NGOs, groups of volunteers existing in the study area, with activities in the respective fields.	Absent or irrelevant factor	4 14.3%	0.0%	4 10.5%
	Medium priority	9 32.1%	40.0%	13 34.3%
	High priority Low	12 42.9% 3	5 50.0%	17 44.7% 4
D.1.3.4. Development of local museums,	Absent or	10.7%	10.0%	10.5%
tourist and cultural information centers,	irrelevant factor	10.7%	0.0%	7.9%

exhibitions on the history of the Black Sea,	Medium	9	5	14
and opportunities for exploration and diving.	priority	32.1%	50.0%	36.8%
	High	12	5	17
	priority	42.9%	50.0%	44.7%
	Low	4	0	4
	priority	14.3%	0.0%	10.5%

Source: Own processing

Regarding the *clustering factor*, *NGOs*, *existing groups of volunteers in the study area, with activities in the respective fields*, 44.7% of the surveyed entities consider that their existence is a high priority, of 34.3% a medium priority, of 10.5% low priority, whereas 10.5% do not know. Studies on the involvement of the non-governmental sector (Zervak, 2019, p.241) have shown that the contribution of NGOs varies from providing expertise, conducting fieldwork, and participating in monitoring and evaluation activities, to facilitating public participation by conducting campaigns, with the ability to mobilize volunteers.

The development of local museums, tourist and cultural information centers, exhibitions on the history of the Black Sea, and opportunities for exploration and diving are appreciated by 44.8% as a high priority, 36.8% a medium priority, 10.5% low priority, and 7.9% do not know. Stakeholders understand that creating an information network is a major promotional tool to spread the message of hospitality to tourists, while providing them with accurate information to assist them in guiding and assessing their destination, stakeholder engagement depending on the local and national context, especially the existing planning culture and the specificity of the planned maritime area (Zaucha and Kreiner, 2021, p.9).

As a result of the analysis, it is found that the involvement of stakeholders facilitated the collection of relevant information on the multiple-use implementation (MU) in MSP, education, and research entities being well anchored in the economic and social realities of the Romanian coastal area.

5. Conclusions

The studies conducted (Abramic *et al*, 2018, p.24) on Maritime Spatial Planning (MSP) and the development of the concept of multiple-use (MU) confirm the benefits of the public and all stakeholders' participation in the process by reducing conflicts, encouraging investment and increasing cooperation between administrations, as gathering stakeholders' views on the stated positive and negative effects of the MU combination is important.

Combining coastal activities in terms of economic potential and environmental impact requires predictability. Bonnevie, Hansen, and Schrøder (2019, p.1) point out that maritime spatial planning (MSP) has gained attention as a planning framework that takes into account cross-sectoral compromises with an interdisciplinary and transparent approach that includes stakeholder involvement, representing a challenging mission. Moreover, to more easily integrate the concept of multiple-use in MSP Kyvelou and Ierapetritis (2019, p.14) indicated a broad definition of MSP: a "complex, multidimensional process specific to the marine management context between multiple users, led by technological, financial, socio-economic, cultural, environmental and governance factors - which should be nurtured by the planning, engineering, governance and management disciplines - to achieve an integrated, adaptive, transparent spatial planning process, coordinated, innovative and coherent, with limited exclusive rights, at sea and in the oceans", which denotes the complexity of this process.

Thus, even if the importance of tourism activity in the Romanian coastal area is overwhelming for local development, nevertheless viable solutions must be found for an economic development based on the sustainable use of natural resources.

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7. References

- Abramic A., Bigagli E., Barale V., Assouline M., Lorenzo-Alonso A., Norton, C., 2018. Maritime spatial planning supported by infrastructure for spatial information in Europe (INSPIRE). Ocean & Coastal Management, 152, pp. 23-36, https://doi.org/10.1016/j.ocecoaman.2017.11.007.
- Bonnevie I.M., Hansen H.S., Schrøder L., 2019. Assessing use-use interactions at sea: A theoretical framework for spatial decision support tools facilitating co-location in maritime spatial planning. *Marine Policy*, 106, 103533, https://doi.org/10.1016/j.marpol.2019.103533.
- Chen Y.-H., Kim J., Mueller, N., 2021. Estimating the economic impact of natural hazards on shared accommodation in coastal tourism destinations. *Journal of Destination Marketing & Management*, 21, 100634, https://doi.org/10.1016/j.jdmm.2021.100634.
- Dell'Ovo M., Dell'Anna F., Simonelli R., Sdino L., 2021. Enhancing the Cultural Heritage through Adaptive Reuse. A Multicriteria Approach to Evaluate the Castello Visconteo in Cusago (Italy). Sustainability. 13(8), 4440. https://doi.org/10.3390/su13084440.
- Depellegrin D., Venier C., Kyriazi Z., Vassilopoulou V., Castellani C., Ramieri E., Bocci M., Fernandez J., Barbanti A., 2019. Exploring Multi-Use potentials in the Euro-Mediterranean sea space. Science of The Total Environment, 653, pp. 612-629, https://doi.org/10.1016/j.scitotenv.2018.10.308.
- Directive 2014/89/EU of the European Parliament and of the Council of 23 July 2014 establishing a framework for maritime spatial planning, Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32014L0089 [Accessed 21 October 2021].
- Douvere, F., Ehler, C.N., 2009. New perspectives on sea use management: Initial findings from European experience with marine spatial planning. *Journal of Environmental Management*, 90(1), pp. 77-88, https://doi.org/10.1016/j.jenvman.2008.07.004.
- European Commission. Technical Study on Maritime Spatial Planning (MSP) for Blue Growth;
 European Commission: Executive Agency for Small and Medium-sized Enterprises (EASME),
 Brussels, Belgium, February 2018; Available at: https://op.europa.eu/en/publication-detail/publication/0223d4a6-41ec-11e8-b5fe-01aa75ed71a1 [Accessed 21 October 2021].
- European Commission. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. Maritime Spatial Planning in the EU achievements and future development, COM/2010/0771 final; European Commission: Brussels, Belgium, 2010; Available at: https://eur-lex.europa.eu/legal-content/en/TXT/?uri=CELEX%3A52010DC0771 [Accessed 23 October 2021].
- Frazão Santos, C., Domingos, T., Ferreira, M.A., Orbach, M., Andrade, F., 2014. How sustainable is sustainable marine spatial planning? Part I—Linking the concepts. *Marine Policy*, 49, pp. 59-65, https://doi.org/10.1016/j.marpol.2014.04.004.
- Friess, B., Grémaud-Colombier, M., 2019. Policy outlook: Recent evolutions of maritime spatial planning in the European Union. *Marine Policy*, 132, 103428. https://doi.org/10.1016/j.marpol.2019.01.017.
- Kite-Powell H. L., 2017. Chapter 10: Economics of Multi-use and Co-location. In: Buck, B.H., Langan, R. (Eds.). Aquaculture Perspective of Multi-Use Sites in the Open Ocean, (eBook) Springer International Publishing AG, pp. 233-249, https://doi.org/10.1007/978-3-319-51159-7 10.
- Kyvelou S.S., Ierapetritis D. 2019. Discussing and Analyzing "Maritime Cohesion" in MSP, to Achieve Sustainability in the Marine Realm. Sustainability, 11(12), 3444, https://doi.org/10.3390/sul1123444.
- Laskowicz T., 2021. The Perception of Polish Business Stakeholders of the Local Economic Impact
 of Maritime Spatial Planning Promoting the Development of Offshore Wind Energy. Sustainability,
 13(12), 6755. https://doi.org/10.3390/su13126755.
- Lillebø A.I., Pita C., Garcia Rodrigues J., Ramos S., Villasante S., 2017. How can marine ecosystem services support the Blue Growth agenda?. *Marine Policy*, 81, pp. 132-142, https://doi.org/10.1016/j.marpol.2017.03.008.
- Luhtala H., Erkkilä-Välimäki A., Qvist Eliasen S., Tolvanen H., 2021. Business sector involvement in maritime spatial planning Experiences from the Baltic Sea region. *Marine Policy*, 123, 104301, https://doi.org/10.1016/j.marpol.2020.104301.
- MARSPLAN BS Projects; Available at: < http://www.marsplan.ro/en/> [Accessed 23 October 2021].
- Munteanu I.F., 2021. Comparative Analysis on Financial Performance and Sustainable Incentives in the Construction Sector. Evidence from the Coastal Area of Romania. *Annals of "Dunarea de Jos" University of Galati Fascicle I. Economics and Applied Informatics*, 27(1), pp. 61-67, https://doi.org/10.35219/eai15840409168.

- Onyango, V., Papaioannou, E., Schupp, M.F., Zaucha, J., Przedzymirska, J., Lukic, I., Varona, M.C., Schultz-Zehden, A., Giannelos, I., Läkamp R., van de Velde I., 2020. Is Demonstrating the Concept of Multi-Use Too Soon for the North Sea? Barriers and Opportunities from a Stakeholder Perspective. Coastal Management, 48(2), pp. 77-95. https://doi.org/10.1080/08920753.2020.1728206.
- Papageorgiou M., 2018. Underwater cultural heritage facing maritime spatial planning: Legislative and technical issues. *Ocean & Coastal Management*, 165, pp. 195-202, https://doi.org/10.1016/j.ocecoaman.2018.08.032.
- Papageorgiou, M., 2016. Coastal and marine tourism: A challenging factor in Marine Spatial Planning. Ocean & Coastal Management, 129, pp. 44-48. https://doi.org/10.1016/j.ocecoaman.2016.05.006.
- Przedrzymirska J., Zaucha J., Calado H., Lukic I., Bocci M., Ramieri E., Varona M.C., Barbanti A., Depellegrin D., de Sousa Vergílio M., Schultz-Zehden A., Onyango V., Papaioannou E., Buck B.H., Krause G., Schupp M.F., Läkamp R., Szefler K., Michałek M., Maniopoulou M., Vassilopoulou V., Kyriazi Z., Gawlikowska-Hueckel K., Szultka S., Orobello C., Gee K., Buchanan B., Lazić M., 2021. Multi-Use of the Sea as a Sustainable Development Instrument in Five EU Sea Basins. Sustainability, 13(15), 8159, https://doi.org/10.3390/su13158159.
- Salas-Leiton, E., Vieira, L. R., Guilhermino, L., 2021. Sustainable Fishing and Aquaculture Activities
 in the Atlantic Coast of the Portuguese North Region: Multi-Stakeholder Views as a Tool for Maritime
 Spatial Planning. Sustainability, 13(2), 663, https://doi.org/10.3390/su13020663.
- Schultz-Zehden, A., Weig, B., Lukic I., 2019. Maritime Spatial Planning and the EU's Blue Growth Policy: Past, Present and Future Perspectives. In: Zaucha J., Gee K., Eds. *Maritime Spatial Planning*. Palgrave Macmillan, Cham, Switzerland, pp. 121-149, https://doi.org/10.1007/978-3-319-98696-8
- Schultz-Zehden A., Lukic I., Ansong J.O., Altvater S., Bamlett R., Barbanti A., Bocci M., Buck B.H., Calado H., Varona M.C., Castellani C., Depellegrin D., Schupp M.F., Giannelos I., Kafas A., Kovacheva A., Krause G., Kyriazi Z., Läkamp R., Lazić M., Mourmouris A., Onyango V., Papaioannou E., Przedrzymirska J., Ramieri E., Sangiuliano S., van de Velde I., Vassilopoulou V., Venier C., Vergílio M., Zaucha J., Buchanan B., 2018. Ocean Multi-Use Action Plan, MUSES project. Edinburgh.
- Stancheva M., Stanchev H., 2020. Addressing the Multi-Use Concept with Maritime Spatial Planning in the Cross-Border Region (Bulgaria). MARSPLAN-BS II Project (EASME/EMFF/2018/1.2.1.5/01/S12.806725), Deliverable: WP2, Activity 2.4, June, 2020, 81 pp.
- UNESCO, Convention on the Protection of the Underwater Cultural Heritage, Available at: heritage [Accessed 25 October 2021].
- Zaucha J., Kreiner A., 2021. Engagement of stakeholders in the marine/maritime spatial planning process. *Marine Policy*, 132, 103394, https://doi.org/10.1016/j.marpol.2018.12.013.
- Zaucha J., Depellegrin D., Lukic I., Schupp M., Varona M., 2016. Analytical Framework (AF) Analysing Multi-Use (MU) in the European Sea Basins. Edinburgh: MUSES project, Available at: https://sites.dundee.ac.uk/muses/wp-content/uploads/sites/70/2017/06/MUSES-AF-Version-10-22.pdf [Accessed 25 October 2021].
- Zervak A., 2019. The Ecosystem Approach and Public Engagement in Ocean Governance: The Case of Maritime Spatial Planning. In Langlet D., Rayfuse R. (Eds.). *The ecosystem approach in ocean planning and governance: perspectives from Europe and beyond*, (eBook) Leiden: Boston, pp. 223-255.

Why Should Fisheries and Agriculture Be Considered Priority Domains for Maritime Spatial Planning in the Black Sea? A Stakeholder Perspective

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Abstract

The European Maritime Spatial Planning Directive 2014/89/EU requires that to promote sustainable and integrated development and to optimally manage human activities at sea, land-sea interactions (LSI) should be taken into account. In the context of preparing the national maritime spatial plan, this study analyzes the perception of stakeholders in Maritime Spatial Planning (MSP) regarding the most important interactions and the reciprocal impact of the land and sea in the Black Sea area for maritime fishing activities, aquaculture, coastal fishing, agriculture and animal husbandry. The analysis was based on a questionnaire answered by 51 stakeholders with activities in sectors relevant to the use of marine space and carried out at different levels international/national/local -, stakeholders being entities such as authorities, economic operators, non-governmental organizations, universities, and research institutes.

Key words: Land–Sea Interaction (LSI), fisheries and agriculture domains, stakeholder, Black Sea, Maritime Spatial Planning (MSP)

J.E.L. Classification: O20, R10

1. Introduction

In the European Union, maritime spatial planning (MSP) is considered an important tool for the sustainable development of marine areas and for ensuring the sustainable coexistence of uses and, where appropriate, the proper distribution of maritime space between the intended uses, the member States must draw up and implement a maritime spatial planning plan (Directive 2014/89/EU).

In Romania, the European Maritime Spatial Planning Directive 2014/89/EU is currently being implemented by Law no. 88/2017, approved by Government Ordinance no. 18/2016 on the arrangement of the maritime space. Article 14 para. (1) of H.G. no. 436/2018 defines the maritime spatial plan as a strategic document of a managerial and regulatory nature, which identifies the spatial and temporal distribution of current and future activities and uses in marine waters and establishes the general framework for sustainable and integrated development of different sectors in marine waters.

To support the implementation of Directive 2014/89/EU of the European Parliament and the Council establishing a framework for maritime spatial planning, the European Commission has approved and funded the project "Cross-border Maritime Spatial Planning for Black Sea - Bulgaria and Romania (MARSPLAN- BS-II)" which aims to support coherent activities on maritime spatial planning in the Black Sea cross-border area - Romania, Bulgaria. A requirement of the MSP Directive (2014/89/EU) is that the Member States of the European Union should take into account

land-sea interactions (LSI) when preparing their maritime spatial plans. The report "Maritime Spatial Planning Conference: Addressing Land-Sea Interactions" in Malta (DG MARE, 2017) stated that the options for addressing LSI may be different in MSP, with each Member State having to decide individually on possible ways to address LSI when conducting MSPs, but should also consider cross-border context and issues.

On the other hand, the inherent complexity of offshore planning, called maritime spatial planning (MSP), requires a planning approach in which science - data and evidence - and stakeholders - their commitment and involvement - are integrated throughout the planning process (Jean *et al*, 2018, p.1). Thus, the MARSPLAN-BS-II project explores the possibilities of identifying and analyzing important aspects of land/sea interactions (LSI) for the Romanian coast and in the Black Sea, in the cross-border region of Bulgaria and Romania, through the public consultation of relevant authorities.

This study analyzes the perception of MSP stakeholders regarding the most important interactions and the reciprocal impact of land-sea in the study area for sea fishing, aquaculture, coastal fishing, agriculture, and animal husbandry.

2. Literature review

Maritime Spatial Planning (MSP) is an integrated framework to support the sustainable development of activities while seeking to increase efforts to conserve the marine environment (Dupont *et al*, 2020, p.1). It is a public process of analyzing and allocating the spatial and temporal distribution of human activities in marine areas to achieve the ecological, economic, and social objectives that have been specified through a political process (Directive 2014/89/EU). Thus, the imperative for using a multidisciplinary approach to maritime spatial planning comes from the nature of marine space as a multidimensional concept that requires a vision of many scientific disciplines and types of knowledge (Ehler, Zaucha, and Gee, 2019, p.2).

Maritime Spatial Planning (MSP) should aim to "integrate the maritime dimension of some users or coastal activities and their impact and, ultimately, allow for an integrated and strategic vision". In this regard, eight of the most typical marine development sectors of land-sea interaction (LSI) have been identified to be considered in the MSP process: aquaculture, desalination, fisheries, marine cables and pipelines, minerals and mining, ports and shipping, tourism, and coastal recreation, offshore energy (European Commission, 2018, p.1).

At the EU level, the *Common Fisheries Policy* (CFP) guarantees that fishing and aquaculture activities ensure long-term sustainable environmental conditions and are managed consistently, taking into account the objectives of achieving economic, social, and labour force employment benefits, to contribute to the availability of food supply (Article 2 of Regulation (EU) No 1380/2013). At the same time, the development of the agricultural sector is strongly influenced by the European Union's *Common Agricultural Policy* (CAP), as agriculture has a special status in Europe.

Marine resources play a vital role in social and economic development, and industries such as fishing and agriculture benefit from them (Ansong, Gissi, and Calado, 2017, p.65), MSP offering a much more promising approach to implementing ecosystem-based management (Crowder and Norse, 2008, p.772). In this context, the fields of fishing and agriculture, basic economic activities in the Romanian coastal area, require balanced and integrated management, because the sustainable development of the Romanian Black Sea coastal area is a complex and sensitive issue that must take into account the interactions between economic, environmental, and social factors (Stan, 2014, p.56; Filip, Stan, and Vintilă, 2016, p.524). Moreover, the coastal area must be seen as a multifaceted concept and which, in addition to the mentioned dimensions, also has a territorial one (Petrişor, 2014, p.27; Munteanu, 2020, p.973). Practically the concept of sustainability covers all areas and sectors in which a development process takes place (Petrişor, 2017, p.144).

The economic activities of fishing and aquaculture, as well as agriculture, represent a socioeconomic necessity for the sustainable development of the Romanian coastal area. Fishing is the activity of extracting living aquatic resources from natural fish habitats, in compliance with measures for the protection, conservation, and regeneration of living aquatic resources; aquaculture deals with the growth or cultivation of aquatic organisms using techniques designed to increase the production of the organisms concerned beyond the natural capacity of the environment, in a framework in which those organisms remain the property of a natural or legal person throughout the growing/cultivation and harvesting period, while agriculture is concerned with the cultivation of plants and the raising of animals to obtain food and raw materials.

In the Black Sea coastal area, on the Danube and in the Danube Delta, an important part of the population has as its traditional activity fishing, which has both a social and economic role and provides food resources. Also, agriculture and animal husbandry are a traditional sector in Constanța County, while for Tulcea County only agriculture continues to be the main branch of the economy, especially in rural areas; although fish farming and aquaculture have a high potential for development, they are ahead of agriculture. All these activities involve several relevant actors: fishermen, aquaculturists, farmers, animal breeders, processors, farmers, cooperatives, companies.

There are studies and analyses in the literature that examine fishing in the context of MSP, focusing on the relationship between MSP and fishing, the involvement of fishermen in MSP, and tools that can help integrate fishing into MSP (Psuty *et al*, 2021, p.1). Other studies show that relevant agricultural stakeholders can create an integrated European cross-sectoral and multidisciplinary maritime policy (Salomon and Dross, 2013, p.144).

To be able to identify the important aspects of land / sea-land interactions (LSI) for the coastal and maritime area of the Black Sea to develop and implement the maritime spatial plan, the involvement of relevant stakeholders is necessary. Recent studies (Zaucha and Kreiner, 2021, p.1) have shown that there are many benefits of stakeholder involvement in the effectiveness of the MSP process, as expert consultation or involvement can be integrated into the complex process of spatial planning (Calado *et al*, 2021, p.2). Intuiting the importance of agriculture, fisheries, and aquaculture from an economic point of view, to get a clear picture of how companies in this field achieve their intended purpose and contribute to the economic benefit of the area, a series of studies (Aivaz, 2021a; Aivaz, 2021b; Aivaz, 2021c) performed structural and dynamic analyzes of the most important financial indicators of results.

3. Research methodology

The research aims to assess the perception of stakeholders regarding the interactions between land and sea in the Romanian coastal area of the Black Sea in terms of their priorities, to identify relevant issues in the fields of fisheries and agriculture which must be taken into account in maritime spatial planning in the Black Sea.

To achieve the research objectives we used a questionnaire, the variables-questions aimed at clarifying the aspects that include the two components related to (1) interactions with impact from shore to sea and (2) interactions from sea to land and refers both to economic activities as well as natural phenomena and processes. Within the MARSPLAN II project, the questionnaire was developed by the representatives of the National Institute for Marine Research and Development "Grigore Antipa" and was applied and interpreted by the representatives of Ovidius University of Constanta. The questionnaire was applied online to stakeholders, who are both public and private entities.

The grouping of the variables in the questionnaire was carried out according to the scale at which the activity of the participating organization takes place: international, local and national. From a methodological point of view, the assessment of how terrestrial developments influence and support marine developments and how they have an impact on the environment was carried out for each activity in the field of fisheries and agriculture by setting priorities grouped into 3 categories: *ecological priorities*, *economic priorities*, and *social priorities*. For each answer, in our case, the assessment of the priority by the entity in question, we used a scale from 1 to 5 with the following meanings: Maximum (score 1), Medium (score 2), Low (score 3), Non-existent (score 4) and I don't know / I don't answer (score 5). Data processing, systematization of results, and obtaining indicators used for statistical analysis were performed using the *Statistical Program for the Social Sciences* (SPSS).

4. Findings

For the analysis undertaken in this study, questions from marine or coastal fisheries, aquaculture, and agriculture and animal husbandry were selected from the complex questionnaire for stakeholders covering all coastal activities. All these activities are, according to the CANE classification, part of a compact field of activity entitled "Agriculture, forestry, and fishing".

The questionnaire was answered by 51 stakeholders from sectors of activity relevant for the use of marine space whose activity is carried out at different levels - international/national/local -, the stakeholders being entities such as authorities, economic operators, non-governmental organizations, universities, institutes of research, public companies, etc.

Having up-to-date information and understanding the specifics of sea fishing activities are key components and key elements in maritime spatial planning (MSP). Marine fishing is carried out along the Romanian coastline and is limited to the marine area located up to the isobath of 60-70 m and on the seaside of the Danube Delta Biosphere Reserve.

According to the data analysis, regardless of the scale at which the organization operates, sea fishing is considered an *ecological priority* of the highest level by 56.9% of the entities, while 29.4% consider it a medium priority, 3.9% low, and 9.8% do not know. The high score given to this criterion is because fishery resources in European inland waters are in continuous decline, as a result of habitat degradation and overexploitation through fishing, the Romanian coastal area being an area of great ecological importance, because some of the most productive habitats are concentrated there. In Romania, the analysis carried out for the *Aquaculture and Fisheries Program 2021-2027* confirms that the precarious state of the Black Sea stocks endangers the sustainability of commercial fishing and the entire ecosystem.

Regarding the extent to which the surveyed entities consider fishing as an *economic priority*, the following scores resulted: 58.8% High, 29.4% Medium, 3.9% Low, and 7.9% Not Known. From an economic point of view, this sector includes commercial fishing activities, fishing vessel activities, fish processing, and preservation activities, with a high degree of relevance for the development of fishing communities and it is not surprising why almost 60% of the surveyed entities considered this activity to have a high economic impact. Among the economic problems raised by them, most of them refer to the underdeveloped infrastructure represented by fishing ports with non-specialized berths, inadequate storage spaces, as well as the lack of suitable locations for organizing the first sale of fish, that of the direct producer.

Regarding the appreciation of sea fishing as a *social priority*, the following scores resulted: 43.1% High, 35.3% Medium, 7.8% Low, and 13.7% Not Known. The high score given to this criterion is because a large number of people from coastal localities work and depend on income from this sector, thus providing the necessary livelihood. People working in related sectors, such as fish processing, ship maintenance, and tourism, also indirectly depend on this area of sea fishing.

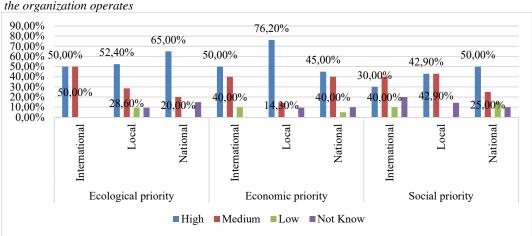


Figure no. 1. The extent to which sea fishing can be considered a priority depending on the scale at which the organization operates

Source: Own processing

Although aquaculture is the fastest-growing food industry in the world, its development is largely conditioned by the existence of a coastal area close to the coast. The biggest problems they face are the lack of clear planning policies and strategies at both the European Union and national levels. Hence, it is necessary to develop a maritime planning strategy that can identify suitable sites for the expansion of aquaculture, without compromising areas important for biodiversity and other socioeconomic uses in the region (Venier *et al*, 2021, p.2).

The aquaculture activity confirms its importance in the Romanian coastal area by the fact that large areas are concentrated for its development, the potential of the field being supported by the existence of resources from the Danube Delta and the Black Sea. Although marine aquaculture, called mariculture, is a recent activity in the Black Sea, the potential economic benefits have made it necessary to know the perception of stakeholders on this activity for its future development and to minimize possible conflicts.

Regarding aquaculture, regardless of the scale at which the activity of the organization is carried out, 56.9% of the entities considered it a high *ecological priority*, 25.5% average, 3.9% low and 13.7% said that they do not know. Stakeholders believe that ecologically conserving marine biodiversity requires special attention, even if the activity has a high potential for economic growth.

The distribution of the results regarding the assessment of the *economic priority* of aquaculture is as follows: 51.0% of the entities consider it a high priority, 29.4% average, 3.9% low and 7.9% stated that they do not know. One of the directions that should be taken into account in the development programs, to cover the demand for cultivated species in Romania and maximize the production potential, is to support the growth and diversification of production, especially from local ichthyofauna species, including mariculture.

Regarding the appreciation of aquaculture from the perspective of *social priorities*, the following relative sizes resulted: 33.3% of the entities consider this category to be with high social priority, 41.2% average, 9.8% low and 15.7% do not know. The role of the social component of this activity must be emphasized because aquaculture is one of the directions that will drive the balanced development of rural and coastal areas.

The Aquaculture and Fisheries Program 2021-2027 mentions and encourages investments in sustainable aquaculture infrastructure, as it recognizes its potential to contribute to sustainable development, food security, economic growth, and employment.

Therefore, the inclusion of the views of the stakeholders in the maritime spatial planning activity is essential, as it provides investors with certainty in avoiding conflicts, so that all actors involved enjoy the ultimate goal - sustainable development.

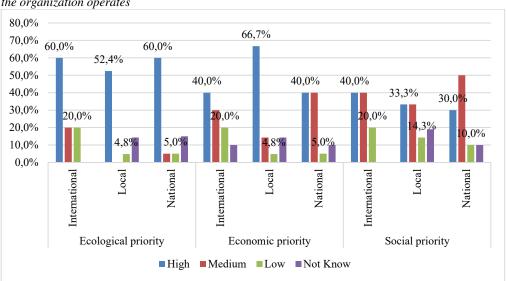


Figure no. 2. The extent to which aquaculture can be considered a priority depending on the scale at which the organization operates

Source: Own processing

The fishing activity in the coastal lakes from the Romanian coastal area takes place in the Razim-Sinoe lagoon complex, the Taşaul-Gargalâc lake complex, the Siutghiol-Tăbăcărie lake complex, the Agigea, Techirghiol, Costinesti, Tatlageac lakes, the swamps near Mangalia, important areas in the natural ecosystem.

The guidelines analysis of the stakeholders regarding the fishing activity in the coastal lakes is necessary for the maritime spatial planning because this is an activity with a long tradition, an important part of the population having as its traditional activity the fishing.

According to the data analysis, regardless of the scale at which the organization operates, fishing in coastal lakes is considered an *ecological priority*, the distribution of scores being as follows: 45.1% of entities consider it to have high priority, 31.4% average, 11.8% low and 11.7% do not know. Coastal lakes are most severely affected by human activities, with severe pressures leading to the deterioration of aquatic ecosystems over time. In this regard, the management of waste, including that generated by commercial or recreational fishing activities, the use of prohibited or non-selective fishing methods, non-recovery of lost gear, etc. these are issues that should be put on the agenda of decision-makers.

Fishing in coastal lakes is considered an *economic priority* by the interested entities in the following structure: 39.2% of them consider it a high priority, 39.2% medium, 9.8% low and 11.8% do not know. Most of the responding stakeholders consider fishing in coastal waters as having a high economic priority, due to the existence of living aquatic resources which have a high economic value and can generate added value. However, the seasonal nature of coastal fishing cannot provide a permanent source of income for traditional fishing communities, which severely limits interest in this activity.

Fishing in coastal lakes is considered a high *social priority* by 25.5% of stakeholders, 43.1% consider it a medium level, 15.7% low and 15.7% do not know. In coastal lake communities, especially in rural areas, fishing is a subsistence activity, so it is necessary to protect coastal fishing communities.

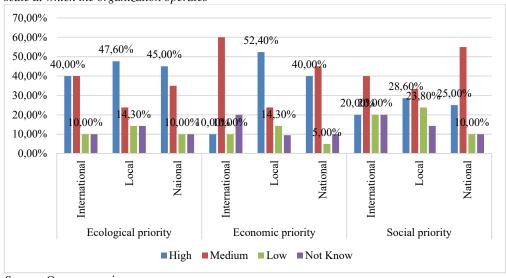


Figure no. 3. The extent to which fishing in coastal lakes may be considered a priority depending on the scale at which the organization operates

Source: Own processing

Agriculture, which covers about 40% of the European Union's land area, is considered to be the main driver of environmental degradation. It is well known that agriculture and animal husbandry, represented by cattle, pigs, sheep, poultry, have an important contribution to the economic growth of the area and serve as a driving force for the sustainable economic development of the Romanian coastal area.

For the coherence of maritime spatial planning, it is necessary to collect data from users or terrestrial activities in the coastal zone because both agriculture and biodiversity conservation are necessary for human existence and well-being (Lécuyer *et al*, 2021, p.7).

According to the analysis based on the questionnaire, regardless of the scale of the organization, agriculture and animal husbandry are considered a high *ecological priority* for 52.9% of the analyzed entities, 25.5% consider it an average priority, 11.8% low and 9.8% do not know. These results reflect the fact that stakeholders are aware of and accept the value of agriculture and its role in protecting biodiversity namely, to produce cleaner food in full correlation with the conservation and development of the environment.

Regarding the appreciation of the *economic priority*, 66.7% of the stakeholders consider agriculture and animal husbandry as high, 21.6% average, and 11.7% do not know. As it can be seen, the perception of stakeholders is eloquent, agriculture being considered extremely important for the development of the area.

Regarding the *social priority*, it is considered high by 54.9% of the entities, an average of 33.3% and 11.8% do not know. A large part of the population in rural areas is engaged in agricultural activities, the employed labor force ensuring its existence mainly in this way. Thus, this aspect of the living standard of the inhabitants of the area has a strong characteristic of social vulnerability.

Therefore, stakeholders' perceptions of agricultural activity are needed in the analysis of coastal conflicts, as it has a substantial potential for sustainable growth.

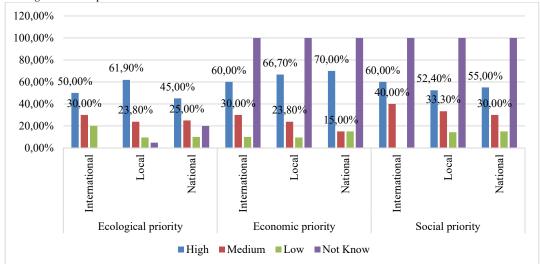


Figure no. 4. The extent to which agriculture can be considered a priority depending on the scale at which the organization operates

Source: Own processing

The European MSP Directive has decided to give greater importance to land-sea interactions (LSI), in particular for the development of the National Maritime Space Plan and the development of rational, sustainable development scenarios for maritime activities in harmony with the marine environment; scenarios are relevant in maritime spatial planning (MSP) because they provide an inclusive and comprehensive approach, reaching all sectors that interact directly and indirectly in a given area (Calado *et al*, 2021, p.2). Therefore, the identification of important issues in the areas of fisheries and agriculture is necessary for the coherence between terrestrial and marine planning, avoiding conflicts, and establishing synergies between activities.

5. Conclusions

The European MSP Directive requires that land-sea interactions (LSI) should be taken into account to promote sustainable, integrated development and to manage human activities at sea. It is well known that maritime spatial planning (MSP) is one of the many framework conditions that shape

development activities on land or at sea.

Land-sea interaction (LSI) is a complex phenomenon that involves both natural processes along with the land-sea interface and the measurement of the socio-economic impact of human activities taking place in the coastal zone. LSI is defined as "interactions in which terrestrial natural phenomena or human activities have an impact on the marine environment, resources and activities and interactions in which marine natural phenomena or human activities have an impact on the terrestrial environment, resources and activities" (SUPREME, 2018, p.11).

This research is part of the concerns of Romania and Bulgaria to support coherent activities on maritime spatial planning and the establishment of a long-term mechanism for cross-border cooperation in the Black Sea basin with MSP. Within the MARSPLAN-BS-II project, the research team started a whole series of studies, as well as this paper, through which useful information was collected from stakeholders, public and private authorities, whose activities are directly or indirectly related to this space to establish a common strategy.

Identifying land-sea interaction in the coastal zone provides opportunities for the development of fishing and aquaculture activities in both marine and freshwater areas, as well as for agriculture and animal husbandry activities and avoiding potential conflict with current maritime and coastal activities.

6. Acknowledgment

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7. References

- Aivaz, K.A., 2021a. The Dynamics of the Degree of Investment at the Level of Economic Agents
 whose Main Activity is Agriculture, Forestry and Fishing in the Context of the Concerns regarding
 Coastal Development. Ovidius University Annals, Economic Sciences Series, XXI(1), pp. 2-8.
- Aivaz, K.A., 2021b. The Dynamics and Challenges related to the Sustainable Development of Marine Fishing and Aquaculture Activities. Spatial Maritime Planning and Solutions in the Coastal Region of Romania. Ovidius University Annals, Economic Sciences Series, XXI(1), pp. 9-17.
- Aivaz, K.A., 2021c. Investigating the impact of subsidy revenues on turnover at the level of companies in agriculture, forestry and fishing in the coastal area of the Black Sea. Annals of "Dunarea de Jos" University of Galati Fascicle I. Economics and Applied Informatics, XXVII(2), pp.31-38, https://doi.org/10.35219/eai15840409189.
- Ansong J., Gissi E., Calado H., 2017. An approach to ecosystem-based management in maritime spatial planning process. *Ocean & Coastal Management*, 141, pp. 65-81, https://doi.org/10.1016/j.ocecoaman.2017.03.005.
- Calado H., Pegorelli C., Vergílio M., Hipólito C., Campos A., Moniz F., Costa A.C., Pereira da Silva C., Fonseca C., Frazão Santos C., Gabriel, J. Guerreiro D., Gil A.J.F., Johnson D., Ng K., Monwar M.M., Ventura M.A., Suárez-de Vivero J.L., Pinho M., Borges P., Caña-Varona M., Papaioannou E.A., 2021. Expert knowledge-based co-development of scenarios for maritime spatial planning in the Northeast Atlantic. *Marine Policy*, 133, 104741, https://doi.org/10.1016/j.marpol.2021.104741.
- Crowder L., Norse E., 2008. Essential ecological insights for marine ecosystem-based management and marine spatial planning. *Marine Policy*, 32(5), pp. 772-778, https://doi.org/10.1016/j.marpol.2008.03.012.
- Directive 2014/89/EU of the European Parliament and of the Council of 23 July 2014 establishing a framework for maritime spatial planning. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32014L0089 [Accessed 18 October 2021].
- Dupont C., Gourmelon F., Meur-Ferec C., Herpers F., Le Visage C., 2020. Exploring uses of maritime surveillance data for marine spatial planning: A review of scientific literature. *Marine Policy*, 117, 103930, https://doi.org/10.1016/j.marpol.2020.103930.
- Ehler C., Zaucha J., Gee K., 2019. Maritime/Marine Spatial Planning at the Interface of Research and Practice. In: *Maritime Spatial Planning past, present, future* (eBook), https://doi.org/10.1007/978-3-319-98696-8.

- European Commission, 2018. Land Sea Interactions in Maritime Spatial Planning. Available at: https://ec.europa.eu/environment/iczm/pdf/LSI_FINAL20180417_digital.pdf

 [Accessed 20 October 2021].
- European MSP Platform for the European Commission Directorate-General for Maritime Affairs and Fisheries (DG MARE), Conference Report "Maritime Spatial Planning Conference: Addressing Land-Sea Interactions", 15 16 June 2017, St. Julian's, Malta. Available at: https://www.msp-platform.eu/sites/default/files/20170927_conferencereportmalta_msp_lsi_010.pdf [Accessed 18 October 2021].
- Filip, C., Stan, M.I., Vintilă, D.F. 2016. Considerations regarding the expected benefit of rehabilitation works related to Romanian coastal zone of the Black Sea on regional sustainable development. *Proceedings of the 16th International Multidisciplinary Scientific GeoConference SGEM 2016*, 6(3), pp. 523-530, DOI: 10.5593/SGEM2016/HB63/S10.067.
- Government Decision no. 436 of June 21, 2018 regarding the approval of the Methodology for elaborating the maritime spatial plan, published in the Official Gazette no. 530 of June 27, 2018.
- Jean S., Gilbert L., Medema W., Keijser X., Mayer I., Inam A., Adamowski J., 2018. Serious Games as Planning Support Systems: Learning from Playing Maritime Spatial Planning Challenge 2050. Water, 10(12), 1786, https://doi.org/10.3390/w10121786.
- Lécuyer L., Alard D., Calla S., Coolsaet B., Fickel T., Heinsoo K., Henle K., Herzon I., Hodgson I., Quétier F., McCracken D., McMahon B.J., Melts I., Sands D., Skrimizea E., Watt A., White R., Young J., 2022. Chapter One Conflicts between agriculture and biodiversity conservation in Europe: Looking to the future by learning from the past. In Editor(s): David A. Bohan, Alex J. Dumbrell, Adam J. Vanbergen. Advances in Ecological Research. Academic Press, Volume 65, pp. 3-56, https://doi.org/10.1016/bs.aecr.2021.10.005.
- Law no. 88/2017 for the approval of the Government Ordinance no. 18/2016 on the arrangement of the maritime space, published in the Official Gazette no. 313 of May 2, 2017.
- Ministry of Agriculture and Rural Development, Aquaculture and Fisheries Program 2021-2027, draft June 2021, Available at: https://ampeste.ro/pap-2021-2027/programare-2021-2027/project-de-program-2021-2027.html [Accessed 21 October 2021].
- Munteanu I., 2020. An Overview of the Business Approach and Labor Costs in the Construction Industry. Case Study: Romania's Counties by the Sea. Ovidius University Annals, Economic Sciences Series, 20(2), pp. 971-977.
- Petrisor A.I., 2014. The territorial competitiveness of sustainability cannot be assessed by a single domain. *Urbanism Architecture Constructions*, 5(4), pp. 27-34.
- Petrişor A.I., 2017. A diversity-based approach to the spatial development of socioecological systems. *Urbanism Architecture Constructions*, 8(2), pp. 143-162.
- Psuty I., Zaucha J., Mytlewski A., Suska M., Szymanek L., 2021. The use of the contribution margin
 on the valorisation of polish fisheries for maritime spatial planning. *Ocean & Coastal Management*,
 211, 105751, https://doi.org/10.1016/j.ocecoaman.2021.105751.
- Regulation (EU) No 1380/2013 of the European Parliament and of the Council of 11 December 2013 on the Common Fisheries Policy, amending Council Regulations (EC) No 1954/2003 and (EC) No 1224/2009 and repealing Council Regulations (EC) No 2371/2002 and (EC) No 639/2004 and Council Decision 2004/585/EC. Available at: http://data.europa.eu/eli/reg/2013/1380/oj [Accessed 20 October 2021].
- Salomon M., Dross M., 2013. Challenges in cross-sectoral marine protection in Europe. *Marine Policy*, 42, pp. 142-149, https://doi.org/10.1016/j.marpol.2013.02.012.
- Stan M.I., 2014. The influence of coastal erosion on the development of southern Romanian Black Sea coastline. JIDEG Journal of Industrial Design and Engineering Graphics, 9(special issue), pp. 53-56.
- Supporting maritime spatial Planning in the Easter Mediterranean (SUPREME), How to perform analysis of land-sea interactions, combining MSP and ICZM in the considered project area, Deliverable No. 1.3.7, December 2018, Available at: https://iczmplatform.org/storage/documents/taFUAsAqp9pOnvq8F4zQmNIhMWBTEvocP0qncF2 C.pdf> [Accessed 20 October 2021].
- Venier C., Menegon S., Possingham H.P., Gissi E., Zanella A., Depellegrin D., Sarretta A., Barbanti A., McGowan J., 2021. Multi-objective zoning for aquaculture and biodiversity. *Science of The Total Environment*, 785, 146997, https://doi.org/10.1016/j.scitotenv.2021.146997.
- Zaucha J., Kreiner A., 2021. Engagement of stakeholders in the marine/maritime spatial planning process. *Marine Policy*, 132, 103394, https://doi.org/10.1016/j.marpol.2018.12.013.

Money Laundering and Its Understanding by the Current Romanian Legal System – Origins, Mechanisms and Implications

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Abstract

Money laundering benefits from the evolution of technology. It is developing as a way of financial crime, from both perspectives: the prevention and sanctioning tools that are getting more and more sophisticated, but also the way in which this crime is being committed. Last but not least, having a banking system that encourages money laundering is not only counter-productive for the law enforcement officers and judicial system, but also for the economy system of a developing country, which will fail to attract investors. The purpose of this article is to present the legal framework of the Romanian judicial system when it comes to money laundering, but also to underline its flaws and its perspectives of improvement. It will also focus on the main methods that are being used in Romania for money laundering.

Key words: money laundering, methods, legal framework, legislative proposals

J.E.L classification: K40, K49, P44, E42

1. Introduction

Investigators have found that a happy financial offender is the one who keeps the money in his accounts, he assumes the possibility of bearing the repressive mechanism of the State because he does not care about how the State finishes to execute the form of constraint on his freedom, in order to "re-educate". He will have sufficient resources, which he may perhaps be able to put into the financial circuit, to justify the legal origin of the revenue. (Bjelajac, 2011, p.2)

Happy criminals often receive advice on the criminal schemes they carry out, planning their criminal activity over a minimum period of 10 years. They take and accept the risks of being caught in about the seventh year, statistics show. It is only the unfortunate and uneducated criminals who, at the end of the criminal proceedings, are unable to prove their innocence, and their proceeds of illegal activities are confiscated. The real problem for the legal systems, or society in general, are the happy and educated criminals. (Achim, 2019, p.23)

This is why, It is the Romanian legal system's understanding that starting from the premise of correct understanding of the criminal profile of the financial criminal, attempts are being made, in the field of investigation of these crimes, to phase out traditional theories in which the restriction of individual freedom is the indispensable condition for restoring law and order, of general and special prevention and the implementation of a new policy of social control, focusing not so much on the restriction of individual freedom but rather on the confiscation of fraudulently acquired assets. (Achim, 2019, p.23)

2. Literature review

While money laundering is an intense debatable theme in the international literature, with many authors focusing on its methods (Bullogh, Bjelajac and many others), the Romanian literature has less work in distinguishing between important terms the international literature uses when it comes to money laundering.

The definition and description of trends in the money laundering process cannot be considered as easy operations due to the clandestine of the laundering process. In determining a trend, the analyst should also take into account some indirect indicators, such as information provided by financial

investigation units, judicial authorities or other authorities responsible for the money laundering process.

However, the difficulties involved in using these sources of information to identify the trend toward money laundering do not allow a complete picture of the phenomenon. It has been noted, for example, that the high number of convictions or investigations for money laundering could mean that several people were involved in a washing scheme, where a possible trend of scourge can no longer be analyzed during that time. (Florea, 2016, p.54)

Otherwise, a low number of convictions for money laundering offenses does not necessarily mean that less money laundering activities take place over a period of time, but could allow the influence of factors limiting the investigation of this crime to be observed, such as the difficulty of proving the predicate offense. (Letia, 2016, p. 36-37)

3. Research methodology

In order to establish the future of money laundering within the Romanian legal framework, we must first ask the question: "What has already been done and what are the problems the current legal system faces?"

This question ensures there will be an analysis based on the evolution of the incrimination itself, but also it will ensure that the methods used by criminals are underlined so that proper measures are being taken. The current article aims to underline the evolution of the methods used, the incrimination itself, but mostly to offer legal solutions towards the problems the current system in Romania faces.

The legal problems that will be underlined in the present article can be used as the basis for future *de lege ferenda* (or legal proposals) measures that need to be taken by the Romanian legislature.

4. Findings

4.1. The origins of money laundering in the Romanian legal system

The most tangible instrument of this new profit-based paradigm in the area of criminal law is money laundering, because through this process, the assets derived from illicit activities are hidden, while ensuring both control over these assets and the imperative of justifying the appearance of the licit character of their origin. This paradigm has proven to be an excellent instrument of anti-criminal policy aimed at repression of drug trafficking in the United States of America and has been enshrined in the United Nations Convention against illicit traffic in Narcotic Drugs and Psychotropic substances (starting from 1988). (Bjelajac, 2011, p.11)

Gradually, the confiscation of the proceeds of crime has become the central objective of criminal law systems, and the Romanian legal system is still struggling to thereby aim to reduce the proceeds of crime. Efforts made by Romanian authorities have been focused on increasing the effectiveness of legal instruments to detect, seize, confiscate illegally acquired assets, to reduce the motivation of criminals to engage in such criminal activities, and to reduce the operational capital used to continue such activities.

In a plastic way, it was justified in the Romanian doctrine by the special nature of the efficiency of freezing and confiscation in the fight against organized crime, pointing out that the conviction of any member of the group alone does not put an end to criminal activity, since it can be replaced and another group that can continue to carry out its illegal activities. However, confiscation of the proceeds of crime prevents the proceeds of crime from being infiltrated into the civilian system by neutralizing the instrument for committing new offenses, thereby ensuring that crime does not generate further revenue. (Ghinea, 2014, p.62-63)

As regards the criminalization of money laundering, as recommended by the FATF (Financial Action Task force – international reference body for the prevention of and fight against money laundering and terrorist financing), each country must extend the offense of money laundering to all serious crimes, to include it in the widest range of predicated offenses (offenses whose punishment involves in general prison according to their type, a minimum of 1 year imprisonment)

4.2. The methods used

There are a number of international, European and national regulations that criminalize the crime of money laundering, but more important is to analyse the concept of money laundering itself, in order to understand its current context. The attempt to capture current and future trends in the money laundering process was one of the main aims pursued by the experts of the Financial Action Task force on money laundering (FATF or FATF). (Bullogh, 2019, p.29)

The importance of studying methods and techniques for money laundering and terrorist financing, with a view to adopting the most appropriate policies and strategies for combating financial crime, is obvious, but we also need to understand the evolution of these trends over time. Their identification allows relevant methods of money laundering and terrorist financing to be systematically analysed, with an understanding of the context in which some of these methods have been used by financial criminals within a certain period of time.

In-depth knowledge of the process of money laundering typologies allows other methods and trends to be identified in the future, as well as other vulnerable areas to easily infiltrate the money laundering scourge. To this end, a FATF Expert Committee, meeting in Moscow on 6-8 December 2005, defined some basic concepts of the money laundering process to address money laundering typologies and terrorist financing. (Bullogh, 2019, p.30)

In the context of money laundering and terrorist financing, the method is a separate procedure used in the process. The method involves combining techniques, mechanisms and tools and may in some cases be the very typology of money laundering.

The money laundering or terrorist financing **technique** is a distinct action or means by which the above-mentioned criminal activities are carried out. For example, the structuring of financial transactions, the mixing of legitimate and illegal funds, the undervaluation or over-valuation of goods, the transmission of funds through electronic transfers, and so on

The money laundering **mechanism** is a system through which certain activities of the money laundering process are carried out. These are money laundering mechanisms financial institutions, money remittance systems, virtual casinos, corporate entities, etc.

The money laundering **tool** is an object used in the money laundering process. They are money-laundering tools: Checks, letters of credit, precious metals, real estate, guarantees.

The money laundering **scheme** is the specific operation combining different methods, techniques, mechanisms and instruments into a single criminal structure. In some cases, these schemes are confused with money laundering, but in most cases, investigation of the washing process reveals the existence of several criminal schemes.

The money laundering **typology** is the pattern in which money laundering methods or schemes can be found between which there are clear similarities. It is important to note the differences in the scope of concepts used in the money laundering process: Trends, methods and typologies of laundering. The method and typology only refer to a specific washing process regarded in a time-determined unit, while the trend is related to the evolution of the method or typology over time. (Popa, 2016, p.5)

Law no. 656/2002 from the Romanian legal system made for the prevention and sanctioning of money laundering and for the establishment of measures to prevent and combat terrorist financing defines, in the provisions of Article 2, the key terms that are found in the description of the money laundering process. Thus:

- a) money laundering means the offense referred to in article 29;
- b) terrorist financing means the offense referred to in Article 36 of Law No. 535/2004 on the prevention and fight against terrorism;
- c) property shall mean any tangible or intangible, movable or immovable property and any legal acts or documents evidencing title or right in respect thereof;
- d) a suspicious transaction means an operation which appears not to have an economic or legal purpose or which, by its nature and/or unusual in relation to the activities of the client of one of the persons referred to in Article 10, raises suspicion of money laundering or terrorist financing;
- e) external transfers to and from accounts shall mean cross-border transfers as defined in accordance with the relevant national regulations, as well as payment transactions and receipts made between residents and non-residents on the territory of Romania;

As regards the movement of funds through electronic transfers of funds, we see that this can happen:

- -From one institution to another;
- -From one client's account to another client's account,
- -On the basis of instructions given by the customer; by the transmission of electronic instructions:
- -Lead to entry in the records of each institution for the purpose of making funds available, and it is necessary to identify:
 - the person ordering the payment,
 - the financial institution of the person ordering the payment;
 - the financial institution of the beneficiary;
 - other financial institutions (correspondent banks),
 - the person ordering the payment,
 - the financial institution of the person ordering the payment;
 - the financial institution of the beneficiary;
- other financial institutions (correspondent banks), distinguishing between simple client-toclient transfer and transfer between correspondent banks known as intermediate or follow-up financial institutions; these become relevant for cross-border transactions where: the bank of the person ordering the payment does not have a branch in a foreign jurisdiction; it may involve the use of two correspondent banks (that of the sender and the recipient of the funds).
 - f) money laundering through credit institutions as defined by article 7.1. pt.10 from OUG 99/2006
 - g) money laundering through financial institutions as defined by article 18 from OUG 99/2006
 - h) money laundering through business relations as defined by article 10 from OUG 99/2006
- i) money laundering through operations that seem connected, and by this we refer to single transaction transactions from a single commercial contract or agreement of any kind between the same parties and whose value is fragmented in instalments of less than 15,000 euros or the equivalent in lei, when they are made during the same banking day, in order to avoid legal requirements;
- j) through fictitious bank refers to a credit institution or an institution that carries out equivalent activity, registered in a jurisdiction in which it does not have a physical presence, namely the management and administration of the activity and the records the institution is not located in that jurisdiction, and which is not affiliated with a regulated financial group;
- k) money laundering by service providers for companies and other entities or legal constructions or any natural or legal person providing a professional title as the ones stated by law no. 656/2002
- l) by a group of entities, as defined in art. 2 (1) point 13 of the OUG no. 98/2006 on the additional supervision of credit institutions, insurance companies and/or reinsurance undertakings, financial investment services companies and investment management companies in a financial conglomerate, approved with amendments and completions by Law no. 152/2007. Politically exposed people are, according to the provisions contained in art. 3 of Law no. 656/2002, the persons who exercise or have exercised public functions, important members of their families, as well as those who are publicly known as close associates of individuals performing important public functions (as they are defined by the Romanian legal system).

4.3. Practical methods used in the current context and their effects - challenges for the Romanian legislature and Romanian judicial system.

4.3.a. Practical methods used (as the Romanian jurisprudence and literature identifies them):

- 1) Money laundering through commercial activities the accounts of ghost companies, whose the real beneficiaries are unknown, they are used only for the purpose of hiding the illicit origin of some funds and "moving some values" under the justification of commercial transactions.
- 2) Money laundering through mass cash withdrawals from the accounts of some companies, set up specifically for placement, but also stratification of illicit funds obtained from tax evasion.
- 3) Money laundering through funds of illicit origin, deposited in cash in the accounts of viable trading companies, with proof of loan / company lending, etc., followed by the transfer of the amounts to the accounts of other companies and their final withdrawal, in cash, with the justification of loan / credit repayment.

- 4) Money laundering through the stratification of funds of illicit origin through the accounts of several companies (ghost or viable), followed by money outsourcing (usually to offshore jurisdictions)
- 5) Money laundering through Outsourcing of funds of illicit origin, generally to accounts opened with financial institutions in jurisdictions offshore, followed shortly by their reintegration into the Romanian financial system, but at the expense of other individuals or legal entities.
- 6) Money laundering using the accounts of some resident companies to stratify illicit funds resulting from crimes committed outside the Romanian borders.
- 7. Money laundering using overvaluation in transactions, whether civil or commercial, of the traded object (real estate, securities furniture, valuables, etc.), part or all of the price paid in return representing in fact funds of illicit origin.
- 8. Money laundering using the transfer of illicit funds through fast money transfer systems, carried out by persons who apparently have nothing to do with each other and whose financial profile does not justify the amount transferred. (Jurj-Tudoran, 2016, p. 71)

4.3.b. Challenges for the Romanian legislature and Romanian judicial system. Tendencies in the current context.

- 1) Jurisdiction from the analysis of the incriminating text of the law we notice that the Romanian legislator wanted to provide as a crime not only the money laundering from serious crimes, as defined in domestic and international regulations in money laundering, but from any offense as well, whether the offense against which the property originated was committed on the territory of Romania or abroad, according to the express provision contained in the provisions of art. 29.5 Law no. 656/2002. Thus raises the problem that not all national legislations recognize the Romanian jurisdiction in returning international criminals in Romania and charges brought against them.
- 2) The purpose itself since money laundering needs mainly the use of financial-banking systems, it has an effect over the credibility of the banking system itself, especially in developing countries such as Romania. Having a large number of criminal cases related to money laundering shines a dark light over the financial market, and the whole banking system, and thus investors might have reservations when it comes to investing in a certain country. Romania needs to take act of this, and to urge its process into establishing legal sanctions and prevention for this type of illegalities.
- 3) The subject of money laundering distinction within the national legislation must be made between the subject of accomplice to money laundering and accomplice to aiding criminals. These are distinct criminal violations within the Romanian criminal code, that are yet to be clearly distinguished within the legal system.
- 4) The content of the incrimination itself- the Romanian law no. 656/2002 must clearly state that convicting a person of money laundering is an autonomous crime (meaning in the absence of a conviction previous or simultaneous for other offenses for the alleged offense and without a precise determination of the alleged offense or its author), thus has the illicit origin of the goods involved in a money laundering scheme and is established on the basis of direct or indirect evidence, the intentional element of the money laundering offense needs to be analyzed in light of the corroboration of all objective factual elements.
- 5) The methods used need to be specifically underlined as they were previously. Some preparatory acts are still in discussion in order to be incriminated, some are already incriminated. Attempt is however incriminated by the Romanian legislation, but problems still arise when it comes to various acts of money laundering itself. Some acts may prevent the process from taking place, some might nullify it, so the Romanian legislature still has a lot of work to do when it comes to implementing reform policies, from both prevention and sanction point of view.

5. Conclusions

The Romanian system regarding the incrimination of the crime of money laundering still has gaps and is one in the process of being revised.

Over time, more and more methods have been found to constitute the crime of money laundering, as a result of which the legislator has not always been able to keep up with the necessary changes.

In order to eliminate any terminological inaccuracies, we appreciate that the Romanian legislator must to consider whether it would be necessary to replace the phrase "knowing that they come from committing crimes" with the phrase "knowing that they come from committing a criminal activity." This approach on behalf of the legislator would facilitate proof of the subjective element of the analyzed crime is being developed.

The legislator should also criminalize money laundering, when the one who commits any of the actions incriminated in art. 29 of law 656/2002. In addition, there needs to be considered that it would be necessary to provide a separate provision as an aggravated variant of the analyzed crime, by committing money laundering from predicate crimes committed by organized criminal groups.

Last but not least, the control bodies must intensify the prevention activity, by developing the mechanisms of cooperation with the national banking system.

6. References

- Achim, M.V., 2019. Criminalitatea economico-finaciară [Economic and financial crime]. Bucharest: Economica Publishing House
- Bjelajac, Z., 2011, Contemporary tendencies in money laundering, available on-line at: https://www.researchgate.net/publication/340899873_CONTEMPORARY_TENDENCIES_IN_MONEY_LAUNDERING_METHODS_REVIEW_OF_THE_METHODS_AND_MEASURES_FOR_IT_S_SUPPRESSION
- Bullogh, O., 2019. Moneyland: why thieves and crooks now rule the world. London: Profile Books
- Florea, C., 2016. Măsuri de prevenire şi combatere a spălării banilor şi finanţării terorismului [Measures to prevent and combat money laundering and terrorist financing]. *Journal of Accountability*, no. 2/2016, pp. 52-58, available on-line at:
 - https://www.worldcat.org/title/masuri-de-prevenire-si-combatere-a-spalarii-banilor-si-finantarii-terorismului/oclc/997373438
- Ghinea, N., 2014. Prevenirea și combaterea infracțiunilor de spălare a banilor [Preventing and combating money laundering offenses]. Craiova: Sitech Publishing House
- Leția, A., 2015. Investigarea criminalității de afaceri : spălarea banilor, corupția și frauda fiscală, aspecte teoretice și practice [Investigating business crime: money laundering, corruption and tax fraud, theoretical and practical issues]. Bucharest: Universul Juridic Publishing House
- Popa, L., 2016. Particularitățile investigării infracțiunilor de spalare a banilor [Peculiarities of the investigation of money laundering offenses]. *Tribuna Economica*, no.8/2016, pp. 56-62, available online at: https://www.worldcat.org/title/particularitatile-investigarii-infractiunilor-de-spalare-a-banilor/oclc/1043076356
- Jurj-Tudoran, R., 2016. Spălarea banilor: teorie și practică judiciară [Money laundering: theory and judicial practice]. Bucharest: C.H. Beck Publishing House

The Role of Leadership in Modern Education

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Abstract

A moral way of life helps the evolution of people, in the sense that observance of principles, protects them from what is bad and gives them support. There is a high effort to integrate morality in the professional life of employees in educational institutions, in order to reach the stage of happiness. The purpose of this article is to focus on moral values and how they are promoted by teachers. Thus, in this sense, there is a combination of the study of basic concepts, but also with the study of a practical application, in order to identify the role of leaders in developing the moral values of students. The most important conclusions drawn from this scientific paper highlight the fact that a good leader in the educational environment must have high moral values to be a role model among students.

Key words: teaching staff, instructional-educational process, morality, education

J.E.L classification: I21, I25, M12, P36

1. Introduction

In a democratic society, answers and solutions are always sought for the problems that have arisen, of the community, so each leader in the educational environment must become more and more responsible both in front of the team he belongs to and in front of the learners.

Leaders are not born, they become in time and as a result of a complex process. However, it is increasingly accepted that a good leader must have experience, knowledge, commitment, patience, the ability to lead, negotiate, persuade and work with others to achieve organizational goals.

In today's workplace dynamics, organizations need leaders to meet new challenges in order to gain a competitive advantage in the marketplace. In addition, organizations need managers to maintain a conflict-free job, but also to use resources efficiently. Without a leader, chaos would be created, a dull work climate in which no person would feel comfortable. Finally, a well-balanced organization should have a mix of leaders and managers to succeed. (Lawrence, 2010, p.31).

2. Literature review

Leaders (whether we are talking about teachers in the classroom or in the decision-making position) during the instructional-educational process must promote morality and ethics among students. They also outline the significance of the position of school organizations in this field. The moral nature of education can not be reduced only to the knowledge and skills necessary for the act of teaching. Moral behavior must be continuously present in schools, in the actions of teachers and their results (Burant et al, 2007, p.31).

Teachers as leaders are responsible for the morality and education of students, in the interaction with the class is inevitable the existence of a moral behavior. They must also have pedagogical skills in the sense of managing and directing their actions in the classroom (Husu & Tirri, 2007, p.59)

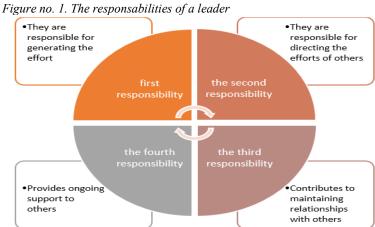
Promoting the moral way helps people to develop, and this refers to the fact that it protects them from what is bad. The peculiarities of the modern world, but also of globalization have accelerated the modernization of the 21st century society and have highlighted the need for the moral behavior of teachers (Husu & Tirri, 2007, p.62)

The review of empirical studies in the analyzed field nuances a number of characteristics that distinguish a good leader from a weak one, and these are:

- 1. integrity;
- 2. honesty;
- 3. desire to drive;
- 4. the desire to have knowledge;
- 5. authenticity.

In recent years, the literature talks about the existence of another type of leader, the humble one. Morris offers an important analysis and an excellent study in this regard, defining the concept through three distinct dimensions (Morris et al, 2005, p.46-48):

- 1. Self-awareness: The ability to understand someone, to acknowledge one's mistakes.
- 2. Openness: Recognition of limitations, openness to new ideas, knowledge and desire to listen and learn from others.
 - 3. Transcendence: Appreciating the opinions and ideas of others within the organization. According to Simona Mardar, leaders have a number of responsibilities (figure 1).



Source: (Mardar, 2013, p.18)

Jim Colins considers that two attributes are very important for a leader (figure no. 2.).

Figure no. 2. The atributes of a leader professional will The atributes of a leader

Source: (Collins, 2017, p. 59)

3. Research methodology

In order to establish the role of teachers in shaping the moral values of students, during this part we aimed to conduct a field-research, an opinion poll that aims to identify the role of leaders in education in shaping the moral values of students. Thus, the questionnaire was used as a research tool that was applied to a number of 50 people representing teachers working in school organizations in primary and secondary education.

Objectives:

- 01: Knowledge of leaders' concern for the development of human values among students
- O2: Observation of responsibilities for promoting ethical values
- O3: Highlighting respondents' perceptions of the impeccable behavior of teachers as formal leaders

Hypotheses:

- H1: Focusing the organization on issues related to the development of human values results in influencing the impeccable behavior of school leaders
- H2: Respondents' studies and seniority influence the perception of responsibility for the development of human values among students
- H3: The importance given to the development of human values of students varies depending on seniority

4. Findings

During this part, the results obtained from the opinion poll applied to teachers are presented, and in this sense the interpretation of each question takes place.

Question 1. Does the school organization where you currently work focus on developing moral values among students?

Answer	Percentage
yes	100 %
no	-
I don't know	-

Within the organizations where the respondents work, the emphasis is on promoting moral values.

Question 2. Express your opinion on the following statement: "The responsibility for developing the moral values of students belongs exclusively to the leaders in the educational environment".

Answer	Percentage
Totally agree	-
Agree	-
indifferent	-
Disagree	40%
Totally disagree	60%

According to the answers given by the respondents, the task of developing students' moral values does not fall only to teachers as leaders. Compared to the statement, 40% of the participants in the study disagree, and 60% totally disagree.

Question 3. Which of the following should be involved in shaping students' moral values?

Answer	Percentage
Family	40%
Friends	10%
Media	10%
Communities	10%
All the above	30%

According to 40% of teachers, the family should be involved in the formation of moral values, 10% believe that friends, 10% media, 10% community, and 30% said that all parties are responsible for strengthening the moral values of students.

Question 4. How important is it for a leader to have high moral values?

Answer	Percentage
Very important	60%
Important	30%
Indifferent	10%
Unimportant	-
Totally unimportant	-

In the opinion of 60% of the participants in the study, the moral values of teachers as leaders are very important, for 40% they are important.

Question 5. Express your opinion on the following statement: "In school organizations and in the community, leaders must behave impeccably."

Answer	Percentage
Totally agree	50%
Agree	40%
indifferent	10%
Disagree	-
Totally disagree	-

Thus, 50% agree with the above statement, 40% agree, and 10% are indifferent.

The last questions of the questionnaire are related to studies and seniority. 70% of the respondents are graduates of undergraduate studies. Regarding the seniority in work, over 50% of them have been working for a period of 5-10 years.

5. Testing hypotesis

H1: The focus of the school organization on aspects related to the development of human values results in influencing the behavior of teachers as leaders

Table no. 1. Testing the first hypothesis

		Responsibility for the development of human values
Studies	Pearson's correlation	0.705
	Sig. (2-tailed)	0.000
	N	50

Source: self-processing

The value of Pearson's correlation coefficient shows the existence of a direct and significant link between the variables. The first hypothesis is verified.

H2: Respondents' studies and seniority influence the perception of responsibility for the development of human values among students

Table no. 2. Testing the second hypothesis

Corelations		
		Responsibility for development human values
Studies	Pearson's correlation	0.005
	Sig. (2-tailed)	0.943
	N	50
Age	Pearson's correlation	0.197
	Sig. (2-tailed)	0.62
	N	50

Source: self-processing

In this case, in order to test the hypothesis, Pearson's correlation coefficient was used. The value of Sig, of the statistical threshold is not in the limit, this demonstrates the fact that there is no direct connection between the variables. Thus, the second hypothesis was not tested/verified.

H3: The importance given to the development of human values of students varies depending on seniority. The T test was used for this hypothesis.

Table no. 3. Testing the third hypothesis

14010 110. 3. 1	Tuble no. 3. Testing the third hypothesis					
T test						
	Test value = 0					
			Sig.		95% (Confidence interval of the
			(2- Medium difference			
	t	df	tailed)	diference	Lowest	highest
the biorhythm						
that	91.303	239	0	3.688	3.61	3.77
characterizes	91.303	239	U	3.000	3.01	3.//
you						
profile	52,665	239	0	5.425	5.22	5.63

Source: self-processing

Sig is in the normal range, there are differences in perception of individuals. Hypothesis three was verified.

6. Conclusions

The moral behavior of teachers (leaders or not) plays an essential role in building a society according to the expectations of citizens, a society characterized by normalcy and in which morality reigns.

Changes in the moral nature of individuals have not led to severe changes, but the focus on the moral behavior of teachers is increasing, it can be defined as one of the most important aspects of the last three decades.

The aims of promoting morality among school leaders are vast, they have in common the study of organizational culture, with an emphasis on: beliefs, values, norms. The formation and cultivation of virtues among students allows the evolution of the world.

Research has confirmed that the behavior of leaders consistently influences employee performance. It is said that the power of example has a great influence on the employee. Therefore, both traits and behavior go hand in hand or in other words the theory of leadership traits influences the theory of behavioral leadership. But keep in mind that it is easier to change behavior (through learning) than to change traits.

The managerial style and the one used in leadership determine the performance of the employees. Thus, any company must adopt this widely accepted fact at the intellectual level in organizations in both the private and public sectors, but now all prove to be quite resistant to significant change.

Globalization, instant communication, economic crises, corporate social responsibility and huge environmental problems are some of the obvious examples that modern leadership has to face, and for this to be possible new leadership qualities are needed.

In conclusion, only a moral leader can positively influence student behavior.

7. References

- Adams, D., 2002. Education and National Development: Priorities, Policies, and Planning, available online at: < http://cerc.edu.hku.hk/wp-content/uploads/2013/11/Education-and-National-Development-Priorities-Policies-and-Planning.pdf>
- Burant, T., Chubbuck, S. M., & Whipp, J.L, 2007. Reclaiming the moral in the dispositions debate. *Journal of Teacher Education* 58(5)
- Collins, J, 2010, Excelența în afaceri [Business excellence]. Bucharest: Curtea Veche Publishing House
- Husu, J, Tirri K, 2007. A case study approach to study one teacher's moral reflection. *Teaching and Teacher Education* 19(3)
- Fitzmaurice, M, 2010. Considering Teaching in Higher Education as a Practice. *Teaching in Higher Education* 15(1)
- Mardar, S., 2013. Leadership organizational [Organizational Ledearship]. Bucharest: "Carol I" National University of Defense Publishing House

Leadership and Its Importance in Sustainable Development

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Abstract

A good knowledge of the current state in the field of leadership has led to a proper understanding of the phenomenon, the types of leadership and the relationships between them and organizational environments. Although there are established typologies and theories of leadership, due to the permanent organizational changes, new factors appear that must be taken into account in order to arrive at a correct and precise evaluation of the leadership concept. The purpose of this article is to establish the key elements regarding the connection between leadership behavior and traits.

Key words: leader, leadership, management, manager

J.E.L classification: B30, M12, M19

1. Introduction

From the beginning of the organization of society, leadership has been a central theme for mankind.

Leadership is one of the topics of management that has been written and researched the most. The qualities that must be found in a good leader and the weaknesses of a weak leader have been the subject of many debates that have led to the emergence of dozens of theories and models of leadership.

Implicit theories of leadership have existed since ancient times in the form of various advice and prescriptions based on experience and passed down from one generation to another or from mentor to disciple. Courage, risk-taking, motivation, vision have been the most important skills of a leader since ancient times.

2. Literature review

In Max Landsberg's view, the formula by which an effective leader acts is: leadership = vision x motivation x drive

(Landsberg, 2008, p.32)

The ability to create vision, motivation and drive in a group of people is the essence of leadership. The positive image of what an organization could become and the way to achieve the goals is the vision of the leader, who must always be looking for new ideas that correspond to the strategy of the organization.

What pushes the members of some organizations to action, is the motivation, the leader being the one who using his skills awakens people's energy.

The necessary element for the organization's projects and initiatives to reach their destination is the drive. The leader must ensure that the organization is on the right track to fulfilling its mission.

In Lansdberg's theory, the leader must function efficiently in all three dimensions. The visionary is not a leader if he cannot motivate. The person who sustains the momentum is not a leader if he cannot create a vision that is shared by all. From this triad, the leader's ability to create a common vision and to motivate the organization are the characteristics that differentiate him from the manager.

Table no.1 The difference between managers and leaders

Manager	Leader		
Does things right	Does the right things		
Is focuses on the present, on short-term results	Focuses on the future, long-term results and		
and on the main direction of action.	perspectives.		
Seeks for order	Enjoys change		
Limits risks	Takes risks		
Appeals more to reason than to emotion.	Appeals to both emotion and reason.		

Source: self-processing

3. Research methodology

In order to establish the role of leaders in shaping the moral values we must first ask the question: "What must be lead?"

Obviously the answer to this question refers to either individuals or groups / teams.

There are 4 theories of leadership: trait theory; behavioral leadership theory; situational leadership theory; integrative leadership theory. These theories have been developed over time. Behavioral leadership theory began to be researched in the 1940s and intensively researched in the 1950s. Most research has shifted from trait theory to behavioral theory, a theory that focuses on what leaders do and say.

Researchers have tried to find the best leadership style in all situations, trying to identify the differences between effective and inefficient leaders. Behavioral leadership theory has made important contributions to leadership research, but it has never achieved its primary goal of discovering the best leadership style. In the field of behavioral paradigm, research continues today to better understand the behavior of leadership, in all its complexity and the effects it has on employee performance.

4. Findings

Organizations need both managers and leaders alike. Without strong managers the organization risks going into chaos, without efficient leaders the organization enters a state of lethargy and no longer evolves.

Despite the development of science and technology, humanity is still looking for leaders to save it. The complex world we live in, a world of accentuated professionalism in which there is an increasing need to meet higher standards, a world in which people live isolated in their own professional and existential life where their own experiences are considered the most relevant but and a world belonging to a community where everyone knows each other and knows what everyone else is doing, has become a concept.

Complexity has become, as the professor at the London School of Economics - the Mitleton-Kelly Gospel - puts it, "a new way of thinking, of looking at the world", an attempt to introduce a relative order into the chaos of new paradigms of thinking.

According to historians, since ancient times in the portraits of leaders appear certain qualities related to the art through which an individual leads others. (Tuturea et al, 2010, p.45)

Systematic and modern studies on leadership appeared according to research in the field, only towards the end of the 19th century.

The organizational aspects of work have evolved, from those with an authoritarian leadership style to one with a more comfortable work environment, then to organizations where people are empowered, encouraged and supported in their personal and professional development. A much more pleasant working environment has been created in which employees have come to contribute to increasing labor productivity.

According to researchers Gregory Stone and Kathleen Patterson, who conducted a study of the phenomenon of leadership historically in 2004, "early leadership studies emerged in the wake of the Industrial Revolution, which helped transfer the American economy from an agricultural to a an

industrial one, producing a change in the behavior of leaders towards those who follow them". (Gregory & Patterson, p.3)

People have been discussing the art of knowledge since the time of Plato. But still the same problem always arises, we are obsessed with leadership. During the Enlightenment, philosophers like Voltaire argued that only by applying reason could people control their destiny. Thus in the twentieth century two beliefs emerged from this notion of rationalism: a belief in progress and a belief in human perfection.

With the writings of Sigmund Freud and later Max Weber, Western man's faith in rationalism and progress was destroyed. The current search for leadership is a direct consequence of their work. Freud, the founder of psychoanalysis, theorized that under the surface of the rational mind there is the unconscious. He assumed that the unconscious was responsible for a significant proportion of human behavior. (Mardar, 2013, p.118)

Weber, Marx's brilliant sociologist and leading critic, also explored the limits of rationality. For him, the destructive force operating in institutions was, as he called it, technical rationality - a rationality without morality. Technical rationality represents a particular form of organization - bureaucracy. Bureaucracies, he said, were to be feared not because of their inefficiency but because of their efficiency and ability to dehumanize people. Weber believed that the only power that could withstand bureaucracy was charismatic leadership. But this, too, was a rather tangled theory, considering that throughout history there have been inspirational and transformational warlords, who have also been charismatic leaders, like Hitler, Stalin, and who have committed unimaginable atrocities. (Zlate, 2004, p.74)

However, Weber's concerns about bureaucracy did not affect the views of other theorists who prepared and anticipated research on what we now call "classical management theories" and "scientific management."

Classical theorists have focused on the design of organizational activities, while scientific management has focused on the systematic management of individual jobs.

Henri Fayol, one of the classical theorists, defined management as a whole that includes five elements:

- 1. Forecasting and planning
- 2. Organization
- 3. Leadership
- 4. Coordination
- 5. Control

For Fayol, management means looking ahead, which makes the forecasting and planning process a central activity.

In terms of scientific management, Frederick Taylor made a significant contribution, advocating for a management with a strong emphasis on control, efficiency, quantification, predictability and jobs. It has initiated studies on time-movement variables to analyze and properly frame workloads and to improve worker productivity in order to achieve the highest possible level of efficiency. Taylor's ideas led to heated controversy over the alleged inhumanity of his system, which reduced the worker to the level of an efficient machine.

The leading position in the theory of scientific management aimed at establishing and implementing performance criteria, in order to meet organizational objectives. The leader focuses mainly on the needs of the organization and not on those of each member.

Although different in approaches, classical management and scientific management have similar objectives: organizations are rational and must function as efficiently as possible to achieve the highest level of productivity. (Zlate, 2004, p.76)

Although these two theories have proven to be productive, emerging theories have encouraged leaders to recognize that people are not machines and should not be treated as such.

The post-bureaucratic change that took place in the mid-1940s shifted responsibility for the success or failure of the organization to the people. The founder of the Movement for Human Relations, Elton Mayo, following his research, demonstrated the importance of groups in determining individual behavior at work. His studies have led to a deeper understanding of the human factor in the work process. His works also highlighted the importance of an adequate communication system, oriented especially from the bottom up, ie from workers to leaders.

Research has shown, as he himself said, that "a leadership is successful or not insofar as it is unreservedly accepted by the group, as an authority or as a leader." Around the 1959s, a new theory of leadership began to work based on the idea that people are effective when their needs are met. Thus, leaders began to redirect their attention to meeting the needs of employees. (Mardar, 2013, p.121)

Frederick Herzberg developed and modified Maslow's Theory of Hierarchy of Needs, concluding that there are two groups of factors / needs: motivators and hygienists that influence the increase of motivation and employee satisfaction. (Mardar, 2013, p.124)

It soon became clear that leading people who have their own authority is a much more satisfying and enjoyable job than checking every move performed automatically.

Leadership theorists have begun to introduce the notion of "behavioral elements" into their work. At the same time, a new theory of organization and leadership emerged. This is based on the idea at more leavest more efficiently when their mode are mother and if this harmone, they are likely to

that people work more efficiently when their needs are met, and if this happens, they are likely to participate in increasing labor productivity which influences the evolution of the organization.

Douglas McGreogory, considers that the traditional organization, is based on some concepts / hypotheses regarding nature and human motivation, which he called Theory X and Theory Y or Theory of Hypotheses man-work relationship. (Landsberg, 2008, p.71)

This theory is one of the emotional sphere, being built on two different hypotheses regarding the motivation of employees. One hypothesis is that people may have negative motivation (which outlines Theory X) and another is that they may show a positive motivation (Theory Y).

Comparing the two theories, it is necessary to re-examine the premises according to which managers manage human resources, considering that the two theories correspond to different types of management: participatory style - Theory Y and authoritarian style - Theory X.

The social transformations of the 1960s and 1980s changed society's focus from increasing economic well-being to ensuring social rights and equality. The development of technology and the advent of the computer transformed leadership into a complex process, in which leaders were forced to focus on the customer, with or without concern for the organization to survive. (Landsberg, 2008, p.79-80)

Traditional methods of leadership were no longer effective in an ever-changing society. This was the factor that required the preparation of other research in leadership and society, so that organizations are prosperous and profitable.

The situational theory of leadership has evolved. Compared to Fiedler's model, which assumes that leadership style is difficult to change, the approach proposed by Hersey and Blanchard shows that effective leaders are able to adapt their leadership styles. The main criterion that leaders follow in adopting this leadership style is the maturity of their followers. Maturity is given by two factors:

- 1. Ability to perform tasks
- 2. Confidence that they will succeed.

Research has shown that in the late 1970s, many leaders turned to transactional leadership, the most important method of leadership still seen in today's organizations. The fundamental theory of this method of leadership is that leaders offer rewards for employee flexibility, a concept based on bureaucratic authority and the legitimacy of the leader within the organization.

In 1978, MacGregor Burns introduced the concept of transformational leadership to the literature, the research being expanded and refined by Bass and Avolio. According to Burns' conception, the transformational leader requires subordinates to transcend their own interests for the good of the group, organization, or society, to take into account the long-term needs to develop themselves, not the immediate ones. The organization is the main concern of this type of leadership.

5. Conclusions

Leadership or the science of leadership is the process of leading, directing and influencing the activity of members of an organized group to achieve the goals of the group.

Leaders are those people who guide and influence subordinates to achieve the goals of the group. They set a direction, a vision of what the future will be like to produce the changes needed to reach that direction. Try to recruit employees to make the changes needed to achieve that direction. Try to

recruit employees who share their vision. They motivate and inspire employee teams, oversee employee needs, values and emotions.

Leaders perform several essential functions:

- are responsible for generating and maintaining the required level of effort;
- are responsible for directing the group members' efforts in ways that promote group supervision and achievement of goals;
 - facilitates group relations;
 - meet the needs of group members;
- helps the group to move in complementary directions with the mission and, at the same time, keep the group united;
- provides a logical and emotional support point for people trying to understand the causes and consequences of organizational activity.

Moreover, the essential functions of leaders can be deduced from a semantic point of view regarding the word leadership, it coming from the verb to lead whose meanings are either:

- to lead, to guide, to guide, to be at the forefront, to open (the road), to direct, to command, to be a guide / guide, to show (the road) etc.
- show the way (for an individual or a group), be in harmony, guide, induce, influence, act and / or think and / or feel and / or behave in a certain way.

Therefore, leadership, although it cannot be translated into Romanian by a single word, can be defined as a management process or as the staff that performs this management process. It is also very important to note that there is no universal definition of leadership because it has been and is studied in different ways.

Transformational leadership is a high-level evolution in leadership paradigms, highlighting a strong concern for people and production. The last few decades have brought major changes to the leadership process, leading to questions about how future leaders should look and behave. Thus, the portrait of such a leader still remains difficult to achieve.

6. References

- Gregory, S., Patterson, K., 2004. Transformational versus servant leadership: a difference in leader focus. *Leadership & Organization Development Journal*, Vol. 25 No. 4, pp. 349-361
- Landsberg, M., 2008. Leadership: Viziune, Motivație, [Leadership: Vission, Motivation] Bucharest: Curtea Veche Publishing House
- Mardar, S., 2013. *Leadership organizațional [Organizational Ledearship]* Bucharest: "Carol I" National University of Defense Publishing House
- Țuțurea, M, Miricescu D., Moraru G.M., Grecu V., 2010. Leadership în organizații [Organizational Ledearship] Sibiu: "Lucian Blaga" University Publishing House
- Zlate, M, 2004. Leadership și management [Management and Leadership]. Bucharest: Polirom Publishing House

Englishization and the Appeal of Multinational Corporations among Business Students

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Abstract

With globalisation also comes Englishization, the tendency to use English as the language of communication almost anytime, anywhere, but especially in the case of multinational corporations (MNCs). They are looking for qualified workforce that is able to perform tasks in a foreign language and their appeal is significant among business students, who understand the importance of improving their skills through (Business) English courses. This paper discusses Englishization in relation with higher education and MNCs, while also presenting the results of a study conducted among undergraduate business students on the appeal of multinationals and the language skills needed in order to access corporate positions. It will show that, although Englishization has become a well-established trend in Romania, which seems to increase the appeal of multinational corporations among highly qualified candidates, it may not be permanent, since many of them are not necessarily looking to work there throughout their career.

Key words: globalisation, Englishization, higher education, job market, multinational corporations **J.E.L. classification**: A12, F66, I23, J2, M2, Z13

1. Introduction

Globalisation and Englishization seem to come as a package, as more and more people use English at school and at work on a daily basis, while also switching codes in less formal environments, like when socialising with friends and family. English has become so ingrained in our lives that we no longer find it unusual to hear people speaking it around us, to read signs or posters containing a combination of Romanian and English or to see entire job advertisements in the foreign language when browsing a job search website. English is taught from kindergarten to university and sometimes at work as well, and it has come to be considered as the default foreign language competence requirement for almost any qualified job. The vast majority of undergraduate students at the Faculty of Economics and Business Administration in Iaşi choose English as their preferred foreign language for the mandatory four-semester language course (which starts at intermediate level), likely being aware that the job market has high expectations from job seekers in terms of foreign language skills.

This paper aims to discuss the concept of 'Englishization' in relation to higher education and the current requirements of the workplace, by taking a look at business students' career goals and how the appeal of corporate jobs shapes Business English courses at university level. Starting with a definition of the term, it will touch upon its benefits and downsides by looking at the relevant literature, briefly analyse the job market in terms of available corporate positions and their language requirements and also present the results of a study on the attractiveness of working for a multinational corporation conducted among 102 undergraduate business students at the Faculty of Economics and Business Administration in Iaşi. It will show that Englishization in Romania is both a premise and a result of globalisation and the expansion of multinational corporations to markets rich in (human) resources but still profitable in terms of labour costs. Thus, the popularity of English among students at all levels allows them to access better-paid jobs, while also leading to increased requirements for foreign language competence on the labour market.

2. Literature Review

Englishization is partly a consequence of globalization and it essentially refers to the spread of English as the language of communication in non-Anglophone contexts. It has become the lingua franca for business communication, but also a requirement for employment, and it "provides a crosscultural and cross-linguistic indicator of change and acculturation" (Kachru, 1994, p.135). According to David Crystal (2003, p. 3), for a language to achieve global status, it needs to develop "a special role that is recognised in every country." This can be achieved by either making it the official language of the country or by "making it a priority in a country's foreign-language teaching, even though this language has no official status" (Crystal, 2003, p. 4). The latter has definitely been the case for Romania, where English is the preferred first foreign language taught in schools and universities alike. At the Faculty of Economics and Business Administration in Iași, for example, English is taught to all undergraduate students for four semesters, with one study programme (Business Administration) taught exclusively in English. Teaching ESP has always been closely connected to the requirements of the labour market, as it stems from very specific needs. Undergraduate Business English courses aim to prepare their (mostly) pre-experienced students for the recruitment process and further entering the job market, which nowadays requires them to speak at least one foreign language (mostly English) at intermediate level or higher and display a wide array of skills even for entry-level positions.

According to a Cambridge English and OS Global Employer Survey (2016), based on data collected from 5,373 employers in 38 countries, English language skills are important for over 95% of employers in many non-native English-speaking countries. However, the same study reports at least a 40% gap between the required and the actual skills that employees have, in every industry. Reading and speaking are considered by employers to be the most important language skills, but only a very small percentage (around 3%) are planning to improve the English skills of their employees. Of course, these results may differ when looking at specific countries or territories, but the bottom line is that recruiters are normally looking for candidates who already possess English language and other practical skills, especially when it comes to management/executive positions. A superficial look at the two most popular recruitment websites in Romania (ejobs.ro and bestjobs.eu) reveals that most job titles and a large number of job advertisements (posted for all career levels) are in English, and the vast majority of positions require at least a minimum level of English language competence. In the case of multinational corporations however, this is the norm. According to Ellis and Johnson (1994), employees who seek language training because of the demands of their jobs can be placed into three main categories: managers (because they work with international affairs and, since they occupy important positions, companies are more inclined to invest in training them), technical staff (who may either be promoted to managerial positions or need to communicate with other departments and/or clients and business partners) and secretaries and clerical workers (who also have a lot of responsibilities and need to communicate with a variety of people). Nevertheless, we have reached a point where it is difficult for any employee, no matter their position in a company, not to come across any situation in which even the most basic knowledge of the English language come in handy, from using the computer to reading the instructions on a product's packaging or to giving directions to a foreigner trying to find his or her way to somebody's office. For the in-service learner, English holds the key to professional development, as "it may be the gateway to promotion, the requirement for an international posting or the means to success in next week's presentation to management" (Brieger, 1997, p. 13). And with the advent of new technologies, corporations now expect their employees to stay on top of alternative means of communication, like instant messaging, wikis, blogging, microblogging, and videoconferencing (Chan, 2020).

Still, the ability to speak one foreign language is often the minimum level of competence required nowadays. It is important to note that Tietze, Holden and Barner-Rassmussen (2016, p. 312) compare "the highly complex transnational business communication capital of MNCs" to the behaviour in a metropolis, referring not only to English but also to other national languages (like French, German, Chinese etc.), "special languages (i.e. occupation-specific language forms) and corporate sociolects." Kim (2016) similarly points out that only focusing on Englishization in MNCs is an oversimplification, since it is not the only language strategy employed by such companies. Rather, the tendency is towards a multilingual strategy, which is obvious from the requirements included in their job ads. English is no longer the only foreign language candidates need to speak because, based

on the company's profile and target customers, they will also have to use a second or third language. Thus, it is argued that "the very process of economic globalization has by now detached itself from the dynamics of Englishization and has adopted a much more sophisticated, *multilingual* strategy" (Dor, 2004, p. 102, emphasis in the original).

However, English remains at the core of both MNCs' communication activities and a lot of the scientific and teaching work in the academia. Jackson and Primecz (2019) argue that even though Englishization appears to positively offer scholars the means to publish their research in top journals, it also highlights the discrepancies between native speakers and those who struggle to learn academic English in order to read the literature and write articles in the foreign language. In terms of the teaching and learning process in higher education, Van Parjis (2021) emphasizes the fact that the universities' desire to rank well and receive funding through internationalization has led to poor quality education and is detrimental to both socially less advantaged students and national languages. Similarly, in business, "critics of globalization warn that lack of proficiency in English and the skills prized by today's knowledge industries (e.g. advanced technological skills) can disadvantage individuals and organizations by denying them access to resources and global markets (e.g. lucrative contracts, intercultural/international contracts)" (Jackson, 2014, p. 274).

Consequently, balance needs to be achieved between taking advantage of the global opportunities (through the extensive use of English) and losing our national identities, but this also explains why recruitment sites are full of job advertisements written in English, because, at this point, job seekers are used to being required to possess above average language skills. Moreover, smaller companies have started to take advantage of the Englishization trend and try to mimic MNCs in order to attract candidates looking for those benefits usually provided by corporations only. In fact, globalisation itself has come to be seen as the result of multinationals' activities, which rely on foreign direct investment in markets characterised by rich but cheap resources (Haller, 2016), so they have definitely started a trend in terms of recruitment standards and employee satisfaction on the local job market.

So, what exactly makes multinational corporations so appealing to business students, what do their ideal candidate profiles look like and how does this impact the undergraduate English courses they attend? First, we will look at the results of a study conducted by Catalyst (2020), which details the most desired employers in our country, based on the answers of over 14,000 respondents with a higher education background in the fields of business, IT&C, engineering, social sciences and medicine/pharma. Unsurprisingly, they are all multinational corporations. The top 5 contains the following names, in the order of preference: Continental, Oracle, Microsoft, Amazon and IBM. Continental occupies the first place in the respondents' preferences for the second time in a row. This proves that MNCs have both the know-how and the financial power to provide employee satisfaction. Their business model usually includes a combination of higher-than-average salaries, extra benefits like vouchers, a bonus system, private medical insurance and a type of corporate culture that allows for more flexibility in terms of work schedules and task completion, teamwork, extracurricular activities, training courses and/or travelling, which are appealing to potential candidates, especially in contrast with the traditional work environments. At the same time, a look at the job postings on two popular recruitment websites shows that all qualified positions at Continental require English language skills, mostly at advanced level, with a few even requiring being proficient (Bestjobs.eu, Ejobs.ro, 2021). Moreover, the job ads themselves are all in English, except for the ones where foreign language competence is not required. The same is true for the other four most desirable employers and, wherever other foreign languages (like French or German) are required, English is present as well. Thus, it is not surprising that these three are the languages taught at the Faculty of Economics and Business Administration in Iași, with English being the top option in terms of undergraduate students' preferences.

Consequently, teachers are faced with the task of identifying and developing the language skills needed to perform work tasks in a multicultural environment, which requires both specialised (technical) knowledge but also the ability to communicate effectively using a foreign language in a variety of situations. Corporations typically test the candidates' language skills through various tools (from written tests to phone or face-to-face interviews), which are sometimes more comprehensive that the specialised, technical knowledge tests, so this proves the prevalence of linguistic competence over other aspects involved at working for a multinational corporation. Moreover, companies often

provide training courses themselves (usually in the case of other foreign languages, like Spanish or Italian, but also English), in order to make sure that their employees language level is up to standard in terms of the tasks to be performed.

Relevant information can be found below about a study which was conducted among business students with a view to illustrate their perspective on some of the aspects discussed so far, specifically the appeal of corporate jobs in relation to the Englishization of the Romanian society, in general, and that of higher education, in particular.

3. Research methodology

In order to take a closer look at prospective job candidates' preferences, a questionnaire was devised using Google Forms and distributed online to first- and second-year undergraduates at the Faculty of Economics and Business Administration in Iaşi. The study set out to establish the appeal of multinational corporations among business students and also to shed some light on the English language requirements involved in such corporate jobs. The questionnaire was devised in English and consisted of 13 questions in total, including those referring to demographic information. One hundred and two responses were recorded, over a period of one week.

The main research questions were the following:

- Would business students choose to work for a multinational corporation? Why/Why not?
- Have they applied for a job at an MNC and if yes, what did the application/recruitment process involve in terms of (English) foreign language use?
- If they worked or are currently working at an MNC, were/are they using their English language skills to complete the tasks and, if so, which ones?
- Do they see themselves having a long career at a multinational corporation?

The questionnaire was distributed to students from six specialisations (CIG – Accounting and Business Information Systems, FB - Finance and Banking, IE – Business Information Systems, EAI – Economics and International Business, MG – Management, MK – Marketing). All the demographic information is synthetised in the following table.

Table no. 1. Demographic information

Tweete no. 1. 2 emog. up ne injermanen						
Category	Number of respondents: 102					
Gender	Female: 70			Gender Female: 70 Male: 32		
Age	18-25: 100 25-3			30: 2	Over	30: 0
Year of study	1 st year: 18				2 nd year: 84	
Field of specialisation	CIG: 16	FB: 15	IE: 25	EAI: 0	MG: 17	MK: 16

Source: (Author's own survey, 2021)

The results of the study are presented below, alongside a discussion of the overall appeal of working for a multinational corporation among undergraduate business students.

4. Findings and Discussion

The first question in the questionnaire required students to say whether they would like to have a job at a multinational corporation. There were three possible options and 63 respondents (61.8%) answered 'Yes,' 30 respondents (29.4%) answered 'No' and 9 (8.8%) answered 'I don't know'/'I haven't decided' to this question.

This shows that more than half of the respondents would be interested in working for such a company, possibly even before they graduate from university. While a significant number has not made a decision yet (due to various reasons, among which may be the fact that they are still in their first or second year), it is likely that, by the end of their studies, they will at least take this possibility into account, since a large number of the advertised positions in large cities (such as Iași) on specialized websites are within such companies.

Would you like to have a job at a multinational corporation? 102 responses Yes No. I don't know / I haven't decided 61.8%

Figure no. 1. Results for question 1

Source: (Author's own survey, 2021)

If the respondents answered 'Yes' to the first question, they were directed to the second one, which required them to tick the reasons for their choice or provide their own. The available options were the following:

- Attractive salary package
- Attractive benefits package
- Company prestige
- Travel opportunities
- Multicultural environment
- (English) language improvement opportunities
- Career development opportunities
- Other

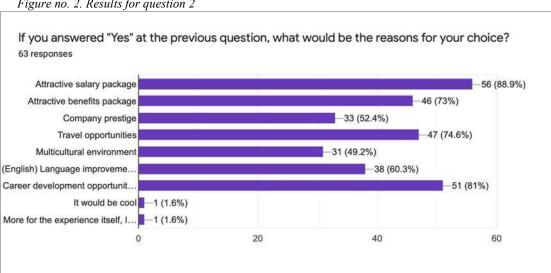


Figure no. 2. Results for question 2

Source: (Author's own survey, 2021)

Out of the 63 respondents for this question, the majority (88.9%) chose the first reason, 51 (81%) chose 'Career development opportunities,' 47 (74.6%) chose 'Travel opportunities,' followed closely (73%) by 'Attractive benefits package.' (English) Language improvement opportunities' was the reason behind 38 (60.3%) respondents' choices, while 'Company prestige' and the 'Multicultural environment' appealed to 33 (52.4%) and 31 (49.2%) of the students respectively. One student (1.6%) responded that 'It would be cool,' while another one (1.6%) added that he or she would like to work for an MNC 'more for the experience itself, I wouldn't work all my life for a Multinational Corporation.'

As previously stated, corporations have relocated their operations to markets such as Romania because they can find qualified workforce who can speak English well at lower costs, which allows them to provide attractive salary and benefit packages and still make a good profit. In an environment where the concept of employee satisfaction did not really exist thirty years ago, it is not surprising that (prospective) candidates value the opportunity to have a pleasant work environment and develop their career, which MNCs usually provide them with.

Those who had answered 'No' at the first question were asked to give their reasons as well. They had to choose from the following options:

- Work schedule
- Deadlines
- Working via phone/e-mails/IM/CMR (Technology-based job)
- Advanced (English) language skills requirements
- Lack of flexibility/space for creativity
- Corporate culture
- Corporate values/philosophy
- Other

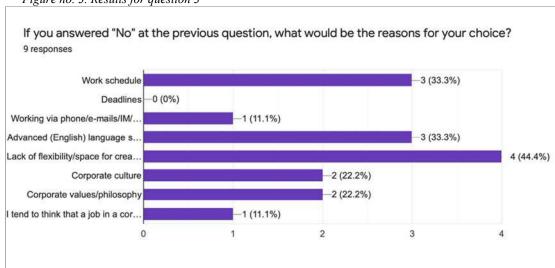


Figure no. 3. Results for question 3

Source: (Author's own survey, 2021)

Out of the 9 responses for this question, 4 (44.4%) referred to the perceived 'Lack of flexibility/space for creativity' when working for a MNC, 3 (33.3%) were about the 'Work schedule' and 'Advanced (English) language skills requirements' respectively, while 2 respondents (22.2%) chose 'Corporate culture' and 'Corporate values/philosophy' respectively. One student (11.1%) chose 'Working via phone/e-mails/IM/CMR (Technology-based job)' as the reason, while another one (11.1%) answered: 'I tend to think that a job in a corporate setting would limit my ability to evolve professionally at a certain point.' No respondents chose 'Deadlines' as a reason for not wanting to work for an MNC.

Consequently, even though working for a multinational corporation has its benefits (as discussed above), business students are aware that this comes with some downsides as well, which might even discourage them to apply for a position altogether. Corporate jobs are perceived as inflexible, both in terms of work schedules and other requirements, while corporate culture and philosophy does not fit every personality. However, a lot of the respondents have already applied for a corporate job, presumably to test out such an opportunity before dismissing it completely.

The following two questions referred to applying for a job at a multinational corporation and the recruitment process. When asked whether they had ever applied for a position at a MNC, 88 respondents (86.3%) out of the total of 102 said they hadn't, with 14 (13.7%) answering that they had.

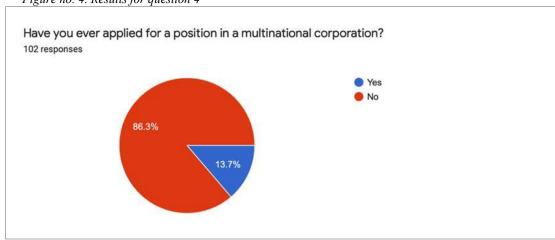


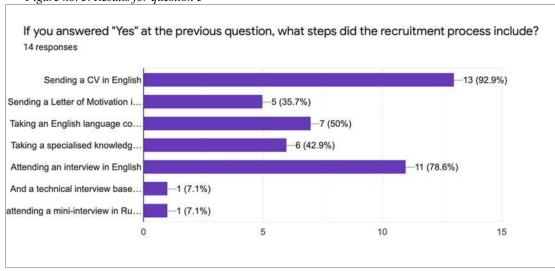
Figure no. 4. Results for question 4

Source: (Author's own survey, 2021)

Those who answered affirmatively were next asked about what the recruitment process involved, with the following options:

- Sending a CV in English
- Sending a Letter of Motivation in English
- Taking an English language competence test
- Taking a specialised knowledge test in English
- Attending an interview in English
- Other

Figure no. 5. Results for question 5



Source: (Author's own survey, 2021)

Out of the 14 responses to this question, 13 students (92.9%) chose the first option, 'Sending a CV in English.' Eleven respondents (78.6%) also attended an interview in English, 7 (50%) had to take an English language competence test, 6 (42.9%) took a specialised knowledge test in English, while 5 (35.7%) sent a letter of motivation in English as well. One respondent (7.1%) added that he or she had to also attend a mini-interview in Russian (which was needed for the position he/she applied for), while another one (7.1%) mentioned 'A technical interview based on my knowledge of the field.' The recruitment process at MNCs clearly relies heavily on the candidates' English language competence, as it can be observed from the job advertisements available online. Moreover, this reflects the high percentage of language use for the completion of work tasks.

Out of the 14 students who had applied for a corporate position, 7 (50%) worked or are currently working at such a company (internships included), so they were next asked how often they used/are currently using English for completing their tasks at work.

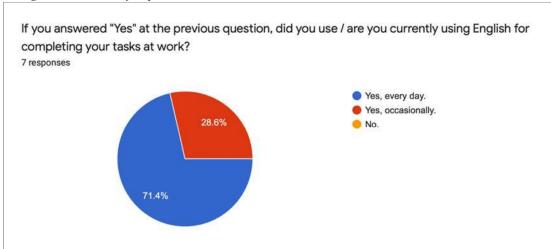


Figure no. 6. Results for question 7

Source: (Author's own survey, 2021)

Five of them (71.4%) answered 'Yes, every day,' while 2 (28.6%) answered 'Yes, occasionally,' with 0 answers for the third option, which was 'No.'

Next, respondents had to choose the English skills they most commonly used at work. 'Reading' was the top choice (100%), followed by 'Listening' (85.7%), and 'Speaking' and 'Writing' (both at 71.4%).

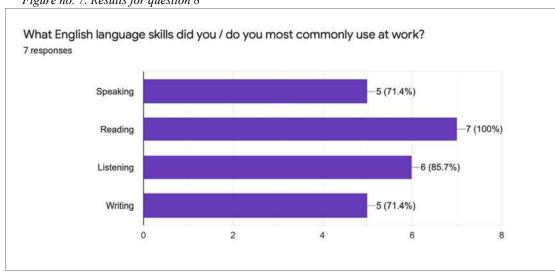


Figure no. 7. Results for question 8

Source: (Author's own survey, 2021)

The results for this question are consistent with those presented in the previously cited study conducted by Cambridge English and QS, but they also show that all four skills are required, since most of the tasks are in English and a good level of language competence is needed to complete them.

Finally, when asked how long they see themselves working for an MNC, 3 respondents (42.9%) chose the 'Under 5 years' option, the 'Indefinitely' option was selected by 3 respondents as well, while 1 student (14.3%) chose the '5 to 10 years' one.

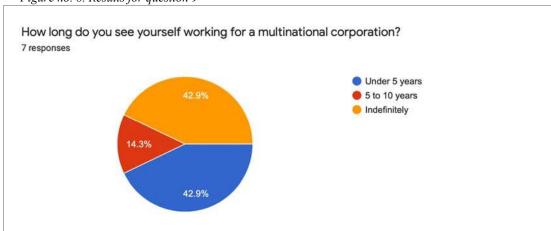


Figure no. 8. Results for question 9

Source: (Author's own survey, 2021)

This indicates that, even though corporations are appealing, a lot of candidates are not willing to spend their entire career in such an environment. They are more likely to try things out, gain experience and then move on to something else, which is more consistent with their career goals further down the road.

This study has its limitations in terms of the number of students questioned, but it does reveal the fact that there is a definite interest in working for a multinational corporation among business students, who are generally not deterred by the language-related competencies required for such positions. Further research is certainly needed in order to be able to make generalisations, and it would definitely be interesting to find out whether and how their opinions change with time, as they get closer to graduation. However, in the past year and a half, given the switch to online education during the pandemic, more and more students have started to combine education with work, as they feel distance learning is more compatible with having a job, which might have also led to an increase in the number of students working for corporations.

5. Conclusions

The current job market in Romania and the business students' preferences as expressed in the study conducted at FEAA Iași clearly show that there is a significant interest in corporate jobs, especially in big university centres where MNCs have expanded their operations. The Englishization of both society in general and higher education in particular has provided them with a highly-qualified workforce, who in turn is eager to access corporate jobs due to the benefits they provide and the opportunity to further develop their career in a multicultural environment. Thus, the two are in a sort of symbiotic relationship, but we must not forget that corporations are constantly watching their costs and may at some point be unable to fulfil the increasing financial requirements of their employees. On the other hand, as the study showed, job seekers are not planning to spend too much time working for corporations, seeing them as a good starting point in order to gain experience but not necessarily worth dedicating their entire careers to, which does say a lot about the perception of corporate culture among the younger, highly-educated generation. They are becoming increasingly aware of their value and prefer to relocate abroad or start their own business if they do not feel satisfied with what is currently offered on the market.

English seems to continue its supremacy as a widely-used used foreign language in Romania, both in the academic environment and on the job market, with the pandemic seemingly accelerating the trend as online communication has allowed us to connect virtually with even more people and attend global events where English is the access key to effective information exchange. Thus, although Englishization may be seen as a threat to national culture and can certainly put several categories of people at a disadvantage when it comes to access to information or to well-paid jobs, it is also a means to tap into global resources which can open doors career-wise and not only.

Disclaimer: This case study and the corresponding questionnaire have not been ordered or endorsed by any academic institution or private company, including the ones mentioned in this article.

6. References

- Bestjobs. 2021. Available at: https://www.bestjobs.eu/ro/locuri-demunca?keyword=continental&location
 =&employment type%5B0%5D=1&filter employment type=1> [Accessed 19 November 2021].
- Brieger, N. 1997. The York Associates Teaching Business English Handbook. York: York Associates.
- Cambridge English and QS. 2016. English at Work: Global analysis of language skills in the workplace. [online]. Available at: http://englishatwork.cambridgeenglish.org/#page_q_skills [Accessed 30 October 2021].
- Catalyst. 2020. *Most Desired Employers Survey*. [online]. Available at: https://www.catalyst.ro/top-desired-employers-2020/ [Accessed 1 November 2021].
- Chan, M. 2020. English for Business Communication. Abingdon: Routledge.
- Crystal, D. 2003. English as a Global Language. 2nd Edition. Cambridge: Cambridge University Press.
- Dor, D. 2004. From Englishization to Imposed Multilingualism: Globalization, the Internet and the Political Economy of the Linguistic Code. *Public Culture*, [online]. Available at: https://www.researchgate.net/publication/249879130 From Englishization_to Imposed Multilingu alism_Globalization_the_Internet_and_the_Political_Economy_of_the_Linguistic_Code>[Accessed 4 November 2021].
- EJobs. 2021. Available at: https://www.ejobs.ro/locuri-de-munca/full-time/nivel-studii-calificat,nivel-studii-student,nivel-studii-absolvent/continental [Accessed 19 November 2021].
- Ellis, M. and Johnson, C. 1994. Teaching Business English. Oxford: Oxford University Press.
- Haller, A.P. 2016. Globalization, Multinational Companies and Emerging Markets, *Ecoforum*, [online].
 Available at: http://www.ecoforumjournal.ro/index.php/eco/article/viewFile/277/183 [Accessed 6 November 2021].
- Jackson, J. 2014. Introducing Language and Intercultural Communication. Abingdon: Routledge.
- Jackson, T. and Primecz, H. 2019. Cross-cultural management studies and the Englishization of scholarly communication: A paradox, *International Journal of Cross-Cultural Management*, [online]. Available at: https://journals.sagepub.com/doi/10.1177/1470595819865095?icid=int.sj-related-articles.citing-articles.31 [Accessed 6 November 2021].
- Kachru, B. 1994. Englishization and contact linguistics. World Englishes. Vol. 13, No. 2, pp. 135-154.
- Kim, H. 2016. Language Strategy: Beyond Englishization. *Annals of Business Administrative Science*, [online]. Available at: https://www.researchgate.net/publication/310820825_Language_Strategy_Beyond_Englishization [Accessed 8 November 2021].
- Tietze, S., Holden, N. and Barner-Rasmussen, W. 2016. Language Use in Multinational Corporations: The Role of Special Languages and Corporate Idiolects. In: Ginsburgh V., Weber S. (eds) *The Palgrave Handbook of Economics and Language*. Palgrave Macmillan, London, pp. 312-341. [online]. Available at: https://doi.org/10.1007/978-1-137-32505-1_12 [Accessed 7 November 2021].
- Van Parijs, P. 2021. Englishization as Trap and Lifeline. In: R. Wilkinson and R. Gabriëls, eds. 2021.
 The Englishization of Higher Education in Europe. Amsterdam: Amsterdam University Press, pp. 355-369.

Determinants of the New Companies Formation in E.U Member Countries. An Autoregressive ARDL Model Approach

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Abstract

This article searches for influential factors on new companies' formation in a number of 26 EU Member States during the 2009-2019 period basing on available statistical data of this. In such an order data were panel organized and an ARDL (autoregressive distribution lag) model was estimated as the result of unit root tests for stationarity of variables with different level of integration (I_0 ; I_1). The main advantages of such a model used is that we can obtain an image of long run and short run associations between model variables for all countries. In addition, the ARDL model will take into account heterogeneity (differences) among countries by allowing for country specific variables. Significant results for long run association between variables for most countries were obtained, except for: Belgium, Germany, Estonia, Spain, France, Hungary and Austria; short run associations will be presented also individually for each of the 26 countries implied.

Key words: enterprise birth rates, entrepreneurship environment, EU entrepreneurship, determinants of new enterprises formation **J.E.L. classification:** C01, C13, C23, M13

1. Introduction

As already mentioned above, the aim of our below study is detecting a correlation, i.e. some causal links between new companies' formation in most of the EU member countries and a list of macroeconomic variables assumed to influence it in the literature. We believe that the significance of this study then deepens on identifying short and long term such links and these between the exogenous like existing entrepreneurship, unemployment rate, GDP, the population's educational attainment level and density of population, on the one hand, and the endogenous that is the enterprise birth rate, on the other. And this will be while limiting to the EU member countries.

Actually, we see this as a challenge and as an attempt to solve it by an ARDL regressive type model, given stationarity and differences within these above variables' integration degrees. As equally mentioned above, the model will range on a panel data of 26 EU member States and correlations will result and be seen not only on the short and long terms, but equally on both sides, the Union, as a whole, and each member country in part. Reference data come from Eurostat for the EU member States, as cross-sections, on the 2009-2019 years interval (11 years).

Besides, a substantial literature treats on the companies' formation issue and here we'll have a 'literature review' paragraph detailing about each variable in context. Positive (+) and significant influences on business formation (i.e. new companies) are here expected from currently existing entrepreneurship, country's economic development attained, density of population and degree of education attained, the last a proxy of *human capital* related to both each country in part and the whole Union. Last, but not least, the unemployment rate is here expected to equally encourage the new business, rather than its alternative option for the unemployment benefits.

2. Literature review of variable selection

According to Eurostat statistics, the enterprise is an unit that produces goods and services and benefits from autonomy in making decision, e.g. its resources allocation. An enterprise (that might be equally called firm or company) is a legal entity everywhere and can do its job in one or more establishments.

Enterprise birth rate (endogenous variable) will be the considered number of newly created enterprises (firms, companies) in year "t" over total number of active enterprises at the same year end, in percentages. This is a so called ecological approach (Alexandrova, 2015). An enterprise birth rate so has been computed for each of the EU 28 countries, here excluding Greece and Croatia for no available data.

The enterprise birth rate, as in the *Eurostat* definition, relates to the creation of such production units. And this is understood simply as newly added combinations of production factors in which the existent enterprises aren't involved. This institutional definition so skips new born enterprises through mergers, split-offs, break-ups and/or existent enterprises' component sets restructuring. The same for sub-populations of enterprises that result from changing activity only. Such a new born enterprise is viewed as a new activity from scratch. New born enterprises also create new jobs, while reactivation of dormant enterprises are not supposed to be any new born enterprises.

Existent entrepreneurship, as a first independent variable, equals the number of existent entrepreneurs (i.e. enterprises) and the literature sees it as favourable for new enterprise creation since the existing entrepreneurship actually defining the business environment stability in the economy (Otsuka, 2008, Henderson at all 1995). Here the existing entrepreneurship is the number of legal establishments accounted in each country each year. The higher the number of companies and offices, the more the available capital. The whole rest of resources and factors, here including intelligence, talent and opportunities sees itself boosted in context (Ciccone and Hall, 1996).

But to be equally mentioned that a positive relationship between existing and new born entrepreneurship does not make unanimity in the literature, i.e. while the previous opinion sees business opportunities multiplying, the last (opposite) view sees rather competition strengthening in the area. Other opinions see the entrepreneurial climate as either positive for the individual decisions to become entrepreneur (Armington and Acs,2002; Delfmann et all, 2014), or already settled in its past (Fotopoulos, 2014).

Gross domestic product at market prices - in volume terms specific to the year 2010 as per capita Euro – here is the second independent variable. It is calculated as the ratio of real GDP to the average population of a specific year in the 2010 prices. GDP measures the amount of total final output of goods and services produced by the economy within a certain period of time. It includes goods and services with their own specific market segments done (or able to do as such) and products which are produced by general government and non-profit institutions. It is a measure of economic activity and is also used as a proxy for the development in a country's material living standards. Studies have shown that the relationship between entrepreneurship and per capita GDP is highly significant in the economic development context (Audretsch, 2007; Baumol & Strom, 2007). Opinions in the literature stays divided on the per capita growth's influence on new born business: Armington and Acs (2002) see it quite positive, Lee et al (2004) not too much influence (about zero) and Sutaria and Hicks (2004) even the contrary effect.

Unemployment rate – the one of 15-64 years of age unemployed individuals in total population of these same ages (%) – is the third independent variable and a problem to be permanently fought by political authorities and also a reason for the citizens to become self-employed (Deveci and Seikkula-Lein,2018). It is here seen as a natural labour resource for newly created enterprises. Unemployment can be considered a *push factor* as it turns self-employment into a necessity. Storey (1991) and Lindh and Ohlsson (1996) here see some positive association with creation of new businesses, while other cross-sectional studies indicate rather the opposite (Giannetti and Simonov,2004). According to Audretsch and Thurik (2002) a low level of unemployment can stimulate entrepreneurship by opportunities here given. At the macro level a high rate of unemployment might also negatively impact the level of entrepreneurship by lowering availability of business opportunities when depressed economy (Audretsch at all, 2002 and Almus and al.,

1999). Johnson and Parker (1996) also found a negative effect of unemployment on entrepreneurship.

The population's educational attainment level (i.e. tertiary/%). This is the fourth independent variable of this model and sees the tertiary education population of 15-64 years of age in total population of these ages. The literature sees it as the most influential factor upon entrepreneurship. "University education makes them ready for the tough market game" (Robinson & Sexton, 1994), while Bilić I. and all (2011) cite studies in Croatia that find as high as 67% of Croatian students with serious and strong entrepreneurial intentions (see also Bakotić & Kružić 2010). The same for studies previously made in France to conclude on the importance of young and highly skilled people, here including graduates of local universities, for current business (Guesnier,1994).

The population density – i.e. the demographic balance, as population on square kilometer –is the fifth variable considered, here seen as important for entrepreneurship through measuring the production factors' crowding in the area. The growth of population might keep its effects on the self employment level in a country (Verhoeven, 1995). Countries with rapidly expanding population, here including labour force, see also growth in the self-employed people's share in total population; the opposite for countries of low growths of total population. Brüderl & Preisendörfer (1998), mentioned by Audretsch et all (2002), argue for the up pressure on the entrepreneurial activity from higher population density, the urbanization factor and so the specific infrastructure proximity. Reynolds et al. (1994) and Storey (1994) similarly express that the population's important density in the urban areas clears the way for new small business opportunities.

3. Data and methodology

The macro-level determinants of entrepreneurship are resulting from the relationships between human capital, level of development, and institutions (Arin et al, 2014). Human capital, as a production factor, but equally an influencing factor for entrepreneurship, will be analysed below as related to population's density, to education and unemployment rates as well. As in context population density is here considered a measure of population agglomeration in a country, tertiary education is a measure of the educated part of 15-64 years old population as a percent in total population of this age group and unemployment rate, actually in each of the EU member States, is the unemployed people's percentage of given labour force.

The *Eurostat* database that includes the entrepreneurship statistics for 26 countries (less Greece and Croatia, just for missing data) as EU member States will be here used. Each country development level, here as an influential factor of new firms' creation and of the existent entrepreneurship's strengthening, will be seen below with the help of per capita GDP in Euro referred to the 2010 year basis (the 2010 volume = 100 for next following years' numbers in chain). Data will be panel ranged for their analysis through the *ARDL* (autoregressive distributed lag) type model due to their integration degree difference – I(0), versus I(1) -, as according to Pesaran (1999). In a ARDL model type, each of variable of interest is considered to be a function of the it's past values (auto-regressive) and the present and past values of other variables (distributed lag). The Eviews programme will help for model estimations.

4. Model description and results

Previously to regression analysis done descriptive statistics were deployed for information about normal distribution, versus outliers in data, for measuring the central tendency (mean, median, maximum, minimum,), the same for dispersion (standard deviation) and the same for normality: *kurtosis* (measuring the sharpness degree) and *skewness* (measuring the degree of symmetry). The sample here comprises those 26 EU member countries, with data for the 2009–2019 year interval provided by *Eurostat* 2020 statistics (see Table no.1)

Table no. 1. Variables descriptive statistic, Sample: 1-286

	New Companies	Entrepreneurship	GDP/capita	Density	Tertiary	Unemployment
Mean	2.29	12.99	9.96	4.70	3.22	2.10
Median	2.30	13.10	10.04	4.68	3.31	2.06
Maximum	3.21	15.20	11.33	7.31	3.70	3.26
Minimum	1.11	10.19	8.51	2.75	2.41	0.83
Std. Dev.	0.33	1.40	0.64	0.96	0.31	0.41
Skewness	-0.03	-0.23	-0.19	0.29	-0.61	0.23
Kurtosis	3.60	2.15	2.38	3.44	2.34	3.034
Jarque-Bera	4.06	9.97	5.85	5.81	21.12	2.47
Probability	0.13	0.006	0.053	0.054	0.000026	0.28
Sum	595.64	3379.18	2592.03	1224.02	839.79	546.74
Sum Sq. Dev.	28.77	507.72	106.73	243.06	25.04	45.14
Observations	260	260	260	260	260	260

Source: author's own calculations with Eviews, based on Eurostat data

The skewness between -1 and -0.5 (negatively skewed) means that data are moderate level skewed (the case of "tertiary education" variable). The unemployment variable shows a normal distribution with a *kurtosis* of 3 (*mesokurtic*). Entrepreneurship, per capita GDP and tertiary education reveal kurtosis of less than 3, meaning a flat distributions (*platykurtic*) relative to the normal. New companies and density variables are *leptokurtic* (with a kurtosis of more than three). The *Jarque-Bera* statistic here measures the difference of the *skewness* and *kurtosis* of the series with those from the normal distribution. The association's probability (the null hypothesis of a normal distribution) reveals that two of variables are not normally distributed – but the rest of them are.

Further on, the model's estimation needs *stationary* and *co-integration* specific tests. Inclusion of non stationary panels in the estimation might lead to spurious regressions (Baltagi, 2013; Gujarati & Porter, 2009). Then, when we don't find any unit root in the data of each series means that the series are stationary. Co-integration is tested for a long run relationship between two or more non-stationary series. Various unit root tests for panel data were then performed – e.g. common tests as Levin, Lin, and Chu (2002), Breitung and Candelon (2005), Im, Pesaran, and Shin (2003) and individual root tests as Augmented Dickey and Fuller-Fisher and Phillips and Perron-Fisher test, in Eviews programme. We also used the Schwartz info criterion for selection of lag order. These tests have null hypothesis H_0 , when all variables have unit root and alternative hypothesis H_1 , when all variables are stationary for a significance level accepted as $\alpha = 5\%$.

More precisely: $Y_t = Y_{t-1} + \epsilon_t$, where Y_t is the endogenous variable at time t and ϵ_t is a the error term.

Due to these mixed orders of integration, the PMG/ARDL (pooled mean group/auto-regressive distributed lag model) panel approach here proves more appropriate than the traditional panel cointegration test. The option for ARDL was for the 0 versus 1 integration degrees announced. The endogenous here is stationary at level, i.e. at I(0) integration degree. On the contrary, the independent variables are I(1) integration degree, i.e. at the first difference. According to Johansen (1995); Philipps and Hansen (1990), the long-run relationships is present only if a exist a cointegration among variables with the same order of integration. Contrary Pesaran and Shin (1999) argue that the ARDL panel could be equally used with variables of different integration levels, i.e. I(0), and I(1).

Concomitantly, the PMG/ARDL type model Eviews estimated here makes clear the yes or no short and long term association's existence between variables. Moreover, the short run association between variables will be possible for each EU member country in part, together with country specificities to be made distinct. As already mentioned above, the ARDL model estimation for panel data takes into account heterogeneity (i.e. differences) among countries by allowing for country specific variables. This data panel contains a combination of cross section (N=26 countries,

as EU member States) and time series (T=11 years) observations, i.e. a short panel with large N and smaller T. The model sees itself applied on an unbalanced panel for missing data cases either.

The general form of ARDL (p,q...q) model is specified as:

$$Y_{it} = \sum_{j=1}^{p} \alpha_{i} y_{i,t-j} + \sum_{j=1}^{q} \beta_{ij} x_{i,t-j} + \mu_{i+} e_{it}$$
 (1)

in which:

Y_{it} is the endogenous variable;

 X_{it} is a vector of exogenous and could be I(0) or I(1) or co-integrated

 α_{ij} is the coefficient of the lagged exogenous variable

 β_{ii} are coefficient vectors

 μ is the country (specific fixed effects)

I=1,2,....6; t=1,2,....11; p, q are the lag orders; e_{it} is the error term.

P represent the lag of the endogenous variable, and q, the lag of exogenous variables

The re-parameterized ARDL(p,q,..q)error correction model is specified as :

$$\Delta Yit = \theta * [y_{i,t-1} - Z_i X_{i,t}] + \Sigma^{P-1}_{J=1} h_{ij} \Delta X_{i,t-j} + \Sigma^{q-1}_{J=0} \beta'_{ij} \Delta X_{i,t-j} + \mu_{i+} e_{it}$$
 (2)

in which:

 $\theta_i = -(1-\alpha_i)$ - country specific speed of adjustment coefficient (expected $\theta i < 0$)

 Z_i = vector of long run relationships

 $ECT = [y_{i,t-1} - Z_i X_{i,t}] = error correction term$

 h_i , β_{i} = short run dynamic coefficients

The ARDL model then finds a long-run equilibrium between similar variables across the 26 countries in the sample, except for a sub-set of these. The short run adjustment, in its turn, might be country specific, i.e. different impacts of unemployment, tertiary education attainment and/or GDP on either entrepreneurial environment or companies' creation. The coefficient of the error-correction term is negative and not lower than -2 (Samargandi et all, 2013) for the existence of a long-run relationship among the variables of interest. Data limitation here imposes the lag structure. This last is rather likely to be imposed across countries when the time dimension is not long enough to force lags extension (see Loayza and Ranciere, 2006; Demetriades and Law,2006).

Based on the Akaike criterion the following lag structure (1,1,1,1,1,1) for the all variables in the model was estimated.

The long run coefficient is here estimated as common coefficient which keeps both negative sign and lower than 1% significant level (probability of $0.0005 \le 0.01$). Value of -0.601719 represents the long run association between variables or speed of adjustment. Long run association is estimated also through individual coefficients for each variable, but it stays common to all countries. The 1% increase of existing entrepreneurship leads to the 0.08% increase of new companies' creation in the long run. The coefficient has positive sign, as expected.

The per capita GDP coefficient is also positive and the 1% increase of per capita GDP level leads to the 0.16% increase of new companies' formation in the long run, as well. Increase of unemployment rate by 1% can also conduct to an increase of new companies' formation of 0.07% in the same long run actually, unemployment could be a labour resource needed for the new enterprises.

Density's coefficient sign is negative, namely contrary, as expected. The 1% increase of density of population would lead to a 0.143% decrease in new companies' formation – actually, population crowding might rather discourage entrepreneurship in the long run.

Tertiary education, as a common coefficient for all countries, is not significant in the long run (significance probability is 0.2418>0.05 % significance level).

In the short run, only existing entrepreneurship and GDP are significant and positive signs, as expected. Tertiary education, unemployment rate and density of population have no influence on new companies' information in the short run (see Table 3)

As equally already mentioned, the ARDL model keeps also the advantage that short run and long run coefficients can be estimated for each country in part. See the table below with the individual results as such. Here there are significant long run associations between variables for a majority of countries, i.e. except for: Belgium, Germany, Estonia, Spain, France, Hungary and

Austria, due alternatively to their probability of more than significance probability level of 0.05%, or to non negative sign of long run coefficient .

Table no. 2. Long run coefficients and associated probability

Country	Long run coefficient	Probability
Belgium	0.121	0.002
Bulgaria*	-1.057	0.000
Czech*	-0.196	0.014
Denmark*	-1.019	0.000
Germany	0.268	0.000
Estonia	-0.185	0.114
Ireland*	-0.170	0.091
Spain	0.686	0.001
France	0.109	0.000
Italy*	-0.104	0.000
Cyprus*	-0.468	0.000
Latvia*	-0.886	0.000
Lithuania*	-0.299	0.000
Luxembourg*	-0.821	0.002
Hungary	-0.202	0.518
Malta*	-1.348	0.000
Netherlands*	-0.334	0.003
Austria	0.105	0.001
Poland*	-1.953	0.000
Portugal*	-0.313	0.003
Romania*	-0.990	0.000
Slovenia*	-1.158	0.000
Slovakia*	-1.381	0.000
Finland*	-0.118	0.000
Sweden*	-0.406	0.005
UK*	-3.525	0.003

Source: own representation; calculation performed in Eviews

In the short run, the PMG/ARDL model here offers the capability of detecting the exogenous on endogenous influence both in each country included and through individual coefficients of each variable. So, the existing entrepreneurship variable seems to be significant and has positive influence on new companies' formation in the short run for: Czech Republic, Denmark, France, Italy, Cyprus, Latvia, Lithuania, Luxembourg, Poland, Romania, Slovenia, Slovakia, Finland, Sweden and the UK.

^{*} significant values of long run coefficient

Table no. 3. Short run individual coefficients and estimated probability

Country	Variable	Coefficient	Std. Error	t-Statistic	Prob. *
Belgium	Unemployment	-0.17319	0.048661	-3.559126	0.038
Bulgaria	Unemployment	0.082359	0.017931	4.593107	0.019
Czech Republic	Entrepreneurs	2.897227	0.812672	3.565064	0.038
	Tertiary	-1.412156	0.458467	-3.080167	0.054
Denmark	Unemployment	-0.288956	0.011024	-26.2125	0.000
	Tertiary	2.238893	0.873569	2.562927	0.083
	Entrepreneurs	4.520834	0.255037	17.72622	0.000
Germany	Unemployment	1.428391	0.234009	6.103996	0.009
	Tertiary	4.125799	0.303166	13.60906	0.001
	Entrepreneurs	-6.822536	0.652576	-10.45478	0.002
	GDP	7.240134	1.215	5.958959	0.010
Estonia	GDP	2.734118	0.960622	2.846197	0.065
Ireland	No short run				
Spain	Unemployment	1.283108	0.351835	3.646905	0.036
France	Unemployment	-2.479571	0.417958	-5.932583	0.010
	Entrepreneurs	2.315106	0.247769	9.343793	0.003
Italy	Unemployment	-0.747742	0.018246	-40.98065	0.000
	Entrepreneurs	8.299672	3.377853	2.457085	0.091
	GDP	-5.724641	0.625611	-9.150485	0.003
Cyprus	Unemployment	-0.44	0.069793	-6.304341	0.008
	Entrepreneurs	1.048907	0.33982	3.086656	0.054
Latvia	Unemployment	-0.134948	0.013252	-10.18307	0.002
	Entrepreneurs	3.434655	0.065688	52.28725	0.000
	GDP	-0.4466	0.152739	-2.923935	0.061
	Density	-13.80091	2.331024	-5.920536	0.010
Lithuania	Unemployment	1.257044	0.018126	69.35169	0.000
	Entrepreneurs	1.67055	0.10445	15.99378	0.001
Luxembourg	Unemployment	0.07509	0.007594	9.888247	0.002
	Tertiary	0.291937	0.008996	32.45175	0.000
	Entrepreneurs	1.991177	0.539003	3.694188	0.034
Hungary	Unemployment	0.544813	0.1674	3.254549	0.047
Malta	No short run				
Netherland	No short run				
Austria	Unemployment	-0.271576	0.104701	-2.593833	0.081
	Tertiary	0.107605	0.013207	8.147817	0.004
Poland	Unemployment	0.51449	0.003914	131.4487	0.000
	Tertiary	0.605172	0.144591	4.185414	0.025
	Entrepreneurs	-1.380677	0.023427	-58.93634	0.000
	GDP	6.885972	0.316716	21.74178	0.000
Portugal	Unemployment	0.298333	0.097232	3.068249	0.055
Romania	Unemployment	2.514109	0.44675	5.627551	0.011
	Entrepreneurs	0.672526	0.143557	4.684719	0.018

Slovenia	Unemployment	0.341512	0.041863	8.157762	0.004
	Entrepreneurs	4.513914	0.793606	5.68785	0.011
Slovakia	Unemployment	0.700498	0.01765	39.68816	0.000
	Tertiary	-4.964376	0.484511	-10.24617	0.002
	Entrepreneurs	3.579412	0.36575	9.786509	0.002
Finland	Unemployment	0.908135	0.070461	12.88841	0.001
	Entrepreneurs	9.658762	2.489922	3.879142	0.030
Sweden	Unemployment	-1.208964	0.196462	-6.153693	0.009
	GDP	2.870433	0.729381	3.935436	0.029
	Entrepreneurs	-1.515428	0.486341	-3.115977	0.053
UK	Unemployment	-3.181572	0.84714	-3.755663	0.033
	Entrepreneurs	1.527259	0.306469	4.983402	0.016

Source: own representation; calculation performed in Eviews

Negative, but significant coefficients were obtained for Germany, where the entrepreneurial environment seems to discourage the entrepreneurs. *Tertiary education variable* is significant and positive in the short run only for Denmark, Germany, Luxembourg and Austria, and keeps negative signs for Slovakia and Czech Republic. For the rest of countries tertiary education has no influence on new companies' formation in the short run. *GDP* variable is significant and positive in the short run just for Germany, Estonia, Poland, Sweden and negative, but significant for Italy and Latvia. For the rest of the countries it is not about any association between GDP and new companies formation in the short run. *Unemployment rate* is significant and positive in the short run for Bulgaria, Germany, Spain, Lithuania, Luxembourg, Hungary, Romania, Slovenia, Slovakia, Finland, i.e. the unemployment rate rise might be presumed as a self-employment strengthening factor. On the contrary, this is negative for Belgium, Denmark, France, Italy, Cyprus, Latvia, Austria, Sweden and UK, i.e. countries in which unemployment rather impedes on new business.

Density of population looks significant, but has a negative influence on new companies' formation just for Latvia and is not significant for the rest of countries – i.e. it seems that density of population isn't here too much able to influence the new companies' formation.

Lastly, there are three countries of the total of 26 analysed, for which there is rather no evidence for short run associations between variables in the model, but just for those of long run: Ireland, Netherlands and Malta (all the results of interdependencies between variables are expected in a longer number of years)

5. Conclusions

It is the *PMG/ARDL* type model of Pesaran and Shin (1999) helping this above finding of influential factors on the new companies' formation in both the whole EU area and each EU member country. And so our analysis could focus on panel data developed on 26 individual countries along an 11 years period that finally makes a total of 286 observations.

First, based on the above results' estimation of *long run common coefficients* proper to all the EU member countries prove that there are real influences in this long run from existing entrepreneurship, GDP, unemployment and density of population on new companies' formation in European (EU) member countries. As presumed, *a quality entrepreneurial climate* is supposed to stimulate the people's decision to become entrepreneurs as a lot of studies support such an idea (see also Armington and Acs 2002; Delfmann et all, 2014)..

Per *capita GDP*, as a predictor of new firm formation is found to have a positive effect in a long run by similar studies (Armington, and Acs, 2002). – i.e. it is, of course, the economic development level and its rising that positively influences either the business environment, or the companies' creation, that is here included.

Unemployment rate can be considered here a push factor as it turns self-employment into a necessity. We obtained positive and significant results in line with other studies regarding positive association with creation of new businesses. Storey (1991) and Lindh and Ohlsson (1996). in their turn, argue in such a sense about the common scenario in which, first, employed people are licensed – i.e. their wage/salary income turns into the lower one of employment benefit --, then they prefer the self-employment alternative – i.e. that might provide the entrepreneur specific profit of course higher than the unemployment benefit and sometimes higher even than the same people's former wage/salary (see also Harrison and Hart, 1983).

As for *density of population*, we can conclude that in the long run a higher population density discourages the entrepreneurship, rather than supporting it. *Tertiary education*, in its turn, is not a significant exogenous in the long run according to this model developed. It seems that a high level of education does not quite lead to entrepreneurship option – i.e. different/lower education levels here proves more appropriate, e.g. the professional, secondary and vocational ones.

In the *short run* there are significant common coefficients just for existing entrepreneurship, and GDP in their relationship with new company formation. In the short run *tertiary education*, *unemployment rate and density of population* prove no influence in new companies' formation. Using this ARDL model also individual coefficients were estimated, as already showed above, in the previous parts of this paper. Just for three countries Ireland, Malta and Netherlands there aren't short run association between variables, but just long run ones.

There is to be mentioned in the end of our study that the above results get in line with previous ones in this area, although with some limitations regarding the data missing for business European statistics before 2009 and also total data missing for the 2009-2019 decade interval for Croatia and Greece – so, these countries could be excluded from our above analysis. However, enlarging this study on future is intended both provided corresponding data available and more variables considering.

6. References

- Alexandrova M., 2015. Effects of Regional Determinants on New Businesses Formation: The Case of Bulgaria. *International Journal of Economic Theory and Application*, 2(4), pp.33-39
- Acs, Z. J., Szerb, L., 2007. Entrepreneurship, economic growth and public policy, Small Business Economics, Vol. 28, No. 2-3.
- Arin K. P.et all, 2014. Revisiting the Determinants of Entrepreneurship: A Bayesian Approach. *Journal of Management*, 41(2), pp.607-631
- Audretsch, D., 1998. Agglomeration and the location of innovative activity. Oxford Review of Economic Policy, Vol. 14 (2), pp.18-29.
- Audretsch, D.et all, 2006. Entrepreneurship and Economic Growth. New York, Oxford University Press
- Armington, C. and Acs, Z.J., 2002. The determinants of regional variation in new firm formation. *Regional Studies*, Vol. 36 (1), pp.33-45.
- Audretsch David B.,2007. Entrepreneurship capital and economic growth. Oxford Review of Economic Policy, 23(1), pp. 63–78
- Baltagi, B. H., 2013. Econometric Analysis of Panel Data. 5th ed. Chichester. John Wiley and Sons.
- Bakotić, D., & Kružić, D.,2010. Students' Perceptions and Intentions towards Entrepreneurship: The Empirical Findings from Croatia. The Business Review, Cambridge, 14 (2), pp.209-215
- Baumol, W. J.,2002. Entrepreneurship, Innovation and Growth: The David-Goliath Symbiosis. Journal of Entrepreneurial Finance and Business Ventures, 7(2), pp. 1-10.
- Bilić, I., Prka, A. i Vidović, G. (2011). How does education influence entrepreneurship orientation? Case study of Croatia. *Management*, 16 (1), pp.115-128.
- Brüderl, J., Preisendörfer, P., 1998. Network Support and the Success of Newly Founded Business. *Small Business Economics*, 10, pp.213–225
- Ciccone A., Hall R.E., 1996. Productivity and the Density of Economic Activity. *American Economic Review*, 86(1), pp. 54-70.
- Delfmann H. at all, 2014. Population Change and New Firm Formation in Urban and Rural Regions. *Regional Studies, Taylor & Francis Journals*, vol. 48(6), pp.1034-1050.

- Deveci, İ. & Seikkula-Leino, J.,2016. Finnish Science Teacher Educators' Opinions about the Implementation Process Related to Entrepreneurship Education. *Electronic Journal of Science Education*, 20(4), pp.1-20.
- Fotopoulos G.,2014. On the spatial stickiness of UK new firm formation rates, *Journal of Economic Geography*, 14(3), pp. 651-679.
- Giannetti M., Simonov A, 2004. On the determinants of entrepreneurial activity: Social norms, economic environment and individual characteristics. Swedish Economic Policy Review 11, pp.269-313
- Guesnier B.,1994. Regional Variations in New Firm Formation in France, *Regional Studies*, 28:4, pp.347-358
- Gujarati, D.N. and Porter, D.C., 2009. Basic Econometrics. 5th Edition, McGraw Hill Inc., New York.
- Harrison, R T and Hart M., 1983. Factors influencing new-business formation: a case study of Northern Ireland. *Environment and Planning A*, 15, pp. 1395-1412
- Henderson, J. V., et all, 1995. Industrial Development in Cities. *Journal of Political Economy* 103, pp.1067–1085.
- Johansen, S., 1995. A Statistical Analysis of Cointegration for I(2) Variables. Econometric Theory, 11(1), pp.25-59.
- Johnson, P. and Parker, S., 1996. Spatial variations in the determinants and effects of firm births and deaths. Regional Studies, 30, pp. 679-688.
- Johnson, R. A., Wichern D., 2007. Applied Multivariate Statistical Analysis, Pearson Education, USA
- Lee, S.Y., Florida, R., Acs, Z.J., 2004. Creativity and entrepreneurship: a regional analysis of new firm formation. *Regional Studies*, 38(8), pp. 879-891.
- Lindh, T. & Ohlsson, H., 1996. Self-Employment and Windfall Gains: Evidence from the Swedish Lottery. *Economic Journal, Royal Economic Society*, 106(439), pp. 1515-1526
- Otsuka A., 2008. Determinants of new firm formation in Japan: A comparison of the manufacturing and service sectors. *Economics Bulletin*, 18(5), pp. 1-7.
- Pesaran, M., Shin, Y., & Smith, R.,2001. Bounds Testing Approaches to the Analysis of Level Relationships. *Journal of Applied Econometrics*, 16(3), 289-326.
- Pesaran, M.H. and Shin, Y.,1999. An Autoregressive Distributed Lag Modelling Approach to Cointegration Analysis. In: Strom, S., Ed., Chapter 11. *Econometrics and Economic Theory in the 20th Century*. Cambridge University Press, Cambridge, 371-413.
- Phillips, P. and Hansen, B.,1990. Statistical Inference in Instrumental Variables Regression with I (1) Processes. Review of Economic Studies, 57, pp. 99-125.
- Reynolds P, Storey D. J. & Westhead P., 1994. Cross-national Comparisons of the Variation in New Firm Formation Rates, Regional Studies, 28:4, pp.443-456
- Robinson, P. B.; Sexton, E. A. 1994. The effect of education and experience on self-employment success, *Journal of Business Venturing*, 9(2), pp. 141-157.
- Schumpeter, J A.,1954. The *Theory of Economic Development: An Inquiry into Profits, Capital, Credit, Interest, and the Business Cycle*. Cambridge, MA.: Harvard University Press
- Shane, S., 2003. A general theory of entrepreneurship, Edward Elgar
- Storey, D.J., 1991. The birth of new firms. Does unemployment matter? A review of the evidence. *Small Business Economics* 3, pp.167–178.
- Sutaria, V., Hicks D.,2004. New firm formation: Dynamics and determinants. Ann Reg Sci, 38, pp.241–262.
- Thurik, R.,2003. Entrepreneurship and Unemployment in the UK. Scottish Journal of Political Economy, 50 (3), pp.264-290.
- Verheul, I. et all, 2006. The Relationship between Business Ownership and Unemployment in Spain: A Matter of Quantity or Quality? *Estudios de Economía Aplicada*, 24(2), pp.435-457

The Current Needs of the Agrarian System in the South-East Region

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Abstract

Even if, after the integration into the European Union in 2007, Romania had a thriving economy, it ranks in the top of the underdeveloped countries, where the minimum wage is among the last in the European Union. Although the post-social transition and European integration have shown themselves full of benefits, there are major differences between the capital and large cities and rural areas in our country. This influences the population in the migration process.

The agrarian system has come up with a new concept, namely regional development, a concept that includes the set of economic activities taking place within a region, the investments made in the private sector, the reduction of the unemployment rate and, above all, the proposals initiated to increase the standard of living.

This article is based on an indication of the problems facing the South – East Region and the current needs of the agricultural system and involves the creation of a plan of measures and techniques to increase performance in rural areas.

Keyvwords: rural, pandemic, agriculture, region, system.

J.E.L. classification: O18, Q01, Q14

1. Introduction

Due to the major changes to which the agrarian system in our country is subjected, the economy must be prepared for the emergence of a crisis. Thus, it is necessary to carry out a set of methods and techniques that will help the economy not to collapse. The COVID-19 crisis is putting pressure on all development sectors, especially agriculture through the delay in agricultural transport and the lack of labor in some areas.

Following the census, the region has approximately 2.5 million inhabitants with ethnic and religious diversity, namely Russians, Turks, Greeks, Roma and Tatars.

In the South-East Region, agriculture holds a surprisingly important share, especially since after the area of fruitful vineyards, the region ranks first among regions.

This paper is based in the first part on the evaluation of the financing within the South-East Development Region, further on the need for digitization and the European development model are studied, and in the last part the provocations generated by the COVID-19 crisis are debated.

The South-East region is part of the 8 Development Regions of Romania, being the second largest among the regions and includes 6 counties, namely Braila, Buzau, Constanta, Galați, Tulcea and Vrancea. The total area of the region amounts to 35,774, 15% of the total area of Romania. In the figure below we see the area of the South-East Region by counties.

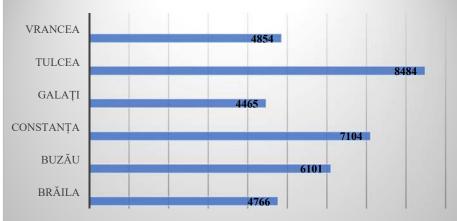


Figure no. 1. Distribution of se region counties by area

Source: Own processed data from the

https://www.adrse.ro/Documente/Planificare/Studii/Rezumat studiu EDER.pdf accessed on 23.11.2021

2. Theoretical background

The rural area is facing more and more intense challenges more and more often (Stanciu S., 2007), thus, more and more researchers show an increased interest in the analysis and study in the agrarian field.

The improvement of the rural area is based on the analysis of the social and political challenges, but especially on the detailed analysis of the climate changes taking place and which are influencing more and more (Buhociu F.M., 2016). The literature presents focused the strategies used to improve the performance of the agricultural sector. The high-quality technological instruments used in the development of performance (Moga L.M., Buhociu F.M., Ion I., Vîrlănuță F. O., Antohi V., Zugravu A., 2009) are taken into account.

The efficient exploitation of the South-East Region could rank the region in the top of the development regions in our country, especially since it has a real tourist potential (Kinga K., Bernadett P., Emese S., Eniko V., 2010). The concept of digitalization implies a strong strategic approach based on economic development through tools such as research and innovation.

The macroeconomic results could be stimulated by the existence of a process as accurate and complex as possible that would involve all the changes that occurred in a certain period of time (Constantin DL., 2000).

The literature promotes strategies that are based on competitiveness in the agricultural field. To draw up a solid development plan, it is necessary to identify the current state of the studied area, including the main areas where assistance is desired (Stanciu S., 2015). The countryside is in a continuous competition with the urban space although it does not enjoy the same fast-paced development process.

3. Research methodology

The data studied in this work are results from the analysis of quantitative and qualitative methods and techniques. The information is studied and analyzed from the National Institute of Statistics. In the present paper we have analyzed information since 2014 to provide a more accurate vision of the current situation in the rural area of the South-East Region.

Evaluation of funding under the South-East Region. To carry out the most accurate analysis, it is necessary to evaluate the following points, namely:

- Labor force evolution.
- Analysis of the main economic indicators.
- Entrepreneurial environment.
- The evolution of digitalization.

In recent years, the region has experienced a deficit in the working population, especially since most decreases have been recorded in agriculture. In the figure below we note the distribution of the civilian active population in the South-East Region in the period 2014-2017.

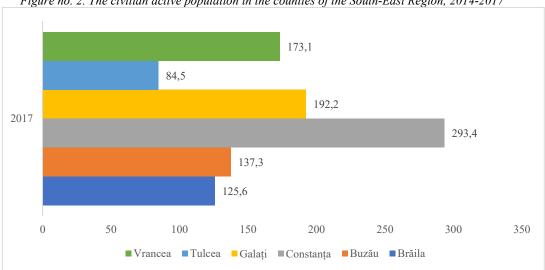
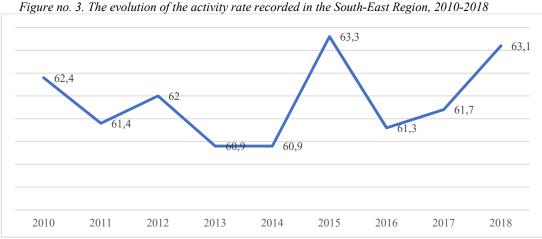


Figure no. 2. The civilian active population in the counties of the South-East Region, 2014-2017

Source: Self-processed data from

https://www.adrse.ro/Documente/Planificare/Studii/Rezumat studiu EDER.pdf accessed on 23.11.2021

The activity rate has fluctuated in recent years, and the county with the highest activity was in 2017, Vrancea, and the lowest activity rate was recorded in Galati, 59.2%. In the following figure we see the activity rate recorded in the South-East Region in the period 2010-2018.



Source: Self-processed data from

https://www.adrse.ro/Documente/Planificare/Studii/Rezumat_studiu_EDER.pdf accessed on 23.11.2021

Below we will see the population of the South-East Region by age group in 2018.

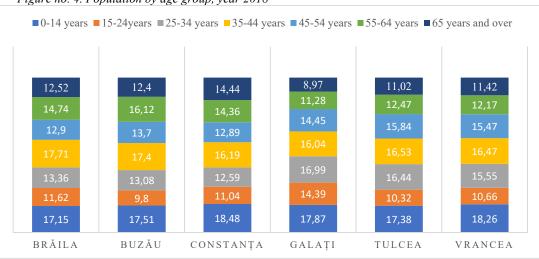


Figure no. 4. Population by age group, year 2018

Source: Data processed by itself from the National Institute of Statistics, TEMPO Database, accessed on 17.04.2021

4. Findings

The need for re-digitization the model applied in Europe

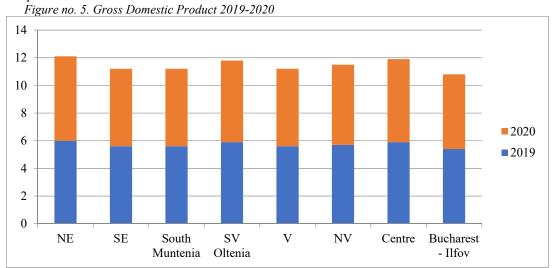
To make an extensive analysis, we went through the following directions:

- Economy and need for development in the South-East Region.
- Analysis of the labor force and the necessary indicators.
- > Prioritizing needs.
- > Applying a set of methods and techniques that consider the medium and long-term development of the region.

For a long time, there has been talk about the need to transform the digital in our country to position Romania among the developed states in the old continent. The emergence of the pandemic caused by the COVID-19 virus emphasizes the need for digitization in our country.

The need for digitalization is based on the discovery of sectors in which the region excels, or their potential is profitable in the future.

The emergence of the virus has caused major changes in all economic sectors. The labor market sector has suffered the most. In the figure below we note the evolution of gross domestic product in the period 2019-2020.



Source: Self-processed data from INSSE, 2020

Increases in gross domestic product have been identified in most of the development regions of our country. The main branches of development of the South-East Region are the following:

- Development of infrastructure and telecommunications.
- Development of public services.
- > Environmental conservation.
- > Development of local tourism.
- > Creation of new housing and residential areas.
- Attracting new investors to underdeveloped areas.
- > Supporting the economy.

5. Conclusions

The main purpose of creating a vision of smart specialization is to plan future actions by using appropriate techniques in the development of areas with high potential for innovation.

In Romania, agriculture is an important pawn in the rural economy. As the demographic analysis shows decreases annually, the most populated counties being Constanta and Galati, the labor force also registers large deficits. Below we will list some aspects that can help create new jobs, namely:

- > Transition from quantitative productions to qualitative productions.
- > Creation of new education programs and qualification courses.
- ➤ Modernization of agricultural holdings.
- Adoption of innovative ideas and development of technology.
- ➤ Participation in Erasmus programmed involving the exchange of experience.

The realization of new jobs requires a significant positive effect for rural economic development. The main advantage of the South-East Region is the geographical location. In this article, the current needs of the region's rural development have been addressed, especially under the pandemic shadow in which we are currently located. The pandemic has affected the entire planet with a negative impact on the labor market.

6. References

- Botti S., McGill A. L., *The Locus of Choice: Personal Causality and Satisfaction and Utilitarian Decisions*, Journal of Consumer Research, 2011
- Buhociu F.M., Territorial resources to support sustainable rural development in a European context, Europlus Publishing House, Galați, 2016
- Clarles R., Handbook of cross-border cooperation for the use of local and regional authorities in Europe, 3rd Edition, Bucharest, 2000
- Constantin D.L., Regional economy. Theories, models, policies, ASE Bucharest Publishing House, 2000
- Kinga K., Bernadett P., Emese S., Eniko V., Rural development. Employment in rural areas, Cluj-Napoca, 2010
- Balasan D. L., Buhociu F. M., Tourism Evolution in Region 2 SE, Annals of "Dunărea de Jos" University of Galați, Fascicle I. Economics and Applied Informatics, 2020
- Buhociu F.M., Moga L.M., Vîrlănuță F.O., The Quality of Health Services new instruments for the evaluation, Revista Quality acces to succes, an 10, nr. 1-2, 2009
- Buhociu F.M., Antohi V.M., Moga L.M., *The Common Agricultural Market and its Effects Upon European Union Countries Agriculture and Budget*, Annals of Dunărea de Jos University, Fascicle I, Economics and Applied Informatics, nr. 2, 2009
- Lupaşc I., *The role of European Union funds in stimulating investments in Romania*, International Conference "EFINV- 2005", ASE Bucharest, May 27-28, 2005
- Lupașc I., Analysis and Challenges Regarding Eomen Contribution to the SME Development in Romania, International Conference "Risk in Contemporary Economy", XIVth Edition, 2013, Galati, Romania, "Dunărea de Jos" University of Galați – Faculty of Economics and Business Administration, Galati, 2013
- Stanciu S., Rotaru G., (2017) Appreciation of food quality, Academic Publishing House, Galați
- Stanciu S., Security, Safety and Continuity on Agri food Chain, Lambert Academic Publishing OmniScriptum Publishing Group, 2015
- Stanciu S., *The Foreign Direct Investment in The Romanian Agrifood Production*, SEA-Practical Application of Science, 2016

- Stanciu S., A comparative Study Regarding the European Agricultural ALLOCATION OF Funds for Rural Development 2007-2013 and 2014-2020, Advances in Scence, Innovation and Management – Sea 11 International Conference, (April 27-28, 2017, Iaşi, Romania), Plenary Conference
- Stanciu S., Bylge H., Danaci T., *Business and Financial Strategies*, LAP Lambert Academic Publishing Imniscriptum Publishing Book, 2017
- Zugravu A., Neculiță M., Turek Rahoveanu M. M., Information System for Financial Analysis and Economic Planning within Fish Farms, The XVIIth International Conference IBIMA (International Business Information Management Association), Business Transformation through Innovation and Knowledge Management, Proceedings ISI, clasificată B ERA 2010, 23-24 June, Istanbul, Turkey, 2010
- Zugravu A., Man O., Neculiță M., The Management Information System FOR fish farms, International Symposium Competitiveness of Romanian Agriculture in the European Integration Process, ARS Publishing House, Bucharest, 2009
- Manual by Cooperación Transfronteriza, European Association of Border Regions (AEBR), Berlim, 2014
- Moga L.M., Buhociu F.M., Ion I., Vîrlănuță F. O., Antohi V., Zugravu A., The Internet as a Business Environment in Romanian Agriculture, Journal of Food, Agriculture & Environment (JFAE) Vol. 7 (2), 2009
- Onea F., Rusu E., An assessment of the wind and wave power potential in the island environment, Volume 175, 15 May, 2019
- Stanciu S., Rotaru G., Appreciation of the quality of food goods, Academic Publishing House, Galaţi, 2007
- Strategy of intelligent specialized of the South-East Development Region, elaborator SC ACZ Consulting SRL, Project co-financed by ERDF through POR 2014-2020, Brăila, Romania
- https://www.cjgalati.ro/images/stories/formulare/potential-turistic.pdf
- https://www.galati.insse.ro/comunicate-de-presa/turismul-in-judetul-galati-luna-iulie-2019/
- http://www.adrse.ro/Documente/Planificare/RIS3/SRSI_SE_2021-2027.pdf
- http://www.madr.ro/docs/dezvoltare-rurala/programare-2014-2020/strategia-de-dezvoltare-rurala-2014-2020-versiunea-I-nov2013-update.pdf
- http://www.fsesudest.ro/PDR 2009.pdf
- http://infraed.ro/wp-content/uploads/2017/10/PRAI-SUD-EST-2016-2025.pdf

Statistical Analysis of the Impact of Application of the European Union Rules on the Number of Death from Traffic Accidents and the CO Pollution

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Abstract

In the context of introducing the latest rules for traffic monitoring, new types of cars propulsion, and security systems, a significant change in the trends of human life lost in car accidents and diminishing CO pollution are expected. In this article, we emphasize the trend in these two directions in the European countries. It is shown that the human loss significantly diminished in a certain number of countries, while the CO recorded a decreasing trend in 25 countries (out of 28) during the analyzed period. Clustering emphasizes the existence of the dissimilarities among the series contained in different groups obtained based on the two study criteria.

Key words: trend, cluster, statistical analysis

J.E.L. classification: Q52, R11

1. Introduction

On the European Union (EUR-Lex 1) site, it is mentioned that the policy in the transport field should have as the final goal ensuring 'smooth, efficient, safe, and free movement of people and goods throughout the EU' by all modalities and employing interconnected transportation networks.

The EU White Paper (COM(2011) 144 final) presents transportation as a key element for society and the economy that must ensure the necessities of the market and the citizens' mobility. Therefore, it must fulfill sustainability and security conditions, including pollution reduction, environment conservation and restoration, passengers' rights.

The study presented here investigates the results of EU directives implementation in the national legislation. Two time series are investigated, one reflecting the traveling security, and the second one, the pollution level with CO. The correlation of these aspects, reflected by clustering the countries based on two criteria, is finally emphasized.

2. Literature review

One of the critical concerns constantly raised by scientists after 2000 is pollution (Al-Taani et al., 2021; Bărbulescu and Dani, 2019; Bărbulescu and Nazzal, 2021; Nazzal et al., 2021a,b; Bărbulescu et al., 2018, 2021). WHOs reports show that over four-fifths of the urban population is affected by pollution at an alarming level surpassing the international recommendations. In the Asian and Mediterranean cities from middle and low-income countries, pollution values are 5-10 times above the warning limits (WHO, 2016a,b).

Owusu and Sarkodie (2020) showed that the WHO Directives for air quality were met by no country studied (195) in 1990 - 2017.

The Report of the European Union emphasized the necessity of drastically decreasing the pollutants emissions to limit the global temperature increase to a level under 2°C. The EU established the target of reducing the emissions of greenhouse gases (GHGs) by 2050 under the 1990's level

(COM(2011) 144 final). The analysis of the European Commission emphasized that diminishing the GHGs emission from the transport sector by a minimum of 60% by comparison to 1990 is mandatory by 2020 (COM(2011) 112 final) given that the pollution coming from this sector is still significant. The goal set for 2030 is reaching a level 20% lower than in 2008.

On the other hand, the Directive 2010/40/EU introduced the framework for the European Union countries for the Intelligent Transport Systems deployment (EUR - Lex 2). It stipulates the implementation and application of the new communication technologies for improving the efficiency and safety of the transport and passengers.

Since the European countries transposed in their legislations the stipulations of the EU Directive, our study comes to analyze the progress of applying these regulations in two directions: reducing the pollution with CO (that is mainly due to the engine's exhaust) and diminishing the number of dead people in car accidents (that should be the direct result of the intelligent driving systems implementation and traffic monitoring).

3. Research methodology

Statistical analysis has been performed on the series recorded in each country (spatial analysis) aiming to emphasize the series evolution. They included:

- Computation of basic statistics and boxplot drawing for the outliers' detection.
- Testing the null hypothesis (H₀) that the series presents no monotonic trend versus the alternative hypothesis (H₁) that such a trend exists, utilizing the Mann-Kendall test (Hipel, 1994).
 If H₀ was rejected, the nonparametric procedure of Sen (1968) was utilized to compute the slope of the linear trend detected.
- If there is a trend, it can be increasing (when a positive significant was estimated), or decreasing (when a negative significant slope was computed).
- Testing the hypothesis (H₀) that the series is stationary in level/trend versus (H₁) its non-stationarity in level/trend, utilizing the KPSS test (Kwiatkowski et al., 1992).

The significance level at which the hypotheses testing was done is 5%.

The series have been grouped in clusters using the k-means algorithm (Everitt et al., 2011; Xu and Wunsch, 2005).

For selecting the best number of clusters, 30 criteria have been utilized. The optimum number of clusters was selected based on the majority rule (Kassambara).

Data series consists of the annual series formed by the number of deaths in car accidents and the series of CO emissions recorded in 28 European countries in the period 2007 – 2017. Data was downloaded from Eurostat (Eurostat). The first series is represented in Figure 1.

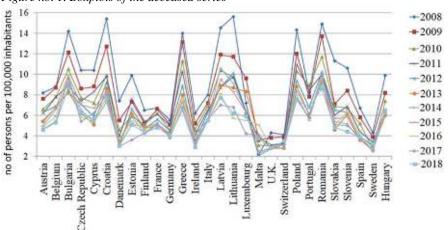


Figure no. 1. Boxplots of the deceased series

Source: Own chart drawn using data from

https://ec.europa.eu/eurostat/databrowser/view/ sdg 11 40/default/table?lang=en

Figure 2 contains the chart of average pollution with CO in the European countries during the study period.

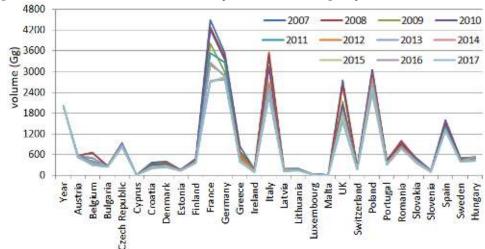


Figure no. 2. CO volume recorded in the European countries during the period 2007 -2017

Source: Own chart drawn using data from https://ec.europa.eu/eurostat/web/main/data/database

4. Findings

4.1. Results on the deceased series

The basic statistics are presented in Table 1. The highest minimum values are reported in Romania, Croatia, Poland, Bulgaria. The highest maximum values are reported in Lithuania, Croatia, Romania, Poland, and the highest average are in Romania, Bulgaria, Latvia, and Poland. These are countries where the transportation infrastructure is deficient.

At the opposite pole, the lowest maxima were recorded in Ireland, Switzerland, Sweden, Germany. In contrast, the lowest average was registered by Sweden, U.K., Switzerland, and Malta, where the legislation is less permissive to the traffic rules violations.

The coefficient of variation (cv) (Table 1) indicates the highest variation of the series values for Denmark, Slovakia, Lithuania, and Malta. The first three mentioned series exhibit a decreasing trend, based on the results from Table 2.

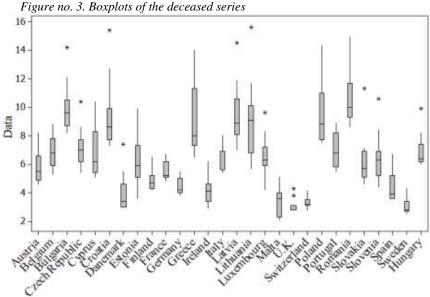
Table no. 1. Basic statistics of the deceased series

	Austria	Belgium	Bulgaria	Czech Republic	Cyprus	Croatia	Denmark	Estonia	Finland	France	Germany	Greece	Ireland	Italy
min	4.6	5.3	8.2	5.4	5.1	7.3	3.0	3.6	4.2	4.8	3.8	6.5	2.9	5.4
max	8.2	8.8	14.2	10.4	10.4	15.4	7.4	9.9	6.5	6.7	5.5	14.0	6.0	8.0
mean	5.9	7.0	10.0	7.1	6.1	9.5	4.0	6.2	4.9	5.6	4.4	9.2	4.1	6.2
St.dev	1.2	1.2	1.8	1.4	1.7	2.5	1.4	1.6	0.7	0.7	0.6	2.6	0.9	0.9
cv(%)	20.2	17.1	18.0	19.9	25.1	26.3	34.7	26.4	13.3	12.0	12.4	28.4	23.2	13.9
	Latvia	Lithuania	Luxembourg	Malta	U.K.	Switzerland	Poland	Portugal	Romania	Slovakia	Slovenia	Spain	Sweden	Hungary
min	7.0	5.7	4.2	2.1	2.8	2.8	7.5	5.5	8.6	4.6	4.4	3.6	2.5	6.0
max	14.5	15.6	9.6	5.1	4.3	4.1	14.3	8.9	14.9	11.3	10.6	6.7	4.3	9.9
mean	9.6	9.3	6.6	3.3	3.1	3.3	9.5	6.9	10.6	6.2	6.2	4.4	3.1	6.9
-4.1	2.1	2.8	1.4	1.0	0.5	0.4	2.2	1.2	2.0	1.9	1.7	1.0	0.6	1.2
stdev	2.1	2.0	1.7	1.0	0.5	0.7	2.2	1.2	2.0	1.,	1.7	1.0	0.0	1.2

Source: Own computation, based on the data from Eurostat (europa.eu):

https://ec.europa.eu/eurostat/web/main/data/database

The series boxplots are shown in Figure 3. Most series present outliers. Data varies in a large range for some countries (Greece, Poland, Lithuania). The lowest ranges are noticed for U.K., Sweden, and Switzerland.



Source: Chart generated using the R software

Table 2 contains the results of the statistical tests performed on the deceased series. From the second column, it results that for Bulgaria, Malta, Switzerland, and Hungary, the hypothesis that there is no monotonic trend of the data series could not be rejected. For the other series, the null hypothesis has been rejected. The slopes computed by Sen's nonparametric method are given in the third column.

Table no. 2. Results of the statistical tests on the deceased series

Country	p-val. MK test	Sen slope	p-val. KPSS level	p-val. KPSS trend	Country	p-val. MK test	Sen slope	p-val. KPSS level	p-val. KPSS trend
Austria	0.0002	-0.350	0.4761	0.0436	Latvia	0.0097	-0.486	0.0711	0.1000
Belgium	0.0000	-0.350	0.0456	0.1000	Lithuania	0.0011	-0.650	0.0447	0.0850
Bulgaria	0.1844	-0.300	0.1000	0.0868	Luxembourg	0.0115	-0.200	0.0846	0.1000
Czechia	0.0008	-0.328	0.0520	0.0427	Malta	0.1611	0.100	0.1000	0.1000
Cyprus	0.0430	-0.367	0.0753	0.0520	U.K.	0.0048	-0.050	0.0797	0.0541
Croatia	0.0011	-0.480	0.0615	0.0460	Switzerland	0.2064	-0.050	0.1000	0.0413
Danemark	0.0036	-0.250	0.0759	0.0610	Poland	0.0001	-0.520	0.0475	0.0394
Estonia	0.0017	-0.367	0.0442	0.0610	Portugal	0.0188	-0.329	0.0950	0.1000
Finland	0.0073	-0.133	0.0481	0.0484	Romania	0.0100	-0.420	0.0746	0.0705
France	0.0036	-0.187	0.0600	0.0961	Slovakia	0.0023	-0.280	0.0612	0.0498
Germany	0.0010	-0.150	0.0470	0.0207	Slovenia	0.0008	-0.400	0.0473	0.0725
Greece	0.0001	-0.876	0.0537	0.0635	Spain	0.0169	-0.217	0.0847	0.0543
Ireland	0.0007	-0.240	0.0495	0.0966	Sweden	0.0188	-0.110	0.0826	0.0361
Italy	0.0004	-0.233	0.0576	0.0469	Hungary	0.2020	-0.180	0.1000	0.0571

Source: Own computation

The series stationarity in level (the fourth column of Table 1) has been rejected for Belgium, Estonia, Finland, Germany, Ireland, Lithuania, Poland, and Slovenia series. The trend stationarity has been rejected for nine series, among which Italy, Switzerland, Poland, and Slovakia (last column, Table 2). So, the stationarity hypothesis in trend and level couldn't be rejected only for the series recorded in Finland, Germany, and Poland.

Three were clusters provided by the k-means algorithm. The following countries are contained by the clusters:

1. Denmark (7), Finland (9), Germany(11), Ireland (13), Malta(18), UK(19), Switzerland(20), Spain (26), Sweden (17).

The countries in the last cluster have a standard deviation between 0.4 and 1.4 and an average between 3.1 and 4.9. Half series are nonstationary in level or variance. All series but Malta and Switzerland have a negative trend.

2. Austria (1), Belgium (2), Czech Republic (4), Cyprus (5), Estonia (8), France (10), Italy (14), Luxembourg (17), Portugal (22), Slovakia (24), Slovenia (25), Hungary (28).

This cluster is formed by the series with an average above 6.1 and standard deviations between 0.9 and 1.9.

3. Bulgaria (3), Croatia (6), Greece (12), Latvia (15), Lithuania (16), Poland (21), Romania (23). This cluster contains the countries with the highest average (above 9.2) and the highest variation coefficients. Almost all are stationary in level, and all but Poland are stationary in trend.

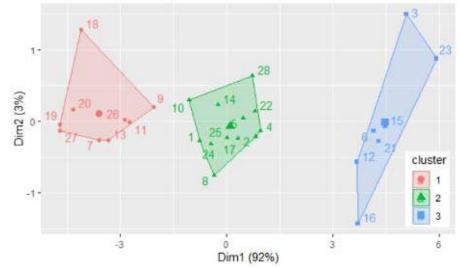


Figure no. 4. Cluster of the countries based on the deceased series

Source: Result of the k-means algorithm. Output from R software

4.2. Results on the pollution series

The Mann-Kendall trend did not reject the hypothesis of a decreasing trend of CO volume for all, but Austria, Ireland and Greece.

At a significance level of 5%, the stationarity hypothesis was rejected for series from Austria, Bulgaria, Czech Republic, Germany, Romania, and Hungary. At the same significance level, for half series, the level stationarity was rejected. But, at a significance level of 4.5%, the null hypothesis could not be rejected for all series.

The optimal number of clusters was determined to be 3. Running the k-means algorithm, the clusters contain (Figure 5):

- 1. France, Germany, Italy, and Poland. These are the countries with the highest production of CO in Europe. Germany and Polland have a variation coefficient greater than 10%, while this coefficient is about 5% for the other two countries.
 - 2. The Czech Republic, UK, Romania, and Spain.
 - 3. The other countries.

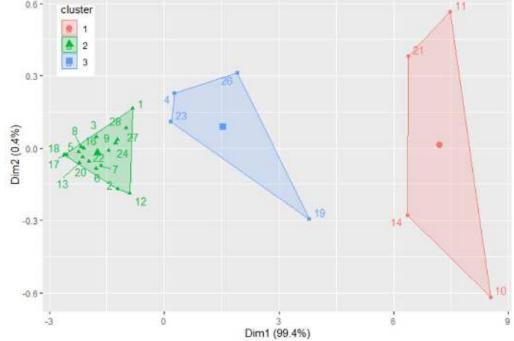


Figure no. 5. Clusters of the countries based on the CO series

Source: Result of the k-means algorithm, Output from R software

5. Conclusions

In this article, we analyzed two aspects related to the implementation of 'intelligent' transport rules. The first one, related to the number of death from car accidents, show a decreasing trend in all countries. Stationarity in mean and trend of pollution with CO is noticed. At the regional level, the average series presents a significant decreasing trend. The comparison of the two groups of clusters leads to the following conclusions. The Czech Republic and Poland keep their position in clusters 2 and 3, respectively. The cluster that contains the series with similar behavior relative to both criteria is the first one, including Denmark, Finland, Ireland, Malta, Switzerland, and Sweden.

The study should be extended to other aspects related to diminishing the impact of anthropic activity on the environment.

6. References

- Al-Taani, A.A.. Nazzal, Y.. Howari, F., Iqbal, J., Bou-Orm, N., Xavier, C.M., Bărbulescu, A., Sharma, M., Dumitriu, C.Ş., 2021. Contamination Assessment of Heavy Metals in Agricultural Soil, in the Liwa Area (UAE). *Toxics*, 9(3), 53.
- Bărbulescu, A., Dani, A., 2019. Statistical analysis and classification of the water parameters of Beas River (India). *Romanian Reports in Physics*, vol. 71, no. 4, 716.
- Bărbulescu, A. Barbes, L., Nazzal, Y., 2018. New model for inorganic pollutants dissipation on the northern part of the Romanian Black Sea coast. *Romanian Journal of Physics*, vol. 63(5-6), 806,
- Bărbulescu, A. Nazzal, Y., 2020. Statistical analysis of the dust storms in the United Arab Emirates. *Atmospheric Research*, vol. 231, 104669.
- Bărbulescu, A. Şerban, C. Caramihai, S., 2021. Assessing the soil pollution using a genetic algorithm. *Romanian Journal of Physics*, vol. 66(3-4), 806.
- COM(2011) 144 final. Roadmap to a single European transport area: Towards a competitive and resource-efficient transport system [online]. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=legissum%3Atr0054 [Accessed 15 November 2021].
- COM (2011) 112 final. A Roadmap for moving to a competitive low carbon economy in 2050 [online]. Available at: https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2011:0112:FIN:EN:PDF [Accessed 20 November 2021].

- EUR-Lex 1 [online]. Available at: < https://eur-lex.europa.eu/summary/chapter/32.html?expand=3219#arrow_3219> [Accessed 30 October 2021].
- EUR-Lex 2 [online]. Available at: https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A32010L0040 [Accessed 30 October 2021].
- Eurostat (europa.eu) [online]. Available at: https://ec.europa.eu/eurostat/web/main/data/database [Accessed 10 October 2021].
- Everitt, B. S., Landau, S., Leese, M. & Stahl, D., 2011. Cluster analysis. 5th Edition. Chichester: Willey.
- Hipel, K.W., McLeod, A.I., 1994. *Time Series Modelling of Water Resources and Environmental Systems*. New York: Elsevier Science.
- Kassambara, A. Practical Guide To Principal Component Methods in R (Multivariate Analysis Book 2), STHDA.
- Kwiatkowski, D., Phillips, P.C.B., Schmidt, P., Shin, Y., 1992. Testing the null hypothesis of stationarity against the alternative of a unit root. *Journal of Econometrics*, 54(1–3), pp. 159–178.
- Nazzal, Y.H., Bărbulescu, A. Howari, F. Al-Taani, A.A., Iqbal, J. Xavier, C.M., Sharma, M. & Dumitriu, C.Ş., 2021b. Assessment of metals concentrations in soils of Abu Dhabi Emirate using pollution indices and multivariate statistics. *Toxics*, vol. 9(5), 95.
- Nazzal, Y., Bou-Orm, N., Bărbulescu, A., Howari, F., Sharma, M., Badawi, A.E., Al-Taani, A.A., Iqbal, J., El Ktaibi, F., Xavier, C.M., Dumitriu, C.Ş., 2021a. Study of atmospheric pollution and the health risk assessment A case study for Sharjah and Ajman Emirates (UAE). *Atmosphere*, vol. 12, 1442, https://doi.org/10.3390/atmos12111442.
- Owusu, P.A., Sarkodie, S.A., 2020. Global estimation of mortality, disability-adjusted life years and welfare cost from exposure to ambient air pollution. *Science of The Total Environment*, vol. 704, 140636. https://doi.org/10.1016/j.513 scitotenv.2020.140636.
- Sen, P.K., 1968. Estimates of the regression coefficient based on Kendall's tau. *Journal of the American Statistical Association*, 63, pp. 1379-1389.
- WHO, 2016a. Ambient air pollution: A global assessment of exposure and burden of disease [online]. Available at: https://www.who.int/phe/publications/air-pollution-global-assessment/en/ [Accessed 20 November 2021]
- WHO, 2016b. Burning Opportunity: Clean Household Energy for Health, Sustainable Development, and Wellbeing of Women and Children [online]. Available at: https://www.who.int/airpollution/publications/burning-opportunities/en/ [Accessed 20 November 2021].
- Xu, R., Wunsch, D. 2005. Survey of Clustering Algorithms. *IEEE Transactions on Neural Networks* 16(3), pp. 647–678, https://doi.org/10.1109/TNN.2005.845141.

Selection of Features of Smart Cities in the Western Region of Romania

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Abstract

The concept of "Smart city" is used more and more by urban policymakers, implicitly by those from Romania. Within this work, the attention is focused on "smart city" projects implemented by the territorial administrative units of the Western Region of Romania, a mapping of these types of projects being carried out according to the smart pillar on which they were implemented: mobility, environment, economy, citizens, living and governance. The objectives of this work are represented by the identification of the set of smart city projects implemented in the Western Region of Romania, as well as their classification according to the pillar on which they were implemented and the infrastructure intended to be developed through the project. The research tool used was content analysis. The objectives assumed in the research were achieved, and the results highlighted the situation of the smart city projects implemented in the Western Region of Romania.

Key words: smart city, west region of Romania, smart pillars, smart city projects, urban development **J.E.L. classification**: H0, H70, O10

1. Introduction

In this article, the analyzed topic has as a starting point a challenging global field for the sustainable development of an urban area. The purpose of this research is to make a detailed mapping of the "smart city" projects implemented by the territorial administrative units at the level of the West Development Region of Romania. This article uses document analysis as a research method, while the research tool was that of content analysis. The researches carried out over time in Romania have highlighted the fact that the field is in a state of emergence, with multiple institutions that are trying to implement smart city projects (Cîrnu, et al., 2017, pp. 316-317). At the level of Romania, the democratic period after the 1989 Revolution was marked by a strong interest of the public administration authorities regarding the urban development through classical methods, aimed at hard infrastructure, to the detriment of projects that would facilitate the development of the soft infrastructure of an urban area. These practices have been maintained in the last 10 years, although the global focus has shifted from the implementation of hard infrastructure measures to the implementation of projects aimed at soft infrastructure. In the context of environmental changes and the different challenges generated by public policymakers worldwide, they have turned their attention to projects aimed at preserving the environment and implicitly implementing a large number of projects on the smart environmental pillar.

2. Literature review

The researchers developed and adapted a series of definitions for the concept of "smart city", depending on the period and the point of view approached when referring to this concept. In 2000, Hall defines the concept of a smart city as being related to "the integrated monitoring and development of the infrastructure of high importance of a city, and which includes: roads, bridges, tunnels, subway lines, airports, telecommunications, water, energy sources and buildings, as well as

carrying out maintenance activities with a predictive role within them, with the role of maximizing the living conditions for citizens. (Bowerman, et al., 2000, pp. 1-2)

In 2001, Beatty outlined a profile of a digital city, which was seen as an open, complex space and which benefits from an adaptive system of computer networks and urban information resources, all of which formed a virtual digital space for the city (Beatty, 2001, pp. 4-5). Thus, it can be seen that the emphasis is placed on the importance of developing tangible and large-scale infrastructure within a city, at the same time as the preventive measures related to the developed infrastructure (Cocchia & Dameri, 2010, pp. 2-3).

In 2010, Giffinger presented "a smart area concept, which included regional competitiveness, the implementation of telecommunications infrastructure, the development of transport, the increase in the quality of life, the care for nature and last but not least, the implementation of policies at governmental level" (Giffinger, 2010, pp. 4-5). In the previous definition, a general perspective can be seen, in which the areas of intervention were stipulated at the conceptual level of a smart area.

A widespread mistake among urban decision-makers that needs to be clarified, namely the confusion of the concept of "digital city" with "smart city" (Cocchia & Dameri, 2010, p. 2). A smart city includes a digital city, but it is much more than that, because a smart city is not only aimed at developing the ITC infrastructure, but is aimed on top of the overall development of urban infrastructure in an eco-friendly manner and integrating people into the intelligent ecosystem thus created.

In 2014, Frost and Sullivan approach the concept of a smart city in a structured manner, in which they highlight the smart city as consisting of eight dimensions: governance carried out in a smart way, sustainable and smart energy, smartly built and managed buildings, smart mobility of citizens at city level and within peri-urban areas, citizens' access to a smart infrastructure, smart technologies and smart health system, all of the above being offered to smart citizens.

Another perspective is offered to us by De Santis et co., which presents a smart city as a city that is constantly changing and adapted to the wishes and needs of citizens. This perspective has a bottom-to-top starting point in the decision-making process at the urban level (De Santis, et al., 2014, pp. 3-4).

Thus, although most of the definitions presented concern the smart city from different perspectives, there is an important principle that unites them all - the importance of meeting the requirements and needs of citizens, with the role of increasing the standard and living conditions for them.

Today, the concept of smart city is viewed from a holistic perspective, in which there are presented multiple areas of interest (such as sustainable development, architecture, implementation of ITC, decentralization of decisions, etc.) which represents an "area of debate and decision" for multiple categories of stakeholders in several fields (such as urban planners, architects, geographers, IT and digitalization specialists, politicians and members of the academic community) (Appio, et al., 2018, pp. 2-3). All these professional groups are brought together due to the desire to innovate and identify alternative ways for urban areas management. Thus, lately, urban planning is beginning to be more and more the task of strategic planning specialists trained for this field, able to manage large-scale urban projects that target several areas. For this reason, there is currently a major need to set up inter-disciplinary teams to implement smart city measures, given that in the current society of speed and rapid innovations, people who have niche qualifications do not cope with multiple tasks and situations determined by the external context.

As a model of good practices for smart city, to which urban and deportable areas within Romania should tend, we believe that Barcelona is the city that has implemented over time a series of smart measures that have given it a leading place in the top of smart cities in Europe, with a public administration based on cutting edge technologies, but at the same time the urban policymakers are very careful with the needs of its citizens. Barcelona's road of becoming a smart city began about 30 years ago when fiber optics were installed, a novelty at the time, thus connecting two buildings in the city.

Although the city comprises several research institutes that deal with the technical process itself to integrate innovation into the urban reality, the innovative core is District 22 which is the center where smart decisions are implemented in Barcelona, and includes both the technology part and the management part of the process itself (Madakam & Ramachandran, 2015, pp. 6-7). Among the

actions that are carried out are the introduction of electric cars at the same time as the very fast charging stations for them, the rehabilitation of old buildings to manage energy waste and the installation of cooling and heating systems from renewable sources within them.

The first paradigm of action was Smart City 1.0, being based on technology (technology based paradigm) within it can be seen that decision makers want the implementation priority of the latest innovative technologies, in order to bring them efficiency within urban governance practices. It was aimed at a large-scale technology in all fields of activity at urban level, but without having a sustainable development strategy.

The second paradigm was that of Smart City 2.0 and was also based on technology, but unlike Smart City 1.0. in which the vision was purely technological, within this paradigm it was based on a mapping of the urban environment, aiming at a synergistic integration of technology with urban development strategy, in order to generate the maximum advantage at urban level. A disadvantage of this approach is given by the fact that the opinions and expectations of citizens are not integrated in the process of carrying out the strategy, also having a bottom-to-top approach (Alexandrova & Vishnivetskaya, 2019, pp. 4-5).

Smart city 3.0 is the third paradigm in which a high emphasis is placed on citizens, seen as the creators of the urban environment in which they live. This can be understood from 2 distinct perspectives and the measures taken must be focused on them: educating citizens and encouraging them to have opinions on the development of their own urban area through continuous innovations. However, this paradigm also takes into account the technological dimension of things, with sustainable progress being pursued with the help of technology. Thus, this new model brings together in a unique way 4 dimensions of a smart city: communication, cooperation, culture and last but not least, technology (Carta, 2019, pp. 3-4).

3. Research methodology

The research in the smart city study takes into account the model that includes 6 smart pillars: mobility, environment, economy, citizens, living and governance. The method used is that of document analysis, within the article being carried out a mapping of the smart initiatives implemented at the level of the 4 municipalities of county residence in the West Region. The method was used because it represented a viable option for this type of research, aimed at identifying all the projects implemented by the territorial administrative units at the level of the respective localities.

The objectives of the research have been defined in such a way as to highlight the real situation at regional level:

- Objective 1: Determine the pillar with the most projects implemented at regional level by the territorial administrative units.
- Objective 2: Determine the type of urban infrastructure (hard or soft) on which most projects have been implemented.

In order to achieve the first objective and to be able to carry out an objective analysis at the level of the West Region, the 6 pillars of a smart city were analyzed in order to obtain a realistic and accurate framing of the smart projects carried out at regional level. According to the existing information, from the point of view of the implemented smart projects, there are significant gaps between Romania and Western Europe (Eremia, et al., 2016, pp. 14-15). The model of western European countries is the basis of comparison and serves as good practice model for the Western Region.

In order to ensure a uniformity in the research carried out, it was decided to use the model based on 6 smart city pillars:

1. Smart mobility - Urban mobility is one of the basic strategic priorities through which a sustainable development can be ensured for a given city. Interconnection and development of transport infrastructure shall be aimed at. The strategic directions within the pillar are: traffic management, infrastructure and public transport, development of non-motorized transport infrastructure, strategies for smart mobility.

- 2. Smart environment The aim is to approach a holistic strategy that includes environmental and energy aspects. The 2 keywords are the starting points for the development of an integrated strategy for this vertical, with the aim of combating pollution from multiple sources and for a better management of energy resources. The strategic directions within the pillar are: energy and green space management, green buildings, protection of natural resources and monitoring of the natural environment.
- 3. Smart economy The "smart economy" pillar aims to increase the prosperity of the community from the level of a smart city through measures aimed at increasing employment, facilitating entrepreneurial and innovative approaches, improving the relationship between the business environment and employees, in order to provide a better life for citizens on the one hand and to develop business space on the other hand. The strategic directions within the pillar are: training programs, entrepreneurship and innovation, internationalization and smart economy strategies.
- 4. Smart citizens This pillar has at its core the citizens who are the basic cells of any smart city, the citizen being seen as a trigger for change and innovation. In a smart city, citizens are the stakeholders from whom the changes must start and to which the development trends at the level of an urban area must be oriented. Unlike the old top-down approaches to urban planning, the post-modern era in which we find ourselves has led to an increase in the dynamism of the social environment and a change in people's mentality regarding urban changes. The strategic directions within the pillar are: education and creativity in the digital era, involvement in decision-making, inclusive society.
- 5. Smart living The smart living pillar within a smart city refers to the set of measures that are intended to be implemented with the aim of increasing the quality and conditions of the living environment both from the point of view of the urban area itself and from the point of view of their final beneficiary, the citizen. Technology must not go over all the other elements at the level of a city such as tourism, cultural and social life, management of urban area / green spaces or health services, but must work together in a synergistic manner with them in order to provide citizens with the best experience possible. The strategic directions within the pillar are: tourism and culture, security, medical services, accessibility to technology, management of the urban area.
- 6. Smart governance The smart governance pillar presented from a regional perspective refers to all the measures by which urban institutions manage the city and interact with the citizens within a community in order to facilitate their access to different services or products on the one hand and to the way regional authorities manage their relations with the set of central bodies and authorities at the level of government on the other side. The strategic directions within the pillar are: public services, participative management and transparency, institutional management, multi-level governance.

Regarding the second objective, all the implemented smart city projects will be divided into 2 distinct categories of infrastructures – hard and soft, targeting the actual characteristic of the implemented project:

- 1. *Hard infrastructure* The projects developed on this type of infrastructure have in their composition a strong tangible dimension, which is necessary for the physical network created to operate at optimal parameters.
- 2. Soft infrastructure The projects developed on this type of infrastructure have in their composition a strong intangible dimension, and an example of this would be digital applications or potential new strategies and processes created, consisting of innovation.

The data were centralized from the conspected documents, represented by press materials and websites available to the general public (web pages of economic or technological profile or official websites of the territorial administrative units). The reference period of the projects identified is between January 2010 and May 2021. The projects included in the analysis are exclusively completed. Thus, the projects that had the "smart" label assigned were centralized and classified both according to the six pillars and according to the characteristic of the developed infrastructure – hard or soft.

The institutions whose smart city projects have been analyzed are represented exclusively from the local administrations the territorial administrative units of the county residence municipalities, within the West Development Region of Romania: Timisoara, Arad, Resita and Deva. The projects were implemented exclusively at the level of territorial administrative unit, while their financing was made from 3 sources – financing from the local budget, financing from the government budget or financing from non-reimbursable European funds.

There have been identified strategic directions on every smart pillar:

- Smart mobility The strategic directions within the pillar are: traffic management, infrastructure
 and public transport, development of non-motorized transport infrastructure, strategies for smart
 mobility.
- 2. Smart environment The strategic directions within the pillar are: energy and green space management, green buildings, protection of natural resources and monitoring of the natural environment.
- **3. Smart economy** The strategic directions within the pillar are: training programs, entrepreneurship and innovation, internationalization and smart economy strategies.
- **4. Smart citizens** The strategic directions within the pillar are: education and creativity in the digital era, involvement in decision-making, inclusive society.
- **5.** *Smart living* The strategic directions within the pillar are: tourism and culture, security, medical services, accessibility to technology, management of the urban area.
- **6. Smart governance** The strategic directions within the pillar are: public services, participative management and transparency, institutional management, multi-level governance.

4. Findings

Following the application of the content analysis tool, the following results were recorded:

- 1. Smart mobility a total of 11 projects have been implemented, of which 4 on hard infrastructure and 7 on soft infrastructure: Timisoara (2 on hard and 4 on the soft one), Arad (1 on hard and 1 on soft), Resita (1 on hard), Deva (2 on soft)
- **2.** *Smart environment* a total of 10 projects have been implemented, all of them targeting the hard infrastructure: Timisoara (7 projects), while Arad, Resita and Deva have been implemented one project for each municipality.
- **3.** *Smart economy* a total of 5 projects were implemented, of which 2 on hard infrastructure and 3 on soft infrastructure: Timisoara (2 on hard and 1 on software), Reşiţa (1 on software), Deva (1 on hard).
- **4.** *Intelligent citizenship* a total of 5 projects have been implemented, of which 1 on hard infrastructure and 4 on soft infrastructure: Timisoara (2 on software), Arad (1 on software), Deva (1 on software), Resita (1 on hard).
- **5. Smart housing** a total of 14 projects were implemented, of which 10 on hard infrastructure and 4 on soft infrastructure: Timisoara (5 on hard and 1 on soft), Arad (3 on hard and 1 on soft), Deva (2 on hard and 2 on software).
- **6. Smart governance** a total of 10 projects have been implemented, all of them targeting hard infrastructure: Timisoara (3 projects), Arad (2 projects), Deva (5 projects).

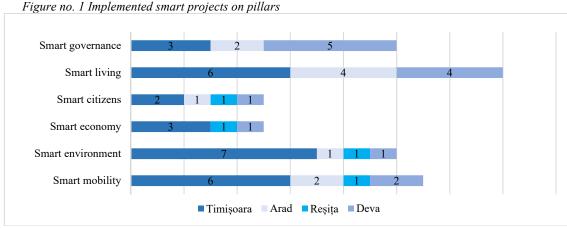
The assessment carried out on the concrete measures and projects of smart city type at urban level according to the 6 pillars highlighted a number of aspects, among which the following can be mentioned:

- 1. For the *smart mobility* pillar all the 4 county residence municipalities have implemented projects. Most of the projects implemented targeted infrastructure development, public transport and traffic management, but it is necessary to develop a complex plan and a simplified strategy, with a focus on the area within the city in order to create a strategic coherence in ensuring mobility within the city.
- 2. For the *intelligent middle* pillar all the municipalities of the county residence at the regional level have implemented projects. In particular, the quantitative dimension of this pillar was targeted, which aimed at the development of hard infrastructure. The projects were implemented mainly on

"Energy and green space management", and on "Strategies to facilitate sustainability", only the city of Resita had such an integrated strategy.

- 3. The *smart economy* pillar was of interest to Timişoara, Reşiţa and Deva, being largely covered through the implementation of entrepreneurship, innovation and competitiveness projects, but with a channel mainly on the hard dimension of the things (infrastructure development). However, the strategic direction focused on training and mentoring showed less interest at regional level. The future perspectives on the smart economy pillar at regional level are very good because from 2021, the West Regional Development Agency will be the Management Authority for the Regional Operational Programme 2021-2027 and will facilitate a freer and easier access for entrepreneurs to both financing and tangible aid programms, as well as to increase their competitiveness and innovation capacity. Thus, the before mentioned aspects merged with the specific local and urban approach will make the Western Region a real growth pole based on a society made up of innovative people and competitive businesses.
- 4. Within the *smart citizens* pillar, all the 4 municipalities of county residence have implemented smart projects, on 2 strategic directions the involvement of citizens in the decision-making process and inclusive society. A positive aspect can be seen regarding the county residence municipality of Deva that collaborated with another municipality at county level to develop a participatory budgeting platform. The system was developed on a common logic and architecture, but on a separate structure for each city, which leads to the conclusion that the process of glocalization is applied at an early scale at regional level, which means global perspective, but at the same time interest for the local specific. An important aspect to note is the lack of projects for the strategic direction of education and creativity in the digital age for second or third age people. The desire is to be able to bring a uniformity at the level of the Western Zone in terms of digital knowledge in order to use the infrastructure provided by the various institutions involved in the development of smart measures.
- 5. The *smart housing* pillar was of interest to 3 county residence municipalities Timisoara, Arad and Deva. Through the implemented projects, the development of the hard infrastructure at the city level was aimed, using the classic technologies used in a smart city. In this category are the projects aimed at the acquisition and implementation of surveillance cameras, urban internet systems, their different sensors, etc. On the other hand, a minority share of all projects was carried out on soft infrastructure, such as web applications aimed at making citizens' lives more efficient, but which have a lower impact at a general level compared to hard infrastructure. In terms of strategic directions pursued at urban level, that of urban security presented the highest attraction for decision-makers, followed by the strategic direction of accessibility to technology and the facilitation of the internet and other digital services for citizens. It can be seen that the facilitation of public health services for citizens had no project implemented at regional level.
- 6. Within the *smart governance*pillar, 3 county residence municipalities have implemented projects at regional level Timișoara, Arad and Deva. Smart projects targeting public services and facilitating transparency for citizens were of the highest interest. This highlights of interest in institutional transparency at urban level and in facilitating the digital deployment of high-importance public services. However, increasing the transparency of public institutions should be continued from a strategic point of view with the implementation of measures to facilitate participative management. Also, the integrated management systems implemented at intra-institutional level should be strengthened through a system that facilitates multi-level governance and ensures a bi-directional connection with local, county, regional and national bodies (at the governmental level).

The first objective was to identify the pillar with the most projects implemented at regional level by the territorial administrative units of the county residence municipalities. Most smart projects have been implemented on the smart living pillar, with 14 smart projects. On the next position was the smart mobility pillar with 11 projects, and on the third place implemented were the environmental pillars, namely smart governance.



Source: Own Data Processing

The second objective of the research was to identify the type of infrastructure targeted primarily within the projects implemented by the territorial administrative units at regional level - the hard or the soft one. Out of the total of 55 implemented projects, 28 of them the soft infrastructure was targeted, while 27 smart projects targeted the hard infrastructure.

12 10 0 Smart mobility Smart Smart economy Smart citizens Smart living Smart governance environment ■ Hard infrastructure ■ Soft infrastructure

Figure no. 2 Smart projects implemented by types of infrastructures

Source: Own Data Processing

5. Conclusions

One of this article analysis objective was to identify the characteristics of smart city projects implemented by the territorial administrative units of the county residence municipalities from the Western Region of Romania between January 2010 and May 2021. Most of the projects were implemented on the pillar of "smart living", which shows that the local public administration authorities have shown an increased interest in raising the living standards of citizens at the level of the four urban development poles at regional level. The European trend of interest in combating climate change was in third place at regional level, along with the smart governance pillar, which illustrates the interest in strengthening administrative capacity. Also, interest in the problems generated by the lack of infrastructure and new ways of travelling within urban agglomerations at regional level has been on the second place in the analysis carried out.

The second objective of the analysis highlighted the fact that 51% of the projects were developed to improve the software infrastructure, contrary to the specific investment at national level. This aspect illustrates that the Western Region is in a paradigm transition, following the new international and european trend, which aims to develop mainly a soft infrastructure, detaching itself from the classical trend of the post-1989 Romania in which investments in hard infrastructure were a priority.

A spatial limit to the research is that the analysis focuses exclusively on the Western Region of Romania, while the remaining seven regions are not taken into account. Also, the sample of the territorial administrative units focuses strictly on the four urban development poles that are represented by the county residence municipalities of the four counties at regional level, while the rest of the cities and municipalities were not mapped in the analysis, due to the lack of information.

6. References

- Alexandrova, E., Vishnivetskaya, A., 2019. "Smart city" concept. Implementation practice. IOP Publishing, 49(7), pp.4-5.
- Appio, F., Lima, M., Paroutis, S., 2018. Understanding Smart Cities: Innovation Ecosystems, technological advancements, and societal challenges. Technological Forecasting & Social Change Journal, 142(C), pp.2-3.
- Beatty, M., 2001. Contradictions and conceptions of the digital city. Environment and planning Journal, 28(4), pp.4-5.
- Bowerman, B., Braverman, J., Hall, R.E., Taylor, J., Todoscow, H., 2000. The vision of a smart city. Brookhaven National Laboratory Journal, 67(9), pp.1-2.
- Carta, M., 2019. Creative City 3.0: smart cities for the urban age. WS5 Smart cities and sustainable urban development, 9(5), pp.3-4.
- Cîrnu, C.E., Gheorghiță, A. Rotună, C.I., 2017. Implementing smart city solutions: Smart city map and city drop. Jurnalul Calitatea vieții, 18(3), pp.316-317.
- Cocchia, A., Dameri, R.P., 2010. Smart City and Digital City: Twenty Years of Terminology Evolution. International Journal of computers & technology, 11(5), pp.2-3.
- De Santis, R., Fassano, A., Mignolli, N., Villa, A., 2014. Smart city: fact and fiction. MPRA Journal, Spring Issue, pp.3-4.
- Eremia, M., Sanduleac, M., Torna, L., 2016. The Smart City Concept in the 21st Century. Procedia Engineering Journal, 181(12), pp.14-15.
- Giffinger, R., 2010. Smart City Ranking: Year effective for tool the Positioning of the City. Journal of the Centre of Land Policy and Valuation, 12(1), pp.4-5.
- Madakam, S., Ramachandran, R., 2015. Barcelona Smart City: The Heaven on Earth (Internet of Things: Technological God). ZTE Communications, December 2015, 13(4) pp.6-7.

The European Union, the United States and China Main Actors in the Global Economy

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Abstract

Due to their geographical position, the EU, the United States/US and China benefit from the fact that they have had the opportunity to structure their own economic influence areas, including from the perspective of securing raw materials and energy sources. Furthermore, there are broad relations, including trade relations between the EU, the US and China, a process determined by the increasing globalization of the world/global economy.

The purpose of this paper was to highlight the role that the EU, the US and China play within the global economy. The complex challenges faced by the world today call for the active involvement of the three great powers in solving the problems that have arisen. The EU, the US and China must take into account their own interests, as well as the interests of the other countries, and they must have the ability to look to the future responsibly and generously.

Key words: economic pillars, economic growth, geopolitical powers, global economy, competitiveness

J.E.L. classification: F02, F63

1. Introduction

In the 1980s, the proponents of economic globalization claimed that this was a phenomenon that required greater cooperation between the countries of the world by the free movement of goods and the free movement of capital, and by increasing the free movement of workers. The economic gap was expected to narrow over time, and on this basis there would be a more pronounced increase in the standards of living for the citizens of the poorer countries.

After four decades of increasing globalization, we can say that the concrete way in which this phenomenon has materialized has been largely debatable. In fact, it was the economically advanced countries that established the rules of the game, rules determined by the interests of the main economic actors (multinational companies) over the last decades. Multinational companies with registered offices in developed countries, compared to those with registered offices in developing countries, are the most numerous and strongest from an economic point of view.

Even though, during the mentioned period, it is clear that all the parts of the world have advanced in terms of economic development, the gaps between the richer and the poorer countries in various respects have been maintained or even amplified.

During the Cold War, politically, ideologically, militarily, and economically two powers crystallized: the United States and the Union of Soviet Socialist Republics/USSR. Practically, in the battle against the socialist world, whose core was represented by the USSR, the US had the strength and the necessary means to be the exponent of the capitalist world. The fall of communism led to the reconfiguration of the balance of power internationally, including economically. Under these circumstances, in the 80's and 90's, respectively, we can note that three great economic powers asserted themselves in the world: the EU, the US and Japan.

Throughout the globalization of the world economy, the importance of Japan has decreased significantly, while China's economic performance exponentially increased. In this context, the increasing globalization has highlighted three major economic actors, namely: the EU, the US and China.

The EU has proven to be the most successful "empire" in history, its economic and social progress being the result of promoting a policy based on discipline, not on force. Moreover, it should be noted that between 1980 and 2020, the EU, with one exception, has steadily increased its membership. On average, a new country has joined the EU about every two years. This dynamic has had a direct impact on indicators such as: GDP, population size, size of the common market, etc. Depending on the year to which we made statistical references, we have considered EU9, EU12, EU15, EU 27, EU 28 and again EU 27, given the United Kingdom's exit from the EU.

The United States has been for a very long time and continues to be the country with the strongest economy in the world. With an emphasis on research and innovation activities, the United States has the best performance in terms of competitiveness. We must not forget the huge military spending that the US incurs. All this conveys the US the status of first pillar in the global economy, although today the intensity of the American voice has decreased significantly compared to 30-40 years ago.

China, without the risk of being wrong, can be said to be the champion of economic globalization. The sharp increase in GDP, the trade surpluses recorded over the years, the huge foreign exchange reserve, the strong increase in the potential of the internal market, etc., are some of the reasons in this regard. The benefits of the market economy, coupled with discipline and the establishment, respectively the achievement of long-term objectives specific to a communist-type of political leadership, seem to have been the recipe for China's economic success.

The aim of this paper has been to highlight the role that the EU, the US and China have played in the global economy over the last three to four decades, while highlighting the performance of the three economic pillars mentioned in terms of economic growth, cross-border trade, FDI flows attracted or issued and research and innovation expenditure.

2. Literature review

Through the information presented in this paper, we have tried to highlight the global economy's structuring into three main economic pillars, a structure which has taken shape in recent decades due to the increasing globalization of the global economy. The EU, the US and China have strong bilateral relations in this context, but at the same time they take part in a fierce competition in order to secure their sources of supply with raw materials and outlets for their own goods. Moreover, the geopolitical role that the three pillars of power are currently playing must be taken into account.

About globalization, in general and about the involvement of the EU, the US and China in this process much has been written in the specialized literature, and the assessments made by a number of important authors are well-known.

The impact of globalization on different categories of states has been thoroughly analyzed by Nobel laureate for economics Joseph Stiglitz. The book "Mechanisms of Globalization" focused on the positive effects, but especially on the negative effects attributable to globalization. Presenting on the one hand the interests and benefits that have characterized the EU and the US during this period as representatives of the developed world, and on the other hand the huge progress that China has made due to the implementation of standard macro-strategies for development through expansion, Joseph Stiglitz emphasizes the need for finding a new balance.

The well-known Polish author Grzegorz W. Kolodko, in the work "Whither the World", considers globalization to be a dynamic system which must be viewed in terms of its impact on long-term economic growth. It is estimated that in the future the world will be multipolar, reviewing the main strengths and main weaknesses specific to the EU, the US and China. Kolodko emphasizes the need to impose a new kind of pragmatism in the relationship between neoliberalism and state capitalism, so that economic life could be characterized by more moderation.

Parag Khanna, in the work "The Second World: Empires and Influence in the New Global Order", presents the situation of different parts of the world and the causes that have led to the current state of affairs. From a diplomatic point of view, he highlights the American imperial way

of the coalition, the European way of consensus and the Chinese way of consultation. Khanna believes that the world is searching for balance. From this perspective, the tripolar world (EU, US and China) is compared to a three-legged chair. The statistical information provided by the United Nations Conference on Trade and Development and World Bank was very helpful for highlighting the dynamics of the various economic indicators which emphasized the role of utmost importance that the EU, the US and China play in the global economy.

3. Research methodology

The polarization of the global economy is taking on new dimensions in the context of the increasing interdependencies between the countries of the world. The global financial crisis and the pandemic crisis have further complicated the problems faced by the world's great powers.

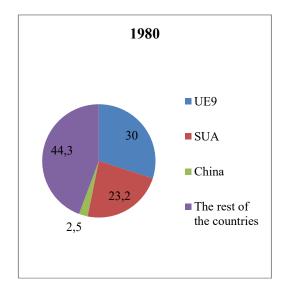
The critical examination of the phenomena was based on the theoretical documentation specific to the topic and on the available statistical data.

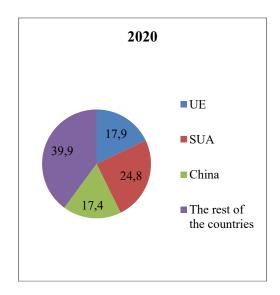
Using comparative analysis, induction and deduction, we have emphasized the role played by the EU, the US and China in the global economy, while trying to highlight the similarities and differences which characterize them.

4. EU, US and China's contribution to the global GDP and to attracting, respectively issuing FDI

In the early 1980s, the EU9, the US and China provided 55.7% of the global GDP. Under these circumstances, the rest of the countries had a contribution of only 44.3% to the global GDP. If we consider that at that time Japan was the world's second largest economy, the discrepancies between the three major economic poles of that time (the EU, the US and Japan) and the rest of the countries was even more pronounced.

Figure no. 1 The structure of the global GDP





Source: www.unctad.org

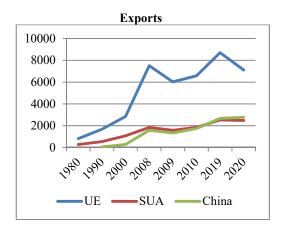
After 40 years, EU, US and China's contribution to global GDP has reached 40.1%. It is worth noting the substantial increase of the role that China plays in the world economy, China's GDP, expressed in nominal values, being in the year 2020 48.1 times higher than the level recorded in the year 1980. By comparison, in the same interval, the global GDP has multiplied only 6.8 times. As share in global GDP, the US has recorded a slight increase, whereas the EU has registered a

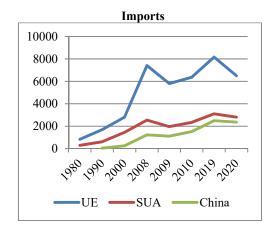
substantial decline. In the case of the EU, the situation was largely determined by Britain's exit from this union.

It is clear that the globalization of the world economy has not generated a somewhat harmonious economic growth on the planet. The income was distributed among the members of the society in a similar way, emphasizing the inequality between the different social categories. Compared to the global situation, the three studied countries recorded faster increases in the average wealth of the richest citizens. Thus, in the period 1987-2017, the average wealth of the richest 1% of adult citizens grew at an average annual rate of 3.5% in the US, Europe and China and 2.6% worldwide. (Piketti, 2020, tab 13)

Under these circumstances, in the United States the income obtained by the middle class has decreased in comparison to that of the wealthy Americans. Despite the sharp rise in the number of Chinese billionaires, China has managed to distribute more equitably the results of economic growth over the past decades. Under these circumstances, hundreds of millions of Chinese have moved from the category of poor to the middle class, with positive effects on increasing the purchasing power of the population. The EU, compared to China and the US, took the middle position in this regard.

Figure no. 2 Evolution of cross-border trade in goods and services (billion dollars)





Source: www.unctad.org

Given the recorded economic growth, the three major pillars of the world economy have amplified their role in the cross-border trade. Between 1980 and 2020, the share of exports and imports achieved by the EU, the US and China in the total world exports and imports increased from 46.4%, respectively 47.7% to 56.1%, respectively 53.9%. It is clear that both the EU and the US and China have substantially increased their foreign trade, while the greatest progress has been achieved by China. In fact, since 2009, China has become the world's largest exporter, surpassing Germany.

There are major differences between the three competitors in terms of the evolution of the trade balance. Throughout the analyzed period, the US registered significant deficits of the trade balance, noting, however, that the American economy had the potential that would allow this situation. While in the first decade the EU recorded predominantly trade deficits, in the following decades the situation improved significantly with a predominance of surpluses. The evolution of China, for which the whole period has been characterized by trade surpluses, was particularly positive, including in the years when the global financial crisis and the pandemic crisis manifested themselves.

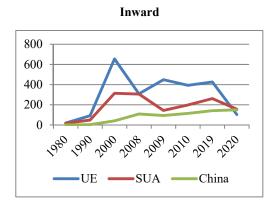
5. The EU, the US and China in terms of foreign direct investment and research activity

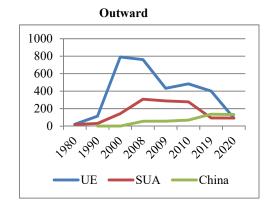
The competitiveness increase of an economy is mainly based on the implementation of the latest technologies. In order to achieve this goal, one can choose either to attract foreign direct investment or to allocate an appropriate amount so as to finance research and development activities.

Regarding the attracted foreign direct investment, it must be said that on the one hand they do not increase the states' public debt, and on the other hand they provide access to the latest technologies, to advanced knowledge in the field of management, marketing, etc. Furthermore, direct investments made abroad illustrate the performance of the economy of the country of origin and the availability of capital of the economic agents in that country.

Contrary to the growing trend of the share of the EU, the US and China held cumulatively in global GDP and global foreign trade, in the case of foreign direct investment flows attracted and issued, the cumulative share of the three economic powers decreased in the 1980-2020 interval, reaching at the end of the period 40.9% of the total in the case of attracted investments and 31.7% of the total in the case of issued investments. It should be noted that in the previous year (2019) the situation was much better, the cumulative share of the three powers in the world total exceeding 50% both in terms of inward and outward FDI flows. Obviously, the substantial decline in the year 2020 was due to the consequences of the pandemic crisis.

Figure no. 3 Foreign direct investment flows (billion dollars)





Source: www.untcad.org

After the fall of communism, the EU, given its geographical proximity and certain common cultural values, has had a robust investment activity in Central and Eastern Europe. This process was greatly enhanced by the opportunities provided by the privatizations that took place in the former socialist countries. In terms of investment, the most important EU countries have been: France, Germany and the Netherlands, but especially the United Kingdom up to the moment it left the EU. It should be noted that among the three largest powers globally, the European Union recorded the most drastic decrease in the flows of foreign direct investment attracted and issued in the year 2020, compared to the levels reached in the year 2019.

The United States has been a world leader in terms of attracting, respectively issuing annual foreign direct investment flows. The performance recorded by the US economy was a real magnet for foreign investors. Thus, the US has been the largest absorber of foreign direct investment in the world. The exception was the year 2002 when the September 11, 2001 terrorist attacks left a mark on the foreign direct investment flow attracted by the United States, this country being surpassed by other countries in the world ranking. Subsequently, the US regained its leading position, over the years the distance from the countries that occupied the second position becoming greater. On the other hand, availability of capital, as well as geopolitical ambitions have propelled the US to the top of the countries that have promoted foreign direct investment.

In the early 1980s, China's economy was in a precarious position. The reform measures implemented by the decision-makers of that time also aimed at attracting foreign capital. Financial incentives for investors and cheap labor attracted significant flows of foreign direct investment with a major impact on China's economic development. As economic growth started to be felt, domestic capital availability increased, which on the one hand enhanced the progress of the national economy and on the other hand allowed China to invest abroad. While in the first half of the period, the annual flows of foreign direct investment attracted by China were substantially greater than those issued, in the second half of the period and especially in the last decade the situation became balanced, the two flows registering relatively close values. It should be noted that the Chinese economy has been of interest to foreign investors including during the pandemic period, foreign direct investment flows recording a slight increase in 2020 compared to the previous year.

In terms of absolute values, the US has represented the country with the highest expenditures for research and development activities, the American economy excelling in the areas characterized by advanced technology. Moreover, from the perspective of the share in GDP of the research and development expenditure, the US occupied the first place among the three main economic powers, with 2.82% in the year 2018. For China, as well as the EU, this share was 2.06%. (DIGI 24, 2020) In 2018, compared to the previous year, research and development expenditure increased in China by 34%, in Europe by 14% and in North America by 7.8%. (Electroretail, 2018) According to some forecasts, the budget allocated for research and development by China will exceed in 2025 the budget allocated by the US for this purpose, and according to other forecasts, the event will take place in 2028. It is clear that China's process of strong economic growth has also been driven by a significant increase in the amount allocated to development and research, which has more than 32 times multiplied between 1991 and 2018. The EU has made some efforts in terms of the dynamics of research and development spending, but we can say that efforts in this area have been below EU's potential and below the needs generated by the globalization of the world economy. In 2020, EU allocated 311 billion euros (2.3% of GDP) for research and development compared to 312 billion euros (2.2% of GDP) in 2019. (Antena 3, 2021) In terms of the share in GDP of research and development spending in 2020, Belgium, Sweden, Austria and Germany outperformed the other EU countries.

6. Conclusions

The economic and political realities of recent years have led to some changes in the EU – US-China relations. During President Trump's term, the EU-US relationship was affected by a series of discrepancies caused by the implementation of the *America first* program. Some actions taken by China and Russia have also contributed to the escalation of the disagreements between the US and the EU, the main goal of the former two countries being to reduce America's global power. China's and Russia's preferential economic relations with certain EU countries, the dissenting attitudes towards the EU coming from within and Brexit are important factors that have damaged EU's international position.

Despite the fact that between the United States and China there is the largest bilateral trade relationship in the world, a number of disagreements have emerged that have led to a major trade dispute. Due to the large trade deficits recorded by the US in relation to China, the Trump administration increased the tariffs for several product groups. This act provoked a backlash from China. It should be noted that the trade dispute between the US and China has affected EU's trade interests, the negative effect spreading globally to some extent. It is hoped that US President Joe Biden and Chinese President Xi Jinping will take steps so as to rationally manage the bilateral competition. We can say that a first step in this direction has been taken by improving the communication between the two presidents.

Last but not least, we must keep in mind China's territorial ambitions in Taiwan, a chain of islands in the East China Sea, most of South China, and so on. Due to its massive military spending, China has become a geopolitically demanding country. In fact, in terms of military budgets, the US and China occupy, by far, the top two positions in the world. EU's ambitions are much lower in this field.

It is obvious that both in terms of their share in the global economy and in terms of geopolitical influence, the EU, the US and China are the strongest players on the planet, noting that in the recent decades "America is less and less loved and increasingly feared, Europe is more and more loved and less feared, and China is more and more loved and feared at the same time". (Khanna, 2008, p 303)

7. References

- Khanna Parag, 2008. Lumea a doua. Imperii și influență în noua ordine globala [Second world. Empires and influence in the new world order. Iasi: Polirom Publishing House
- Kolodko W Grzegorz, 2015. Încotro se îndreaptă lumea [Where is the world heading]. Iasi: Polirom Publishing House
- Piketty Thomas, Capital and ideology, [online]. Available at:
 http://piketty.pse.ens.fr/files/ideologie/pdf/T13.1.pdf>[Accessed 14.11.2021]
- Stiglitz E Joseph, 2008. *Mecanismele globalizării* [The mechanisms of globalization]. Iasi: Polirom Publishing House
- Antena 3, România, pe ultimul loc în UE la cheltuieli pentru cercetare și dezvoltare [Romania, on the last place in the EU in terms of spending for research and development] [online]. Available at:https://www.antena3.ro/be-eu/romania-pe-ultimul-loc-in-ue-la-cheltuieli-pentru-cercetare-si-dezvoltare-621496.html [Accessed 01.12.2021]
- Digi 24, România este ultima țară din UE la capitolul cercetare și dezvoltare [Romania, on the last place in the EU in terms of spending for research and development] [online]. Available at:https://www.digi24.ro/stiri/actualitate/romania-este-ultima-tara-din-ue-la-capitolul-cercetare-si-dezvoltare-1408268[Accessed 15.03.2021]
- Electroretail, Cheltuielile pentru cercetare și dezvoltare ale companiilor au crescut cu 11% în 2018 la nivel global [The spending on research and development of companies has globally increased by 11% in 2018] [online]. Available at:https://www.electroretail.ro/studii-de-piata/cheltuieli-cercetare-dezvoltare-2018.html[Accessed 20.03.2021]
- DW, *Două mari puteri se îndreaptă spre un conflict: China şi SUA*,[Two big powers are heading towards a conflict: China and theUSA] [online]. Available at:https://www.dw.com/ro/dou%C4%83-mari-puteri-se-%C3%AEndreapt%C4%83-spre-un-conflict-china-%C5%9Fi-sua/a-43102974, >[Accessed 20.04.2021]
- Financialintelligence, Cheltuieli uriașe ale Chinei în cercetare și dezvoltare [The enormous spending of China in research and development] [online]. Available at:https://financialintelligence.ro/cheltuieli-uriase-ale-chinei-in-cercetare-si-dezvoltare/[Accessed 10.09.2021]
- www.unctad.org
- www.worldbank.org

Public Innovation in Romania: Financing Smart City Initiatives Using European Funds in Small and Medium Sized Cities

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Abstract

In the current paper we identify some of the challenges in implementing innovative projects among local public administration type of organizations, alongside with some examples of best practices in Romania. Main scope of the paper is to show that only some of the local public administrations in Romania are demonstrating characteristics that are beneficial to citizens, that is: openness to innovation, strategic thinking, transparency, agility or collaboration with a wide range of stakeholders. We observe some case studies and extract some conclusions of relevant indicators for promotion of innovation and smart city solutions. Also, we analyse the rate of EU non-reimbursable funds absorption of some local public administrations and conclude that it is consistent to their institutional capacity and performance to embrace innovation and competitivity of their respective territories.

Key words: innovation, smart city, strategy, public sector

J.E.L. classification: H83, O31.

1. Introduction

An improved quality of life, a secure and clean environment, predictable decisions are some of the citizens' expectancies from the public administration. Due to the exponential growth of technology and innovative companies all over the world, there is a growing pressure on meeting citizens' needs. Still, despite the increased attention of innovation and smart city solutions in recent years, their adoption in the public sector has been slow.

Main scope of the current paper is to show that public organizations in Romania are on their way of making a big change in their institutional capacity, but there are in their beginnings, with not so many organizations that are truly implementing innovative solutions. Since great economic and social challenges are still ahead of us, we can only hope that best practices and tangible results and implemented projects are going to inspire other organizations to accept the benefits of this new type of change in public sector.

2. Theoretical considerations

As urbanization grows globally, it is closely linked to a set of quality-of-life issues, such as traffic congestion, waste disposal, energy consumption, environmental disruption, rising energy costs and urban resource management. All of these are concerns and issues that city administrations are trying to address. Smart city technologies are an innovative way to address these concerns and ensure sustainable urban development (Kramers, Höjer, Lövehagen, & Wangel, 2014). The development of smart solutions for information and communication technologies (ICT) is a strategy driven not only by the need to enhance of citizens life and expectancies, but also by the desire to streamline administration and services in a systemic way that addresses complex quality of life and societal challenges (Lee, Phaal, & Lee, 2013; Melo, Macedo, & Baptista, 2017).

It is a known fact that local public administrations that implement smart and innovative projects and initiatives ensure above all an adequate administrative environment. In this regard, rules that promote the sharing of information, data and responsibilities between different departments, agencies and programs are essential to promote collaboration and integration both at the managerial level and in the provision of services (Nam and Pardo, 2011; Alawadhi et al., 2012; Glasmeier and Christopherson, 2015). Such interoperability in public administration also requires leadership and coordination to actively improve the value of shared information.

On the other hand, collaboration and integration processes must also be encouraged outside the public administration, especially between this type of organizations and other stakeholders or citizens. In relation to economic actors, establishing public-private partnerships to involve enterprises in the provision of public services (Deakin, 2014; Hajer, 2014) is seen as a viable approach to optimize the limited resources that local authorities have (Paskaleva, 2011). However, to avoid the risk of social exclusion and / or profit creation, stakeholders such as businesses, citizens and other organizations must be included in decision-making and planning processes (Angelidou, 2014; Marsal-Llacuna, 2015). In this sense, it is essential to create collaborative processes that promote the co-production of public services and goods (Paskaleva, 2011). The creation of new (online) communication channels for citizens, discussion platforms and public and social services are some of the tools for involving individuals and groups belonging to a community (Chourabi et al., 2012). Such involvement processes must be supported by a policy that promotes commitment to data disclosure (open data) so as to promote accessibility and transparency (Nam and Pardo, 2011; Chourabi et al., 2012). These in turn will increase the responsibility of public institutions and, therefore, the levels of trust towards them (Alawadhi et al., 2012; Zygiaris, 2013). Moreover, it is known that the processes of empowerment and participation of citizens alleviate social inequalities, thus resulting in an improvement of social inclusion (Paskaleva, 2011). However, there is a risk of deepening existing inequalities, even more so if these processes are not supported by inclusive strategies and interventions that address the digital divide, i.e. the issue of unequal access and use of ICT (Zygiaris, 2013; Angelidou, 2015). Here, interventions aimed at increasing the accessibility of ICT, especially the Internet, are absolutely necessary to reduce socio-economic disadvantages (Paskaleva, 2011). ICT equipment and broadband network access should be made available to citizens free of charge through public access points or other similar arrangements (Zygiaris, 2013).

But neither access nor data availability seems to be in this case enough. Of course, as Angelidou (2014) pointed out, we also postulate that having access is not equivalent to participation, and the availability of data does not necessarily correspond to knowledge. Investments and programs to promote education in the use of ICT, especially for the persons with fewer skills (e.g. the elderly) and disadvantaged social groups (e.g. the unemployed persons) (Wiig, 2015), these are the main actions that can be taken to support the improvement of human and social capital and the avoidance of social disparities (Glaeser and Berry; 2006; Caragliu et al., 2011; Neirotti et al., 2014). Interventions aimed at reducing possible barriers, such as language, culture and disabilities that prevent certain individuals or groups from fully accessing ICT (Nam and Pardo, 2011). Because information technology and cyberspace are not accessible to everyone, it is necessary to complement online and offline interventions, i.e. with traditional tangible services (Nam and Pardo, 2011; Walters, 2011; Angelidou, 2014). This is also true for interventions that do not specifically target low-skilled and disadvantaged groups, but also in general, in the context where direct relationships and physical proximity are important factors for the development of human and social capital (Nam and Pardo, 2011).

Finally, the role of public administrations in defining and implementing smart city solutions requires a common vision, debated and shared by different stakeholders, and this could materialize in a long-term strategy (Nam and Pardo, 2011; Pultrone, 2014; Goh, 2015). The leader represented by a person or department within the public organization is beneficial in promoting this process (Nam and Pardo, 2011). In addition, this long-term strategy must be based on an in-depth analysis of the context of a city in order to match existing resources and needs and to avoid the application and use of ICT in an inappropriate or totally inappropriate way (Hajer, 2014; Pultrone, 2014). In fact, the analysed literature highlights the fact that the strategy and integrative approach that favours the initiation and implementation of smart city solutions vary depending on the context,

because cities vary depending on local institutions, values, priorities, physical and social conditions (Goodspeed, 2015; Kitchin, 2015). Therefore, there is no single paradigm for smart city and innovative development: cultural, social, political, and economic contexts shape the approach and features of a community (Alawadhi et al., 2012; Neirotti et al., 2014). Then, there is clearly a dependence on the effects of a smart city initiative and it seems that previous initiatives also influence the further development of innovative solutions (Marsal-Llacuna, 2015).

To sum up, the primary role of local public administration in the development of smart innovative solutions refers to the creation of new forms of collaboration through the use of ICT so as to encourage the co-production of services and goods in the urban environment. The purpose of smart city governance is to integrate and enhance urban management processes and improve human and social capital, so as to provide better results which in turn conduct to a higher quality of life. The main components in the development of smart city solutions can be summarized at:

- a common strategy with long-term impact, based on the analysis of the strategic vision of urban metabolism and challenges and opportunities that characterize a particular context;
- openness, accessibility and data sharing, as much inside the organisation as outside it as well, so as to encourage collaboration and integration processes and to increase transparency and accountability;
- creating collaborative and participatory processes for the involvement of stakeholders and private citizens in the initiation process, production and delivery of public services and goods based on smart city solutions;
- combining "new" online interventions with "traditional" offline ones, especially in the educational field, to remedy possible uneven results related to the use of ICT and to increase the acceptability of smart solutions in sustainable urban development.

3. Research methodology

The aim of our analysis is to debate on the role of local public authorities in attracting EU funds for financing smart city initiatives and enhance innovation, especially in small and medium-sized cities. Thus, we have started by assessing the role of public administration and noticing the importance of strategic development, using tools such as collaboration, participation and digitalization. Several documents and statistics have been compared to draw up conclusions regarding the absorption of EU funds in Romania for smart city initiatives. At the end, some conclusions were formulated in order to determine Romania as a potential model for sustainable development using smart city solutions and public innovation.

4. Status quo of smart city projects throughout Romania

Some of the results of the current study are based on the exploratory analysis of smart city initiatives in Romania and the analysis of the areas addressed by these initiatives in Romania.

Smart city projects represent innovative initiatives in many cities that belong to the post-communist bloc (Sikora-Fernandez 2018). In Romania, similar to the other Central and Eastern European states, we observe a lack of maturity in smart projects, that is they are not fully integrated or coordinated, although they are meant to represent short-term solutions to some identified urban problems as opposed to development strategies with a significant long-term impact (Borsekova, Nijkamp 2018). Romania is still at the beginning of a long process, with a timid and relatively underdeveloped start of the smart city concept (Vegacomp, 2018). Moreover, it can be seen that the idea of smart city was introduced for the first time in CEE and Romania only in the business environment and only later it is adopted by the local public administration.

A report by the European Organization for Smart Cities states that some of the biggest Romanian cities are truly implementing smart city projects, but smart city concept is developed at an initial stage (Batagan 2012); even important cities, such as Timişoara, Sibiu or Craiova are below the EU average in terms of smart city development (Rotuna et al. 2017). Between years 1999-2012 there were only a few cities in Romania that had started to initiate and develop smart solutions (Iaṣi, Piatra-Neamṭ, Hunedoara, Sinaia). Since 2012, big important cities such as

Bucharest, Sibiu, Craiova, Cluj-Napoca, Brașov or Timișoara, due to their demographic data or industrial potential started to implement more and more smart solutions and integrate them in their urban projects for further development (Batagan 2012).

Currently, the city of Alba Iulia represents the ultimate leader in the implementation of smart projects in Romania with as many as 106 projects implemented not only by the city administration, but by private companies as well. The rank of smart cities in Romania includes Cluj-Napoca with 54 smart initiaves, Timisoara with 26 projects, Arad and Iaşi each with 19 initiatives, Braşov and Sector 4 in Bucharest each with 18 projects, Oradea (17), Sibiu (16) and Piatra Neamţ (15 projects).

We observed that in the first edition of the Vegacomp report which appeared in March 2018 a number of 216 projects and initiatives in Smart City areas were identified in Romania and their estimated value exceeded 30 million Euros, whereas in the second edition of the same report which appeared several months later there are included over 300 Smart City projects. The number of identified Smart City initiatives grew every year until in 2020 Vegacomp report there are approximately 600 Smart City projects with a market value of over 120 million Euros from multiple sources. In our opinion these numbers undoubtedly demonstrate an exponential interest in the concept of Smart City projects in Romania.

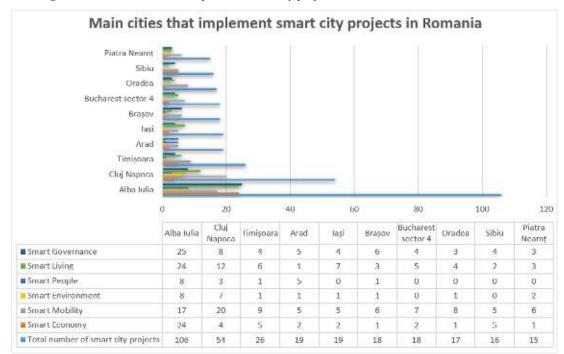


Figure no. 1. Main cities that implement smart city projects in Romania.

Source: Vegacomp (2020).

Regarding the type of smart city solutions adopted in Romania, the old leader is confirmed in 2020, respectively solutions for Smart Mobility. This is of utmost importance in our opinion considering the increasing interest on public safety and citizens' health, reflected also in the field of transport. This vertical is represented by a total of 188 projects in Romania, with over 100 more than in the Vegacomp report issued previously. Smart Governance is also deemed important, with 130 projects. Third place for smart projects in Romania is occupied by Smart Living, with 121 projects. Next in line is Smart Economy, with a total of 84 projects. Smart Environment, having 42 projects and Smart People, with 29 smart projects complete this ranking. The consolidated leadership position show a pending need in Romania in finding suitable solutions to the problem consisting in the lack of mobility infrastructure, accentuated by social distancing rules and the effects of the 2020 pandemic. This aspect renders smart transport as a major priority for the safety of residents not only in Romania but all over the world.

5. Role of European funds in promoting innovation and implementing smart city initiatives in Romania

The European funds available for Romania are being used mainly to implement innovative solutions in accordance with EU policies. Thus, the majority of smart cities were initiated in Romania in close connection with programs financed by the European Union. In particular, the Regional Operational Program was initiated in order to play a key role in the projects developed by cities across Romania to boost smart sustainable development. In our opinion, European Union financing programs have created the opportunity for public administration to increase their financial resources, but they also improved their innovative capacity to implement smart and innovative solutions at high-level quality standards.

Regional Operational Programme 2014-2020 is an Operational Programme that is addressed mainly to public administrations in Romania and its consistence and financial allocation is based on a comprehensive view of the economic and social situation of the Romanian regions. Following this analysis, a series main problems have been identified, such as:

- Research, development and innovation: there is a low transfer of market research results and an extremely low level of innovation within private companies;
- SME: underdeveloped SME sector, which in turn has a negative impact on the competitiveness of regional economies. A few main deficiencies of the SME sector were identified in the national strategic programming documents, such as:
 - o Absence or low presence of entrepreneurial culture and extremely low business density in all Romanian regions;
 - o Few resilience of new companies, that is approx. 2/3 of new private firms disappear from the economic market in the first year;
- Energy efficiency in public infrastructure, including public buildings and residential buildings: big energy consumption;
- Environment: increased level of pollution in urban open spaces;
- Urban development: degraded urban areas, vacant or not properly used areas in Romanian cities;
- Heritage resources: poorly capitalized cultural heritage;
- Tourism: valuable, balanced touristic potential distributed territorially as an alternative for the revitalization of less developed / isolated areas;
- Mobility infrastructure: poor or no accessibility in certain areas of Romania, which results in no competitivity and attractiveness with small level of potential for investments;
- Social and educational infrastructure: undersized educational, health and social services infrastructures impede social inclusion and human capital development;
- Cadastre: cadastral records missing or incomplete, which affects the implementation of socioeconomic policies that govern sustainable development;
- Administrative capacity: there is an ongoing need to strengthen the administrative capacity of public authorities and beneficiaries, which would support relevant and successful projects' implementation.

These aspects have been linked to the strategic directions of action mentioned by the European Commission regarding the financing from the European Structural and Investment Funds, through the European Regional Development Fund in the period 2014-2020:

- Innovation and research;
- Digital agenda;
- Support for small and medium enterprises (SMEs);
- Low carbon economy.

During the current programming period, the counties with the largest number of contracted projects are: Cluj (267), Constanța (180), Bihor (154), Timiş (146) and Argeş (142), and those with the highest value of projects (EU funding) are Cluj (1,743,073,821 lei), Bihor (1,036,340,777 lei), Bistrită-Năsăud (951,079,707 lei) and the Municipality of Bucharest (818,318,099 lei).

Regarding the distribution of projects through ROP 2014-2020 by Romanian municipalities and cities, the situation is as follows:

Table no. 1. Distribution of projects contracted by Romanian municipalities and cities at the end of 2020.

Top main municipalities of the county (The average of the contracted projects is 17 projects.)	Top municipalities (The average of the contracted projects is 5 projects.)	Top cities / towns (The average of the contracted projects is 5 projects.)
Oradea – 39 projects	Hunedoara – 15 projects	Petrila – 17 projects
Timișoara – 33 projects	Dej – 15 projects	Pucioasa – 13 projects
Baia Mare – 32 projects	Orăștie – 14 projects	Buftea – 11 projects
Bistrița – 31 projects	Turda – 11 projects	Uricani – 10 projects
Cluj-Napoca – 31 projects	Carei – 10 projects	Oravița – 9 projects
Galați – 31 projects	Odorheiu-Secuiesc – 10 projects	Beclean – 9 projects
Deva – 26 projects	Slobozia – 9 projects	Balş – 9 projects
Reșița – 25 projects	Târgu Jiu – 9 projects	Negrești Oaș – 8 projects
Craiova – 24 projects	Târgu Secuiesc – 9 projects	Sângeorz-Băi – 8 projects
Zalău – 24 projects	Gheorgheni – 9 projects	Siret – 8 projects

Source: ROREG (2020).

With reference to the value of EU funds contracted by local public administration, situation is illustrated in the next table which reveals the champions of applicants among Romanian local public administrations.

Table no. 2. Distribution of EU funds contracted by Romanian cities at the end of 2020.

Top main municipalities of the county (The average of the total non-reimbursable budget contracted per municipality of county residence at national level is 56.16 million Euros.)	Top municipalities (The average total non-reimbursable budget contracted per municipality is 12.385 million Euros.)	Top cities / towns (The average contracted non-reimbursable budget / city is 5.78 million Euros.)
București – 205,65 mil Euro	Dej – 58,652 mil Euro	Pucioasa – 32,679 mil Euro
Cluj-Napoca – 162,99 mil Euro	Turda – 52,668 mil Euro	Beclean – 29,782 mil Euro
Oradea – 137,21 mil Euro	Făgăraș – 37,886 mil Euro	Eforie – 26,93 mil Euro
Craiova – 98,433 mil Euro	Carei – 29,297 mil Euro	Sîngeorz-Băi – 24,746 mil Euro
Timișoara – 88,326 mil Euro	Orăștie – 28,416 mil Euro	Sinaia – 23,717 mil Euro
Galați – 87,876 mil Euro	Mangalia – 25,712 mil Euro	Siret – 20,656 mil Euro
Reșița – 85,987 mil Euro	Odorheiu Secuiesc – 24,184 mil Euro	Isaccea – 18,694 mil Euro
Iași – 84,519 mil Euro	Bârlad – 23,427 mil Euro	Cugir – 18,234 mil Euro
Baia Mare – 73,062 mil Euro	Curtea de Argeș – 21,96 mil Euro	Oravița – 18,061 mil Euro
Bistrița – 70,087 mil Euro	Moinești – 20,094 mil Euro	Gura Humorului – 17,874 mil Euro

Source: ROREG (2020).

Regarding the thematic fields of contracted projects, the total number of 1070 projects contracted by the municipalities were divided between the following areas:

- Business environment: 0.7% 7 projects;
- Energy efficiency: 42.2% 452 projects;
- Urban mobility: 20% 214 projects;
- Green spaces: 5.5% 59 projects;
- Cultural heritage: 3.6% 38 projects;
- Tourism: 0.7% 7 projects;
- Health: 4% 43 projects;
- Social services: 0.7% 7 projects;
- Marginalized urban communities: 3.5% 37 projects;

• Education: 16.8% - 180 projects;

• Urban regeneration: 2.4% - 37 projects.

62.2% of the total of 1070 contracted projects are in the fields of energy efficiency and urban mobility. In our opinion, these are the fields with the most prolific innovations in the smart city sector. By far, the largest total non-reimbursable budget was contracted by municipalities in the field of urban mobility, i.e. 1.992 million Euros.

The 475 projects contracted by cities or towns were divided between the following areas:

• Business environment: 0.21% - 1 project;

• Energy efficiency: 35.79% - 170 projects;

• Urban mobility: 7.58% - 36 projects;

• Green spaces: 10.32% - 49 projects;

• Cultural heritage: 3.16% - 15 projects;

• Tourism: 7.58% - 31 projects;

• Health: 6.53% - 31 projects;

• Social services: 3.16% - 15 projects;

• Education: 12% - 57 projects;

• Urban regeneration: 14.74% - 70 projects.

50.53% of the total of 475 contracted projects are in the fields of energy efficiency and urban regeneration, also the fields with the highest contracted budget by the local administrations, that is approximately 204 million Euros for urban regeneration and 191 million Euros for energy efficiency.

As we have seen, more developed regions such as the Bucharest-Ilfov Region and the North-West Region of Romania have had several projects in the last years and have implemented more mature initiatives, while the other regions have had fewer initiatives. several contextual projects (especially in response to applications requests through European Union funding programs and we noticed a real lack of a long-term vision on the implementation of the idea of "smart city".

In short, smart city or other innovative projects have been developed mainly in several large cities: Bucharest (capital), Braşov, Baia Mare, Cluj-Napoca, Iaşi or Timisoara mainly with the support of EU funding programmes. Some of the medium-sized cities where such programs have taken place (such as Hunedoara or Alba Iulia) have benefited from contextual programs of the European Union or these cities have been involved in unique initiatives aimed at reviving the tourist potential of historical heritage or cultural. Manika (2020) also found that in the case of smart cities, the European Union's legislative framework on public procurement encourages the implementation of innovation and sets the context for strategic procurement for smart cities.

6. Conclusions

Schipper and Silvius (2018) analysed the characteristics of smart development of sustainable cities and the implications for project management. They said that local public administration could require a centralized system and a comprehensive approach in order to strike the right balance between exploring various services in different areas and intensively exploiting services. As we have seen, smart and innovative projects implemented exclusively by public organizations can help accelerate the adoption of smart solutions from an early stage. In the case of some smart cities, Milenkovic et al. (2017) showed how the role of government in public-private partnership projects is to evaluate and approve detailed execution plans of the concessionaire, while the role of the private partner is to design, build, finance and exploit smart solutions.

The initiatives that were analysed in the Romanian context covered only some dimensions of the concept of "smart city", especially smart transport and ecological mobility, free Wi-Fi and public safety, recycling and lower CO2 emissions, energy savings, e-government, sustainable development and land use, regeneration of small and medium-sized cities and disadvantaged areas, smart buildings, renewable and sustainable energy and smart tourism. We have not been able to identify too many projects or initiatives aimed at accessing health services, especially for vulnerable people or groups. We believe that this field of medical services could be intensively exploited by initiating projects with smart solutions, especially in the context of the COVID-19

pandemic that has affected the entire world and continues to have an impact on all levels. Therefore, we conclude that the idea of "smart city" in Romania is strongly related to improving the country's infrastructure, saving energy and reducing CO2 emissions, which is a relatively restrictive view on the concept of implementing smart city solutions. Still, there are a considerable number of public administrations which, as we have shown in this research, apply for European funding and are successful in increasing their financial resources with impact on their "smartness" and innovativeness. By implementing European funded projects, some local public administrations are increasing their institutional capacity alongside with reaching some quality standards in their procedures and initiatives that were otherwise difficult to achieve.

Romania's case could be a model for other middle-income countries in the European Union, as infrastructure development, including internet-based technologies, is seen as a sign of progress by local authorities. Consequently, smart cities initiatives would not aim to address people's needs, but to improve local economic development and infrastructure. We believe that such issues need to be further analysed in other Eastern European countries and that similar models should be investigated. Any approach to the smart city in Romania, focusing on Internet-based technologies, as a way to increase people's quality of life could be a first step in connecting smart city development strategies to take over good practices and even implement strategies in partnership to ensure the success of these projects and increase the acceptability of smart solutions in the community. Here, Jiménez's (2015) approach, which identifies new models of collaboration, could be important. Such models include collaboration with citizens, which leads smart city communities to grow beyond addressing public-private partnerships. This could be a Quadruple Helix model defined by the public-private-partnership or PPPP, in which citizens have an important say in designing solutions for their city. In our opinion, promoting innovation throughout public sector represents at the moment not only a desirable outcome, but a tangible effect once more and more smart city solutions are being implemented with the support of European funding.

7. Acknowledgement

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8. References

- Alawadhi, S., Aldama-Nalda, A., Chourabi, H., Gil-Garcia, J.R., et al., 2012. Building understanding of smart city initiatives. Lecture Notes in *Computer Science*, 7443: 40-53.
- Angelidou, M., 2014. Smart city policies: a spatial approach. Cities, 41: S3-S11.
- Angelidou, M., 2015. Smart cities: A conjuncture of four forces. Cities, 47: 95-106.
- Batagan, L., 2012. The use of intelligent solutions in Romanian cities. *Informatica Economica*, 16, 37–43.
- Borsekova, K., Nijkamp, P., 2018. Smart cities: A challenge to research and policy analysis. Cities, 78, 1–3.
- Caragliu, A., Del Bo, C., & Nijkamp, P., 2011. Smart cities in Europe. *Journal of Urban Technology*, 18(2), 65-82.
- Chourabi, H., Nam, T., Walker, S., Gil-Garcia, J. R., Mellouli, S., Nahon, K., Scholl, H. J., 2012.
 Understanding smart cities: An integrative framework. Paper presented at the 45th Hawaii International Conference on System Science (HICSS).
- Deakin, M., 2014. Smart cities: the state-of-the-art and governance challenge. *Theoretical Chemistry Accounts*, 1 (1).
- Glaeser, E. L., & Berry, C. R., 2006. Why are smart places getting smarter?. Rappaport Institute/Taubman Center Policy Brief, 2.
- Glasmeier, A. and Christopherson, S., 2015. Thinking about smart cities. *Cambridge Journal of Regions, Economy and Society*, 8: 3-12.
- Goh, K., 2015. Who's smart? Whose city? The sociopolitics of urban intelligence. In *Planning Support Systems and Smart Cities* (pp. 169-187). Springer International Publishing.

- Goodspeed, R., 2015. Smart cities: moving beyond urban cybernetics to tackle wicked problems. *Cambridge Journal of Regions, Economy and Society*, 8: 79-92.
- Hajer, M., 2014. On being smart about cities. Seven considerations for a new urban planning and design. In M. Hajer & T. Dassen (Eds.), Smart about cities – visualising the challenge for 21st century urbanism. Rotterdam, NL.
- Jimenez, C.E., 2015 Smart Cities, open innovation and open government: Towards "Public-Private-People Partnership" (PPPP) Models? In *Proceedings of the 2015 Second International Conference on eDemocracy & eGovernment (ICEDEG)*, Quito, Ecuador, 8–10 April 2015.
- Kitchin, R., 2015. Making sense of smart cities: addressing present shortcomings. *Cambridge Journal of Regions, Economy and Society*, 8: 131-136.
- Kramers, A., Höjer, M., Lövehagen, N., & Wangel, J., 2014. Smart sustainable cities–Exploring ICT solutions for reduced energy use in cities. *Environmental modelling & software*, 56, 52-62.
- Lee, J. H., Phaal, R., & Lee, S.-H., 2013. An integrated service-device-technology roadmap for smart city development. *Technological Forecasting and Social Change*, 80(2), 286-306.
- Manika, S., 2020. Mechanisms for innovative-driven solutions in European smart cities. Smart Cities, 3, 527–540.
- Marsal-Llacuna, M. L., 2015. City indicators on social sustainability as standardization technologies for smarter (citizen-centered) governance of cities. Social Indicators Research: 1-24.
- Melo, S., Macedo, J., & Baptista, P., 2017. Guiding cities to pursue a smart mobility paradigm: An example from vehicle routing guidance and its traffic and operational effects. Research in transportation economics, 65, 24-33.
- Milenkovi'c, M.; Raši'c, M.; Vojkovi'c, G., 2017. Using public private partnership models in smart cities proposal for Croatia. In *Proceedings of the 2017 40th International Convention on Information and Communication Technology, Electronics and Microelectronics (MIPRO)*, Opatija, Croatia, 25–26 May 2017; pp. 1412–1417.
- Nam, T., & Pardo, T. A., 2011. Smart city as urban innovation: Focusing on management, policy, and context. Paper presented at the *Proceedings of the 5th international conference on theory and practice of electronic governance*.
- Neirotti, P., De Marco, A., Cagliano, A.C., Mangano, G., and Scorrano, F., 2014. Current trends in smart city initiatives: Some stylised facts. *Cities*, 38: 25-36.
- Paskaleva, K.A., 2011. The smart city: A nexus for open innovation? *Intelligent Buildings International*, 3 (3): 153-171.
- Pultrone, G., 2014. Partecipazione e governance. Per smart cities più umane [Participation and governance. For human-centred smart cities]. *TeMA Journal of Land Use, Mobility and Environment*, 7 (2): 159-171.
- ROREG, 2020. Analiza sistemului de implementare a POR 2014-2020. [Analysis of implementation system of ROP 2014-2020]. [online]. Available at: https://www.roreg.eu/
- Rotuna, C., Cîrnu, C.E., Smada, D., Gheorghiță, A., 2017. Smart city applications built on big data technologies and secure IoT, *Ecoforum*, 6, 3, 1–9.
- Schipper, R.P.J.R.; Silvius, A.J.G., 2018. Characteristics of smart sustainable city development: Implications for project management. *Smart Cities*, 1, 75–97.
- Sikora-Fernandez, D., 2018. Smarter cities in post-socialist country: example of Poland. *Cities*, 78, 52–59.
- Vegacomp, 2018. Scanning Smart Cities Romania, First report, March 2018, Innovate networks. Redesign business, Vegacomp Consulting, https://vegacomp.ro/wpr/wpcontent/uploads/2018/10/radiografia-smart-city-romania_2018.03.20-en.pdf.
- Vegacomp, 2020. Radiografia smart city în România. [Smart city scan in Romania]. 4th Editions, June 2020. [online]. Available at: https://vegacomp.ro/wpr/wp-content/uploads/2020/06/raport-radiografie-smart-city-romania-iunie-2020 final-1.pdf
- Walters, D., 2011. Smart cities, smart places, smart democracy: Form-based codes, electronic governance and the role of place in making smart cities. *Intelligent Buildings International*, 3 (3): 198-218.
- Wiig, A., 2015. The empty rhetoric of the smart city: from digital inclusion to economic promotion in *Philadelphia Urban Geography*: 1-19.
- Zygiaris, S., 2013. Smart city reference model: Assisting planners to conceptualize the building of smart city innovation ecosystems. *Journal of the Knowledge Economy*, 4 (2): 217-231.

The Influence of Culture on Accounting Disclosure among Islamic Countries

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Abstract

The purpose of the paper is to explore the influence of cultural diversity on accounting disclosure among companies from Islamic countries. The methodology consists in analysing the literature on accounting disclosure and accounting information reported by companies operating in Islamic countries. We used the inductive reasoning, starting from a review on current scientific research over the changes occurred in accounting practices in developing economies. Islamic companies need to disclose clear and accurate financial and nonfinancial information in a trustworthy and reliable manner, while both Shari'ah-receptive investors and regulators care for environmental, social and governance impacts of Islamic investments. Analysing the governance scores, we came to conclude that companies with headquarters in countries that adopted Shari'ah standards as national ones, score higher than companies from countries where international accounting standards are used or in countries where both standards are used.

Key words: accounting, culture, Islam, corporate governance, corporate disclosure **J.E.L. classification:** M41, M14, E42

1. Introduction

The motivation for making this research consists in highlighting some features rising from the influence of culture in the accounting, precisely in accounting disclosure of companies. Aside from the financial situations, rules and calculations, accounting is also about the professional reasoning and taking accounting decisions is influenced by the organizational culture promoted within the company, the accounting system used and the national culture of the state where the company operates.

Accounting practices, disclosure and corporate governance influence each other. Corporate governance leads the direction in accounting to fulfil the objectives of a company while accounting is a measuring instrument of the shareholders wealth and providing relevant and accurate information in real time. Therefore, accounting is a factor influencing the decisional process. Shareholders, as users of the accounting information are interested in the size of their dividends and in the company's capacity of continuing its activity. Not only shareholders are interested of the information, stakeholders too, as customers or potential investors, company's staff, they are all interested in the accounting disclosure, in addition to the financial statements.

The accounting system represents the ensemble of accounting processes, procedures, accounting methods, controls set to store information, to register, clarify, analyse, interpret financial data, and create reports to be used in making managerial decisions.

The differences that occur in practice come firstly from adopting the accounting standards. The International Accounting Standards Board (IASB) and the International Sustainability Standards Board (ISSB) settled the International Financial Reporting Standards (IFRS) that are adopted by most multinationals. The Financial Accounting Standards Board (FASB) provided the Generally accepted accounting principles (GAAP). The Accounting and Auditing Organisation for Islamic Financial Institutions (AAOIFI) elaborated the Islamic Accounting Standards, while the Islamic Financial Services Board (IFSB) outlined guidelines and procedures for preparation of Standards/Guidelines used in the Islamic Capital Market.

2. Theoretical background

Disclosure refers to supplementary information about an entity's financial statements, in the form of clarifications for actions that led to changes in the financial results of the company (Bragg, 2021). Shari'ah is the Islamic religious law controlling religious customs and daily life situations, along with the religious rituals, aiming to offer safety and fairness to people. Shari'ah law provides to the Muslims followers principles and guidelines for living their lives, for making decisions in finances and banking (El-Halaby and Hussainey, 2015; Investopedia, 2021).

Islamic law, Shari'ah, described as the divine code of Muslims, is based on the Qur'an, Sunnah and the explanations and interpretations of experts in Islam, being built on five principles: obligatory duty (*wajib*), recommended (*mandub*), allowed work (halal), the unrecommended thing (makruh), the forbidden thing (haram).

The Islamic accounting system is the perfect model in which religious perceptions are considered in accounting principles. The accounting rules come from Shari'ah. The concept of accounting comes from "Hesab", meaning "calculation", responsible before God. Shari'ah refers to accounting, transparency, trust.

Islamic finance or Shari'ah-complaint concerns the manner of managing money respecting the ethical principles of Islam and applies to savings, borrowings and investing. One main idea of Islamic finance is not considering money a value, but a way to convert products and services that are valuable. Thus, making money out of money is not endorsed, that means, there shouldn't be a price for money, and paying interest (*riba*) is prohibited in Islam. Any economic activity in the Islam must provide justice, fairness, and honesty to all parties, and to ensure their rights and obligations. Companies need to disclose financial and nonfinancial information clearly in a trustworthy and reliable manner. Transparency is key in corporate governance for generating quality information (Narastri, 2019).

Others fundamental ideas in Islamic finance are to not cause harm to others, and it also advocates for partnership. This means that Islamic companies do not invest in alcohol, tobacco, and gambling. Islamic finance encourages wherever possible sharing profits and risks. The Islamic banking system is one based on the equity financing. It is present in more than 75 countries worldwide (Tabash, 2019) and has proven its stability in times of financial struggle and volatility. Islamic banks are expected to include in their business models social responsibility and ethics.

Even though there are many Islamic cultures, there are some constant elements that are accepted by all Muslims, based on the Qur'an and the Sunnah Law, but also several variable elements based on the local traditions of the people. Following, we will proceed to explain the basic principles of Islamic finance or Shari'ah-compliant and the requirements imposed by the Islamic disclosure reporting for Islamic capital market products.

There are three guiding principles in Islamic finance. First one refers to "clear and accurate information", second is about disclosing "sufficient information" and third is about offering "timely information" (Islamic Financial Services Board, 2017).

Table no. 1 Guiding principles of Islamic finance

General principle	Explanation		
Clear and accurate	Information disclosed to stakeholders must be clear, accurate and not		
information	misleading.		
	Investor (and potential investors) commit on the offered information to		
	make their investment decisions. Offering accurate, clear, and not		
	misleading information protect investors interests and the probity of their		
	decision making. Not misleading information refers to not disclosing untrue		
	information or fail to disclose material information		
Sufficient information	Full disclosure of information to be used justly by investors as material for		
	their intention or investing or maintain their investment.		
	Disclosed elements will be justly reachable to investors.		
	The information will be related to Shari'ah compliance.		
Timely information	It is required a timely disclosure of information that is significantly material		
	to an investment decision.		
	The information will be disclosed as soon as possible, depending on their		
	nature and circumstances		

Source: (Islamic Financial Services Board, 2017)

In Islamic countries, it is not possible to discuss a certain influence of culture on accounting because culture is what generated the accounting.

As the pursuit of social justice is essential in Islam, Muslims have a responsibility to care for others and to avoid selfishness and greed (Kamla et al., 2006). It then became one of the most important principles in the development of Islamic accounting.

AAOIFI (2010) considers that the purpose of financial accounting is the link between Islamic financial institutions and their affiliates in the Islamic context, which must:

- 1) to establish the rights and obligations of all stakeholders, in accordance with Shari'ah and the concepts of equity, charity and respect for Islamic business values;
- 2) to help maintain the assets of Islamic banks, their rights and the rights of others in an appropriate manner;
- 3) to enhance the managerial and productive capacity of the Islamic bank and to encourage compliance with established objectives and policies and, above all, respect for Shari'ah, and
- 4) to provide useful information to users to make legitimate decisions in their dealings with Islamic financial institutions.

3. Research methodology

The methodology consists in analysing scientific literature concerning accounting disclosure of companies in the Islamic countries. Using inductive reasoning, we started from a review on current scientific literature over the changes occurred in accounting practices in developing Islamic economies. The research can offer an answer on the question *Does Islamic culture influence sustainability reporting in companies?*

We have chosen for this research companies from 5 Islamic countries, Bahrain, Saudi Arabia, the United Arab Emirates, Indonesia, and Malaysia. From a number of 2276 companies, only 172 reported on Eikon scores on Environment, Social and Governance, and from these, only 100 companies reported scores for the last five years (Y-5).

Foreword we analysed the scores on Environment scores. We drew our conclusions correlating the country of the headquarters with the industry field. Entire data was retrieved from Eikon Reuters platform.

Table no. 2 Sample distribution of companies by country and industry name

Country of headquarters	Malaysia	Indonesia	Saudi	United Arab	Bahrain	Grand
Industry name			Arabia	Emirates		Total
Real Estate Rental,	98	71	13	15		197
Development & Operations						
Construction & Engineering	91	30	2	4	1	128
Food Processing	49	36	9	5	1	100
Banks	11	47	11	19	10	98
Fishing & Farming	38	31	5	1	1	76
IT Services & Consulting	50	6	3			59
Construction Materials	19	11	19	9		58
No. of Islamic companies	72	48	26	23	3	172

Source: data extracted from Eikon Reuters Islamic countries disclosed data on ESG

Companies that score highest for the Environment data are the ones shown in Figure no.1 – banks, Food processing, Real Estate, Coal, Oil Related services, Wireless telecommunication services, Casinos and Gaming, and Healthcare.

Figure no. 1 Number of analysed companies by industry and Environment score (sum) for the 2020 Companies shown by industry name: Banks has noticeably higher 1200 1000 Number of companies 800 600 400 200 Renewable Energy Equipment & Services Property & Casualty Insurance Auto, Truck & Motorcycle Parts Corporate Financial Services Consumer Publishing Heavy Machinery & Vehicles Wireless Telecommunications Services Oil Related Services and Equipment Household Electronics Water & Related Utilities Forest & Wood Products Specialty Chemicals Semiconductors Personal Services Apparel & Accessories Retailers Investment Management & Fund Operators Investment Banking & Brokerage Services Industrial Machinery & Equipment Home Furnishings Phones & Handheld Devices Oil & Gas Exploration and Production Food Retail & Distribution IT Services & Consulting Non-Gold Precious Metals & Minerals Courier, Postal, Air Freight & Land-based Logistics Non-Alcoholic Beverages Auto Vehicles, Parts & Service Retailers Healthcare Facilities & Services Medical Equipment, Supplies & Distribution Construction Materials Industry name

Source: authors analysis on extracted data from Eikon Reuters ESG Islamic finance database

A more precise situation of selected companies by their headquarters is shown in the figure below.

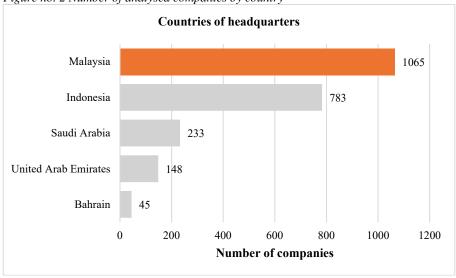


Figure no. 2 Number of analysed companies by country

Source: authors analysis on extracted data from Eikon Reuters ESG Islamic finance database

4. Findings

Bahrain uses international accounting standards, together with international auditing standards and Shari'ah complaint standards. The analysed companies all reported under IFRS.

Kingdom of Saudi Arabia uses the international accounting standards, as well as the United Arab Emirates, while Malaysia and Indonesia both follow the Islamic standards, Shari'ah complaint.

Further data analysing, we can state that companies disclosing most data are from the bankingindustry, real estate, constructions & constructions materials, food processing, banks, fishing & farming, and IT services & consulting industries, most of them having their headquarters in Malaysia and Indonesia. The logic comes from the fact that Malaysia and Indonesia adopted Shari'ah guidelines as national ones (Hassan et al., 2019), while Saudi Arabia and United Arab Emirates use the Accounting Standards and Bahrain uses all standards combined – auditing standards, accounting standards and Shari'ah Standards (GAAP, IFRS, AAOIFI).

According to Shari'ah Standards, companies need to be transparent in their reports, disclosing financial information in a fair and accurate way. Entire society is considered companies stakeholders. Being accountable and responsible in front of all stakeholders and Allah, as final owner. Success and welfare are measured in a moral and ethical way as being accountable in front of Allah, the ultimate authority.

5. Conclusions

Analysing the corporate governance scores in companies that reported on Environment, Social and Governance Eikon database, we can notice that companies with headquarters in countries that adopted Shari'ah standards as national one score higher than companies from countries where international accounting standards are used or in countries where both standards are used.

Islamic finance requires more disclosure aiming to reduce information asymmetries specific in Islamic contracts companies. Moreover, disclosing information would introduce more flexibility and would provide a wider understanding to stakeholders, as supervisors and public over risks and companies' strategies. As other scholars already enhanced, Islamic accounting is characterized by lower uncertainty tolerance and higher commitment to community (Dima et al., 2010; Neifar and Jarboui, 2018) I align on the same opinion (Neifar and Jarboui, 2018) that to improve transparency, companies are encouraged to disclose information at a wider extent, particularly regarding risk.

To answer the research question is required a more profound analysis on companies that report their scores. What we can state is that Islamic culture only cannot influence the accounting disclosure, as most of companies do not report their scores. Only 172 of 2276 companies disclosed information on all sustainability pillars, and not all of them reported data in the last five years.

6. References

- Bragg, S., 2021. Accounting Tools. Account. Tools.
- Dima, S.M., David, D., Păiușan, L., 2010. Specific features of Islamic accounting and cultural paradigm MRPA Paper no 27174, 20.
- El-Halaby, S., Hussainey, K., 2015. The Determinants of Social Accountability Disclosure: Evidence from Islamic Banks around the World. *Int. J. Bus.* 20, 202–224.
- Hassan, M.K., Aliyu, S., Huda, M., Rashid, M., 2019. A survey on Islamic Finance and accounting standards. Borsa Istanb. Rev. 19, S1–S13. https://doi.org/10.1016/j.bir.2019.07.006
- Investopedia [WWW Document], 2021. Investopedia.
 URL https://www.investopedia.com/terms/s/shariah.asp (accessed 1.5.22).
- Islamic Financial Services Board (Ed.), 2017. Guiding Principles On Disclosure Requirements For Islamic Capital Market Products.
- Narastri, M., 2019. 15 Pillars of Islamic Good Corporate Governance for The Corporate Level, in:
 Proceedings of the Proceedings of the 1st Asian Conference on Humanities, Industry, and Technology
 for Society, ACHITS 2019, 30-31 July 2019, Surabaya, Indonesia. Presented at the Proceedings of the
 1st Asian Conference on Humanities, Industry, and Technology for Society, ACHITS 2019, 30-31 July
 2019, Surabaya, Indonesia, EAI, Surabaya, Indonesia. https://doi.org/10.4108/eai.30-7-2019.2287546
- Neifar, S., Jarboui, A., 2018. Corporate governance and operational risk voluntary disclosure: Evidence from Islamic banks. *Res. Int. Bus. Finance* 46, 43–54. https://doi.org/10.1016/j.ribaf.2017.09.006
- Tabash, M.I., 2019. An Empirical Investigation on the Relation between Disclosure and Financial Performance of Islamic Banks in the United Arab Emirates. *J. Asian Finance Econ. Bus.* 6, 27–35. https://doi.org/10.13106/jafeb.2019.vol6.no4.27

Analysis of GDP per Capita Convergence Speed in the Member States of the European Union

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Abstract

The economic convergence of the European Union countries is a result that we expect to be achieved by relying on Solow's neoclassical growth model. This article presents the analysis results of convergence speed in terms of GDP per inhabitant of the European Union individual states. The analyses are carried out on the convergence, in order to highlight the impact of pandemic caused by the COVID 19 compared to the global economic and financial crisis of 2008. The existence of convergence of GDP per capita is confirm by the results obtain in the countries from the sample studied, members of European Union, in the studied period. The speed of convergence, after the 2008 crisis, is significantly reduced, but the emergence of Covid 19 pandemic does not significantly influence the speed of convergence although the results are incipient.

Key words: convergence, GDP per capita, speed of convergence, COVID 19 pandemic, economic and financial crise

J.E.L. classification: E13, O47, C22

1. Introduction

Economic convergence was first presented by Solow's (1956) neoclassical growth model. The concept of convergence in the economy (sometimes known as the catch-up effect) assumes that in the poorest economies, income per capita will tend to grow much faster compared to richer economies. So, all nations' economies should converge in the final phase in terms of per capita income, or some other aggregate economic indicator. Convergence also means that developing countries have the capability to grow faster compared to developed countries. This is a possibility when the countries with small values of GDP will have institutions, technologies and possibilities of production like in developed countries.

With regard to convergence in EU countries, it comes in two forms: nominal convergence and real convergence.

Nominal convergence is a multilateral process and consists in a gradual harmonization of the national institutions and policies of the countries that have joined the European Union with those that are part of the European Union, both in the monetary and financial spheres. There are also criteria for nominal convergence in terms of inflation, long-term interest rates, political deficit, government debt and exchange rate stability.

Real convergence aims at equalizing the standard of living and is defined (in a broader sense by the European Commission) as "economic and social cohesion". There is no well-established convergence criterion, but the structure of the external balance of payments, per capita income, the level of government spending, unemployment, etc. are taken into account.

Also, in the literature of economic growth, the term "convergence" comes in two forms. The first type of convergence, "sigma - convergence", it is a possibility of presenting that is a reduction in the dispersion of income levels in countries' economies. On the other hand, the second type, also called

"beta convergence", occurs when the economies with small values of macroeconomic indicators of results grow at a much faster rate than economies with big values of macroeconomic indicators of results. The fact that a country has small values of macroeconomic indicators of results it is not a certainty that it will obtain catch-up growth. Abramovitz M. (Abramovitz M., 1986) emphasized the need for "social capability" to benefit from catch-up growth. Social capability involves the ability to create new technologies, attract capital and participate in global markets. Abramovitz (1986) also points out that these conditions must characterize an economy before catch-up growth can emerge and thus explain why there are still differences in today's world.

2. Literature review

An analysis of the convergence of GDP per capita in the Member States of the European Union for a long period of 1960-2001 is carried out by Kaitila et al. (2003). Since 1991, the new member states of the European Union have been included in the analysis. The results obtained confirm three convergence periods: the period 1960-1973 marked by sustained convergence under EU 15; the period 1973 to 1986 during which convergence stagnates and the third period from 1986 to 2001 and 1991 to 2001, respectively, for the new 7 entrants to the European Union, with less convergence.

With the help of statistical analysis of the panel data Raileanu, Szeles and Marinescu (2010) study the convergence of GDP in 10 countries in Central and Eastern Europe, in the period 1998-2009. The inclusion of Romania in the study determines an increase in the economic convergence in the studied sample. The results confirm that labour productivity and participation in international trade are the main drivers of convergence.

Zarembova et al. (2012) is studying convergence of GDP per capita in the Central and Eastern European Countries (Hungary, Latvia, Lithuania, Poland, Estonia, Czech Republic, Slovakia and Slovenia) in the period 1995-2011. The results obtained confirm both the presence of sigma convergence and convergence of time series until 2007; after this year the divergence occurs.

Matkowski et al. (2016) extends the study of convergence of GDP per capita, conducted by Zarembova et al. (2012), to 11 countries in Central and Eastern Europe (takes into account Bulgaria, Croatia, Romania). The convergence of this group of countries is related to the old core EU 15, countries. The study concludes that the speed of convergence is higher, before the global economic and financial crisis (2000-2007), compared to the period after the crisis (2007-2015).

More recently Głodowska and Pera (2019) using regression analysis, panel data econometric analysis and cluster analysis, studies the convergence of 10 Central and Eastern European countries compared to the group of EU-15 countries in 1995 - 2016. The results obtained indicate sigma and beta convergence.

3. Research mehodology

Beta convergence allows to determine the convergence rate with which differences between individual countries are eliminated compared to a reference country (benchmark), as measured by a macroeconomic variable, as is the case with GDP per capita.

In estimating the beta convergence, we use two methods that have been widely applied in econometric analyses. A first method that is based on the theoretical framework of economic growth and that has been applied in the analyses carried out by the Young et al. (2008), Butnaru et al. (2017).

$$\frac{1}{T}\ln\left(\frac{y_{i,t_{0}+T}}{y_{i,t_{0}}}\right) = \beta_{0} + \beta_{1}\ln\left(y_{i,t_{0}}\right) + \varepsilon_{i}$$

where:

 y_{i,t_0} - represents the per capita GDP of country i at the time t_0 (reference time);

T - represents the number of periods for which the beta convergence is estimated

 ε_i – error variable in the regression model

If the parameter β_1 estimate is negative and statistically significant, then the result obtained will confirm the existence of the phenomenon of beta convergence. But, if the estimated value of this regression coefficient is positive, it will indicate the existence of a phenomenon of divergence.

The estimation of the convergence speed, which we will note with β , can be obtained based on the relationship (Barro and Sala i Martin, 2003):

$$\beta = -\frac{1}{T}ln(1 - \beta_1 T)$$

The method presented above makes it possible to determine the beta convergence, for a group of countries, within a set time frame. But we can use an alternative method that offers the possibility of determining convergence for each country considered in the analysis. The method was proposed by Adam et al. (2002).

For the estimation of the β convergence, for GDP per capita, the following regression equation is estimated:

$$D_{i,t} = \alpha_i + \beta D_{i,t-1} + \sum_{l=1}^{L} \gamma_l \Delta D_{i,t-l} + \varepsilon_{i,t}$$
(1)

 $D_{i,t}$ - represents the difference between the GDP per capita of a country and the GDP per capita of a reference country (in this study we will choose Germany) determined at time t. It is calculated according to the relationships:

$$D_t = d_t - d_t^B$$

 d_t - represents the change (%) in GDP per capita in the individual economy under consideration d_t^B - represents the change (%) in GDP per capita in the reference economy (benchmark) against which convergence is studied

 Δ - is the difference operator,

 α_i - is the country-specific value under review, and

 $\varepsilon_{i,t}$ - represents the residual variable.

The size of the lag L is determined on the basis of the Schwarz information criterion. The smallest value of this information criterion will indicate the best lag. The estimated value of the parameter β is a direct measure of the rate of convergence of GDP per capita from the economy under analysis to the reference economy considered.

A negative β coefficient indicates the occurrence of the convergence phenomenon. The coefficient β can take values between -2 and 0. The closer the β the coefficient is to -1, the faster the convergence rate. If β =0 or β = -2, it cannot be said that there is convergence. Also, if, β takes values from -1 to 0, this fact indicates a monotonous convergence.

4. Empirical results

The use of the convergence method based on the theory of economic growth involves estimating the next regression equation:

$$\frac{1}{T} \ln \left(\frac{GDP/capita_{i, t_{0}+T}}{GDP/capita_{i, t_{0}}} \right) = \beta_{0} + \beta_{1} \ln \left(GDP/capita_{i, t_{0}} \right) + \varepsilon_{i}$$

In order to identify whether the speed of convergence is influenced by the global economic and financial crisis of 2008 and the pandemic caused by the emergence of COVID 19, several regression models have been estimated:

One model estimates beta convergence throughout the analyzed period considered 1995-2020,

which we will call model 1;
$$\frac{1}{T}\ln\left(\frac{GDP/capita_{i,2020}}{GDP/capita_{i,1995}}\right) = \beta_0 + \beta_1 \ln(GDP/capita_{i,1995}) + \varepsilon_i \tag{1}$$

Another model estimates the beta convergence until the onset of the COVID 19 pandemic that we will call model 2

$$\frac{1}{T}\ln\left(\frac{GDP/capita_{i,2019}}{GDP/capita_{i,1995}}\right) = \beta_0 + \beta_1 \ln\left(GDP/capita_{i,1995}\right) + \varepsilon_i \tag{2}$$

The third and fourth models estimate the convergence before and after the global economic and financial crisis of 2008, which we will call model 3 and model 4.

$$\frac{1}{T}\ln\left(\frac{GDP/capita_{i,2008}}{GDP/capita_{i,1995}}\right) = \beta_0 + \beta_1 \ln\left(GDP/capita_{i,1995}\right) + \varepsilon_i \tag{3}$$

$$\frac{1}{T}\ln\left(\frac{GDP/capita_{i,2019}}{GDP/capita_{i,2009}}\right) = \beta_0 + \beta_1 \ln\left(GDP/capita_{i,2009}\right) + \varepsilon_i \tag{4}$$

The results obtained are presented in the table below:

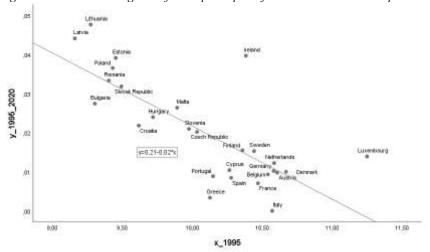
Table no. 1 Estimating of convergence and convergence rate of GDP per capita for the European Union member states

Perioada de estimare a convergenței	$oldsymbol{eta}_0$	$oldsymbol{eta}_1$	β
1995-2020	0.208620 (0.0000)	-0.018693 (0.0000)	-0,0152
1995-2019	0.207290 (0.0000)	-0.018361 (0.0000)	-0,0151
1995-2008	0.263021 (0.0000)	-0.022953(0.0000)	-0,0199
2009-2020	0.180481 (0.0173)	-0.016119 (0.0250)	-0,0147
2009-2019	0.203188 (0.0045)	-0.017733 (0.0086)	-0,0162

Source: Results obtained by the authors

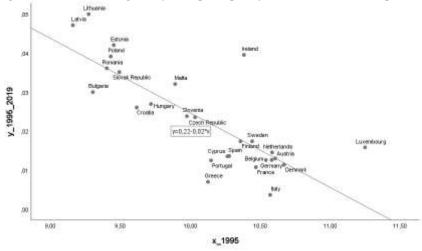
Note: β_0 - represents the constant of the convergence model; β_1 - means the convergence coefficient; β - represents the convergence rate of GDP per capita.

Figure no. 1. Beta convergence of GDP per capita of the EU countries in the period 1995-2020



Source: Results obtained by the authors

Figure no. 2. Beta convergence of GDP per capita of the EU countries in the period 1995-2019



Source: Results obtained by the authors

Highlighting beta convergence through the graphical representations in Figures 1-5 shows us very small differences in convergence in all periods studied. We note, however, that in the period 1995-2008, that is, before the global economic and financial crisis, highlighted in Figure 3, Ireland does not have an extreme value, a situation which is present in all the other periods studied.

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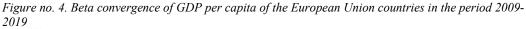
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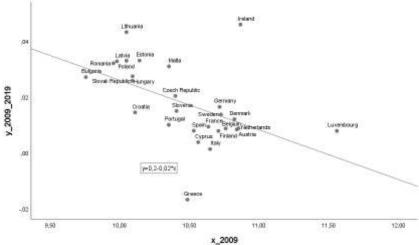
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Figure no. 3. Beta convergence of GDP per capita of the EU countries in the period 1995-2008

Source Results obtained by the authors





Source: Results obtained by the authors

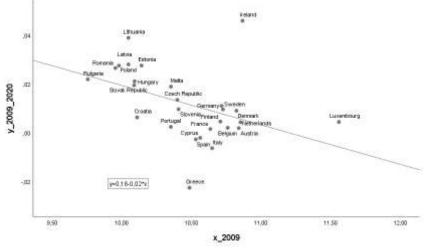


Figure no. 5. Beta of GDP per capita convergence of EU countries in the period 2009-2020

Source: Results obtained by the authors

Table no. 1 shows the results obtained for beta convergence of the Member States of the European Union in different periods of time considered. The first period between 1995-2020 considers the entire time frame for which we have data for GDP per capita for all considered countries, members of the European Union, from the Eurostat database. Regression coefficient β_1 estimated is negative and statistically significant, which confirms the presence of beta convergence.

The second period analyzed, 1995-2019 excludes the year 2020, when the health crisis caused by the appearance of COVID 19 began. The results obtained also confirm the existence of convergence at a speed of convergence almost identical to the previous period studied (the difference is at the fourth decimal place 0.0152 and 0.0151). In order to study the beta convergence and, implicitly, the speed of convergence of the European Union countries before and after the global economic and financial crisis, we considered two distinct periods 1995-2008 and 2009-2020. The pre-crisis convergence speed (0.0199) is higher than convergence speed after the crisis (0.0147) showing the significant effect of the global financial crisis on the beta convergence and the speed of convergence. The global economic and financial crisis has therefore led to a significant decrease in GDP convergence in the European Union.

Also, taking into account the period after the global crisis until the Covid 19 crisis, which implies the exclusion of 2020 from the beta convergence study, it is clearly observed, this time, that the convergence speed has decreased (0.0147 compared to 0.0162), the emerging of the health crisis has led to a reduction in the speed of convergence.

The results of the convergence rate for each European Union country considered in the analysis, towards reference value GDP per capita in Germany, are presented in Table 2. The speed of convergence is estimated, this time, only for two periods: a period between 1995-2008 shows the situation before the global economic and financial crisis and the period between 2009-2020 shows the situation after the global economic and financial crisis. Based on these we can mention that Belgium, Finland and Ireland are the only countries in the studied sample that have maintained their high speed of convergence of GDP per capita after the global economic and financial crisis.

Before the economic crisis Belgium, Austria, Croatia, Finland, Ireland, Italy, Portugal and Slovenia had the closest convergence rate values to -1, which indicates the highest convergence speed. In the same period a monotonous convergence is observed in the case of Bulgaria, Cyprus, Czech Republic, France, Hungary, Poland and Romania.

After the economic and financial crisis, the highest speed of convergence is identified in the case of Belgium, Estonia, Hungary, Luxembourg and Romania.

The results presented confirm that the global economic and financial crisis of 2008 had a significant influence on GDP per capita convergence in the European Union countries.

Table no. 2 Estimating of speed of GDP per capita for each of the EU member states

Country	1995 - 2008	Probability	2009-2020	Probability
Austria	-1.127011	0.0071	-0.974261	0.0206
Belgium	-1.049256	0.0135	-1.086570	0.0151
Bulgaria	-0.644626	0.2421	-0.897304	0.0047
Croatia	-1.224178	0.0368	-0.630517	0.1215
Cyprus	-0.605892	0.0468	-0.590243	0.0659
Czech Republic	-0.349664	0.4099	-0.709936	0.0775
Denmark	-0.538416	0.1240	-1.553403	0.0066
Estonia	-0.805893	0.1077	-0.938420	0.0026
Finland	-1.322665	0.0036	-1.070103	0.0023
France	-0.638076	0.0628	-1.834492	0.0092
Greece	-0.411808	0.2170	-0.861718	0.0255
Hungary	-0.674498	0.1031	-1.134921	0.0154
Ireland	-1.140767	0.0427	-1.078728	0.0090
Italy	-0.383830	0.2245	-0.703740	0.1266
Latvia	-0.223131	0.7038	-0.932410	0.0058
Lithuania	-1.784349	0.0404	-1.999627	0.0013
Luxembourg	-1.767489	0.0161	-1.008518	0.0128
Malta	-1.438807	0.0010	-0.832145	0.0756
Netherlands	-0.716233	0.0668	-0.669376	0.0406
Poland	-0.746333	0.0272	-0.933747	0.0202
Portugal	-1.127246	0.0101	-0.912171	0.0500
Romania	-0.948355	0.0068	-1.089035	0.0001
Slovak Republic	-1.656595	0.0020	-1.265658	0.0011
Slovenia	-1.139799	0.0075	-0.925127	0.0034
Spain	0.207385	0.6865	-0.488272	0.2879

Source: Results obtain by the authors

5. Conclusions

The analysis of the convergence speed of GDP per capita in the European Union countries allows the assessment of an important objective that is to be achieved: economic and social cohesion. The assessment of the convergence speed of GDP per capita of the European Union States was carried out using two methods: a method based on Solow's growth model that allows the overall assessment of the beta convergence (and implicitly of the convergence rate) for the group of countries studied and a method that considered as a reference value the GDP per capita of Germany, which made it possible to assess the convergence of each country considered in the sample.

The results obtained confirm the existence of the GDP beta convergence in the sample of countries considered. Also, the significant impact on the beta of convergence and the speed of convergence, of the global economic and financial crisis and the health crisis are confirmed. A limit to the study is determined by the fact that the available data do not allow us, for the moment, to identify the true impact of the crisis caused by the emerging of Covid 19 that is still present. Therefore, further research based on the analysis of a longer time frame will shed some clarification in this regard.

6. References

- Abramovitz, M. 1986. Catching Up, Forging Ahead, and Falling Behind. *The Journal of Economic History*, 46 (2), pp. 385 406.
- Adam, K., Japelli, T., Menichini, A.M., Padula, M., Pagano, M. 2002. Analyse, Compare, and Apply Alternative Indicators and Monitoring Methodologies to Measure the Evolution of Capital Market Integration in the Eropean Union, European Commission, Directorate General for Internal Affairs. http://www.csef.it/IMG/pdf/eu commission report jan 2002.pdf [Accessed 22 June 2021]
- Barro R.J., Sala i Martin X. 2003. Economic Growth, The MIT Press, Cambridge London.
- Butnaru, Gina I., and Alina P. Haller. 2017. Perspective of Sustainable Rural Tourism in the United Kingdom of Great Britain and Northern Ireland (UK): Comparative Study of β and σ Convergence in the Economic Development Regions, *Sustainability*, 9, no. 4: 525
- Głodowska, A., Pera, B. 2019. On the Relationship between Economic Integration, Business Environment and Real Convergence: The Experience of the CEE Countries, *Economies*, 7, 54.
- Kaitila, V. 2003. Convergence of real GDP per capita in the EU15 area: How do the accession countries fit it?, *ENEPRI Working Paper* No. 25. European Network of Policy Research Institutes, Brussels.
- Matkowski, Z., Próchniak, M. 2007. Economic Convergence Between the CEE-8 and the European Union, Eastern European Economics, 45 (1), pp. 59–76.
- Matkowski, Z., Prochniak, M., Rapacki, R. 2016. Real Income Convergence between Central Eastern and Western Europe: Past, Present, and Prospects, 33rd CIRET (Centre for International Research on Economic Tendency Surveys), Conference on Economic Tendency Surveys and Economic Policy Copenhagen, Denmark, September 14 September 17, 2016, Centre for International Research on Economic Tendency Surveys, Copenhagen
- Raileanu, Szeles, M., Marinescu, N. 2010. Real convergence in the CEECs, euro area accession and the role of Romania, *The European Journal of Comparative Economics*, 7(1), pp. 181-202.
- Solow, R. M., 1956. A contribution to the theory of economic growth. *The Quarterly Journal of Economics*, 70 (1), pp. 65–94.
- Young, A.T., Higgins, M.J., Levy, D. 2008. Sigma convergence versus beta convergence: evidence from U.S. county-level data, *Journal of Money, Credit and Banking*, 40(5), pp. 1083-1093.
- Zarembova, A., Lyocsa, S., Baumöhl, E. 2012. The Real Convergence of CEE Countries: A Study of Real GDP per capita. Ekonomicky časopis/Journal of Economics, 60 (6), pp. 642-656.

The Process of Contemporary Globalization in the Context of the Covid-19 Pandemic

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Abstract

Globalization offers great opportunities for global development, but it also faces some threats. Some countries are integrating into the world economy faster than others, in countries that have managed to integrate, economic growth is faster and poverty is declining. Global problems have always played a particularly important role in the process of globalization.

In this paper entitled "The Process of Contemporary Globalization in the Context of Covid-19" we proposed for analysis the impact of digital technologies in the context of Covid-19 both nationally and globally. Unlike the 2008 crisis, the economic crisis, the source of the current recession was no longer economic, but it affected the economic side, the Covid-19 virus, it affected all countries, regardless of their level of development. The year 2020 will remain a negative benchmark for the general health of the world but also for all economic areas and not only. Starting from this context based on the specialized literature and from the researches that have been done in time and to the predictions made by some researchers and specialists, we have analyzed this aspect of digital technologies.

Key words: globalization, curent context, digital technologies, pandemic

J.E.L. classification: M20, M21

1. Introduction

The impact of digital technologies on social progress highlights the role of so-called disruptive technologies that can be seen as technologies that replace current technology, but we must also keep in mind that this replacement also affects the social organization around displaced technology. The emergence of digital technologies brings changes to social behavioral norms and causes people to adapt their lives and behavior in line with the new technology in their lives.

In the analysis, many elements are outlined that aim directly and pertinently at the approach of the changes and the permanent creativity that must be shown both nationally and globally, permanently anchored in the harsh realities that are constantly changing.

The evolution of technology, with the changes generated over the last decades, has produced a strong effect, felt by us in any specific field or activity of our lives. Therefore, technology has had a transformative, complex, cumulative impact. In the years after the dot.com bubble, the model of digital transformation has undergone a fantastic evolution: the Internet, with an essential role, in some areas even becoming the main medium through which innovations have spread. Through the global Internet network, platform-type business models have emerged that have profoundly redefined the interaction between people, the way in which organizations do business and monetize social interaction or trade various types of value. We can say that, thanks to the Internet and emerging digital platforms, our lives have taken on new dimensions. Thus, digital platforms have redefined power relations, leading at least perceptually to participatory democracy, where every opinion or option expressed in social media has an exponential potential for spread and impact.

Currently, we find a refocus on certain business or social models based on data, information and knowledge. Data has become a source of competitive advantage in almost any area of interest, representing both a reservoir that feeds smart systems and the starting point for future experiences. Therefore, are we more captive or freer in a world in constant digital transformation?

The digitalization of business processes allows companies to develop unique IT capabilities, difficult to imitate. Digital tools and technologies enable manufacturing companies to reduce costs, increase productivity, improve product development, market goods faster, and increase customer focus at various points in the value chain. Companies can use various digital tools and innovations to improve each of the steps taken to generate value, design and innovate products, production, supply chain management, marketing, sales and services.

2. Literature review

For the first time, the term globalization was used by Theodore Levitt, which refers to the technological processes that were the basis for facilitating international transactions but also for the development of economic entities across national borders, especially in the economic field. (Sacalean, 2008, p.86)

The term "globalization" has taken on a strong emotional charge. Globalization is seen by some as a beneficial process - a key to future economic development - as well as inevitable and irreversible. Others view it with hostility, even fear, because they believe that globalization creates greater inequality between different countries, threatens employment conditions and impedes social progress.

Thomas Friedman states in one of his works that globalization is the global integration of financial markets, technologies and nation-states within free capitalist markets, on an unprecedented scale (Friedman, 2012, p.123).

Bauman believes that the name globalization is synonymous with what Jowitt called global disorder, he also defines globalization as an "incantation" that can open all the mysteries of the present and the future. (Zygmunt, 2002, p.69).

James H. Mittelman, professor of international relations and researcher in international political economy, considers that the phenomenon of globalization is a fusion of processes that allow the economy, politics, culture and ideology of one country to penetrate another country (Mittelman, 1996, p.231). For Mittelman, globalization represents the opportunities that arise from the reorganization of government. In short, globalization is about trying to solve a multitude of problems related to both an increasingly borderless economy and a society that demands greater democratization at the national level.

According to Stiglitz, the process of globalization consists in the integration of countries and implicitly of their population between states (Stiglitz, 2003, p.112).

A suggestive definition of globalization comes from the field of sociology and is given by Anthony Giddens, who states that globalization leads to the development of social and economic relations around the world (Giddens, 1991, p.128).

In conclusion, trying to maintain a more objective character of the subject, it can be said that globalization is the sum of all processes aimed at achieving international integration in different sectors such as: economic, military, political, military, socio-cultural and security. Therefore, the process of globalization does not give states much chance to live in isolation. Thus, globalization means domination, freedom and dependence, uniformity and free movement of material goods, people and ideas on a global scale, the whole world being found in every locality and, at the same time, every locality, region or nation being found all over the globe.

Globalization brings new opportunities for development and wealth creation. However, there are divergent opinions and perceptions, especially about its economic and social impact. These divergences correspond, in part, to the diversity of effects that globalization has on the interests and opportunities of different economic and social sectors. Some argue that the current model of globalization has exacerbated the problems of unemployment, inequality and poverty, while others argue that globalization has helped reduce the incidence of these problems. Of course, these problems existed before globalization. But it is clear that in order for globalization to be sustainable both politically and economically, it must contribute to solving it. Therefore, the goal is a globalization that meets the needs of all people.

Despite our desire to maintain control over life, most of what we do in life has been adapted to the technology around us (Norman, 1990, p.165). Therefore, it should come as no surprise that when existing technology evolves or outdated technology becomes obsolete, the emerging phase of new

technology could be seen as a disruptive phase. Disruption occurs when technology affects society (Lyytinen, 2003, p.23).

Examples of disruptive technologies can be found all around us. There is a continuous process of digitization and refurbishment (Klang, 2006, p.65). Photo film is being replaced by digital cameras, floppy disks are being replaced by flash drives, DVDs are being replaced by VHS players. The emergence of these new technologies brings visible social and economic effects to a greater or lesser degree.

The emergence of disruptive technologies brings changes to social behavioral norms and causes people to adapt their lives and behavior to the new technology in their lives (Schwartz, 1983, p.95).

In recent work, the concept of disruptive is used to explain organizational change and innovation. Undoubtedly, the most popular use of the term disruptive technology was presented by Clayton M. Christensen in his book The Innovator's Dilemma. It defines disruptive technology as a new technological innovation (of the product or service type) that will eventually remove the dominant technology that exists in the market sector (Clayton, 1997, p.123).

As companies adapt, they also change their business models, improving current technology and developing new technological innovations will undoubtedly transform the way new businesses are set up. For small and medium-sized enterprises, the technology will allow significant leaps in terms of innovation, efficiency and competitiveness. Rapid adaptation will be essential, among the most important innovative technologies that will change our way of life and the way we do business are counted.

Artificial intelligence (AI). It is so similar to human intelligence that it cannot be distinguished, it is more difficult to develop, but that does not mean impossible. As technology progresses, we will encounter smart cars and smart services. Artificial intelligence refers primarily to processes and functionalities for thinking and analyzing extraordinary data rather than to a particular format or function. The purpose of artificial intelligence is to greatly enhance human capabilities and contribution, making artificial intelligence a valuable asset for any business (Tegmarc, 2016, p.18).

The use of artificial intelligence already has a major impact on the population, leading to the disappearance of many jobs. Estimates show that in the next ten years, in China, artificial intelligence and automation will lead to the replacement of 100 million workers in various fields.

Research on artificial intelligence indicates that by 2025, trades such as translator or commercial seller will disappear completely, and by 2060 it is estimated that artificial intelligence and automation will be able to perform any task (Drum, 2018, p.8).

Scientists and various personalities such as Elon Musk, Steve Wozniak, Stephen Hawking and Bill Gates have expressed concern about the continued development of artificial intelligence. In a factory, this new technology can help keep equipment in good working order. Smart equipment has the ability to send alerts about maintenance work to be performed or automate tasks.

3. Research methodology

The main purpose of the article is to show what the main role that digitalization plays in the process of globalization and what important changes the Covid-19 Pandemic has brought internationally.

In order to carry out this study, scientific articles were analyzed to better understand the essence of globalization, but also a large number of Council of Europe reports, statistical reports of the institutions to highlight the role of digitalization.

4. Findings

The Covid-19 pandemic brings some changes in the way consumers and businesses behave, so the way of working remotely is increasingly encouraged by technical and non-technological companies, but airlines are affected by the restrictions of travel, the supply mode is disrupted both nationally and globally, and retail stores were left at the beginning of the pandemic without some products. These changes that occurred during the short-term pandemic represent direct responses to this crisis, can be recognized as a global crisis and will continue in the long term, creating a digital

change, and becoming the basis of events that will shape business and business mode for decades to come.

The impact of the COVID 19 Pandemic must be seen in three dimensions: firstly biologically, secondly psychologically and last but not least economically.

In terms of biological impact, it has grown rapidly, especially on the elderly. The psychological impact can be seen in stock markets around the world, where investors are unsure of the future, as information on the spread of Covid-19 and its impact on global productivity is, at best, incomplete. The psychological impact on the global population is also noticeable by the low morale generated by increased isolation, low human contact and limiting the freedom to travel.

The economic impact was significant, in the short term, the imbalance was noticed in supply-demand, the supply of essential products was disrupted and the demand for various products and services decreased, the Covid-19 Pandemic would have major effects on global GDP.

Long-term innovation and changes in trends will take place as consumers and businesses try to normalize the impact on the psychological and economic dimensions. The absolute condition being the diminution of the biological impact. The pandemic brings new categories of businesses and activities to the market, thus becoming practically an accelerator of innovation, forcing companies to digitize processes and allowing other types of digital services to enter the market.

Regarding the negative impact, it can be stated that we can talk about the following directions: the impossibility to visit the clients; sales fall significantly; inability to resume production.

If we look at the positive impact of the COVID-19 Pandemic, we can say that: over long distances, the collaboration work of the corporate capacity has been improved; Recognition by all employees of the value of digital transformation and information technology; Developing online marketing capacity.

Technology and technology companies will become stronger and more dominant in the post-pandemic world, as there was a time when business leaders were critical of the technology of their companies, the way telework works. With the evolution of digital companies, there will be more interactions with videoconferencing customers than on-site. A series of digital transformation efforts will take place, starting with the creation of new online accounts, the implementation of new communication strategies and tools adapted to current needs. Of course, with these transformations, digital identity verification will be an important factor in an organization's strategy, as companies need to verify that a person's digital identity matches their physical identity when conducting online activities.

The Covid-19 pandemic is a severe shock to the global economy, as well as to the thousands of people and families it has affected, so companies need to ensure that the health and safety of its workers, partners and suppliers is at the forefront. In the long run, the pandemic increases the need to re-evaluate the company's processes, employee relations, customer relations and the way leaders react. The coronavirus crisis is an extreme but emblematic call of an era whose very essence is change and movement. During this period, there are a series of questions that leaders must answer, as follows: What do you do to maintain your business? How do you run the company to keep people? How do you manage your budget? What tools should you use to be as effective as possible? How is the communication with the employees carried out?

In this situation, leaders must be aware that their role is very important, so the company's representative, the manager can contribute in a real way to stabilizing the social climate, through decisions made at the organization level, by communicating with employees, by correct information and by supporting necessary actions. Working from home is not a difficult transition, but this transition, coupled with the stress caused by COVID-19, could create a state of insecurity at first, until everyone adapts.

What does the future hold for us? No one knows the answer to this, but it is important to keep professional integrity and safety first. It is a time when management, human resources and finance departments need consistency in decision-making and approach so that they can get through these trials.

The pandemic has accelerated the adoption of technology in all areas of activity, with an impact on our lives. Technology will change the lives of all of us for the better, and Human Intelligence will coexist with Artificial Intelligence. Technology will play a key role in increasing stability, post-Covid. The technology will allow the recovery of pre-pandemic stability and cope with the

consequences of the transformations that will follow in the coming years. The vast majority of businesses have adapted to the initial shock of the pandemic and have begun to invest in technologies that can help them transform, to explore new business models. While some businesses have focused on return on investment, they have now begun to move to technology-based transformation where the cloud is increasingly being considered.

Neologisms such as virtual banking, onboarding, mobile banking, internet banking, e-wallet, loan origination, are becoming a habit at the moment (https://www.imf.org). Also, in addition to the digital approach of the clientele, technology, artificial intelligence (machine learning, robotic process analysis, data mining) take place more and more often in daily activity, so processes that until recently were performed manually, repetitively, with the involvement of time and money resources, very generous, but with low profitability, are replaced by technology. Digital technologies enable companies to gain competitive advantage, improve their services and products, and expand their markets.

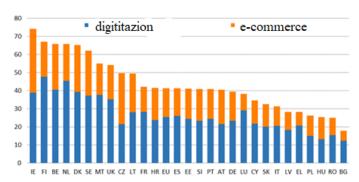
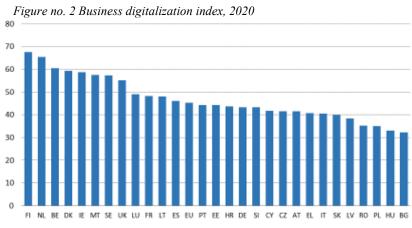


Figure no. 1 Integration of digital technologies

Source: DESI 2020, European Commission

The best performing countries are Ireland, Finland, Belgium, the Netherlands, Denmark and Sweden, with over 55%. In contrast, countries such as Bulgaria, Romania, Hungary, Poland, Greece and Latvia lag behind below 35% (Fig. 1).



Source: DESI 2020, European Commission

The leading countries in the "digitalization of business" (fig. No.2) are Finland, the Netherlands and Belgium, with over 60%. Bulgaria, Hungary, Poland, Romania, Latvia and Slovakia lag behind in the adoption of e-business technologies, with less than 40%.

With regard to e-commerce, Figure 3 shows that Ireland, the Czech Republic, Denmark, Belgium and Sweden are the leading countries in e-commerce, with over 60%. Ireland leads in all three ecommerce indicators (ie SMEs selling online, e-commerce turnover and selling online cross-border). Bulgaria, Greece, Luxembourg and Romania perform the worst under 25%.

100 90 80 70 60 50 40 30

Figure no. 3 E-commerce index, 2020

20 10 Source: DESI 2020, European Commission

Prior to the outbreak of COVID-19, one in five EU companies made online sales. In a short period of time (2013-2019), the number of companies that sold online increased by 3.5%, and the turnover of these companies from online sales increased by 4.5% (fig. no 3).



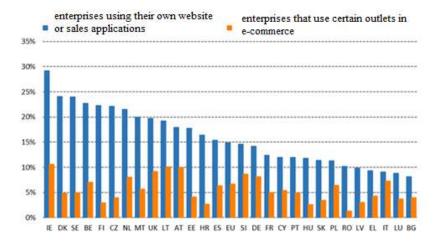
Figure no. 4 Trends in e-commerce

Source: Eurostat, Community survey on ICT usage and e-commerce in enterprises

Before the pandemic, 15% of businesses were active in Europe's online markets using their own website or online sales applications. The market leader with 29% is Ireland, followed by Denmark and Sweden (each with 24%).

Almost 7% of all EU businesses sold through e-commerce markets used by several companies to market their products. Online platforms can facilitate growth, allowing sellers to access new markets and reach new customers at lower costs.

Figure no. 5 Online sales



Source: Eurostat, Community survey on ICT usage and e-commerce in enterprises

Digital transformation is essential for the highly competitive business environment, in order to create value and address the critical aspects of their development. At the same time, it must be borne in mind that the digital transformation affects almost all aspects of the economy and society, with an impact on the way business is conducted and the delivery of value to customers. This has implications not only for operational activity, but also influences work culture and customer relations.

11% of businesses sell through a website or application to other businesses or governments, slightly more than in 2013 (9%).

large enterprises (>250) SMEs (10-249) all enterprises 30% 25% 20% 20% 19% 19% 19% 20% 17% 15% 12% 11% 11% 11% 11% 10% 9% 10% 10% 11% 12% 11% 11% 11% 0% 2013 2014 2015 2016 2017 2018

Figure no. 6 Businesses that use B2B and B2G commerce

Source: Eurostat, Community survey on ICT usage and e-commerce in enterprises

The need for the digital transformation of Romania and of the countries of Central and Eastern Europe in general has been invoked for a long time, as a measure to recover the development gap compared to the other EU member states and to increase the standard of living. Romania is strongly integrated in terms of international trade and foreign investment with Western European countries. The COVID-19 epidemic and the social isolation measures that are becoming mandatory to limit the spread of the virus have accentuated the need for digitization. Moreover, it no longer comes as a result of the measures taken by the state, being imposed in a top-down logic, but is considered necessary and, as a result, requested by companies and at the individual level, in a bottom-up approach.up.

Integrating and managing a wide range of advanced tools into a networked digital ecosystem enables companies to make significant gains in creating value for the various players involved at all levels of the system. Even if the real and potential benefits are high, only a limited number of companies have already made rapid progress by developing the high digital capabilities needed to gain a competitive advantage.

5. Conclusions

The evolution of technology, with the changes generated over the last decades, has produced a strong effect, felt by us in any specific field or activity of our lives. Therefore, technology has had a transformative, complex, cumulative impact. In the years after the dot.com bubble, the digital transformation model has undergone a fantastic evolution, with the Internet playing a key role, in some areas becoming the main medium through which innovations have spread. Through the global Internet network, platform-type business models have emerged that have profoundly redefined the interaction between people, the way in which organizations do business and monetize social interaction or trade various types of value. We can say that, thanks to the Internet and emerging digital platforms, our lives have taken on new dimensions. Thus, digital platforms have redefined power relations, leading at least perceptually to participatory democracy, where every opinion or option expressed in social media has an exponential potential for spread and impact.

Currently, we find a refocus on certain business or social models based on data, information and knowledge. Data has become a source of competitive advantage in almost any area of interest, representing both a reservoir that feeds smart systems and the starting point for future experiences.

The digitalization of business processes allows companies to develop unique IT capabilities, difficult to imitate. Digital tools and technologies enable manufacturing companies to reduce costs, increase productivity, improve product development, market goods faster, and increase customer focus at various points in the value chain. Companies can use various digital tools and innovations to improve each of the steps taken to generate value, design and innovate products, production, supply chain management, marketing, sales and services.

People are harder to please, but the use and application of advanced technologies, measures that must take into account the well-being of all and not punctual opinions, life can take a different form, it can have a different context.

The whole world, including our country, has collapsed into a collapse whose limits are not yet well known, which makes us live in an insecure world. It is premature to see how the world will look next.

6. References

- Clayton, M.C., 1997, *The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail,* Cambridge, Mass: Harvard Business School Press, p.123
- Drum, K., 2018, You Will Lose Your Job to a Robot—and Sooner, Mother Jones, https://www.motherjones.com/politics/2017/10/you-will-lose-your-job-to-a-robot-and-sooner-than-you-think/, p.8
- Friedman, T., 2012, The Lexus and the Olive Tree: Understanding Globalization, USA, p.123
- Giddens, A., 1991, Sociology, Cambridge, Polity Press, p.128
- Klang, M. 2006, Disruptive Technology Effects of Technology Regulation on Democracy, Gothenburg Studies in Informatics, Report 36, Sweden, p.65
- Lyytinen, K. and Rose G., 2003, Disruptive Information System Innovation: The Case of Internet Computing, Information Systems Journal, p.23
- Mittelman, J.M., 1996, Globalization: Critical Reflections, Lynne Rienner Publishers, p.231
- Norman, D., 1990, The Design of Everyday Things, New York: Doubleday, p.165
- Săcălean L., 2008, *Globalism și globalizare (Globalism and globalization,)*, Ed. Universității Petru Maior, Tg Mureș, p.86
- Schwartz, C.R., 1993, More Work for Mother: The Ironies of Household Technology from the Open Hearth to the Microwave, New York: Basic Books, p.95
- Stiglitz, J. E., 2003, Globalizarea. Speranțe și deziluzii (Globalization. Hopes and disappointments), Editura Economica, p.112

- Tegmarc, M., 2016, *Benefits & Risks of Artificial Intelligence*, Future of Life Institute, https://futureoflife.org/background/benefits-risks-of-artificial-intelligence, p.18
- Zygmunt, Z., 2002, Globalizarea și efectele ei sociale (Globalization and its social effects), Editura Antet, București, p.96
- https://ec.europa.eu/eurostat/
- https://ec.europa.eu/info
- https://ec.europa.eu/info/sites/info/files/reflection-paper-globalisation_ro.pdf
- https://www.imf.org/external/np/exr/ib/2000/esl/041200s.html
- https://www.oecd.org/employment/Employment-Outlook-2019-Highlight-EN.pdf

The Influence of the Covid-19 Pandemic on Online Acquisitions

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Abstract

In contemporary conditions, economic digitization creates a particularly strong impact on all states of the world. The contribution of national economies to international economic and financial exchanges is an important source and condition for achieving sustainable economic growth. Regardless of how they are achieved, these external economic exchanges have acquired considerable importance of economic growth at national, regional or company level. The technological changes that have taken place in the last decade have made a dramatic change in the climate of a business. The emergence and development of the multilateral trading system has been achieved gradually, under the influence of historical realities. production and movement of goods, the international division of labor and the international specialization in production, but also the technical-scientific revolution. In this paper, aspects are outlined that directly and pertinently aim at how the members of the society adapt to the changes that take place at a global level and first of all with the introduction of new technologies.

Key words: e-commerce, internet, online shopping, pandemic Covid-19

J.E.L. classification: M15, M21

1. Introduction

E-commerce has become the norm in almost all industries globally. The rapid growth and acceptance by companies has aroused the interest of individuals and organizations in creating a new business model. The Internet has become, without question, the main tool for the proper conduct of electronic activities. He has changed the way information is shared with business partners, the way communication is done and the way it is bought and sold. The accelerated spread of fast broadband internet connections has been the key factor in fueling the growth of e-commerce so the internet and e-commerce technologies are transforming the entire economy and changing business models, revenue streams, customer bases and supply chains. By implementing new technologies, work could be improved so dangerous or difficult tasks can be automated, people can choose where and when to work freely, resulting in a better work-life balance, work environments can become safer and healthier.

2. Literature review

Historically, the Internet has been the only one that has spread at a much faster pace than previous generations of communication technologies (Jaffe, 2006, p.23).

As mentioned (Popescu, 2014, p.123) the Internet is a key factor in the growth of e-commerce by developing business and supply models. Companies have taken a proactive approach and are focusing on new ways of doing business (Lubbe-Johanna, 2019, p.13)

New technologies and a more integrated, globalized world offer many opportunities to create new jobs and improve the quality of existing jobs. Both technological change and globalization create jobs by lowering the price of goods and services, increasing their quality and, therefore, increasing consumer demand (Levy, 2019, p.6). It also creates completely new jobs, such as big data managers, robotics engineers, social media managers and drone operators, jobs that did not exist in the past.

E-commerce has become the norm in almost every industry globally. The rapid growth and acceptance by companies has aroused the interest of individuals and organizations in creating a new business model. According to the Organization for Economic Co-operation and Development, e-commerce is "the conduct of business through the Internet, with the sale of goods and services taking place offline or online." (Serbu, 2004, p.39)

As a result of the accelerated progress in the scientific and technological field, the rapid development of all types of economic activity was an impetus for the emergence of new forms and methods of its implementation. E-commerce has not only become a huge thing in itself, but it has done so in a way that will change any type of business, both offline and online. (Fan, M., et al., 2016, p.104-109).

Despite the many opportunities, there are also some concerns about the future of the labor market. There are concerns that the world of work is moving towards a future of mass technical unemployment, precarious work, low-bargaining workers and significant skills shortages as the population ages rapidly (Petrov, 2021, p.65).

E-commerce has become the norm in almost every industry globally. The rapid growth and acceptance by companies has aroused the interest of individuals and organizations in creating a new business model. In order to facilitate the development of electronic commerce, a series of regulations (standards and norms) have been developed for both the national and international level: obligations of the parties, online contracts, protection of personal information, consumer protection, property rights intellectual property, transaction security, online payments, secure delivery of products to the end user, authentication, digital signature and specific connection protocols. However, the regulations and laws adopted so far cannot fully ensure the protection of intellectual property rights. (Fan, M., et al., 2016, p.104-109)

As robots, artificial intelligence and digital transformation enter the labor market more and more, and economies around the world become more integrated, many people are concerned about the impact of these mega-trends on the number of jobs (Drum, 2017, p.12).

The digital economy and e-commerce companies have created their own business game by changing the rules everywhere and for everyone. Numerous typologies have been developed to describe and analyze the structure and components of this economy. For example, Thomasz and Wu based the digital economy classified business into three areas of application: basic, narrow and broad (Tomasz, 2018, p.163), (Wu, 2019, p.37).

3. Research methodology

The main purpose of the article is to show the effects of the Covid-19 Pandemic on online shopping, on e-commerce.

To carry out this study, a series of Council of Europe reports, statistical reports of the institutions, were analyzed. The data were collected from the National Institute of Statistics and compiled for later use.

4. Findings

Romania, located at the intersection of three major markets: the CIS, the EU and the Middle East, has experienced significant economic growth, becoming one of the most attractive and dynamic markets in Europe.

In recent years, due to the increasing computerization of both the population and businesses, electronic sales have become practically a way of life (https://insse.ro/cms/en). Thus, according to a study conducted by INSSE, in 2020 internet users (16-74 years old) reached a number of approximately 12.8 million people, a rather small increase compared to the previous year.

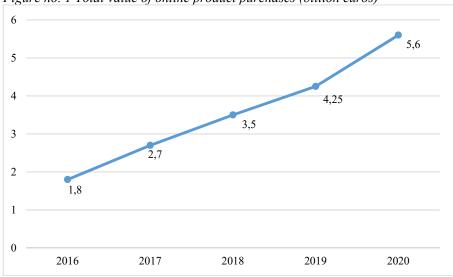
Table no.1.Evolution of the internet

	Years	People who have	People who use or	Number of
		never used the	have ever used the	people - Internet
		internet (%)	internet (%)	users
TOTAL	2016	30,3	69,7	10,6 milion
PEOPLE	2017	26,5	73,5	11,0 milion
	2018	21,2	78,8	11,7 milion
	2019	17,7	82,3	12,1 milion
	2020	8,7	91,3	12,8 milin

Source: https://insse.ro/cms/en

Despite the fact that most Romanians still prefer classic shopping, the e-commerce market has grown, growing from year to year, registering values as high as possible.

Figure no. 1 Total value of online product purchases (billion euros)



Source: https://ec.europa.eu/eurostat

According to the graph, in recent years there has been a huge increase in online purchases, reaching 5.6 billion euros in 2020, compared to 1.8 billion in 2016. This phenomenon is called the fast market. Romania is among the EU countries with the highest annual growth rate of online commerce, which shows the significant potential for development of the e-commerce sector in the future, in a market that has not yet reached the maturity level of other northern countries and Western Europe.

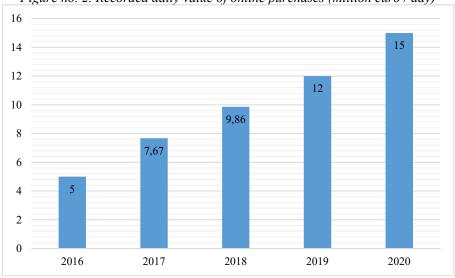


Figure no. 2. Recorded daily value of online purchases (million euro / day)

Source: https://ec.europa.eu/eurostat

Romanians who choose online shopping, identify the following aspects as the main benefits of e-commerce: time saving; easy comparison of products; much richer product offer than offline; lower prices than in traditional trade; the convenience of online shopping.

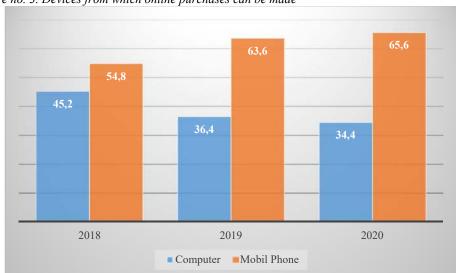


Figure no. 3. Devices from which online purchases can be made

Source: https://ec.europa.eu/eurostat

Table no. 2. Payment methods for online shopping

	Repayment	Online with	Online bay
		card bancar	bank transfer
2016	90%	6-7%	3%
2017	85%	12-14%	1-3%
2018	83%	15%	2%
2019	80%	18%	2%
2020	62%	37%	1%

Source: https://digital-strategy.ec.europa.eu/en/policies/desi

The "cash on delivery" method, although preferred by Romanian customers, decreases from year to year with small percentages reaching from 90% in 2016 to 80% in 2019. In 2020, the percentage of online payments by bank card increased by 17 % compared to the previous year and over 30% compared to 2016.

As well as sales, the number of online stores in Romania increases significantly every year: at the end of 2019 over 20,000 merchants in Romania from approx. 35,000 "add to cart" websites sold actively online, compared to about 15,000 in 2018, 7,000 in 2017 and 5,000 in 2016. (https://www.flandersinvestmentandtrade.com/export/sites/trade/files/market_studies/E-commerce%20market%20in%20Romania%202020.pdf)

As expected, the COVID-19 pandemic had a huge impact on the market and people's shopping habits, turning it into an opportunity for online shopping.

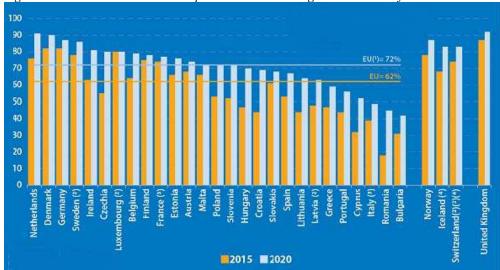


Figure no. 4. Internet users who have purchased or ordered goods or services for their own use.

Source: https://ec.europa.eu/eurostat

Against the background of this pandemic and the closure of physical stores in the 27 Member States of the European Union, e-commerce has grown massively. Over the last year, 89% of Europeans aged 16-74 have used the Internet, and 72% of them have bought products / services online (4% more than in 2019 and 10% more than in 2015). The most passionate about online shopping are the Nordics: the Netherlands (91%), Denmark (90%), Germany (87%), Sweden (86%) and Ireland (81%), Romania ranking last together with Italy and Bulgaria. The most common online purchases were: clothing / footwear and accessories (ordered by 64% of online shoppers), movies / series (32%), food delivered at home (29%), furniture, home and garden accessories (28%)), cosmetics, wellness or beauty products (27%), books, magazines, printed newspapers (27%), computers, tablets, mobile phones and accessories (26%), music on streaming / download services (26%).

Analyzing the situation in Romania, the e-commerce market recorded transactions worth 4.25 billion euros in 2019, increasing in 2020 to 6 billion euros. Specifically, the value of 5.6 billion euros refers to all transactions generated in Romania both to domestic merchants and to online stores outside the country and represents strictly the e-tail segment, ie physical products (tangible) that were purchased via the internet. Excluded from this category are services, payment of utility bills, digital content or airline tickets, vacations and travel, hotel reservations, tickets to shows or various events.

Returning to e-commerce, a very large number of Romanians overcame in 2020 the fear of ordering online and discovered how simple, convenient and safe it is, while others, already familiar with online shopping, have expanded the product categories you order. Once you win, these customers will stay true to this way of shopping.

Apart from purchases in Romania, a third of Romanians prefer to shop online from stores in China (27%), EU member states (23%) and the USA (4%).

The way Romanians chose to pay for online purchases was another change in behavior, the incidence of online card payments increasing by 17% compared to 2019. The highest increase was recorded in the first part of the year until May (15%) following a growth period of only 2% between May and October 2020.

The reviews were also very important in 2020, because based on them, the stores won the trust of customers, generating more sales; 55% of respondents to the study said they would not buy from an online store where they cannot find opinions, and 75% are actively looking for reviews. When it comes to trust 37% trust reviews from independent store sites, 36% in Social Media reviews and 27% in testimonials displayed by online stores on their own pages.

5. Conclusions

It can be said that the simultaneous development of the use of computers and telecommunications, has led to an explosive growth in the Internet in a relatively short time, and has created specific technologies, directly influencing economic and social activities. Information technology driven by the rapid transmission of information and the need for storage, has revolutionized global trade. The evolution of e-commerce is directly proportional to the increase in the number of Internet users and accessibility. Today, the term e-commerce has become synonymous with increasing profits. In terms of impact on companies, this type of trade offers opportunities to redefine markets, create new markets and organize business. It has developed extensively lately with the help of these conditions, aiming at revolutionizing business, as well as boosting international trade, mauring during the Covid-19 pandemic.

Due to the special situation we have not yet gone through, the year 2020 can not remain in people's memory only as the year of the pandemic, but also as the year in which e-commerce aimed at the turning point, migrating to the main trend from the niche segment. Romania was ranked as one of the largest e-commerce industries in Southeast Europe, following the events, which is supported by figures. 600 million euros were registered in 2013, reaching 1.4 billion euros in 2015. Since 2019, Romania has seen an extraordinary increase in this type of trade. This trend continued in the following years, being mainly determined by the pandemic. According to statistics, the e-commerce market in Romania grew by over 30% in 2020, exceeding the 5 billion euro threshold. The fastest growth of online sales in 2020 in Romania, was registered in the category of food and beverages with a percentage of + 115%. Significant changes were registered among online shoppers, the number increasing by 13%, and the average value spent online increased by approximately 41%, in 2020 compared to 2019.

Certainly this segment of trade will have a stable future, continuing to develop as the statistics show, causing an increasing concern on the part of the players in the field, in order to attract and retain customers, despite the new competitors on the market, such as and diversification.

6. References

- Drum, K., 2017, You Will Lose Your Job to a Robot—and Sooner, Mother Jones, https://www.motherjones.com/politics/2017/10/you-will-lose-your-job-to-a-robot-and-sooner-than-you-think/, p.12
- Fan, M., J., Heikkila, J., Zhang, H., 2016, *Internetworked World*, 15th Workshop on e- Business, WeB 2016, Revised Selected Papers p.104-109
- Jaffe, A.B. and Lerner J. and Stern, S., 2006, *Innovation Policy and the Economy*, Volume 6, http://www.nber.org/books/jaff06-1, http://www.nber.org/books/jaff06-1, http://www.nber.org/chapters/c0208, p.23
- Levy, A., 2019, *The 7 Largest E-Commerce Companies in the World*, https://www.fool.com/investing/the-7-largest-e-commerce-companies-in-the-world.aspx, p.6
- Lubbe-Johanna S.M.V.H, 2019, The Economic and Social Impacts of E-commerce, p.13
- Petrov, C., 2021, 91+ Blockchain Statistics: Understand Blockchain in 2021, Techjury, https://techjury.net/blog/blockchain-statistics/, p.65
- Popescu, M., Totu, I., 2014, Improving technology transfer effectiveness of university research results.
 In: Industrial Engineering Journal, Vol. 5, No 2 (42), p. 123
- Şerbu R., 2004, Comerțul electronic (E-commerce), Editura Continent, p.39

- Tomasz M., Gervautz, M., 2018, *Virtual reality*, *History*, *Applications*, *Technology and Future*, Institute of Computer Graphics, Vienna, p.163
- Wu X., and Gereffi, G. 2019, *International Business in the Information and Digital Age*, Volume 13, p.37
- https://digital-strategy.ec.europa.eu/en/policies/desi
- https://ec.europa.eu/eurostat/
- https://aws.amazon.com/?nc2=h_lg
- https://insse.ro/cms/en,
- <a href="https://www.flandersinvestmentandtrade.com/export/sites/trade/files/market_studies/E-commerce%20market%20in%20Romania%202020.pdfhttps://ecommercedb.com/en/markets/ro/all_pdf.ac.in/marke

Rethinking the Welfare State in Global Economy Affected by Pandemic Crisis

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Abstract

The coronavirus crisis has highlighted the flaws in European Welfare States, which can spur their renewal and reinforcement after decades of cuts and privatisation. This pandemic has allowed us to rethink the importance of Weflare State, but also to consider health and well-being as a key driver of new development.

The purpose of this paper is to highlight the role of the Welfare State in the new social and economic context caused by the pandemic and to show the inability of the private health care system to cope with the extremely large number of patients.

Key words: Welafe State, Crisis, COVID-19, pandemic

J.E.L. classification: I31, I38

1. Introduction

In this paper, we identify the importance of the Welfare State in the economies of all countries, as a result of the need to act urgently and effectively, in the fight against coronavirus. The inability of the private health care system to cope with a serious pandemic, such as the one we are going through today, calls for urgent state intervention to support all citizens.

Before the onset of this crisis, the trend was towards liberalization and limitation of State spending and intervention. With the return of the role of the State to face the consequences of the economic crisis, linked to the coronavirus and with the victory of the Social Democrats in the elections in Germany, the question of the reinforcement of the Welfare State is addressed. The rule of the famous 3% deficit of the GDP in the Member States of the European Union, a decision taken to face the economic crisis linked to the health crisis of Covid-19, is a proof that we expect a return of Welfare State to Europe.

2. Theoretical background

States have intervened in support of the people since ancient times, the pre-Christian period, when mankind faced famine, war, various natural disasters. if we are referring to written laws on state involvement in order to provide welfare to the population, then we must remember about The Poor Law of 1601 in England and the introduction of the social security model during Chancellor Bismarck's time, in Germany, in the 1880's.

World War II was the culmination of the most violent and destructive period in modern European history. European countries have implemented all necessary measures to increase the well-being of the population and to limit the negative consequences of capitalism on the economies of these countries. As John Ruggie noted after World War II, political forces "took control of the state in an attempt to impose social control over market forces," establishing "legitimate social purposes in the exercise of which state power was intended to be engaged in the domestic economy". Thus, the countries no longer aimed only at economic development, but also at protecting the people. The expression "Welfare State" was established in 1942, with the appearance of the "Beveridge Report."

In other words, the "good" state was no longer considered the state that had only the status of guardian and was not involved in the economy, but the state that defends the interests of the people and is involved in economic activity.

In Europe, Welfare State appeared and expanded, first in the UK with the important reforms introduced after WWII by the Labor Party. Many European countries have adopted the Welfare State, which even represents the heart of European social model. State involvement is currently being achieved in many areas, from social protection to education and health. (Lucchese and Pianta, 2020).

Very few studies have been conducted on the subject proposed in this paper. O'Donoghue C., Sologon, D.M. and Kyzyma I., in "Novel Welfare State Responses in Times of Crises: COVID-19 Crisis vs. the Great Recession", analyze the impact of social measures taken in Ireland after the recession and during the pandemic. Tzagkarakis, S., Pappas, I., and Kritas, D. in "Covid-19 has Brought Back the Necessity of the Welfare State: The Greek Case" examine how the Welfare State in Greece intervened during the pandemic and the implications of this intervention on the economy and the population.

3. Research methodology

We use the analysis as a research method, regarding the studies carried out so far on the implications of the measures adopted by the state in the field of health, during the pandemic. We also call for a comparative analysis, between the efficiency of the public health system and the private one.

The main objective of our qualitative research is to understand the growing role of the Welfare State in the new conditions caused by the pandemic. This method helps us in explaining the analyzed phenomenon. Is an observation-based research method that we used to understand a phenomenon in depth without using numerical data for it.

4. The need for reinforcement of Welfare State

The collapse in our economic system, revealed by the tragedy of the coronavirus, is unfortunately simple: if an infected person is able to infect several others in a few days and if the disease has a significant lethality, as is the case with Covid-19, no economic production system can survive without a powerful public service.

Impossible to maintain the anthropological fiction of individualism of the neoliberal economy and the policies of dismantling the public service: the negative externality induced by the virus radically challenges the imagination of the start-up nation shaped by the voluntarism of atomized autoentrepreneurs.

One person's health depends on everyone's health! We are all beings of interdependent relationships. Without an efficient public service that allows everyone to be treated, there is no longer a viable capitalist productive system in times of coronavirus. And, therefore, no more in the decades to come. There is a need for the "reinforcement of the Welfare State".

It is useful to come back to this graph: without protective measures, the "peak" of cases of serious infections (in red) exceeds the horizontal line of reception capacities of the hospital system; with protective measures, the "smoothing" of the curve (blue) keeps it below the line:

Intended impact of social distancing measures

1 Delay epidemic
2 Reduce height of epidemic peak
Without measures

→ Time since first case

Source: Centres for Disease Control and Prevention

Figure no. 1 Intended impact of social distancing measures

The Economist

 $Source: The \ Economist, https://www.economist.com/briefing/2020/02/29/covid-19-is-now-in-50-countries-and-things-will-get-worse$

Two types of public intervention can be delimited with the help of this graph and, through them, two conceptions of the State. What distinguishes them is their relationship to the horizontal line, that does not fall from the sky: it is the result of public health policies carried out over the preceding decades: the capacity of public hospital system.

The neoliberal state, captured by the private interests of a few, regards the horizontal curve as a "natural", intangible. It does not have "magic money" to finance its hospitals, increase their reception capacity, save lives. It then only has to try to act on the only red curve, by practicing, or not, various variants of confinement. Eventually, he wasted public money in search of a hypothetical "zero" patient, an impossible task when several hundred thousand people are already infected.

The Welfare State, a state that cares about its citizens, is the one that not only tries to smooth the infection curve, but which acts on the horizontal line, invests in its public hospital, buys respiratory assistance machines and frees public funds to set up urgently "rural" intensive care services. It is imperative that the Welafe State return. Is the only way to save "the productive tool" but, above all, to save lives!

5. The need for rethink Welfare State

Undoubtedly, the public health system has the most important role in managing the situation created by the coronavirus. As Stiglitz (2020) explained, "When we are faced with a crisis such as an epidemic or a hurricane, we turn to the government because we know that such events require collective action". The reason why the public health system is so important during this period is closely related to the fact that it is based not on market logic, profit making, but on providing the best medical services to all people without discrimination.

Since the 1980s, neoliberal measures have reduced the role of the Welfare State, through privatizations and public budget deficits, with direct effects on hospital activity. Hospitals have reduced their capacity and lost the efficiency and universality of the medical services provided to the population. This created a corridor for the establishment of private, luxurious and profitable hospitals, which determined that the social services in the field of health to be offered on a market close to the goods market in terms of functionality. The belief that the free market is the only one able to provide efficiency has led to the limitation of public health services.

However, the crisis we are going through has shown the great mistake that has been made in approaching and supporting the public health system. It has proved impossible to provide prompt treatment to all coronavirus-infected patients in hospital emergency rooms. The private health care system is unable to cope with the pandemic. The only system that can offer solutions to the current pandemic is the public one, being a universal system, free or much cheaper than the private one, coordinated, with good specialists.

The Welfare State has, more than ever, an important role to play in supporting people around the world through social and health measures, to limit the spread of coronavirus, help treat patients and support all those affected by the crisis.

The Welfare State should be the core of a new model of economic and social progress and environmental sustainability (Lucchese and Pianta, 2020). The role of the Welfare State in all countries should be strengthened in order to ensure all necessary measures for sustainable economic development, an increase in living standards and a rapid and efficient approach and solution to pandemics.

6. Conclusions

All public policies must be rethought so that at their center is the assurance of human health. This can only be done by strengthening the role of the Welfare State. The inability of the private health care system to cope with the pandemic has only proved to us the need for state involvement in the efficient provision of social services, the need to expand spending on health and the protection of people. In addition to the current pandemic, there are serious health problems facing humanity. Pollution-related illnesses and deaths, linked to the poor quality of the environment represents problems that more and more countries are facing. The "deaths of despair" are an important social problem in many countries, including United States, people are affected in large numbers due to suicide, alcohol, opioid and drug use (Deaton & Case, 2020; Baldwin, 2020).

People's health and well-being should be the focus of decision-makers at the state level, regardless of the area. No country, regardless of its degree of development, can stop a pandemic, just as no human being, no matter how many resources it has, cannot save itself from a relentless disease. The solution comes only through the involvement of the state, through the increase of expenditures and investments in the field of health, social protection, research, education and environmental protection. By involving each of us. By understanding that human health is more important than anything else.

7. References

- Bachman, D., 2020, COVID-19 Could Affect the Global Economy in Three Main Ways, https://www2.deloitte.com/us/en/insights/economy/covid-19/economic-impact-covid-19.html
- Boubakary B., 2020, La Crise Pandemique de Coronavirus (COVID-19): vers une Emergence d'un Nouveau Modele de Developpement?, Revue Économie, Gestion et Société, special numero 2020, pp 34-35
- Deaton, A. & Case, A., 2020, Deaths of Despair and the Future of Capitalism, Princeton University Press
- Lucchese, M. & Pianta, M., 2020, *The Coming Coronavirus Crisis: What Can We Learn?*. Intereconomics, vol. 55, number 2, pp. 98–104
- Economist, 2020, Covid-19 is now in 50 countries, and things will get worse, https://www.economist.com/briefing/2020/02/29/covid-19-is-now-in-50-countries-and-things-will-get-worse

- O'Donoghue C., Sologon, D.M. and Kyzyma I., 2021, Novel Welfare State Responses in Times of Crises: COVID-19 Crisis vs. the Great Recession", http://www.ecineq.org/milano/WP/ECINEQ2021-573.pdf
- Ruggie J.R., 1982, International Regimes, Transactions, and Change: Embedded Liberalism in the Postwar Economic Order, International Organization, vol. 36, No. 2, pp. 379-415
- Stiglitz J, 2020, Conquering the Great Divide, https://www.imf.org/external/pubs/ft/fandd/2020/09/COVID19-and-global-inequality-josephstiglitz.htm
- Tzagkarakis, S., Pappas, I., & Kritas, D., 2020, Covid-19 has Brought Back the Necessity of the Welfare State: The Greek Case. HAPSc Policy Briefs Series, 1(1), pp 67-73

Composites in Wind Energy

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Abstract

The purpose of the present paper is to highlight the importance of using composite materials in the wind energy industry. As alternative renewable energy becomes a growing problem worldwide, investments in technologies such as solar and wind energy are growing significantly. Wind energy is a key source of renewable energy that produces electricity with very little greenhouse gas production. It is based on very high capacity wind turbines, which must be powerful and efficient. This means longer and lighter blades that are still stiff enough to withstand strong wind conditions. Carbon and glass fibre casting technology enables the production of long, light and powerful wind turbine blades, enabling a higher degree of efficiency in what has become a stable worldwide energy supply framework. The future use of these technologies will allow the development of higher capacity wind turbines, leading to a higher degree of adoption of wind power generation worldwide.

Key words: composite materials, wind energy, wind turbine, blades, reliability, manufacturing **J.E.L. classification:** O3

1. Introduction

Wind energy consists of obtaining electricity with the help of wind intensity, by using wind turbines that capture the energy that will later be transformed into electricity.

Due to ecological considerations and those regarding the growing demand for electricity, efficiency of production costs, as well as the need to supply electricity in locations where it is not possible to supply from the local distribution network, the development of alternative energy sources has made significant progress in recent years.

The wind energy industry is much less expensive and more sustainable in terms of protecting natural resources than traditional methods of obtaining energy. Furthermore, with the help of wind energy, even isolated areas can be supplied with electricity. In order to catch a larger amount of wind energy and for a higher efficiency, wind turbines are organized in wind farms, i.e. several wind turbines located in one area. Given this reason, rural areas are preferred, with smaller and fewer buildings. However, there is the advantage that the land surrounding the turbines is not affected by the operation of the turbines so it can be used without too many complications for agriculture or as pasture for animals.

But wind energy is not a new concept. In its primitive form, the power of the wind has been exploited since antiquity. In this sense we refer to the ships that sailed on Nill, in the 4th century BC. Or the first windmill built in the 7th century in ancient Persia to grind wheat.

Currently the main fuel, which is the basis of electricity generation, is oil, a fuel that according to data provided by the International Energy Agency will be depleted in about 40 years, gas in about 60 years and coal resources in about 200 years. Thus, the development and implementation of energy generation solutions using other natural resources, but using inexhaustible resources became more and more acute: tidal force, wind force, solar energy, etc.

Wind energy, renewable energy, is the transformation of the mechanical force of the wind, with specific installations for obtaining electricity. The wind is formed due to differences in temperature and atmospheric pressure between two geographical areas. Thus, since the earth's surface is spherical, the temperature and pressure are not evenly distributed; the wind intensity differs from one region to

another. Two aspects are especially important when you want to install a wind farm to generate wind energy: direction and speed. But these parameters vary in time and space.

In the following chapters we will present the importance of using composite materials in wind energy.

2. Theoretical background

The specialized literature in the field of composite materials is very extensive. The same can be said for the wind energy industry.

Composite materials have always existed in nature. The best known example is bone which is made from hydroxyapatite which is a hard material and collagen, a protein and a soft and elastic material at the same time. Another well-known example in nature is wood, made of long cellulose fibers that are polymers and a very weak substance called lignin. Composite materials have been used since ancient times even though the notion of composite material was not known at the time.

The extraordinary progress of technology allows us, nowadays, to be able to manufacture parts for many fields that can be both very large and very light, very thin but very rigid and, in addition, very resistant to various natural factors such as wind, rain, frost, extremely high temperature and more. It is known that the composite materials are new materials obtained from two or more materials. The composite materials obtained have very important and very useful properties that the constituent materials, taken separately, do not have. - Mishnaevsky, L., Composite Materials in Wind Energy Technology, Encyclopedia of Life Support Systems.

The need to produce energy from other sources also arose not only to reduce costs and protect natural resources, but also from the desire to bring electricity in hard to reach areas. Wind turbines have been produced to capture as much wind energy as possible. Wind turbines reach a height of over sixty to one hundred meters. It is even expected that the tallest wind turbine will be two hundred and forty two meters high. At the highest point of the turbine is the rotor. The rotor blades are the one that capture the wind energy. The blades must be very large and very rigid to be most effective. At the same time, it is very important that their weight is very low. Traditional materials that are rigid, if very large, are very heavy. In addition it must withstand all natural factors, considering that it operates outside. Last but not list it is desirable that their life span be long. Due to research and technological progress there are materials with such properties. Composite materials as fiberglass and carbon fibre are composite materials that meet all of the conditions listed above. - Mishnaevsky, L., Branner, K., Nørgaard Petersen, H., Beauson, J., McGugan, M., and Sørensen, B.F., 2017, Materials for Wind Turbine Blades: An Overview, US National Library of Medicine National Institutes of Health.

The objective of the present paper is to underline the importance of the use of composite materials in wind energy industry. - Marsh, G., 2014, Greater role for composites in wind energy, Elsevier, pp.20-24.

3. Research methodology

In order to write this paper, a study of the specialized literature and a research of the various parameters involved in the wind energy industry were conducted. Thus, official information and data are provided, according to the specialized studies performed, in order to show the enormous importance of composite materials in the wind energy industry; also, the economic and financial impact and even the influence in sustainable development can be observed.

In this article is presented a list of advantages of using composite materials in wind energy, like the fact that they are very environmentally friendly and there is no waste at the transformation of wind power into energy. Also the costs are reduced compared to the costs of the traditional method.

At the same time, a list of disadvantages is discussed. The biggest disadvantage is the variation of the wind intensity and the duration of the wind intensity. There is also a visual disadvantage, unfortunately. A solution to this problem is to set up offshore wind farms but higher installation and maintenance costs are at stake here.

Than the main criteria for setting up a wind farm is analyzed. First of all, the geographical position is important, but other factors must also be taken into account.

The equipment and the element of a wind turbine are described.

Given the way in which wind energy is captured to be transformed into electricity, analyzing the existing data and information, this article presents the extraordinary role that composite materials have in the wind energy industry.

4. Findings

The advantages of using wind energy:

- One hundred percent environmentally friendly source with zero emissions of greenhouse gases and substances harmful to the environment: the reason the transformation of wind power into energy does not require combustion, as is the case with the conversion of fossil fuel power into electricity.
- Zero waste resulting from the transformation of wind power into electricity.
- Reduced costs for electricity production: in addition to the production costs, the costs of operation, use and maintenance of the facilities are minimal compared to the costs involved in the production of energy from fossil fuels.
- It does not require radical transformations of the environment adjacent to the operating space: the immediately surrounding area can be exploited for agricultural purposes without danger of contamination or disturbance of turbine operation.

The disadvantages of using wind energy:

Indeed, there is a downside to the medal, i.e. the disadvantages, but they are strictly related to the natural conditions. It is about: the variability in time and space of the wind intensity; unpleasant appearance, due to the installation of wind farms. To transform the mechanical power of the wind into electricity, wind farms are used, i.e. several wind turbines installed and connected to the National Energy System. If the maximum wind speed is exceeded, there is a risk of damaging the turbine blades. The wind turbine is an installation that transforms mechanical energy into electrical energy (wind energy). Depending on the needs, the turbines can be individual, with domestic use and without being connected to the distribution network, or grouped in the form of wind farms.

In general, wind turbines are not installed individually, but in wind farms connected to a distribution network. There is the possibility of installing offshore wind farms to avoid the unpleasant aspect. Although the costs would be much higher in all respects, much more offshore wind farms are expected to operate in the future than onshore ones.

The main criteria for the location of wind farms:

- Geographical position, relief and altitude.
- Wind intensity, direction and constant (regularity).
- Economic criteria: the price of the site, i.e. the land.
- Visual impact compared to nearby buildings.
- Distance from the distribution network.

Wind turbine equipment:

- An active system (hydra): ensures the maximization of the use of wind power by changing the angle of incidence of the blades, as well as for the protection of the system in case the wind power exceeds the nominal average value. Thus, if the average nominal value exceeds a threshold that can cause damage to the installations, the blades automatically switch to flag mode.
- Passive system (aerodynamic): in the case of this system the turbine blades are fixed in relation to the turbine hub. Thus, when the critical speed is reached, the blades are gradually unlocked.
- Mixed (active stall): this type of system is equipped with a mechanical brake, which locks the blades in case the wind speed exceeds the critical value.

The elements that make up a wind turbine:

- Blades: their design is essential in the development and production of wind energy. Blades or energy caps are made of a mixture of fiberglass and composite materials. They capture wind energy and transfer it to the rotor, which converts it into wind energy. The diameter of the blades

and their length depend on the installed power of the installation. The most efficient turbines are equipped with 3 blades, which, unlike single or double blades, reduce the vibration, noise and overload of the rotor.

- The platform or housing protects the generator from the inside.
- Pillar of support and resistance of the assembly.
- The foundation that ensures the mechanical resistance of the installation.

In view of the above it is clear that the materials from which the rotor blades are made are of the utmost importance. They must be simultaneously very rigid, very large, very light and very easy to maintain. The rotor blades must also be reliable. The operating period must be long but the production process must not be overly complex or expensive.

The biggest challenge of the moment is probably stopping for a longer period of time, with thinner turbine blades hitting the towers when they are deflected by the wind load. Rigid composite materials are needed, which must be even lighter.

The carbon fiber is a composite more than three times stronger than the glass and even more rigid than the glass. The carbon fiber is a composite which can be used for obtaining longer blades while maintaining the necessary rigidity. The lighter blades also have the advantage of lighter loads at the base.

But at list for now, carbon fiber is not the solution at a large scale, primarily because of the very high costs. Carbon fiber costs twenty times more than fiberglass, or even more. Another important factor is how well the manufacturing process that the manufacturer uses with carbon fiber fits.

Also, another very important aspect is recycling. It was pointed out earlier that composite materials used in wind energy also influence sustainable development. But, in sustainable development, the complete circuit of a material is taken into account, from its production to its decommissioning and its effective disposal. Probably the biggest disadvantage of wind turbine rotor blades is that they are very difficult to recycle. The rotor blades are replaced due to malfunctions or for operational reasons in order to be replaced with much larger blades that are much more efficient. One good thing is that old, non-recyclable wind turbine blades are being revived as bridges in Ireland. More exactly, the decommissioned wind turbine blades are now being used for bridge construction in Ireland, as an innovative solution to this recycling problem. Due to the high hardness of the material the replacement of the steel in light constructions such as pedestrian bridges with rotor blades was considered. A similar option was adopted by the British high-speed rail constructor, Skanska Costain Strabag. The company worked with the National

Center for Composites to replace steel with retracted turbine blades. In this way, wind turbine blades become an important element in the construction industry. The focus is also on the fiberglass. There is a method to recover fiber. More specifically, a team of researchers at Strathclyde University in Glasgow has discovered a system to recycle certain compounds used in wind turbine blades, which were previously impossible to recycle, which is why thousands of obsolete blades were buried annually, write CNBC and Electrek.co. The university had developed a process of recovery under the influence of thermal effect and treatment of the fiberglass from polymeric composites found in wind turbines, in order to obtain almost perfect quality glass fiber. This composite used in wind turbine blades is considered a difficult material to recycle and usually goes straight to the landfill. If implemented globally, it is estimated that the technology will meet almost half of the global demand for fiberglass.

5. Conclusions

In conclusion, the materials from which wind turbine blades are made evolve shoulder to shoulder with the manufacturing process: a higher efficiency is useless if it involves excessive effort and additional manufacturing costs. As installations become larger and rotors grow in size to match, the materials from which wind turbine blades are made must keep pace with various aspects, production conditions and new materials. Nowadays, rotor blades need to be as wide and rigid as possible in order to collect as much wind energy as possible. At the same time, the blades should be lighter in relation with their size and their maintenance should not be too complex.

Recycling is also becoming more and more important, an aspect that the current materials for wind turbine blades are struggling with, but studies and research offer more and more opportunities to reduce the negative effects.

The conclusion is always drawn to the cost per kWh. Any excess power produced must be determined in relation to the production, installation and maintenance process, and any material that does not help reduce the cost of the life of a turbine must be disposed of mercilessly.

6. Acknowledgement

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7. References

- Brahim, A., 2012, Ecomoulding of Composite Wind Turbine Blades Using Green Manufacturing RTM Process, Hindawi
- Eker, B., Akdogan, A., Vardar, A., 2006, *Using of Composite Material in Wind Turbine Blades*, Journal of Applied Sciences, pp. 2917-2921
- Marsh, G., 2014, Greater role for composites in wind energy, Elsevier, pp.20-24
- Mishnaevsky, L., <u>Branner</u>, K., <u>Nørgaard Petersen</u>, H., Beauson, J., McGugan, M., and Sørensen, B.F., 2017, *Materials for Wind Turbine Blades: An Overview*, US National Library of Medicine National Institutes of Health
- Mishnaevsky, L., Composite Materials in Wind Energy Technology, Encyclopedia of Life Support Systems
- 2020, bp Statistical Review of World Energy, pp. 55-59, [online] Available at https://www.bp.com/content/dam/bp/business-sites/en/global/corporate/pdfs/energy-economics/statistical-review/bp-stats-review-2020-full-report.pdf [Accessed 10 November 2021]
- 2021, Wind energy generation vs. installed capacity, [online] Available at https://ourworldindata.org/grapher/wind-energy-consumption-vs-installed-wind-energy-capacity [Accessed 15 November 2021]
- 2021, Wind Power Analysis, [online] Available at: https://www.iea.org/reports/wind-power [Accessed 17 November 2021]
- 2021, Expansion of wind and solar power too slow to stop climate change, Science Daily [online]
 Available at: https://www.sciencedaily.com/releases/2021/10/211014141949.htm [Accessed 19
 November 2021]
- 2021, Offshore Wind Outlook 2019 Analysis", [online] Available at: https://www.iea.org/reports/offshore-wind-outlook-2019 [Accessed 22 November 2021]
- Szarka, J., 2007, Wind Power in Europe: Politics, Business and Society, Springer, p.176
- Holttinen, H., 2006, Design and Operation of Power Systems with Large Amounts of Wind Power, Adelaide, Australia
- https://en.wikipedia.org/wiki/Wind power
- https://destepti.ro/energia-eoliana
- www.renewableenergyworld.com
- https://economedia.ro/turbinele-eoliene-vechi-care-nu-pot-fi-reciclate-renasc-ca-poduri-in-irlanda.html#.YcyRb8lBzDc
- https://economedia.ro/o-universitate-din-scotia-a-descoperit-o-tehnica-pentru-a-recicla-palele-turbinelor-eoliene.html#.YcyKlclBzDc

The Challenge of Language and Cultural Identity in Post-Colonial Africa's National Economic Development

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Abstract

Except for a few, most countries particularly African nations that transited from colonial rule to self-governance have imbibed and internalized the language and culture of the colonial overloads across the broad spectrum and tapestry of their social, political, and economic fabric to the neglect and detriment of their indigenous traditional way of life. It is a common sight in most post-colonial African countries who hinges or pattern their developmental goals (efforts) and way of life in similitude to that of their former colonizers; in terms of mannerism, dressing, demeanor, belief system; jettisoning everything indigenous, and even language. This has created a hybrid, and what we called 'the engrafted' cultures. This has created a kind of a dilemma (lacuna) for the Post-colonial leaders who are juxtaposed and hamstrung in-between traditional cultural norms and values, as well as linguistic forms (ties) of their forefathers vis-à-vis that of the previous colonial overlords. This paper is an attempt at exploring the challenges and dilemmas confronting many African nations in trying to forge (shape) a national consciousness and identity through language, culture in post-colonial African nations.

Key words: language, culture, identity, post-colonial, challenges, dilemma, development **J.E.L. classification**: F5, F54, I125, Z1, Z13

1. Introduction

The linguistic and cultural identity of most African countries has been a subject of debate by mainly African, African-American, and Caribbean writers of African descent(Franz Fanon) in which the liberals, intellectuals; have over the years highlighted and reflected in their writings, songs, paintings and symposia held in various fora aimed at forging a unique identity that is iconic and truly indigenous, taking cognizance of the African traditional kinship ties, value systems, language and cultural norms as an integral part of this projects. This was collaborated by the Kenya writer Ngugi Wa Thiongo (cf. Kachuru 20026, 76) in one of his writings when he affirm that many African countries during and after colonial rule are being categorized/identified not only by outsiders but also by themselves on the basis of the colonialist languages of Anglophone, Francophone, lusophone and Hispanophone which they speak. For Ngugi specifically harped on the domineering and emasculating effect of the English language on African thought-process and its cultural embodiment of every western.

It is important to emphasize that the importance of the traditional value systems, particularly languages, which have undergone transformation substantially at various stages of development during the colonial period. This was so because the colonial authorities, who were, hitherto, apprehensive of the possibility of real or imaginary that the indigenous leaders could hide behind this facade for nationalist agitations and activities that are inimical to the colonialist interest, treated them with disdain.

While many African nations worked and fought assiduously to gain independence and self-rule, yet even after independence their government institutions are governed on the basis of their colonial masters' legal, political and social system; in terms of policy articulation and implementation.

Colonization not only reshaped the political map of the world but affected the social and cultural values of many nations. Colonialism as a system has undoubtedly left a very deep psychological and cultural scar that will take years and conscious, but concerted effort to reassert and establish a truly indigenous identity by the victims to heal. It is a known fact that the language and way of life of a people are inherently associated with salutary effect on the identity of such personality, and ultimately permeate the whole fibre of the entire community.

African writers like Chinua Achebe, Ayi Amah, Sly Koromah, Ngugi Wa Thiongo and many others have consciously and deliberately espoused and reflected this identity in virtually all their writings; mainly because they were baptized in the crucible of colonialism with its totem signs, scars, and vestiges of oppression, slavery, discrimination visibly 'tattooed' in our souls,, etc. Colonialism as a legacy left a deep psychological and cultural scars in the psyche of the colonized, and this will undoubtedly take years, anchored on conscious and deliberate reassertion to establish a truly indigenous identity based on traditional African value systems by the victims. Through their scholarly works they were able to highly the devastating effect of colonialism on the rich cultural, social, and political tradition of the indigenous people in the new nations which have been lost; and to also draw the attention of the world to the cultural mutilation, pillaging, and distortion of the colonized.

Chinua Achebe (2000), the international award-winning novelist, captured the dilemma of the African nations when he said "Until the lions produce their historians, the story of the hunt will glorify only the hunter". While the search for a truly nationalistic but linguistic, cultural, and national identity remains a challenge, the imperativeness of infusing and institutionalizing traditional, linguistic,, and cultural identity into a national life not only holds sacrosanct but a recurring decimal in developmental efforts for most if not all post-colonial African nations.

This has been a dilemma for virtually most postcolonial African nations which have spurred a new thinking, a sort of paradigm shift; and has emboldened the resolve of post-colonial intellectuals, leaders of liberation movements, freedom fighters, trade union activists and political leaders to adopt policies that are geared towards a cultural renaissance and reawakening of a new identity in order to chart a new course for their people.

Chinua Achebe (1966) captured this dilemma of the post-colonial African nations when he stated that 'I wanted the novel to be a denunciation of the kind of independence we were experiencing in postcolonial Nigerian and many other countries in the 1960s, and I intended it to scare my countrymen into good behavior with a frightening cautionary tale''

The endless potentials that language brings, qualify it to capture the versatility of man and validate that language is intrinsically a sophisticated pattern of communication that is in a constant state of transmogrification.

Customs and traditions globally metamorphose on basis of distinct options; and lingua franca, being an indispensable part of culture, too transmutes with the metamorphization of culture.

2. Literature review

It cannot be re-emphasized enough that language and culture are inherently concomitant therefore can impact on the identity and personality of an person; and in the long-run a whole community or nation. In their quest for a new linguistic and cultural identity, post—colonial African nations are psychologically and politically poised at investing in recreating a 'new' people, a 'new' nation by charting a new course of rebuilding the past, deciphering the present and outlining new perspectives for the future generations to come. The newly heralded identity being contemplated will be the crystallization of dream, and with essential attributes and characteristics fused into a 'colorful' tapestry of a national life ruminative of the lingua franca, literature, governmental organs, and academic, technological, and cultural institutions.

Despite the anglophilization, francophilization, spaniardization as well as portuguesization, many former colonies are beginning to take cognizance of the importance and benefits of the use of autochthonous languages and traditional cultural beliefs in stimulating and unifying the citizenry. They are questioning the negative and destructive effect of the use of languages and the imbuement of the culture of their former colonial master's in daily and official communication as well as in the conduct of government business and everyday life.

2.1 Language

It is only natural that language which is a thread of culture should be the fulcrum and the focal point of this discussion; because language represents a key identifying and uniting factor. I perceive language in this context not only as a legitimate means of communication within a community or nation but also as an important spiritual, social, political symbol of the nation. It represents the bridge between the culture and identity of the people that define them.

According to the Merriam Webster dictionary, Language can be described as a orderly way of exchange of information or affections using standardized symbols, remarks, motions, or ensign with assumed significant. Collins Dictionary on the other hand describes language as an orderly exchange that comprises of a set of utterances and recorded signs which are passed on from generation to generation by the persons of a specific nation country or territory for conversation or inscription

Language can be defined as a interconnected structure of human interaction, either spoken or recorded, incorporating the use of words in a standardized and prescriptive way and also a system of social intercourse employed by a specific nation or community. Language is used in intersocietal conversation among people. These of course encompasses emotions, thoughts, and sentiments, expectations; and is characterized by a sound that has structure and connotations within a given context of every community; based on shared rules which act as a vehicle of transmitting same to other people, based on the ascribed moral codes.

One of the essential characteristics of language is the truth that it is a social being. Ndimele (2015) affirmed the meaning of language when she stated 'Language is the fountain of human existence and power. Language is used in the household, in religion, in learning, in conduct of business affairs, in health, or the work setting, in friendship, or diverse interactive social milieu. In her work (Ndimele 2008:3) states that language does not operate and function in isolation.

According, to Ndimele (2015) language provide the vehicle by which the customs and tradition of a people are used to regulated human affairs and exercise controls over our behavior. In O'Grady et el (2011:1) they expressed the real essence of language when they said, language is at the epicenter of all human affairs. It is not just an integral part of our being, but it portrays and defines who we are as a people. It is unimaginable to think of a scenario in human existence where social interaction in the field of academic, music or any human activity taking place without the use of communication without language. We as humans express our inner feelings, pains, happiness and euphoria through language. It is employed as a means of transmitting knowledge, send information, and also in transmitting customs and traditions to each successive generations in a given community.

Since antiquity, researchers, academicians, writers, scholars, technicians and experts that span across various educational and scientific groups, make us of language to document and pass on their inventions and findings and how these findings affect us. Language is therefore a system used by a given group to interact and disseminate. It makes for congenial communal living and good neighborliness'. The importance of the centrality of language in any community cannot be understated. It is germane to a purposeful and meaningful life and progress.

2.2. Culture

Culture on the other hand can be defined as an integrated system of mental elements (beliefs, values, worldview, attitudes, norms), the behaviors motivated by those mental elements, and the material items created by those behaviors. According to Senghor (1964), the Senegalese poet, who went on to be the president of Senegal, said that culture is quintessential element of advancement and progress. In Wardhaugh (2010) Culture is all a person must know to function in a particular society. The heritage and customs of a society is their peculiarity since it bestow on them a quintessential traits and also offers them the acknowledgement they rightly earned. It is their fundamental distinctive hallmark that set them apart other societies and counters. And is equally applicable to other subgroups.

The United Nations Educational and Scientific Organization, (UNESCO 2010) which deals with the promotion of cultural acceptance across the global and ensuring child's access to education described culture in an encompassing context to mean a comprehensive intricate but unique supernatural, tangible and sentimental physiognomy that characterizes a community or subcultural group. It encompasses the social activities or pastimes, scholarships, style of living. It also includes basic rights of every person, ethical values, heritage and philosophy. It presupposes that customs and traditions that imparts on humans the capacity to do a self-evaluation.

It goes further to asseverate that it is culture that distinguished from other living things, that are capable of thoughts, endued with sense of right and wrongs; including consciousness of virtuous obligation. Culture enables us as humans to perceive, appreciates and imbibes moral principles that help us to recognize the endless possibilities available to man.

Culture in its truest sense provides us the instrumentality to convey our thoughts, feelings or emotions. It also offers man a platform for self-consciousness of our imperfections and inadequacies, and self-assertion. Culture help us extend the frontier of knowledge, seeking fresh interpretation to the dynamics of life and existence through which barriers are broken and obstacles are overcame; while new frontier are explored and extended

In a UNESCO 1966) working document on the essence of global cultural collaboration it espoused/stipulates that the most remarkable addition from this announcement is unequivocally is the safeguarding of the nobleness and equal distinction of all culture as stated in Article 1(17) and (1). Without exception, every culture is honourable and it is held in high esteem, and should be appreciated, cherished and safeguarded. (2) Every cultural subgroup is entitled and ow itself the responsibility to advance its culture unencumbered. (3) In their bounteous, interesting array but heterogeneous culture, and because of their inter-mutuality, all culture are regarded as a shared legacy of humanity.

It is interesting to state here that Article (V) of this declarative narrative about culture will later have a universal ramifications on the global concept of culture; which is the advancement of culture, the heterogeneity of culture, shared bequeathal; and so on and so forth. The UNESCO document for the first time pioneered the meaning of global cultural collaboration, which was deliberately institutionalized as deserving and obligation for every region; and such awareness and know-how should be aggregated by all.

In the closing Article (XI) the document states unambiguously that the implementation of the entire principles enunciated therein should be anchored on the twofold pillars of God-given rights and civil liberty. Invariably since its declaration it has been a topic of discussions in conferences over the years.

In the work of Kroecber and Kluckhohn (1952:357) they defined culture as comprises image, both definitive and inferential; of and for manners learned and disseminated through signs, encompassing the peculiar accomplishment of humanity, manifestation/representation in objets d'art. The indispensable locus of civilization encompasses conventional but antiquely copied and chosen concepts particularly their associated and derived value and traditional methods. Conversely it could be regarded as an aggregates of performance And on the other hand it act as a stimulus for additional performance

Hoebel (1972:6) who was an anthropologist described culture as the assimilated network of enlightened conducts and manners which are exclusively peculiar to that group of people, and which is not hereditary as a result of kinship, basically not based on kinship ties.

Tylor (1871) emphasized that, culture is that intricate all-inclusive, comprising scholarship, conviction, past-times, principles, rules of behavior, legal codes, and other abilities that be acquired, and universally accepted by people in that given community and are propagated and pass on to each successive generation. Linton (1945) states that the culture of a community is the lifestyle of its people the aggregation of their imaginations and practices acquired and commonly adhered to, eventually passed on from century to century. According to him culture is crafted and modeled for existence, adhered to by everyone in that community

2.3 Identity

What is then the meaning of identity within the cultural context of an individual in a given society? Because language acts as transmission of culture, it can rightly be said that language becomes the umbilical cord to the birth of a culture.

It becomes the lightning- connecting rod of a sort between culture and identity. Inferably and predictably within this context, one could say that Cultural Identity can be defined as the complex connection of values, customs, traditions, beliefs, behaviors, and way of speech that an individual identifies with; both within themselves and as part of an entire community of shared commonality, fostering a high sense of coercion and belonging within a given society.

Culture is assumed and is embedded in every facet of spoken and unspoken language and this is expected to be pass on either through established structures/system or unconsciously. As pertaining to cultural identity of a person, this dissertation defined the term ethnic cultural identity as the complex connection of values, customs, traditions, beliefs, behaviors, and ways and mannerism of speaking of a person.

Cultural Identity reinforces the believe that each culture is incomparable and inimitable configuration of utility and ultimately in the long run help in the emancipation of the citizens. Cultural Identity can be likened to a thread that binds, hold and glue members of a given community, which ultimately promotes interdependence and peaceful coexistence. Culture is interactive and dynamic, rejuvenating and constantly recreating itself in order to survive and thrive; like a living organism.

Conversely, Cultural Rights as propounded by UNESCO recognizes and affirmed the linkage between culture and development which was derived from the Article 27 of the United Nations Universal Declaration of Human Rights: I stated inter alia that every human being is entitled to conveniently engage and take part in the cultural life of wherever he lives, to derive happiness from the cultural entertainment and partake in the rewards of technological breakthroughs and innovation. These rights are c concomitant to the International Covenant on Economic, Social and Cultural Rights of the United Nations as stated in Article 15, particularly in Article 15.1.a. where it is expressly mentioned that anybody deserves a place and should be involved in the cultural lifestyle of the community where he resides

The United Nations Educational, Scientific and Cultural Origination (UNESCO) have been at the forefront in promoting the centrality of cultural rights as pertains to overall development in any nation. The concept of Cultural Right is till at its infancy with limited research work on it.

It is pertinent to mention here that diversity in culture categorizes a hybridized community or nation, with a gamut of traditional, communal and cultural determinant, giving rise to a tinge of heterogeneous distinctiveness, that makes culture a 'mixed-multitude''. However, the downside of it is that this scenario give rise to a kind of a forgotten identity of a sort, according to Mattleart (2010, 232) ''discriminatory interdependence''

Consequently, the inter-relationship linking language to one's personality as well the evolvement of identity and dissemination of ideas and information in intercultural contexts is still less understood. That is why the need to communicate across cultures is less appreciated and is being taken for granted globally.

According to the United Nations approximately around 175 million people lived outside their home country at the turn of the century and this figure is expected to double within the next 30 years (United Nations 2002).

Therefore, if language is inherent in culture and cultural identity (Rovira 2008, 66), this implies the cultural identity of a large number of people is greatly under peril. The fact is that limited studies have been conducted on identity works in relation to language and culture. In fact, researchers are still trying to understand language and communication developments within cultures. And, aside from self-reports or a priori analyzes, how can one very and authenticate the assertion that language is inherent in cultural identity? Little wonder that the Loss of language or transmogrification due to a post-colonial condition is often viewed as a loss of culture and identity.

3. The African Identity Dilemma

Instituting and establishing a truly African identity is a huge jigsaw puzzle, considering the facts that many African countries are made up of many ethnic groups and nationalities; all competing for supremacy, at best on the basis of equality. A country like Nigeria that has over 450 ethnic groups with distinct and peculiar linguistic categorization, present a serious dilemma in choosing a nationally acceptable language that can be used for social intercourse as well as in conduct of government business. The colonial legacy that created a feeling of mistrust and of playing one tribe against another has created a huge challenge for many post-colonial African nations. The identity crisis which has been stoked in the heat of colonialism has altered and created a competitive identity which makes it difficult to forge an identity that can be uniquely national and peculiar; which can be harnessed for development; without a clash of multiple but different norms and traditions. This we have seen played out politically with ethnically based parties across may African nations. More often than not appointment of people to office are made not on the basis of meritocracy but ethnically, religiously and nepotistically inspired, given rise to corruption, poverty and insecurity.

4. Research methodology

The research methodology chosen for this paper is basically intellectual in form, perusing, scrutinizing and collecting material from printed, electronic books and journal articles that are transcendent various disciplines; encompassing anthropology, sociology, psychology, history and linguistics.

This study is a modest attempt at trying to revisit the unique Africa past in retrospect so as to help the postcolonial African nations reconstruct and fashion out a pragmatic and realistic Cultural Identity in a dynamic global environment that is culturally becoming fluid.

5. Findings

The result and findings of this research brought to the fore the imperativeness and reemphasized the centrality of language as a harbinger of culture in any society, which is a sin quo non for the sustainability, survival and continuity of a people and/or nations. Culture on the other hand connotes the label that gives meaning and identity of a people. The result of this research has also thrown open the complexities and dynamism of culture, which tends towards 'hybridity' of cultural in forging a unique identity in postcolonial African nations.

6. Conclusion

Drawing from the facts presented in this paper, it is the considered view of this researcher that establishing a truly unadulterated African identity in post-colonial is pragmatically a herculean task due to many factors.

In the first place, Colonial legacy of racism, slavery and discrimination bequeathed and left a negative impact on linguistic and cultural traditions and identity, institutionalizing an 'engrafted' identities among Africans nations. It is expected that such a legacy will leave a negative impact on cultural identity, creating an ambiguous identities among Africans.

The English, French, Spanish and Portuguese languages has long taken root and used as a language of communication and government business at inception, uniting a plethora of ethnic nationalities that make up the citizens of these countries; each nationalities with its own distinct linguistic and cultural ties, peculiarities and traditions.

Adopting one language among the various tribal and ethnic nationalities will create whole new problems with its own limitations that far outweigh the use of colonial language for government business and communication. With all the pro and cons across the divide, it will be more pragma to allow both languages and of course the engrafted cultural identity to coexist side by side, since culture itself is dynamic; constantly evolving, particular will the current globalization due the internet and telecommunication.

7. Reference

- Achebe, C., 2000. Home and Exile. New York: Oxford Up. Print.
- Achebe, 1966. Man of the People. Heinemann Publishers (UK).
- Hoebel, E.A., 1972. Anthropology: The study of Man, 4th Edition. New York: McGraw-Hill
- Kachru, Y., 1999. Chapter 4-Culture, context, and writing. In E. Hinkel (Ed.), Culture in Second Language Teaching and Learning (pp. 75-89). Cambridge: Cambridge University Press.
- Kroeber A., Kluckhohn, C., 1952. Culture: A critical Review of Concepts and Definition, New York. Vintage Books
- Leopold S. S., 1964. On African Socialism. New York: Praeger
- Linton, R., 1945. Present World Conditions in Cultural Perspective. New York: Columbia University Press
- Ndimele, R., 2015. *Understanding Sociolinguistics*. Okigwe: Whytem Prints.
- Mattelart, A., 2010. An Archeology of the Global Era: Constructing a Belief, in: Daya Kishan Thussu (ed.): *International Communication*. New York: Routledge.
- O'Grady W., Archibald, J., Katamba, F., 2011. Contemporary Linguistics. An Introduction. Second Edition. Pearson Education Limited.
- Rovira, L. C., 2008. The Relationship between Language and Identity. The Use of the Home Language as a Human Right. *Revista Interdiciplinarda Mobilidade Humana*. Ano XVI. No. 31, 63–81.
- Tylor, E., 1871. Primitive Culture. London: John Murray.
- UNESCO, 2010. Culture and Development, www.unescoetxea.org Composition: Maider Maraña (http://www.journalijar.com/uploads/36_IJAR-14922.pdf/accessede 21/11/2021).
- Wardhaugh, R., 2010. An Introduction to Sociolinguistics. Oxford UK: Blackwell Publishers Limited.
- https://courses.lumenlearning.com/suny-culturalanthropology/chapter/language/
- Culture and Development: A response to future challenges? (Paris, 10th October 2009) http://unesdoc.unesco.org/images/0018/001876/187629e.pdf

Structural Developments in Agricultural Activity after Romania's Accession to the European Union

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Abstract

This paper presents the evolution of agricultural sector in Romania for the period 2008-2020 based on statistical data provided by INSSE. In the analysis we used indicators to reflect the structure and the dynamics for the number of companies in agriculture sector, the number of companies in agriculture depending on the number of employees, the agricultural personnel according to professional status, labor productivity in agriculture, the importance of agriculture in regional GDP, the population employed in agriculture and population employed in agriculture by region. The total number of companies activating in agriculture had an increasing evolution during 2008-2018 representing a 55,37% increase. In Romania there are regions more developed regarding the agriculture and there are regions where the development is lower The productivity of labor in agriculture is lower than the productivity of the activities of the national economy and registered the maximum value of 15.3 lei per hour in 2019. In the West region, the highest increase in labor productivity took place from 21,84 lei per hour in 2009 to 118,9 lei per hour. We could notice that in the regions where the productivity is higher the proportion of population employed in agriculture is lower and where the proportion of population employed in agriculture is higher, the productivity is smaller.

Key words: number of agricultural units, labour productivity in agriculture, the personnel structure in agricultural units

J.E.L. classification: O13, Q10

1. Introduction

Romania is one of the EU countries with the most pronounced agricultural character. Unfortunately, this does not imply an appropriate contribution of agriculture to GDP formation, which is 3,84% in 2020. According to the official statistics of the European Parliament, European Parliament Briefing (2017), the population employed in agriculture at EU level is poorly educated (only 8.5% of farmers have received specialized and complete training) and aged (56% of all farmers are over 55 years), and this trend is evident in the statistics of the last 10 years of agriculture in Romania and has begun to be a concern for agricultural policies adopted by recent governments. Therefore, starting from the general framework offered by the CAP in financing agriculture through multiannual programs, non-reimbursable financing was introduced for small farmers in order to develop, modernize, make the business profitable and reduce the dependence on climate conditions.

There are some papers in the literature that try to analyse different aspects of the evolution of the Romanian agriculture, but in our paper a more important part will be addressed to the aspects regarding the regional evolution of the agriculture in Romania.

2. Literature review

Burja and Burja (2010) analyze the financial viability of Romanian farms as compared with the average of EU farms at the level of 2007 and highlight some of the causes that generate gaps between the Romanian agriculture and that of EU. The main causes identified by Burja and Burja (2010) are the small scale of production and the insufficient sources of financing, including the credit and the European funds for agriculture.

Bercu and Botănoiu (2012) analyze the evolution of agriculture in Romania after the 1989 and consider that the weak results are generated by factors such as "the low level of mechanization, outdated irrigation systems", low intensity of exploitation of land area or small spendings for fertilizers and pesticides and suggest that some of the most important measures to be taken are: stimulating the farmers' cooperation, a better acces to financing and more funds for irrigation.

Meiţă (2015) analzye some quantitative indicators evolution for the Romanian agriculture in the period 2007-2014 and suggest that the European integration put a significant pressure on the Romanian farms, confronted with a market where more eqquipped and modern farms was acting. The opinion of the author ist hat only some structural and legislative changes, along with an easier acces to financing could improve the results of the Romanian agriculture.

Mituko et al. (2015) analyzed some structural and financial indicators regarding the agricultural activity in four of the development regions for the 2007-2011 period and for all the regions for 2012 and noticed the different evolutions in the analyzed areas.

Burja and Burja (2016a) show that the sustainable performance of the agricultural holdings in Romaniain 2008-2012 period vary with the economic size of holdings and find that the medium-sized farms are the most viable systems, so as they suggest that structural changes are required for better results of Romanian agriculture.

Burja and Burja (2016b) analyze the relationship between the size of farms and the performance of the agricultural production factors in Romania for 2010-2012 period and find that the verz large farms are the most efficient in terms of input use. Also, their analysis show that the very small farms could reach the frontier efficiency and contribute to the development of multifunctional agriculture (Gallutio, 2013), but they need to become commercial.

Feher et al. (2017) analyze the structure of the Romanian farms as a starting point of a comparative view on the value of agricultural production per hectare, gross value added per hectare, value of intermediate consumption per hectare for Romania and respectively, for Germany, France and Hungary. They show that are important gaps between Romania and the other analyzed countries, and even under different scenarios of growth for Romania these gaps remains significative so there are needed important structural measures to be taken, such as "amalgamation of land, expansion of irrigated surfaces, growth of animal production shares, development of agricultural research, expansion of financing opportunities" (p. 670).

Bularca and Toma (2018) analyze some technical and financial indicators regarding the agricultural exploitations in Romania for the 2005-2016 period. Their analysis focus mainly on the production (livestock and crops) for the four macro-regions of Romania, trying to find discrepancies between them, but also for different kinds of livestock or crops, to highlight the evolution of the structure of production in Romanian agriculture during time. Based on their analysis, the conclusion is that "the Romanian agriculture is optimally structured, but has a low profitability" (p. 75)

Feher et al. (2022) also analyze the evolution of some key indicators (number of farms, average areas, economic size) of agriculture of the EU countries, but an in-depth analysis is done for Romania, Germany and France. Based on the historical data regarding the period 1998-2019, of the new aspects introduced by the new European agricultural policy and on the assumptions regarding the growth of the Romanian economy, the authors show that Romania will not be able to recover until 2040 the gaps of Output of the Agricultural Industry, Intermediate Consumption, and Gross Value Added of agriculture compared with France and Germany and suggest some measures of real restructucturation of agricultural activity.

3. Research methodology

In our study, we aim to complement the existing literature on the structural evolution of Romanian agriculture. For this reason, we use empirical evidence and the data provided by National Institute of Romania (tempo-online statistical data) regard the 2008-2018 period. These data, which include Agriculture, forestry and fishing, have been statistically processed and analysed.

For characterizing the evolution of the agricultural sector in Romania, we used a number of indicators such as: number of companies in agriculture sector, the number of companies in agriculture depending on the number of employees, the agricultural personnel according to professional status, labor productivity in agriculture, the importance of agriculture in regional GDP, the population employed in agriculture and population employed in agriculture by region. For the indicators mentioned there is underlined the structural and dynamic evolutions.

4. Findings

The total number of companies activating in agriculture had an increasing evolution during 2008-2018, this increase being of 5563 new companies in 2018 compared to 2008, representing a 55,37% increase. But in 2019 compared to 2018 this number decreased by 706 companies (by 4,45%), and this decrease is for all types of companies activating in agriculture, but especially for the small ones, where the decrease is more noticeable.

The share of companies activating in agriculture in the total number of companies in the national economy has the same evolution, this share registering values between 1,84% in 2008 and 2,75% in 2018, but in 2019 this share had a decreasing evolution reaching 2,56%.

Table no. 1 The evolution of agricultural companies in total companies by size classes

Year		Agriculture companies	0-9 people	10-49 people	50-249 people	> 250 people
Tear	No.	10190	8836	1146	175	33
2008	%	1,84	1,78	2,38	1,76	1,76
	No.	11105	9708	1209	157	31
2009	%	2,05	2,00	2,64	1,83	1,92
	No.	11161	9761	1211	163	26
2010	%	2,27	2,23	2,76	2,03	1,67
	No	11231	9628	1416	160	27
2011	%	2,48	2,44	2,97	1,86	1,68
	No	11966	10237	1530	176	23
2012	%	2,53	2,47	3,17	2,06	1,40
	No	12439	10641	1595	178	25
2013	%	2,56	2,49	3,30	2,12	1,56
	No	12918	11095	1623	176	24
2014	%	2,55	2,47	3,39	2,10	1,43
	No	13821	11926	1688	184	23
2015	%	2,69	2,62	3,52	2,14	1,34
	No	14574	12618	1737	197	22
2016	%	2,76	2,69	3,59	2,24	1,27
	No	15230	13246	1766	195	23
2017	%	2,75	2,68	3,62	2,25	1,32
	Nr.	15833	13861	1767	183	22
2018	%	2,75	2,68	3,60	2,13	1,25
	No.	15127	13186	1738	182	21
2019	%	2,56	2,48	3,49	2,16	1,19

Source: calculated data based on INSSE date

We believe that the growing trend of this decade is directly related to the enlargement of the EU in 2007, when Romania and Bulgaria were co-opted into the union, an enlargement that generated a massive infusion of European funds through the Common Agricultural Policy (CAP) with the multiannual exercises 2007-2013 and 2014-2020. Until the early 2000s, farmers and economic agents in the agricultural field suffered greatly due to the very low level of financing, the lack of interest of state institutions in the maintenance and development of irrigation systems, outdated technology that farmers still had to use, very difficult access to new discoveries in the field of genetics, computer science, technology. Access to the EU market, successful examples from the EU's developed countries in the field of agriculture and last, but not least much easier access to European non-reimbursable funds have led to a boom in agricultural business.

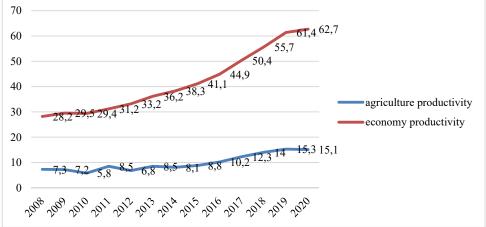
To show the importance of the companies from agriculture in the economy, we also evidenced the weight of the number of the companies from this field in the total number of companies from the economy. The data from table no. 1 shows that the share of agricultural companies in total economy companies and the share of companies with 0-9 employees in total economy companies of the same size class, followed the same increasing evolution from 2008 to 2013, these weights increasing from 1,84% to 2,56% for total of companies and from 1,78% to 2,49%, respectively, for very small ones. In 2014 these weights registered a slight decrease to 2,55% and 2,47% respectively, after which from 2015 to 2018 they increased again, reaching at values of 2,75% and 2.68% in 2018, respectively. In 2019 these weights decreased again reaching at values recorded in 2013 of 2,56% and 2,48% respectively.

The share of companies with 10-49 employees in companies of the same size category had an increasing evolution during 2008-2017 registering values from 2,38% in 2008 to 3,62% in 2017, after which it registered a decreasing evolution until 2019 when it registered the value of 3,49%.

The other shares of companies with more than 50 employees in the total number of companies in the same size class had an oscillating evolution during the period, falling between 1,76% minimum value registered in 2008 and 2,25% maximum value registered in 2017 for companies with 50-249 employees and 1,92% (2009) and 1,19% (2019) respectively for companies with over 250 people.

The importance of agriculture in the economy is influenced also by the productivity of the production factors in the agricultural activities. The productivity reflects the efficiency with which factors of production are used to produce a certain volume of goods and services in each company/economy. At the macroeconomic level, labor productivity is often used (as in the case of the OECD) in terms of hours worked, which is considered to be more representative than that calculated according to the number of employees or the number of people employed, the latter being able to be full-time employees. time or part-time, respectively self-employed (according to Eurostat). Figure no. 1 reflects the difference of labor productivity in the agriculture and in the economy.

Figure no. 1. Evolution of labor productivity, by total activities of the national economy and of agriculture calculated as gross value added to the number of hours worked



Source: Own design based on the data provided by INSSE tempo on-line date based, 2008-2020

The productivity of labor in agriculture is lower than the productivity of the activities of the national economy. The gross value per hour worked in agriculture registered the lowest value in 2010, this value being 5.8 lei per hour, 5 times lower than the gross value per person employed in economic activities. During 2010-2014 the hourly productivity had an oscillating evolution reaching 8.1 lei per hour in 2014 after which in the following period it had an increasing evolution until 2019 when the hourly productivity registered the maximum value of 15.3 lei per hour.

Some explanations for this evolution regard the fact that the vast majority of personnel employed in agriculture had and, unfortunately, still have a low level of qualification, in many cases being reduced to the personal experience of the farmer and his family. This factor is of major importance in the survival and development of the small farmer, who relied exclusively on his and his family's work. This kind of farmer cannot have access to the latest achievements in genetics, technology, even meteorology and, therefore, will achieve a very low labor productivity, which brings him in many situations to the limit of subsistence. Also, he does not have access to high-performance equipment and, generally, is very dependent on the weather conditions. Therefore, state have to think of programs to rejuvenate farmers, to stimulate young people with the most advanced studies in the field to settle in rural areas, by developing infrastructure, technology and by stimulating small farmers to develop their businesses, to technologize them, to digitize them, to hire qualified personnel in order to obtain a superior labor productivity, in order to obtain surplus value.

The structural evolution of the companies from agriculture is analyzed in the table no. 2.

Table no 2 The structure of the companies in agriculture according on the number of employees

Year		10-49	50-249	> 250
1 (111	0-9 people	people	people	people
2008	86,71 %	11,25%	1,72%	0,32%
2009	87,42%	10,89%	1,41%	0,28%
2010	87,46%	10,85%	1,46%	0,23%
2011	85,73%	12,61%	1,42%	0,24%
2012	85,55%	12,79%	1,47%	0,19%
2013	85,55%	12,82%	1,43%	0,20%
2014	85,89%	12,56%	1,36%	0,19%
2015	86,29%	12,21%	1,33%	0,17%
2016	86,58%	11,92%	1,35%	0,15%
2017	86,97%	11,60%	1,28%	0,15%
2018	87,55%	11,16%	1,16%	0,14%
2019	87,17%	11,49%	1,20%	0,14%

Source: own calculation based on INSSE tempo on-line date based 2008-2019

Within the agricultural companies, the largest share (over 85%) is represented by small companies with up to 9 employees, companies with 10-49 people having a share of about 11%-12% all the years, and the rest being companies with over 50 employees. The share of companies with over 250 employees is very small, decreasing in the analyzed period from 0,32% in 2008 to 0,14% in 2019, the number of these companies decreasing from 33 companies in 2008 to 21 companies in 2019.

Analyzing the structure by size classes of agriculture companies in dynamics, we notice a clear tendency of decrease for the companies bigger than 50 employees, as for the small ones (with less than 50 employers) the evolution is sinuous.

Another important indicator for analysis regards the number and the structure of the persons working in the companies from agriculture and the data regarding this indicator are reflected in table no. 3.

Table no. 3 The structure of agricultural personnel according to professional status

Thousands of people

	Agricultural personnel	Employ	yee	Own	ers	Self-empl	oyed	Unpaid family workers		
Year	No	No.	%	No.	%	No.	%	No.	%	
2008	2407,4	103,6	4,30	3,4	0,14	1204,9	50,05	1095,5	45,51	
2009	2410,7	106,2	4,41	2,4	0,10	1142	47,37	1160,1	48,12	
2010	2439,9	95	3,89	1,3	0,05	1122,7	46,01	1178,7	48,31	
2011	2442	98	4,01	1,6	0,07	1051,9	43,08	1290,5	52,85	
2012	2510	105,2	4,19	1,9	0,08	1115	44,42	1287,9	51,31	
2013	2380,1	108,2	4,55	5,4	0,23	1072,6	45,07	1193,9	50,16	
2014	2304,1	113,8	4,94	13,1	0,57	1085,8	47,12	1091,4	47,37	
2015	2003,1	119,1	5,95	11,7	0,58	972,9	48,57	899,4	44,90	
2016	1726,8	124,4	7,20	10,6	0,61	846,2	49,00	745,6	43,18	
2017	1741,7	128,6	7,38	9,7	0,56	894,6	51,36	708,8	40,70	
2018	1759,5	129,3	7,35	12,4	0,70	851,7	48,41	766,1	43,54	
2019	1747	131,4	7,52	15,6	0,89	875,7	50,13	724,3	41,46	
2020	1681,2	129	7,67	14	0,83	834,8	49,66	703,4	41,84	

Source: own calculation based on INSSE tempo on-line datebase

The number of the population employed in agriculture had an increasing evolution from 2008 to 2012 by 4,26% and after that this number decreased registering 1681200 people, ie a decrease by 30,16% in 2020 compared to 2008. Regarding the structure of the persons working in the agriculture according to the professional status, agricultural personnel consist mainly of 90% of self-employed and unpaid family workers, the rest being employers and employees.

In evolution, this structure has changed, some of these changes appearing because of the decreasing of the total number of personnel employed in the agriculture, but also because of the decreasing number of the self-employed and of the unpaid family workers.

We observe that since 2010 the share of employees has started to increase from year to year, from 3,89% in 2010 reaching 7,67% in 2020. The share of business owners had the same evolution, their share being 0,05% in 2010 and 0,83% in 2020. The share of self-employed workers decreased from 50,05% in 2008 to 43,08% in 2011, after which it increased from one year to another until 2017, when the maximum value of the share was registered. of 51,36%. The share of unpaid family workers had an increasing evolution in the period 2008-2011, in 2011 registering the maximum value of 52,85%, followed by a decrease of the share until 2007 when it registered the minimum value of 40,47%. In the following years, the share of unpaid family workers had an oscillating evolution, reaching in 2020 the value of 41,84%.

But the agriculture is uneven developed in Romania. There are regions more developed regarding the agriculture and there are regions where the development is lower. To highlight the importance of the agriculture in the economy of the different Romanian regions we underlined the proportion of regional GDP coming from agriculture in the regional GDP (table no. 4).

Table no 4 The importance of agriculture in regional GDP

	% of		%	of agricultur	e region GDI	P in region GD	P	
Year	agriculture GDP in total GDP	Nord- Vest	Centru	Nord-Est	Sud-Est	Sud- Muntenia	Sud-Vest Oltenia	Vest
2008	6,30	7,20	6,63	10,03	10,51	0,57	9,22	6,58
2009	6,12	6,93	6,53	9,58	10,01	0,48	8,96	6,20
2010	5,00	5,33	5,22	7,70	7,88	0,54	7,13	5,97
2011	6,25	6,55	6,43	10,18	10,30	0,63	9,47	6,69
2012	4,68	4,83	4,46	7,51	7,03	0,54	6,80	5,83
2013	5,38	5,37	5,40	8,79	8,32	0,58	7,79	6,20
2014	4,71	4,93	5,16	7,95	7,12	0,54	7,19	5,48
2015	4,19	4,33	4,39	6,79	7,00	0,54	6,39	4,42
2016	4,07	4,05	4,09	6,39	7,05	0,87	6,12	4,53
2017	4,31	3,96	4,07	6,61	7,62	1,08	7,08	4,77
2018	4,33	4,10	3,95	6,71	7,58	1,22	6,66	5,02

Source: own calculation based on INSSE datebase

The table no. 4 shows that for Romania in 2008 the agricultural sector contributed 6,3% to GDP, the maximum value of the analyzed period and the lowest contribution of the agricultural sector to GDP was recorded in 2016, which was 4,07%.

It is noted that the agricultural sector contributes differently to the formation of GDP by region. The largest contributions of the agricultural sector to the regional GDP were registered in all regions except the South-Muntenia region in 2008, the highest contribution being in the South-East region with 10,51%, followed by the South region - West Oltenia with 9,22% and the North-West region with 7,20%. Compared to the contribution of regional agriculture to the regional GDP in 2008, in 2018 all regions had much smaller contributions, the South-East Region 7,58%, the North-East Region 6,71%. The South Muntenia region is the region where the contribution of the regional agricultural sector to GDP was the lowest, although this contribution increased from 0,48% in 2009 to 1,22% in 2018.

The share of agriculture in GDP decreases over time as a percentage, following more and more faithfully the trend of the common market, where percentage of agriculture contributes less and less to the EU economy, but does not decrease in importance as a sector in the national economy. We consider this decrease to be due to the emergence and exponential development of new economic, digital sectors, the growing importance of the pharmaceutical industry, artificial intelligence and, more recently, the aeronautics and space industry, and all this reduces the percentage of agriculture in GDP of a nation, but do not reduce at all the importance of this vital sector for any national economy.

In this analysis we eliminated the Bucharest-Ilfov region because this area is predominantly urban and the area used in agriculture in this region is very small compared to other regions.

The different importance in the agriculture in various regions is accompanied by different shares of persons employed in agriculture in total persons employed in that regions (table no. 5).

Tabel no. 5. Evolution of the rate of the population employed in agriculture, forestry and fishing in the

total population employed by region

Year	% in total population employed	Regiunea Nord-Vest	Regiunea Centru	Regiunea Nord-Est	Regiunea Sud-Est	Regiunea Sud- Muntenia	Regiunea Sud-Vest Oltenia	Regiunea Vest
2008	27,52	30,55	23,09	39,17	30,73	35,33	37,68	23,51
2009	28,66	31,40	24,25	40,50	32,28	36,63	39,19	24,53
2010	29,15	31,55	24,17	41,50	33,10	37,09	40,24	25,06
2011	29,19	31,77	24,24	41,54	33,74	37,21	40,09	24,95
2012	29,29	31,78	24,17	41,51	33,72	37,44	40,27	25,06
2013	27,90	30,13	22,89	40,06	32,26	35,86	38,86	23,78
2014	27,33	29,25	22,46	39,46	31,91	35,27	38,41	23,10
2015	24,02	25,60	19,58	35,13	28,31	31,48	34,37	20,14
2016	20,76	22,18	16,78	31,01	25,08	27,71	30,64	17,54
2017	20,82	22,19	16,80	30,99	25,16	27,76	30,72	17,81
2018	20,93	22,36	16,89	31,07	25,44	27,80	30,66	17,97
2019	20,57	22,00	16,73	30,58	25,05	27,55	30,28	17,97
2020	19,92	21,29	16,21	29,57	24,29	26,75	29,29	17,42

Source: own calculation based on INSSE datebase

The highest shares of the population employed in agriculture in the total employed population were registered in 2012 (29.29%) and its lowest value was registered in 2020. However, by regions this share registers different values as follows:

- in the North-East region the population employed in agriculture as percent of the total employed population in the region is the highest, and the highest value, of 41.54%, was registered in 2011, after which it registered a decreasing evolution reaching at 29,57% in 2020;
- in the South-West-Oltenia region, the highest share of the population employed in agriculture of 40,27% was registered in 2012 after which it registered a decreasing evolution reaching in 2020 29.29%;
- and in the South East region the share of the population employed in agriculture in the total employed population had the same evolution as the North East region only that the registered values were slightly lower, from the maximum value in 2011 of 33,74% to the minimum value of 24,29% in 2020;
- the other two regions (Center and West) had slightly lower share values as opposed to the previously mentioned regions from 24.24% in 2011 to 16.21% in 2020 the Center region and from 25,06% in 2010 to 17,42% in 2020 the western region;
- The northwestern region registered the highest value of the share in 2012 of 31,78% and in 2020 this share reached 21,29%.

There is a close link between capital endowment and the degree of technological development, on the one hand, and labor productivity, on the other. Increasing labor productivity can only be achieved by increasing the capital intensity of production processes and by technological advancement.

Table no. 6 presents the proportion of the gross fixed capital formation in GDP for the agriculture sector for Romania and for the development regions.

Table no 6 Evolution of Gross fixed capital formation in GDP for the agricultural sector

	% in	Regiunea		Regiunea		Regiunea	Regiunea	
	total	Nord -	Regiunea	Nord –	Regiunea	Sud –	Sud -Vest	Regiunea
Year	GDP	Vest	Centru	Est	Sud-Est	Muntenia	Oltenia	Vest
2008	20,14	9,58	12,09	10,85	20,15	23,25	9,46	39,92
2009	15,60	9,90	9,54	8,48	16,30	20,62	6,90	25,75
2010	29,63	15,73	26,92	20,73	35,03	40,71	15,39	27,08
2011	19,09	11,47	14,71	10,67	24,37	24,94	10,80	20,46
2012	25,01	21,43	20,07	13,34	31,36	27,14	13,55	25,29
2013	33,98	23,96	25,46	16,84	48,18	34,93	20,41	37,99
2014	25,16	16,20	17,51	15,56	32,28	27,77	14,14	31,51
2015	27,71	21,06	19,28	16,85	33,38	24,28	14,52	37,56
2016	19,99	14,85	16,92	12,37	24,11	21,16	11,37	23,64
2017	28,60	18,69	21,50	18,77	26,41	25,78	13,39	55,83
2018	16,10	15,37	11,19	11,71	19,16	18,57	9,80	22,42

Source: own calculated based on INSSE datebase

Gross fixed capital formation in GDP for the agricultural sector registered the highest value of 33.98% in 2013 and in 2018 this rate decreased to 16.10%. There is a significant increase in this rate in all regions in 2010 compared to 2009, after which these values have an oscillating evolution, registering both increases and decreases. There are differences by regions as follows: The West Region registered in 2017 the highest share of 55.83% of gross fixed capital formation in the GDP of agriculture and in 2018 this share decreased to 22.42%. The south-eastern region registered the highest value of the rate of 48.18% in 2013 and in 2018 it reached 19.16%. The region with the lowest recorded rate values is the South East Oltenia region (max value 20.41% in 2013 and min value 9.8% in 2018).

Table no. 7 presents the evolution of the hourly labor productivity, calculated as production per worked hour, for Romania and the development regions.

Table no 7 Evolution of hourly labor productivity by regions

RON/hour

Year	Agriculture Labor Productivity	Regiunea Nord- Vest	Regiunea Centru	Regiunea Nord-Est	Regiunea Sud-Est	Regiunea Sud- Muntenia	Regiunea Sud-Vest Oltenia	Regiunea Vest
2008	14,465	17,351	26,703	8,669	19,171	15,877	9,240	25,474
2009	13,342	16,229	26,845	8,082	16,672	15,297	8,401	21,849
2010	14,114	14,534	26,767	8,406	18,482	16,087	8,594	27,644
2011	18,706	20,162	40,414	10,202	25,267	27,305	10,554	33,200
2012	15,678	14,969	34,117	8,791	19,487	22,999	9,186	31,172
2013	19,560	17,037	41,466	10,890	27,533	28,462	11,870	33,600
2014	19,073	18,725	42,141	10,656	29,409	24,342	11,229	32,263
2015	20,315	21,712	44,131	9,504	29,510	26,998	13,907	54,965
2016	22,715	23,275	45,721	10,183	34,013	29,706	16,094	74,173
2017	26,096	25,268	48,847	11,553	42,307	35,321	18,683	89,554
2018	29,369	29,978	58,912	12,957	44,609	38,775	20,437	118,962

Note: Hourly productivity is calculated as the value of production divided by the number of hours worked by the agriculture personnel

Source: own calculation based on INSSE datebase

Labor productivity in agriculture is influenced by natural and production conditions. The different conditions of geographical location, soil, climate, etc., make that at the same labor consumption different production results are obtained depending on the favorable conditions. Climate conditions, expressed in temperature and precipitation, differ from year to year, causing variations over time in the volume of agricultural production and thus in agricultural productivity. These factors make labor productivity differ by region.

Labor productivity in the Center region records for the entire period analyzed, except for 2012 increases from 26,70 lei per hour in 2008 to 58,91 lei per hour in 2018. The lowest value of hourly productivity was registered in the North-East region in 2009, this being 8,082 lei per hour and in 2020 the maximum value recorded was 12,95 lei per hour, the lowest value among all regions. In the West region, the highest increase in labor productivity took place from 21,84 lei per hour in 2009 to 118,9 lei per hour. We could notice that in the regions where the productivity is higher the proportion of population employed in agriculture is lower and where the proportion of population employed in agriculture is higher, the productivity is smaller.

5. Conclusions

With Romania's accession to the EU and the common market, the country's agriculture began to follow more closely the trends of EU countries, even if Romania's position in terms of digitalization, labor productivity, access to technology and labor productivity and profitability is much lower.

In agriculture in Romania the climatic conditions still greatly influence the business, in some cases even leading to the bankruptcy of some farmers due to unforeseen weather conditions (prolonged drought, hail, floods, etc.). In this sense, it is necessary with priority to expand the national irrigation system, dams and land improvements, and to stimulate the small farmer will have to implement financial programs to promote technological development, purchase of high-performance equipment, easier access to cost-effective software of the activity, including the programs and calculations of exact meteorological predictions and, last but not least, the information and stimulation from the state of the farmers regarding the insurances for crops, animals, goods, businesses in the agricultural field.

On the other side, agriculture's expanding has become a major factor in the decline of biodiversity, with increasingly significant effects on human communities. That is why the need to move from the current system, which pursues only productivity and profit, to a new system, with an emphasis on sustainability and environmental conservation, is increasingly obvious. Therefore, an aspect of major importance for the future, in EU agriculture, but also worldwide, new terms, visions and new trends regarding the future in the agricultural field have started to be more and more present: food security, biodiversity, sustainability, bio, "Green". These terms are being promoted more and more obviously, they represent the obvious trend for the future, it is already visible in the agricultural policies of the EU common market states, but in our country they are in an incipient phase, partly due to the ignorance of micro farmers and rulers, at macroeconomic level, on the other hand due to the unsatisfactory promotion of these new policies, but also due to the low level of qualification of farmers, limited access to information.

6. References

- Bercu, F., Botănoiu, D. D., 2012. Evolution of romanian agriculture in the last two decades and the necessity of cooperation, *Scientific Papers*. Series A. Agronomy, Vol. LV, p. 383-386
- Bularca, E.; Toma, E., 2018. An overview of romanian agricultural indicators in the last years, Agrarian
 economy and rural development realities and perspectives for Romania, 9th Edition of the
 International Symposium, November 2018, Bucharest, The Research Institute for Agricultural
 Economy and Rural Development (ICEADR), Bucharest, p. 70-76
- Burja, C., Burja, V., 2010. Financial analysis of the agricultural holdings viability in Romania in the european context, *Annales Universitatis Apulensis*, Series Oeconomica, 12(1), p. 63-71.
- Burja, C., Burja, V., 2016a. The economic farm size and sustainable value disparities between Romania and the EU states, *Annals of the "Constantin Brâncuşi" University of Târgu Jiu*, Economy Series, Issue 1, p. 50-57.

- Burja, C., Burja, V., 2016b. Farms size and efficiency of the production factors in romanian agriculture, Ekonomika Poljoprivrede, Vol. 63 (2), p. 361-374
- Feher, A., Stanciu, S., Iancu, T., Adamov, T. C., Ciolac, R. M., Pascalau, R., Banes, A., Raicov, M., Gosa, V., Design of the macroeconomic evolution of Romania's agriculture 2020–2040, *Land Use Policy*, 112, 2022, Online at Https://Doi.Org/10.1016/J.Landusepol.2021.105815
- Feher A., Goşa, V., Raicov, M., Haranguş, D., Condea, B. V., 2017. Convergence of Romanian and Europe Union Agriculture Evolution and Prospective Assessment, *Land Use Policy* 67, p. 670–678
- Meiţă, N. L., 2015. The evolution of agriculture in Romania after integration in the European Union, Annals of the "Constantin Brâncuşi" University, Economy Series, Volume I (1), p. 287-292.
- Mituko, V. I., Tudor, V., Stoian, E., Micu, M. M., 2015. Farms regional economic developments identified in the FADN panel, Agrarian Economy And Rural Development Realities and Perspectives for Romania. 6th Edition of the International Symposium, November, Bucharest, The Research Institute for Agricultural Economy and Rural Development (ICEADR), Bucharest, p. 128-133

On the 125th Anniversary of the Construction of the Modern Port of Constanta (Romania), the Largest Port on the Black Sea: Recent Developments, Perspectives, and New Development Strategies

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Abstract

The port of Constanta, the largest Black Sea port in terms of operating capacity, has celebrated 125 years from the start of its modernization works. At present, it is also the largest cereal port in Europe.

The recently evolution of the cargo traffic in this port, in terms of structure, indicates some trends that could continue in the near future, especially regarding the development of the traffic within the Constanta port, as a river port, on the Danube, through the Danube - Black Sea Canal, back and forth from the countries bordering the Danube.

There are important projects, in different development phases, which could lead to the modernization and development of the activity of the port of Constanta.

This paper aims to identify the most significant directions and priority development projects of the port of Constanta in the short and medium term.

Key words: port of Constanta, Romania, the Black Sea, evolution, development strategies and projects

J.E.L. classification: F63, H80, H83, L21, L52, L91, L98, M21, N70, N73, O18, O21, P48, R41

1. Introduction

The largest seaport in Romania and the largest Black Sea port, in terms of total operating capacity, the port of Constanta celebrated, on October 16, 2021, 125 years from the official inauguration of its construction and modernization works, in the presence of King Carol I. That moment represented the beginning of the creation of the "modern" port; however, the port of Constanta has an ancient history, closely linked to the history of Constanta City, the ancient Greek fortress Tomis, dating from the sixth century, BC.

The ancient port city of Tomis, or the fortress of Tomis, founded by the Greek settlers, was originally organized as an *emporion*, i.e., a trade center between the Greek merchants and the native peoples on the western shores of the Black Sea. In fact, the Greek influence lasted in ancient Tomis until the 1st century AD, when it came under the rule of the Roman Empire, a period in which the port experienced a prosperous economic life.

The Byzantine period followed, when the evolution of the port of Tomis was marked by numerous migrating peoples' invasions, which made the merchants look for other markets.

The Romanian rule of these places was short, at that time, given that the Dobrudja region, which included the port of Tomis, came under the rule of the Ottoman Empire, between the years 1421 and 1878, a period in which the city received the Turkish name Kustendge or Kustendje. The town of Kustendje had, in 1878, a small port, with a 7-ha basin, with a wooden quay, just 200 m long, where the vessels docked (Stefan, 1928, p.40).

After the return of Dobrudja to the Romanian Principalities, following the Russo-Turkish War, respectively the Romanian War of Independence, in 1878, commenced the interest in the construction of a modern port, in Constanta.

With the inauguration of the Bucharest-Fetesti railway line and the bridge over the Danube, in 1895, the direct railway connection between Constanta and the center of the country was ensured. The time had come for the expansion and modernization of the port of Constanta, in order to meet the new cargo traffic requirements that made up most of the country's imports, as well as exports.

The first studies for the creation of the new port began in 1881, expanded in 1888, and in 1896 the development and modernization works started. The works lasted until 1909, when the "modern" port was officially inaugurated. Dredging works were carried out, the sea wall, the jetty and the Southern dam were built, the quays, 6 basins, oil tanks and cereal silos. In 1904 the construction of the silos and the oil basin began, and in 1909 a silo and a part of the oil station were inaugurated (Stefan, 1928, p.41).

During the interwar period, new elements of infrastructure were added to the port. However, the port suffered greatly following the destruction brought by the Two World Wars.

In 1963, the expansion works in the port of Constanta began, and in 1984 the Danube-Black Sea Canal was inaugurated, an important moment, which made the port of Constanta also a river port, on the Danube.

The present paper aims at analyzing the recent evolutions of the cargo traffic in the port of Constanta and identifying some directions regarding its evolution perspectives.

2. Literature review

Even though no written evidence has been preserved about the period of the establishment of the settlement, which is the current port city of Constanta, archaeological evidence shows that a dense population lived here even before the Greek colonization, founded between the 7th and 6th centuries BC (Ciorbea, 1995, p. 5).

Ports, along with the phenomenon of globalization, have become logistics centers that play an increasingly important role in the stimulation of the development of the national economy and in the development of regional and international economic relations (Popa and Zburlea, 2020, p.1).

The main advantage of maritime transport is that it uses an infrastructure that does not require high investment costs: water from the seas, oceans, and rivers. Moreover, port infrastructure requires lower investment budgets compared to those for the railway or road infrastructure. Another advantage of maritime transport is that it can connect those "peripheral" regions, which are difficult or even impossible to reach, regions such as the Baltic Sea, the Black Sea and the Mediterranean Sea. From this point of view, Short Sea shipping is the most important means of commercial cargo transport between Eastern and Western Europe and between the countries located in the Mediterranean basin (OECD, 2021, p. 44).

In recent years, Romania has consolidated its position as the main producer and exporter of cereals in Europe, which has also led to an increase in cereal traffic through the port of Constanta. After 2010, the volume of cereals transported by sea and inland waters exceeded the quantities transported by road and railway, reaching a share of 59% in 2016 (Nistor and Popa, 2019, p. 3).

Stinga and Olteanu wrote a paper on the particularities of the bulk terminal within the port of Constanta, starting from an analysis of the transport sector at European level, highlighting the fact that the port of Constanta occupied, in 2017, the 6th place, being the only port on the Black Sea found in the top 10 European ports (Stinga and Olteanu, 2019, p. 300). Another study was conducted on the container terminal in the port of Constanta, belonging to the SOCEP company, using a simulation model designed to help the terminal's management in optimizing their handling, storing and container transport activities (Rusca *et al.*, 2020, p. 213).

3. Research methodology

The theoretical part of this paper is an empirical desk research, based on information on some significant historical landmarks of the evolution of the port of Constanta, since the beginning of its modernization works, 125 years ago. The secondary information source used has been obtained from publications and specialized research regarding theoretical and practical aspects concerning the problems faced by the port and cargo transport activities by sea, especially in the Black Sea and

in inland waters (on the Danube) (Jupp, 2020, pp. 113-115; 117-119).

In the case study, we have combined the quantitative research on the evolution of cargo traffic through the port of Constanta, in total and in structure, especially during the last 10 years, with the qualitative research based on focus-group type of direct discussions (Jupp, 2020, pp. 209-210), with representatives of the management of the port of Constanta and with managers of some of the most important port operators in the port of Constanta. For the quantitative research we have used secondary information, collected in a longitudinal profile (Juganaru, 1998, p. 25), represented by statistical data and other relevant information, obtained from the website of the Maritime Ports Administration Constanta, as well as from two of its publications: its annual publication (Handbook 2021-2022) and the Special Report, published on the occasion of the 125th anniversary.

4. Findings

4.1. Some technical features of the current port of Constanta

The total surface of the port of Constanta is 3,926 ha, of which 1,313 ha mainland and 2,613 ha water. The port of Constanta has 156 berths, of which 140 are operational, the total length of its quays is 32 km and it has depths between 7 and 19 m. All these features are comparable to the other major ports in Europe and allow the access of oil tankers with a capacity of up to 165,000 dwt, as well as bulk carriers with a capacity of up to 220,000 dwt.

In the river port of Constanta any type of riverboat can dock, and the Danube-Black Sea Canal shortens the distance between the Danube and the Sea by 400 km. The Danube River offers one of the most advantageous means of transport, due to the large volumes of goods that can be transported and the low costs. Recently, the works at the Barge Terminal have been completed, an investment meant to improve the facilities for mooring riverboats in the Southern part of Constanta port, being able to face the future increase in river traffic.

The port of Constanta has a number of important advantages, compared to the other ports in the region, its main advantage being its advantageous position, on the Black Sea, being located at one end of the pan-European Rhine-Main-Danube transport corridor. Its position, at the intersection of the trade routes connecting the markets of the Central and Eastern Europe countries with those from Central Asia and the Far East, conveys to the port of Constanta an important role within the European intermodal transport network. Among the other advantages of the port of Constanta, as an important distribution center in the Central and Eastern European Region, we can mention, mainly, the fact that it is a multifunctional port, with modern facilities and sufficiently large depths of the water in the port basin that allow the mooring of the largest ships transiting the Suez Canal; it is a container distribution center across the Black Sea ports; it has good connections with all the other means of transport: railway, road (A2 Constanta-Bucharest motorway), river, air and pipeline; it has Ro-Ro (roll on/roll off) terminals that provide fast connections to the ports in the Black Sea and the Mediterranean Sea; it has direct access to the Central and Eastern Europe countries, through the Pan-European Corridor VII – the Danube; it has modern facilities for mooring passenger ships; it has port status with fiscal and customs facilities, respectively a Free Zone. The fact that it has generous areas of land available for future developments is also added to these advantages.

The hinterland of the port of Constanta includes a vast Central and Eastern Europe region. In recent years, the port of Constanta has successfully served the flow of goods coming from or leaving towards Central and Eastern European countries, such as: Austria, the Czech Republic, Slovakia, Hungary, Serbia, Bulgaria, Moldova and Ukraine. Due to the competitive advantages of the port of Constanta, it has kept its traditional transport routes, despite the numerous economic and political events that have taken place in recent years, this port acting as the main center for storage and distribution of goods in the region. The port of Constanta is a multimodal transport center for any type of cargo and an important commercial gateway for the Central and Eastern Europe countries, as well as for the Black Sea basin countries (NC MPA Constanta, 2021b, p.10).

4.2. The evolution of the cargo traffic through the port of Constanta

The evolution of the cargo traffic in the seaports under the management of the Maritime Ports Administration Constanta (respectively, the seaports of Constanta, Mangalia and Midia, but also the river port Basarabi, located on the Danube-Black Sea Canal) has known several successive periods of growth, but also significant decreases (NC MPA Constanta, 2021a, pp. 20-21). Thus, while in the year 1970, the total volume of operated goods was 14,3 million tons, in the following years there were significant annual increases, without interruption, until 1980, when the traffic reached was 47,6 million tons. Then there were two years of decline (1981 and 1982), during the global economic recession that followed the oil crisis of 1979, after which, during the 1982-1988 years, a new period of uninterrupted annual growth followed, reaching 62,3 million tons in 1988.

During the 1989-1992 years, the decreases in the values of cargo traffic were dramatic, registering a real collapse, down to 26,9 tons in 1992, due to the transformations that occurred after the change of the political regime in Romania, respectively the transition from a centralized economy to the beginning of the transition to the market economy. Then began the process of privatization of the port operators, and also the beginning of the loss of Romania's commercial fleet. This was followed by a period of increases in port traffic, between 1992 and 1996, when a total traffic of 44,2 million tons was reached, followed by another period of decreases, between 1996 and 1999, and slight increases in 2000 and 2001. Between 2001 and 2005 the annual increases in traffic were again spectacular, reaching 60,6 million tons in 2005, then slight decreases in 2006 and 2007, followed by a new peak in 2008, when an annual traffic of 61,8 million tons was recorded.

A new traffic collapse took place in 2009 (at 42 million tons), as a result of the global economic and financial crisis, then an increase in 2010, followed by a decrease in 2011, then again followed a period of successive increases until 2016, a slight decrease in 2017 and significant increases in the following two years, reaching, in 2019, the historical peak of cargo traffic in these ports (over 66,6 million tons). However, as expected, in 2020, as a result of the restrictions caused by the COVID-19 pandemic, there was a decrease of almost 10% compared to 2019, respectively a traffic of 60,4 million tons of goods (NC MPA Constanta, 2021a, pp. 20-21).

Table no. 1 show the evolution of cargo traffic through the port of Constanta in the 2011-2020 period, both in terms of total traffic and in structure, differentiated, by bulk, liquid and solid goods.

Table no. 1. Traffic data – total & bulk, 2011-2020

Table no. 1.	тајји аа	ua – wai	α vuik, 2	011-2020	,					
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total traffic (1,000 tons)	45,97 2	50,585	55,13 8	55,64 2	56,33 7	59,42 5	58,37 9	61,30 4	66,60	60,376
Total bulk (1,000 tons)	35,34 9	39,672	44,99 7	45,18 2	45,48 9	48,85 2	48,20 8	51,21 5	56,50 4	51,006
Liquid bulk	10,61 7	10,015	10,09 1	12,51 6	12,20 4	13,66 3	13,35 4	14,02	14,92 1	12,426
Solid bulk	24,73	29,657	34,90 6	32,66 6	33,28 5	35,18 9	34,85 4	37,19 3	41,58	38,581

Source: Constantza Port Handbook 2021-2022, Twelfth Edition

The main goods operated through the port of Constanta, in the 2011-2020 period were cereals, crude oil, petroleum products and fertilizers (Table no. 2). The largest increase was recorded in cereal traffic, from 9,535 thousand tons in 2011 to 21,894 thousand tons in 2020, while for crude oil and petroleum products, although there were increases, the evolution of the operated quantities fluctuated, with increases and decreases, from one year to another. Significant increases, although with significant annual fluctuations, were also registered regarding chemical fertilizers, from 2,015 thousand tons, in 2011, to 4,420 thousand tons in 2020.

Table no. 2. Traffic data – main products

Main products (1,000 tons)	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Cereals	9,535	12,628	15,262	17,421	19,61	20,39	17,89	17,96	21,32	21,894
					6	4	1	4	9	
Crude oil	5,534	5,043	5,397	6,751	6,593	7,487	7,352	7,475	8,027	6,638
Others	6,529	6,958	6,545	6,782	6,850	6,897	6,526	6,567	6,561	6,349
Petroleum products	3,480	4,000	3,820	4,714	5,166	5,654	5,473	5,898	6,296	5,042
Fertilizers	2,015	2,154	1,763	1,742	1,843	2,927	3,094	3,008	4,025	4,420

Source: Constantza Port Handbook 2021-2022, Twelfth Edition

4.3. The evolution of container commercial transport in the port of Constanta

In Romania, the beginnings of the use of container cargo transport date from the first part of the '70s of the last century, with the design of the first specialized container terminal in the port of Constanta.

After the change of political regime in Romania, in 1989, the reorganization of port activities began, and the process of privatization of port activities started, including the container cargo transport in the port of Constanta. Thus, there were spectacular increases in container cargo traffic in this port, reaching a number of 118,645 TEUs in 2001.

In 2004, the largest specialized container terminal started operating in the port of Constanta, managed by DP World company (Dubai Ports World), with a current operating capacity of 1.2 million TEUs per year. The operational area of the terminal is 52 ha and it has minimum quay depths of 15.5 m, so this terminal can operate Post-Panamax port container vessels.

In 2007, a record 1,411,387 TEUs were reached in the port of Constanta, and after the onset of the global economic and financial crisis, the decreases in traffic were dramatic, reaching about 600,000 TEUs in 2009 and even a minimum of 556,694 TEUs in 2010.

Table no. 3 shows the comparative evolution of container cargo traffic and general cargo in the port of Constanta, in the 2011-2020 period. One can notice that, during this time, the share of the quantity of containerized cargo was more than double in relation to that of the general cargo category, but there were also some more significant decreases in the general cargo category.

Table no. 3. Traffic data – general cargo and containers

Tuote no. 5. Trajjie	auru 5	cherui ci	ngo ana	Comunit	CIB					
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
General cargo	3,966	4,233	3,598	3,681	3,998	3,675	3,647	3,525	3,547	3,024
(1,000 tons)										
Containers	6,518	6,680	6,543	6,779	6,850	6,897	6,524	6,564	6,552	6,346
(1,000 tons)										

Source: Constantza Port Handbook 2021-2022, Twelfth Edition

Table no. 4 presents the evolution of the number of calls in the cargo traffic in the port of Constanta, both in terms of maritime and river traffic, during the 2011-2020 years. There is a noticeable decrease in the number of calls related to maritime traffic and an increase in the calls related to river traffic, which can be explained by the fact that the average capacity of vessels operating in maritime transport has increased, whereas riverboats have smaller capacieties.

Table no. 4. Traffic data – calls

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total										
Maritime	4,872	5,057	4,833	4,771	4,605	4,331	4,093	4,139	4,176	4,031
River	8,096	9,405	9,280	10,053	9,769	10,203	9,272	9,487	10,395	10,344

Source: Constantza Port Handbook 2021-2022, Twelfth Edition

Analyzing, by structure, the situation of the number of calls in the maritime traffic (Table no. 5) we notice a significant decrease in the cargo, tank, portcontainer categories and increases in the categories bulk carrier and others. Regarding passenger ship traffic, from annual increases in the number of operated ships in 2011 (44 ships), it reached a maximum of 95 in 2014, followed by annual decreases, to only 11 calls in 2018, with a return to 17 in the year 2019 (as well as in 2016) and until the collapse in 2020, when no passenger ship was operated. From the latest information, received from the port's administration, in 2021 only a passenger ship was operated in the port of Constanta, as a result of the restrictions caused by the COVID-19 epidemic. However, the main cause for the drastic reduction in the number of cruise ships that docked in the port of Constanta (before the pandemic) was related to the hezitation of the operators of these ships to bring cruise ships in the Black Sea, after the annexation of Crimea and the military operations in the Eastern Ukraine.

The most important increases in cargo traffic in recent years have been due to river traffic. Unfortunately, there are still no regular river-sea shipping lines on the Danube, and their establishment should be a priority in the coming period. However, first it is necessary to carry out the dredging works throughout the Danube, especially in the part belonging to the Bulgarian sector, so as to ensure the seaworthiness of Danube throughout the year. Furthermore, the Danube ports will have to make the necessary investments and to ensure the necessary machinery and equipment for handling and storing containers in these ports.

The improvements that will be made regarding the road and railway facilities, as well as in terms of the conditions offered by the multimodal terminals from Constanta port will increase the efficiency of cargo transport, will cut costs and will therefore lead to the revival of cargo transport in the Romanian ports.

Table no. 5. Maritime calls

Calls	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Cargo	2,879	2,692	2,525	2,143	1,971	1,812	1,815	1,785	1,807	1,927
Passenger	44	52	68	95	37	17	13	11	17	0
Portcontainer	577	651	579	578	610	684	592	524	510	475
Tank	632	673	636	719	668	665	608	670	687	581
Bulk carrier	401	439	533	555	589	607	574	628	622	558
Others	60	550	492	681	730	546	491	521	533	490
Total	4,872	5,057	4,833	4,771	4,605	4,331	4,093	4,139	4,176	4,031

Source: Constantza Port Handbook 2021-2022, Twelfth Edition

Apart from the obvious strengths and opportunities, the Danube ports (not the port of Constanta) also have some weaknesses, which should be eliminated or at least minimized. Among these, we can mention: excessive, unused or underused port capacities, as well as the lack of the resources needed to provide and improve the road and railway connections of the ports with the rest of the network. Moreover, a number of external threats to these ports, such as navigation hindrances along the Danube, as well as strong competition from road and railway transport serving industrial and commercial centers along the Danube, directly from the Koper, Rijeka and Trieste seaports and even from more distant ports, located in North-Western Europe, such as Rotterdam, Amsterdam, Antwerp, Hamburg and others (Marcu & Raileanu, 2020, p. 252).

4.4. Development prospects of maritime transport in Romania

The 2021-2024 Government Program of the Political Coalition that supports the current Romanian government, led by Prime Minister Nicolae Ciuca, regarding the maritime transport strategy, states that, for the next 3 years, the priority areas for action will focus mainly on the capitalization of the huge potential offered by the Danube and the river transport, the development of the Danube commercial ports and the transformation of the port of Constanta into a regional leader.

Among the priorities included in the Government Program in the field of maritime transport, the following stand out: the elaboration of the maritime strategy; the development of the port of Constanța, through a major investment plan, meant for it to reach its maximum potential and to expand its hinterland, thus laying the ground for becoming the most important port in the region; increasing the safety of traffic in ports: digitization and management of the waterway through the development of the Port Community System computer platform, etc. (Government of Romania, 2021, p. 29).

The concerns for the adoption of a new strategy for the development of maritime transport start from the desire to achieve a correct and concrete planning of investments in the Romanian ports, a resizing of tariff and customs policies, as well as the creation of strategic alliances between the states located within the Caspian Sea - Black Sea Corridor. (Government of Romania, 2021, p. 33).

Another priority is to ensure the necessary conditions in order for the navigation on the Danube to be possible, without interruptions, throughout the year, and the river ports to be developed by creating facilities for the storage and operation of containers, as well as providing facilities for container transport on the Danube River. Moreover, the integration of the Romanian river ports on the Danube into the European tourist circuit and the development of some tourist circuits specific to river tourism will be pursued.

The multimodal transport strategy will be correlated with the one concerning the development and modernization of the transport infrastructure, so as to contribute to cost reduction, but also with the one concerning the emissions from transports, by transferring, at least partially, the travels, from the road to other more sustainable means of transport, such as railway or waterway. It will also aim to increase the efficiency of multimodal transport, through the complementary development of logistics platforms directly connected by road-railway-air / sea.

The EU Strategy for the Danube Region or the "Danube Strategy" initiative, launched in 2008, as a joint proposal of Romania and Austria, supported by all Danube riparian countries, starts from the need for the Danube Region to be tackled in an integrated way, from an economic, transport, social and cultural point of view. One of the main objectives of this strategy is to improve the seaworthiness of Danube, especially for the cargo transport and the protection of the environment, respectively the fight against pollution.

By improving the navigation conditions on the Danube, the necessary premises will be created for increasing the river traffic, including through the port of Constanța. To this end, works will be carried out to improve the seaworthiness of Danube, in the sector between Calarasi and Braila and a joint inter-ministerial commission will be set up within the government to unblock the Fast Danube project, regarding the improvement of navigation conditions on the Romanian-Bulgarian Danube common sector, and, in order to do this, the intervention of the European Commission will be requested. (Government of Romania, 2021, p. 33)

The Romanian Government has undertaken, through the **National Recovery and Resilience Plan** - PNRR, a series of reforms and investments, at national level, including, in the maritime sector, those regarding the development of specialized terminals in the port of Constanţa-South, wharf III and wharf IV South, the modernization of the port infrastructure, by ensuring the increase of the depths of the fairways and the basins, as well as the safety of navigation in the port of Constanţa, as well as other infrastructure works in the port.

4.5. Concerns regarding the preparation of port infrastructure for supplying ships with electricity and alternative fuels

Transport contributes 25% to global CO2 emissions, of which 7% - maritime transport, 12% - air transport, 75% - road transport, and 6% - other means of transport (OECD, 2021, p. 43). Onshore electricity supply installations, within ports, can be important sources of clean energy for maritime and inland waterway transport. The electricity supplied ashore can make a significant contribution to reducing the environmental impact of maritime ships (European Parliament, 2014, pp. 7-8).

According to the provisions of Directive 2012/33/EU of the European Parliament and of the Council, by the end of 2025, respectively 2030, a central network of LNG supply points should be available in maritime and inland ports, but also in other ports outside the core network. In accordance with the provisions of Directive 2014/94/EU (art. 2), the notion of "alternative fuels" refers to fuels or energy sources that serve, at least in part, as a substitute for fossil oil sources used to supply energy for transport and which have the potential to contribute to decarbonisation and to improve the environmental performance of the transport sector. Along with electricity, the category of alternative fuels includes: hydrogen, biofuels, synthetic and paraffinic fuels, natural gas, including biomethane in gaseous form (compressed natural gas-CNG) and liquefied form (liquefied natural gas-LNG), as well liquefied petroleum gas - LPG (European Parliament, 2014, p. 13).

One of CN APM (National Company Maritime Ports Administration Constanţa)'s priorities is the streamlining of Romanian seaports from an energetic point of view. The company is a partner in the EALING project, which analyzes the possibilities of supplying ships during their stay in ports, thus eliminating fuel consumption and reducing pollution in port areas by reducing gas emissions in the atmosphere and the noise produced by the power generators on the respective vessels. The project responds to the need for implementing OPS (Onshore Power Supply) solutions in TEN-T seaports.

The "Modernization of the electricity distribution network in the port of Constanța" project, with EU funding, through the Large Infrastructure Operational Program, amounting to over 113.39 million lei, was signed on November 24, 2021. Through this project, which is in line with EU strategies for green ports and increasing the technical and economic efficiency of electricity use, 75% of the electricity network in the port of Constanța will be replaced. A new electricity supply management system will also be installed.

4.6. Projects and development perspectives of the port of Constanța

Among the priorities in the field of maritime transport in Romania, an important place is occupied by the development of the port of Constanţa, through an investment plan which intends for this port to reach its maximum development potential, to become a regional leader and to expand its hinterland.

In recent years, the port of Constanța has seen significant increases in cargo traffic on the Danube, through the Danube-Black Sea Canal and has become the most important cereal port in the region and one of the largest in Europe. If the necessary Danube dredging works will always be carried out on time, in order to ensure the optimal conditions of seaworthiness throughout the year, especially in the Romanian-Bulgarian common sector of the river, there are very good prospects for the development of cargo traffic on the Danube in the coming years, and the port of Constanța will be able to register considerable increases in traffic.

The important investment projects to be carried out in the port of Constanţa are meant to ensure the increase in accessibility of the port, as well as the increase in the maritime transport capacity, the development of specialized terminals within the port of Constanţa South, the modernization of the electricity distribution infrastructure in the New Port area, the modernization of the port infrastructure, by ensuring the depths of the fairways and the basins, as well as the safety of navigation in the port.

Furthermore, the port operators are carrying out their own development and modernization projects. For example, the company COMVEX SA completed, in 2020, an investment in the largest cereal terminal in the port of Constanța (with a capacity of 200 thousand tons). On the other hand, DP World Constanta, the operator of the largest container terminal in the Black Sea region, has

started the project of building a new Logistics Center, on an area of 60 thousand square meters in the port of Constanța.

The "Three Seas Initiative" project, launched by Poland and Croatia in 2015, includes 12 EU member states, located in the Baltic Sea, the Adriatic Sea, and the Black Sea: Poland, Hungary, the Czech Republic and Slovakia, the Baltic countries (Lithuania, Latvia, Estonia), Austria, Slovenia, Croatia, Romania and Bulgaria. This initiative aims at increasing the convergence and cohesion, while reducing the economic development gap between different areas and EU member states, by increasing interconnectivity in this region, in areas such as energy, transport and digitalization (MFA, 2021). As part of this Initiative, Via Carpathia is a project aimed at designing a trans-European corridor, a high-speed road with a length of about 2,500 km, which would become a key connection between Northern and Southern Europe, on the eastern flank of the EU. The Romanian route of Via Carpathia should connect Romania's borders with Hungary, at Bors, with Bulgaria's border, at Calafat, on a length of 462 km. However, for the Romanian authorities, a branch of the project is very important, namely the Episcopate of Bihor-Oradea-Arad-Timisoara-Sibiu-Pitesti-Bucharest-Constanța route, i.e., ensuring the connection with the Black Sea, thus being able to increase the cargo traffic through the port of Constanta.

5. Conclusions

In recent years, the port of Constanța has seen significant increases in traffic, especially in the case of goods transported on the Danube, through the Danube-Black Sea Canal, the largest increase being recorded in cereal transport. In recent years, almost all port operators in the port of Constanța have made investments in the construction of new cereal storage capacities (silos) in the port, and the significant increase in cereal production and exports from Romania and other Danube riparian countries has favored this increase in cereal traffic.

The further increase in the traffic of goods transported on the Danube depends, however, on ensuring the seaworthiness conditions on this river, throughout the year. The Romanian governmental authorities must continue their diplomatic efforts in order to convince the Bulgarian authorities, in particular, of the need to carry out, in a timely manner, the dredging work in the Danube sector corresponding to their country.

Among the priorities of the Romanian maritime sector, an important place is occupied by the development of the port of Constanța, by promoting an investment plan which intends for this port to be able to reach its maximum development potential. The important sums allocated to the investments in transports, in Romania, in the following years, financed both by PNRR and other European and governmental sources, will lead to a considerable improvement in the railway and road connections of Constanța port with the rest of the country and the neighbouring countries.

A particular attention should be paid, by the administration of the Port of Constanţa, to ensuring the necessary investments to provide the required technical possibilities for ships docking into the port to be supplied with electricity, as well as a greater diversity of less polluting fuels than fossil fuels used to power ships' engines (hydrogen, biofuel CNG, LNG, LPG, etc.), in accordance with the provisions of the European directives on reducing pollution in maritime transport.

In our opinion, but also that of many managers of companies operating in the port of Constanţa, whom we have consulted, it is necessary for the new leadership of the Romanian Ministry of Transport and Infrastructure to understand and to act so as not to continue to perceive in the future the National Company Maritime Ports Administration Constanţa only as an important source of profit and income to the state budget, but rather as an administration whose main objective is to ensure the most favorable conditions, so as to attract the highest flows of goods to be operated through the port of Constanţa.

A proposal which should be analyzed by the authorities and implemented, as soon as possible, would be to create, on the premises of the port of Constanța, an *industrial park*, in which to carry out non-polluting production activities. The companies that could be attracted to produce in this industrial park could benefit from the customs and fiscal facilities of the port of Constanța and could attract additional flows of raw materials to be processed within the port and then the resulting products to be exported / delivered to other countries.

6. References

- Cealera, C., 2018. Brief history of the port of Constanța [Scurta istorie a portului Constanța] (1),
 Ziua de Constanța, September 18, 2018, [online]. Available at:
 https://www.ziuaconstanta.ro/stiri/invitati/scurta-istorie-a-portului-modern-constanta-i-670712.html
 [Accessed 4 Nov. 2021]
- Ciorbea, V., 1995. The port of Constanța, from Antiquity to the Third Millennium [Portul Constanța, de la Antichitate, la Mileniul III]. Constanța: Publishing House/Ed. Europolis
- Jugănaru, M., 1998. Theory and practice in marketing research [Teorie şi practică în cercetarea de marketing]. Bucharest: Ed. Expert.
- Jupp, V., 2010. Dictionary of social research methods [Dictionar al metodelor de cercetare socială]. Iași: Ed. Polirom.
- Marcu, A.L. and Raileanu, A.B., 2020. Lower Danube Ports Development and Opportunities.In: Journal of Danubian Studies and Research, Danubius University, Galati, Vol.10, No. 2/2020, pp. 235-253. [online]. Available at: < https://dj.univ-danubius.ro/index.php/JDSR/article/view/527 [Accessed 27 Oct. 2021]
- National Company Maritime Ports Administration [Compania Nationala Administratia Porturilor Maritime] (NC MPA), Constanța, 2021a. Constantza Port Handbook 2021-2022, Twelfth Edition
- NC MPA, 2021b. Constanța Port Annual Report 2020. 125 Years of Modern History, Constanța. [online].
 Available at: https://www.portofconstantza.com/pn/page/np-rapoarte-studii> [Accessed 2 Dec. 2021]
- Nistor, F. and Popa, C., 2019. Importance of the water transport sector for Romania's economy Journal of Physics: Conference Series, Volume 1297, 5th International Scientific Conference SEA-CONF 2019, 17-18 May, [online]. Mircea cel Batran Naval Academy, Constanţa, Romania, [online]. Available at: < https://iopscience.iop.org/article/10.1088/1742-6596/1297/1/012033/meta [Accessed 8 Nov. 2021].
- Romanian Ministry of Foreign Affairs, 2021. The Three Seas Initiative [Initiativa celor Trei Mari] (I3M), [online]. Available at: https://www.mae.ro/node/49437 [Accessed 6 Dec. 2021]
- Nicolae, F., Bucur, M. and Cotorcea, A., 2018. Port performance evaluation. Case study: Ports in the Black Sea basin. IOP Conference Series: Earth and Environmental Science, Volume 172, 4th International Scientific Conference SEA-CONF 2018, 17–19 May 2018, Constanţa, Romania IOP Conf. Ser.: Earth Environ. Sci. 172 012004 [online]. Available at:
 - < https://iopscience.iop.org/article/10.1088/1755-1315/172/1/012004/meta>[Accessed 8 Nov. 2021]
- OECD, 2021. Short Sea Shipping: an alternative to European and inland transport or a complementary mode. In: Short Sea Shipping in Europe. European Conference of Ministers of Transport. ECMT 2021, Paris, https://doi.org/10.1787/9789282113271-en [Accessed 7 Oct. 2021]
- Onea, F. and Rusu, L., 2019. A study on the Wind Energy Potential in the Romanian Coastal Environment, Journal of Marine Science and Engineering. *J. Mar. Sci. Eng.* **2019**, 7(5), 142; [online]. Available at: < https://doi.org/10.3390/jmse7050142> [Accessed 28 Oct. 2021]
- Popa, C. And Zburlea, L, 2020. The Assessment of Port Services Integration Within the Supply Chain. Connectivity Analysis Case on Constanţa Port, Scientific Bulletin "Mircea cel Batran" Naval Academy; Constanţa Vol. 23, Iss. 2, [online]. Available at:.
 https://www.proquest.com/openview/d9d3edd0629ac39ff0db4ed6b50744bb/1?pq-origsite=gscholar&cbl=2036237> [Accessed 27 Oct.2021]
- Rusca, F., Rosca, E., Azmat, M., Perez-Acebo, H., Rusca, A., Olteanu, S. 2020. Modeling the transit
 of containers through quay buffer storage zone in maritime terminals. In: Proceedings of the
 International Scientific Conference "The Science and Development of Transport" (ZIRP 2020),
 University of Zagreb, September 2020, pp. 213-224
- Stefan, N., 1928. Trade through the port of Constanța [Comertul prin portul Constanța]. In: Bulletin of the Constanța Chamber of Commerce and Industry, Festive volume on the occasion of the Semicentenary of the reunification of Dobrudja [Buletinul Camerei de Comert si Industrie Constanța, Volum festiv cu prilejul Semicentenarului realipirii Dobrogei]. Bucharest: "Eminescu" Institute of Graphic Arts S.A [Institutul de Arte Grafice "Eminescu" S.A.] Year XXXIX, OCT. 28, 1928

- Stinga, V. and Olteanu, A. 2019. Economic Analysis Regarding the Particularities of a Bulk Terminal in the Port of Constanţa. In: Ihnatescu, C. (Ed.), 12th LUMEN International Scientific Conference Rethinking Social Action. Core Values on Practice, 15-17 May, Iasi Romania: Lumen Proceedings.[online]. Available at: https://doi.org/10.18662/lumproc.176[Accessed 6 Dec. 2021]
- European Parliament, 2012. Directive 2012/33/EU of the European Parliament and of the Council of November 21, 2012, amending Council Directive 199/32/EC as regards the sulphur content of marine fuels. [online]. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32012L0033&qid=1640948051185&from=RO [Accessed 24 Nov. 2021]
- European Parliament, 2014. Directive 2014/94/EU of the European Parliament and of the Council from Oct. 22, 2014 on the deployment of alternative fuels infrastructure, [online]. Available at: https://eur-lex.europa.eu/legal-content/RO/TXT/HTML/?uri=CELEX:32014L0094&from=RO
 [Accessed 15 Nov. 2021]

G20 Countries: About Investments and Productivity Growth in the Context of the COVID-19 Pandemic

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Abstract

This article aims to present an overview of the G20 member states in relation to the measures and policies adopted in the field of trade and investment, all in the context of the COVID-19 pandemic and its effects. As we know, the COVID-19 pandemic affected the allocation of resources (financial, human, material) during this period and led to a decrease in productivity.

Relating to G20 trade-facilitating and trade-restrictive measures, data presented by WTO (2020) show that during this period the G20 member states have implemented 154 new trade measures, of which 93 were related to the COVID-19 pandemic.

The investment policy measures of the G20 states have been divided into the following categories: - measures specific to foreign direct investments; - measures related to national security; - non-specific measures for foreign direct investment; - international investment agreements.

Key words: G20 countries, the COVID-19 pandemic, investment policy measures, innovation, productivity growth

J.E.L. classification: H12, O33, O38

1. Introduction

As we know, the Group of 20 brings together the world's largest economies in an intergovernmental forum, in order to address various issues of the global economy, such as sustainable development or financial stability. The figures for these economies reveal their importance in the international landscape: G-20 members accounts for more than three-quarters of international trade and contributes by about 80 percent of the world's gross domestic product.

The last two decades have shown a slowdown in productivity, both in developed, industrialized economies, as well as in emerging economies. As a current factor of influence, the COVID-19 pandemic (as well as possible crises generated by it) can affect productivity, given the imbalances in investment, in supply, in distribution or in the workforce.

According to the statements of G20 members, in order to overcome all these problems in terms of productivity, it is necessary an international collaboration, so through joint efforts we must act in making high quality investments in infrastructure and people, obtaining a good reallocation of resources (through interconnected markets), with higher chances of obtaining finance and liquidity.

2. Theoretical background

The interpreted data studied in this article provide, first of all, information on the state of productivity growth, in the event of a crisis caused by the COVID-19 pandemic. For this part of the analysis were taken into account: D'Adamo et. al. (2021) and Di Mauro and Syverson (2020).

D'Adamo et al. (2021) approaches in their work "Digitalization & Beyond: The COVID-19 Pandemic & Productivity Growth in G20 Countries" the issue of the channels through which the COVID-19 crisis can influence productivity growth.

They started from the analysis undertaken by Di Mauro and Syverson (2020), in which it was used an accounting decomposition of Aggregate productivity growth into three components:

- within-firm productivity growth
- reallocation of resources between firms
- reallocation of resources between sectors

Italian G20 Presidency (2021) and D'Adamo et al. (2021) presents the principles of the policy pursued by the Italian Presidency of the G20, to restore productivity growth. The policies agreed by G20 leaders during this period, in the context of the current pandemic, refers to encouraging public and private investment, encouraging investment in human capital, achieving a harmony between access to information and data protection, promoting a friendly business environment and encouraging international cooperation.

Roth and Sen (2021) demonstrates through an econometric analysis of growth accounting that intangible capital (research and development, software, economic skills -market research, branding, training-) has an extremely important role in increasing productivity, both at the aggregate level and at the sectoral level.

3. Research methodology

In this paper, we want to address some issues in connection with the following points:

- ✓ The influence of the COVID-19 pandemic on the deceleration of productivity
- ✓ The risk of occurrence of major regressions in terms of resource allocation (including investment) due to the COVID-19 crisis
- ✓ Investment policy measures considered towards G20 leaders to overcome the possible crisis caused by the COVID-19 pandemic
- ✓ The correlation between the measures targeted by G20 leaders and current research on the influence of the COVID-19 pandemic on productivity and investment
- ✓ The correlation between digitalization-investment-productivity growth

Qualitative research is based on studies of literature specific to this field; we used the fundamental and theoretical research methods by studying the specialized literature, revising articles, reports and books found in the electronic databases. Moreover, for the research and knowledge of the present subject, the method of economic analysis, synthesis, comparison, but also hypotheses and conclusions were used.

4. Findings

National borders have been closed, companies' production has fallen, so the world economy has also been partially closed (out of a desire to reduce the spread of the virus). At the moment, it is difficult to measure the real impact of the COVID-19 pandemic on productivity, investment, resource allocation, and therefore on the world economy as a whole, because: 1. the pandemic is not over (there are still closed borders or travel restrictions, some activities are partially or totally affected in their operation, they are suspended people, etc.); 2. official statistical data are not available (are presented in an estimated, partial manner).

As mentioned earlier, the issue of channels through which the COVID-19 crisis can influence productivity growth has been approached starting with the accounting breakdown of aggregate productivity growth into three components.

1. The issue of increasing productivity within the company

In this first component of aggregate productivity growth, as argued by D'Adamo et al. (2021) and Di Mauro and Syverson (2020) we meet many factors of influence: human capital, investment, innovation, digitalization, miscellaneous intangible assets, fragility of global value chains, administrative and fiscal burden, barriers between countries.

People were suspended, sent into technical unemployment or fired due to the COVID-19 pandemic. If their reallocation on the labor market is not done quickly, then they can no longer have access to professional training, specialization courses, and even begin to be demotivated to increase their various professional skills. Of course, in this case, productivity will also be affected.

We find a close relationship between investment-innovation-digitalization. Given that the pandemic is not over, people have generally feared investing. But in order to continue the activity, some had to create conditions for the current context, in which the movement of people was limited and employees worked from home. For large companies, this adaptation could be easily done; those with smaller businesses, faced financial or logistical barriers to investment. In this case, labor productivity has fallen considerably.

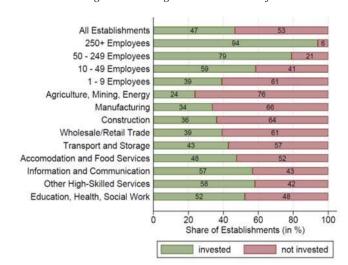


Figure no. 1. Investments in IT or digital technologies since the start of the COVID-19 pandemic

Note: The figure shows weighted percentages based on 1.941 establishments in Germany, February 2021

Source: Bellmann et al., 2021. The pandemic has boosted firm investments in digital technologies (online) (Available at https://voxeu.org/article/pandemic-has-boosted-firm-investments-digital-technologies)

Also, the productivity of a company depends on the relationships it has developed over time with its partners, with its employees, with final consumers etc. What happens when the company closes due to the COVID-19 crisis? Things are obvious: trust in that company is affected, relationships can be lost. Therefore, it is preferable for employers to keep their employees (possibly in a limited form of activity) rather than to fire them (to avoid the additional costs of finding other people, training them, rebuilding relationships with partners, etc.).

2. The issue of reallocation of resources between companies

The issue of reallocation of resources between companies is developed by Di Mauro and Syverson (2020) by presenting variables related to company size (closing small businesses can lead to a reorganization within the industry; at the same time, it is possible (not wanted / preferred) like closing small businesses to make room in the industry also for small and inefficient firms), financial constraints and the creation of zombie firms (defined as firms that are unable to cover debt servicing costs from current profits over an extended period according to Baneriee and Hofmann (2018)).

3. The issue of reallocation of resources between sectors

As we observed during the pandemic, some activities were reduced (for example, flights, accommodation in hotels), and others increased (such as online medical consultations, various online services of central and local government, various IT services). This change in the sectors will certainly lead to a change in aggregate productivity, because the productivity of the various activities mentioned is different.

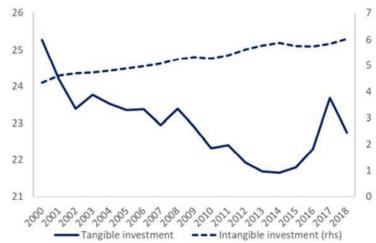
For an economy to be successful, investment is needed to increase productivity. Investments can take the form of money, various financial securities; we can also invest in tangible assets (buildings, fixed/mobile assets, furniture, etc.) or investments in intangible assets (software, copyrights, trademarks, R&D).

G-20 leaders believe that attention should be paid in this period (and not only) to digital technologies, which should be transformed from challenges into opportunities, if we want to increase production and the productivity of factors of production. We mentioned that during the COVID-19

pandemic, the measures of the decision makers were specific to each economy, situation, each context. The same will happen in the case of innovation and digital economies: it will take into account the economic structure of the nation in question, its policies, participants, etc. (D'Adamo et al., 2021)

G-20 leaders noted that there must be a mix of policy options that provides a maximum of digitalization on productivity. Thus, the G20 Menu of Policy Options on Digital Transformation and Productivity Recovery (2021) states that, on the one hand, we have productivity factors, such as infrastructure, human capital, innovation, and, on the other hand, we have productivity-enhancing policy options in connection with stimulating investment or reallocating resources.

The growing importance of intangible investments is also noted in the case of the G20 economies, in the chart below. We can observe that in the analyzed period, 2000-2018, the tangible investments decreased as a share in the gross domestic product, and their place was taken by the intangibles, which register an increasing trend.



Graph no. 1. Intangible vs. tangible investments (selected G20 countries)

Note: % of GDP. The G20 aggregate includes: AU, CA, FR, DE, IT, US, UK, BR, JP, KR, MX

Source: D'Adamo et al., 2021. Digitalisation & Beyond: The COVID-19 Pandemic & Productivity Growth in G20 Countries, ISSN 2443-8030 (online), p.7

(available at https://ec.europa.eu/info/sites/default/files/economy-finance/eb067_en.pdf)

This paper sought to address issues related to investment policy measures considered by G20 leaders to overcome the potential crisis caused by the COVID-19 pandemic, but also a correlation between measures targeted by G20 leaders and current research on the influence of the COVID-19 pandemic on productivity and investment. As we specified in the abstract, recently, the investment policy measures of the G20 states have been divided into the following categories: - measures specific to foreign direct investments; - measures related to national security; - non-specific measures for foreign direct investment and - international investment agreements (UNCTAD-OECD Report on G20 Investment Measures, 2019).

We further summarize the principles of the policy pursued by the Italian Presidency of the G20, to restore productivity growth (D'Adamo et al., 2021, Italian G20 Presidency, 2021):

- encouraging public and private investment, by establishing public-private partnerships, by developing infrastructure, by digitalization of the economies, by guaranteeing the quality of public finances (adjusting government revenues and expenditures of public authorities, in order to obtain an optimal result of their composition), by supporting intangible investments (continuous training, research-development, network training academic environment-industry-decision makers);
- encouraging investment in human capital, through education and training programs (especially for adapting to technological innovations, for the transition to an increasingly digital world), by addressing the management of SMEs (thus ensuring the adaptation of production processes, the skills of those involved);

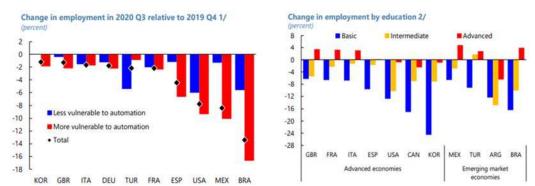


Figure no. 2. Employment Loss by Vulnerability to Automation and Skill Level

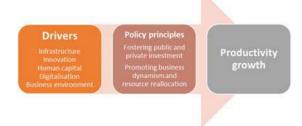
Note: 1/Classification based on ISIC rev.4. Industries more vulnerable to automation: agriculture, forestry, and fishing; mining and quarrying; manufacturing; utilities; construction; wholesale and retail trade; transportation; accommodation and food services; arts, entertainment, recreation; other services; activities of households as employers and extraterritorial organizations. Industries less vulnerable to automation: information and communication; financial; real estate; professional and administrative services; public administration and defense; education; human health and social work. 2/Ages 15–64. Basic: primary and lower secondary education; intermediate: upper-secondary and post-secondary nontertiary education; advanced: above post-secondary non-tertiary education. CAN, FRA, ITA, KOR, ESP, GBR, and USA (BRA, MEX, TUR, and ZAF) are aggregated for G-20 advanced (emerging market) economies; CAN, KOR, USA: latest is 2020Q4 (2020Q3 for others)

Source: IMF, 2021. Group of Twenty: Boosting productivity in the aftermath of COVID-19, p.15 (online) (available at https://www.imf.org/external/np/g20/pdf/2021/061021.pdf)

As can be seen in the figure above, the COVID-19 pandemic has affected to a much greater extent the sectors vulnerable to automation, those who were fired the most were unskilled (basic) employees or with an average qualification.

- achieving a harmony between access to information and data / information protection, by facilitating access to data and information, both for the private and for the public environment (in terms of central and local government services, tax and fee services, etc.), while ensuring confidentiality, ensuring fairness and non-discrimination of participants (including on the payment of taxes or the use of digital platforms of large companies versus SMEs, by avoiding abuses of domination);
- promoting a friendly, dynamic business environment through policies that reduce bureaucracy, promote foreign direct investment, ensure the protection of intellectual property rights, reduce barriers to entry and exit of companies, provide e-government services, facilitate access to finance and liquidity;
- encouraging international cooperation, through the exchange of knowledge and through joint investment initiatives in research and development;

Graph no.2. Productivity drivers and productivity-enhancing policy principles



Source: D'Adamo et al., 2021. Digitalisation & Beyond: The COVID-19 Pandemic & Productivity Growth in G20 Countries, ISSN 2443-8030 (online), p.13

(available at https://ec.europa.eu/info/sites/default/files/economy-finance/eb067 en.pdf)

5. Conclusions

As can be seen, during this period of the COVID-19 pandemic, the measures adopted by the state authorities were staged, depending on the local context and the particular situations that arise. Any decision taken covered short periods of time, without insisting on possible long-term effects or irreversible consequences. All the problems that have arisen should be lessons for the participants in the economic life and not only.

Information technology, digitalization, innovation are aspects that should not be undervalued; in fact, they can secure a future for many of the present and future businesses, especially after various flaws have been observed during the time when the world was slowed down, blocked by this virus. Thus, the European Commission (2021a) considers that, in the long term, the effects of the COVID-19 pandemic may be some positive ones, which dictate trends: the green transition, changes in the global value chains, but also digitalization. New forms of work will be outlined, taking into account teleworking and automatization, which will require highly qualified work with higher salaries.

Regarding digitalization and artificial intelligence, of course there are opinions that they will be related to job loss. We believe that we should consider the opportunities offered by digitalization, such as improving employee skills, streamlining working time, less redundant work, easy access to information and data, improving the relationship with customers (through shorter response time, various channels of information transmission, etc.). In fact, according to the studies consulted (D'Adamo et al., 2021; Cappelli, 2020; Author, 2015), only certain tasks of employees only certain employee tasks can be automated (especially the unskilled or medium-skilled). In addition, the contribution of digitalization in productivity will lead to the creation of new jobs in other sectors; it is therefore a question of a redistribution of jobs, not about a loss.

G20 leaders noted the importance of digital platforms on productivity, whether we mention online stores, social media, general services of central and local government, payment services, app stores, digital work platforms etc. Digital platforms are closely linked to innovation and increased productivity. They allow the rapid distribution and sharing of information, ideas; they are the fast meeting place for business partners, suppliers with potential buyers, employees to work together; contributes to learning and provides new sources of information to develop innovative businesses.

6. References

- Autor, D. H., 2015. Why Are There Still So Many Jobs? The History and Future of Workplace Automation. Journal of Economic Perspectives. 29 (3): 3-30. Available at: https://www.aeaweb.org/articles?id=10.1257/jep.29.3.3 [Accessed 14 November 2021].
- Banerjee, R. and Hofmann, B., 2018. *The Rise of Zombie Firms: Causes and Consequences*. BIS Quarterly Review September 2018. Available at SSRN: https://ssrn.com/abstract=3288098 [Accessed 12 November 2021].
- Bellmann, L.; Bourgeon, P.; Gathmann, C.; Gleiser, P.; Kagerl, C.; Kleifgen, E.; König, C.; Leber, U.; Marguerit, D.; Martin, L.; Pohlan, L.; Roth, D.; Schierholz, M.; Stegmaier, J. and Aminian, A., 2021. The pandemic has boosted firm investments in digital technologies. [online] Available at: https://voxeu.org/article/pandemic-has-boosted-firm-investments-digital-technologies [Accessed 5 November 2021].
- Cappelli, P., 2020. R&I paper series working paper 2020/04. *The consequences of AI-based technologies and jobs*. European Commission, Available at: https://op.europa.eu/en/publication-detail/publication/24809a30-a9f9-11ea-bb7a-01aa75ed71a1/language-en [Accessed 14 November 2021].
- D'Adamo, G.; Bianchi M. and Granelli, L., 2021. Economic Brief 67. *Digitalisation & Beyond: The COVID-19 Pandemic & Productivity Growth in G20 Countries*. [online] Available at: https://ec.europa.eu/info/publications/digitalisation-and-beyond-covid-19-pandemic-and-productivity-growth-g20-countries_en [Accessed 21 October 2021].
- Di Mauro, F. and Syverson C., 2020. *The COVID crisis and productivity growth*. [online] Available at: https://voxeu.org/article/covid-crisis-and-productivity-growth [Accessed 11 November 2021].
- European Commission, 2021a. Note to the Eurogroup. *The sectoral impact of the COVID-19 crisis*. Available at: https://www.consilium.europa.eu/media/48767/eg-note-sectoral-impact_fin.pdf [Accessed 8 November 2021].
- IMF, 2021. *Group of Twenty: Boosting productivity in the aftermath of COVID-19*. p.15 Available at: https://www.imf.org/external/np/g20/pdf/2021/061021.pdf [Accessed 9 November 2021].

- Italian G20 Presidency, 2021. G20 Menu of Policy Options Digital Transformation and Productivity Recovery. Available at: https://www.g20.org/wp-content/uploads/2021/07/G20-Menu-of-Policy-Options.pdf [Accessed 13 November 2021].
- Roth, F. and Sen, A., 2021. *Intangible Capital and Labor Productivity Growth: Revisiting the Evidence*. Hamburg Discussion Papers in International Economics. No. 10. University of Hamburg. Chair of International Economics. Hamburg. Available at: https://www.econstor.eu/bitstream/10419/242120/1/hdpie-no10.pdf [Accessed 15 October 2021].
- UNCTAD, 2019. Twenty-first UNCTAD-OECD Report on G20 Investment Measures. Available at: https://unctad.org/system/files/official-document/unctad_oecd2019d21_en.pdf [Accessed 8 November 2021].
- WTO, 2020. WTO report on G20 shows moves to facilitate imports even as trade restrictions remain widespread [online] Available at: https://www.wto.org/english/news_e/news20_e/trdev_29jun20_e.htm [Accessed 11 October 2021].

A Challenge of Services Management - Balancing the Price of Transportation

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Abstract

The purpose of this paper is to underline the difficulty of balancing prices in a dynamic environment, strongly connected to the technological evolution, political decisions, global events and macroeconomic trends. In order to be able to highlight the level of the challenge it represents, we will also analyse the impact of uncertainty upon the economic environment during the current crisis generated by the COVID-19 pandemic, which is an unprecedented situation. The global competition in the last two decades, adopted by more and more companies, represents the greatest challenge faced by the field of logistics, challenges which involve constant adaptation, innovation, externalisation and changing strategies in record time. In an increasingly global economy, logistics and the costs of logistics will be decisive factors for competitivity and modernisation. Access to new outlets, raw materials and workforce depends on a single essential criterion: the existence of a functional transportation system.

Key words: transport, globalization, pandemic, technology

J.E.L. classification: L99, O08

1. Introduction

Due to its role in economy, logistics represents a distinct and vital industry, a component without which world economy would be blocked. We shall present in the following chapters the importance of this segment of economy, its connection to all the other branches of production and commerce and how it has evolved under the impact of the accomplishment of contemporary civilisation. Logistics is a stimulating factor of progress and development, involving human and material potential and with positive effects upon the fields with which it interferes. The continuous momentum of the progress of logistics, resulting in its rates of development, made globalisation become not only possible and accessible, but also – together with the technological and scientific revolution – one of the most astonishing phenomena of the millennium.

Contemporary consumers have become accustomed during the last century with more and more diversified merchandise of better quality. Producers have permanently been looking for places with cheaper, better qualified workforce, countries with a more permissive and predictable fiscal legislation, perhaps even areas with an abundance of resources and raw materials. For them, transportation and logistics have always represented a challenge.

2. Theoretical background

Literature studying transportation and logistics presents a multitude of concepts and approaches within the field which demonstrate the dynamics of the industry.

The progress of globalisation in the last two decades has been remarkable. With the help of technologies which facilitate the cooperation of economic operators, imports and exports have never been more permissive. In this context, both the economic operators, as well as the final beneficiaries, benefit from lower prices and superior quality for the products which they acquire or market. The

transport of goods has a considerable impact upon the economies and societies of different countries. Its role manifests itself on various levels, from the superior capitalization of natural and material resources to the improvement of living conditions and the stimulation of economic growth.

A major role which we will describe is played by transportation intermediaries, those economic operators who ensure the connection between beneficiary and carrier, who have a role of arbitrage in the transportation market and who are directly responsible for its effective operation.

In order to highlight the dynamics of international transportation we used world level statistical information, continental European statistical information and national level statistical information.

In a more and more globalised economy, transportation, logistics and logistics costs are increasingly important factors for competitivity. If at the beginning the logistics segment of a business had a marginal influence on the global success of the company, it has gradually become one of the factors which ensure competitivity on a global scale. Therefore, logistics has become a major component in the business plan of companies.

The objective of the paper is to highlight the economic development at a global level and to underline the importance of the evolution of transportation throughout this process.

3. Research methodology

This article presents statistical data regarding the transportation of goods and vessels traffic - port container vessels in particular – in ports in the European Union, Iceland, Norway, Montenegro and Turkey. At the same time, it covers the main trends in the road transport of goods in the European Union until 2020. It describes the trend before the emergence of the Covid pandemic and compares it with its impact on the transportation of goods. It analyses transportation at country level, international transportation, cross commercial transportation and cabotage. It must be mentioned that, following the development of the ICT technology, prices practiced by transporters from all segments – terrestrial, maritime, etc. – have dropped dramatically, but crises generated by external factors can generate an unprecedented recrudescence. Transportation at a global level represents a topic approached by many analysts who underlined the positive and negative aspects. The events that transpired in the last two years have created a new reality, as the importance of this segment increased. By analysing the existing data, in this article we presented the effects of the Covid 19 Pandemic on the transport and logistics industry at a global level.

4. Findings

The rapid growth of the costs of maritime transport of goods is a clear sign of supply blockages. Starting with July 2020, the costs of the transport of goods at a global level have been recovering from the minimum levels reached mid-pandemic. During the last months, however, they have reached unprecedented levels, while growth rates have surpassed the ones observed since 2015. At the same time, transportation costs on maritime transport routes from Asia and China to Europe and the Mediterranean Sea, as well as to the United States, have seen a very strong increase in the second half of the year. They seem to have reached the highest point recently. Two factors are associated with the increase in the costs of transportation. On the one hand, the sharp increase in the demand for intermediary inputs due to a more substantial production activity has increased the demand for Chinese exports and the demand for container freight services. On the other hand, the shortage of containers in Asian ports has exacerbated the supply blockages and has increased the costs of transportation even more, because companies in Asia pay premium fees to recover the containers.

Ports are crowded due to logistics disruptions connected to the COVID-19 pandemic, while inactive containers remain in ports due to the uneven recovery of commerce. The available data indicate a decrease in the flow of port-container vessels in ports in Asia, the Asia – EU commercial route registering the greatest decrease.

The increase in the costs of maritime transport has been even more influenced by the limited capacity of air cargo, since the number of international flights has decreased due to restrictions and flight cancellations.

Figure no. 1

Global and regional shipping costs

Global shipping costs

(year-on-year, percentage changes)





Freightos Baltic Index

Source:

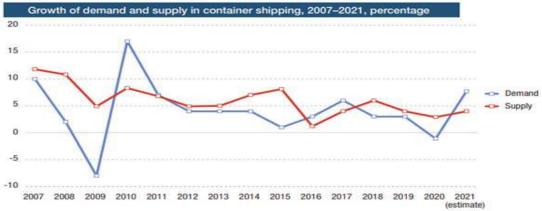
https://www.ecb.europa.eu/pub/economic-

bulletin/focus/2021/html/ecb.ebbox202103 01~8ecbf2b17c.en.html

In 2020, restrictions and other measures taken to prevent the spread of COVID-19 have suddenly reduced the demand for containers. April and May 2020 were the lowest months; by then end of May 2020, 12% of the total container transport capacity was inactive, specifically 2,7 million TEU (according to Clarksons Research, BIMCO, 2020). Maritime transport companies tried several measures to lower the costs and manage the transport capacity, but in the second half of the year 2020, the situation reversed. The sudden increase in demand practically blocked the ports which have a limited capacity to manage, unload and stock. 1.

Mid 2020, the increased demand for containers and the limited operating capacity resulted in an exponential increase in transportation fees. In the second half of 2020, the demand for container transport started to increase again. Vessel capacity remained limited, but the number of inactive containers started to decrease in relation to the increasing demand. By the end of June 2020, dry-running reached 9 percent, subsequently starting to recover until it decreased to 6 percent in July and 4 percent in August. At the end of September 2020, it decreased below the 2019 average level of idling of 4,1%, reaching 3,5 percent. In 2020, the global container fleet extended its capacity by almost 3%, more precisely 281.784.000 dwt, while the container transportation market contracted by 1,1%, reaching 149 million TEU/year.

Figure no. 2



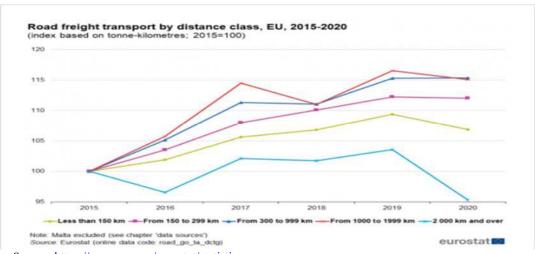
Source: https://unctad.org/system/files/official-document/rmt2021ch3 en.pdf

If the demand for maritime transport had a spectacular recovery, road transport for distances longer than 2 000 km dropped suddenly in 2020.

In 2020, 6,5 percent of expeditions in the EU were for distances shorter than 50 km, while only 4,2 % were for distances over 2 000 km. However, the greatest part of road freight transport activity (89.3%) took place on distances ranging between 50 and 2000 km, most (59,6 %) taking place for distances longer than 300 km.

The chart below presents trends in road freight transport per each distance class from 2015 until 2019. We can notice that all the distance classes below 2 000 km increased, with the only exception of 2018, when transport between 300-999 km saw a slight decrease and the one between 1 000 - 1 999 km had a sudden decrease. We can notice that long haul transport of goods had a considerable fluctuation between 2015-2019, but with an increasing trend. However, the restrictions and traffic blockages at border checkpoints in several countries imposed in 2020 to counteract the Covid pandemic had considerable effects on the trends in the transportation market. Transportation on distances longer than 2 000 km saw a sudden drop (8,0 %) in 2020, a trend which was propagated in shorter distance categories, such as the ones below 150 km which saw a 2,3 percent decrease and the ones between 1 000 and 2 000km, which saw a 1,2 percent decrease. For the other two categories of average distance, the changes were insignificant. More precisely, for the ones between 150-299 km we have a 0,2 % decrease and for the ones between 300-999 km we notice an increase of 0,1 %.

Figure no. 3



Source: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Road freight transport statistics#Long distance road transport over 2 000 km was sharply down in 2020

It is estimated that the use of freight transport will increase by 80 % until 2050, while passenger transportation in Europe will increase by more than 50 %. Considering a significant increase in the use of transportation services, it is very important that prices be constantly monitored to ensure that users are properly stimulated to use more ecological means of transport. The fluctuations in transportation prices affect all the decisions taken by individuals, as well as economic operators regarding the means of transport, which is why it is imperative to intervene on the transportation market by means of incentives, subventions, taxes or regulations.

The price of transport reflects the major market changes, such as the evolution of international energy and fuel prices, the evolution of vehicle technology and last, but not least, the government interventions by means of subventions, regulations and taxation.

The most recent example is the phenomenon registered between June and September 2021, when the prices of freight transport in Europe saw the fifth successive quarterly increase, the reasons being the increase in demand, geopolitical events, as well as the increase in costs. There was an explosive increase in demand in the context of a shortage of drivers, a series of imposed restrictions and an over 30% increase in the price of fuels.

This trend is, first of all, the result of the dynamics of demand, which is continuously increasing both in the processing industry and retail and which is, obviously, the main reason for the increase in transportation fees. But the road transport sector is also facing a severe problem, a capacity deficit. The deficit of drivers is becoming the main problem in all the countries of the European Union. The Ti/Uply, IRU report mentions that in Spain the deficit is expected to reach 10,2% in 2021 compared to 7% in 2020. Germany and France are also affected, while in Great Britain the phenomenon was severly impacted by the Brexit.

The costs increase suddenly. At the same time, road freight transporters are confronted with significant increases in many essential costs. Aside from the lack of workforce, transporters are also confronted with a very significant increase in fuel costs. According to destatis.de data, the prices of Diesel in Germany have increased by 38,5% in the third trimester of 2021 compared to the third trimester in 2020.

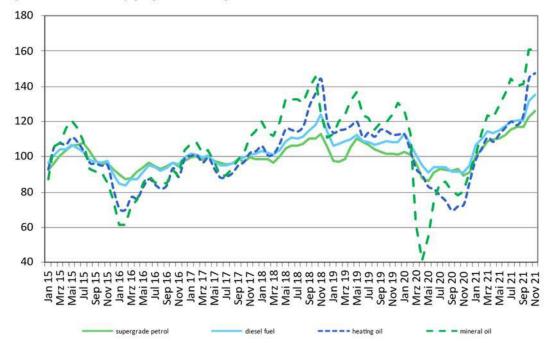


Figure no. 4 Evolution of gas prices in Europe in 2021

Source: https://www.fuelseurope.eu/wp-content/uploads/SR FuelsEurope- 2021 -6.pdf

Eventually, road freight transport is also facing the restrictions or blockages which currently disrupt all the logistics chains at a global level.

All of these uncertainties represent a real challenge for balancing prices considering that all the external factors lead to a potential increase in exploitation costs, in a sector in which profit margins are not usually big.

In this context, transporters make an effort to transfer at least a part of the additional costs which they are forced to support.

Considering everything presented, keeping margins will represent a real challenge for transport managers in the average and near future. The pandemic context keeps making economic perspectives very uncertain, especially considering the hypothesis of the following pandemic waves, and at this point the anticipation or measurement of consequences is impossible.

5. Conclusions

The coronavirus pandemic, an unprecedented event, put global supply chains in a situation which managers could not have anticipated. Nevertheless, many showed signs of adaptability, resilience and endurance. Lately, most economic operators have outsourced and extended more and more production segments and other activities, resulting in a great dependence on global suppliers and a degree of complexity, which makes them extremely vulnerable to interruptions or delays. Disruptions to the distribution chain can be caused by various phenomena which are beyond the control of the company, like natural disasters (such as the COVID-19 pandemic).

Bigger hubs managed to recover earlier, increasing the demand in storage capacity, while smaller ports continue at the same pace as in 2020. The prices of transportation and logistics represented the greatest challenge for exporters and importers. It is difficult, if not impossible, to say exactly when the pandemic will stop, when the travel and transportation restrictions will be lifted or when the global economy will recover, Nevertheless, we see that the commercial model from China has enormous potential in terms of maritime connectivity between countries and ports. With the updates of data reported to the number of COVID-19 cases and the information about the market and cross-border commerce dynamics, especially the maritime one between China, Russia, Europe and Asia, estimations could become more precise, but they will probably continue to represent the greatest challenge faced by service management and they will keep on making the balancing of transportation prices impossible in the current context.

6. References

- Andrew G, 2021. Cross-Border Logistics Operations. Effective Trade Facilitation and Border Management. Kogan Page
- Eurostat, 2021. Statistics Explained [online] Available at:
 - https://ec.europa.eu/eurostat/statistics-
 - explained/index.php?title=Maritime_freight_and_vessels_statistics
 - https://unctad.org/system/files/official-document/rmt2021ch3 en.pdf
 - https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Road_freight_transport_statistics-https://ec.europa.eu/eurostat/statistics-
 - explained/index.php?title=Comparative price levels of consumer goods and services#Price levels
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 otels ; https://ec.europa.eu/eurostat/statisticsexplained/index.php?title=Maritime freight and vessels statistics [Accessed 25 November 2021]
- European Central Bank, 2021. [online] Available at: https://www.ecb.europa.eu/pub/economic-bulletin/focus/2021/html/ecb.ebbox202103 01~8ecbf2b17c.en.html [Accessed 25 November 2021]
- European Central Bank, 2021. *Economic Bulletin* [online] https://www.ecb.europa.eu/pub/economic-bulletin/focus/2021/html/ecb.ebbox202103_01~8ecbf2b17c.en.html [Accessed 25 November 2021]
- European Environment Agency, 2021. [online] Available at: https://www.eea.europa.eu/data-and-maps/indicators/real-change-in-transport-prices/assessment-2 [Accessed 25 November 2021]
- Federal Statistical Office of Germany, 2021. Destatis. [online] Available at: https://www.destatis.de/EN/Themes/Economy/Prices/Publications/Downloads-Energy-Price-Trends/energy-price-trends-xlsx-5619002.xlsx? blob=publicationFile[Accessed 25 November 2021]

- Market Insights, 2021 [online] Available at: https://market-insights.upply.com/en/europe-road-transport-prices-up-sharply [Accessed 25 November 2021]
- Phil S, 2015. Too Big to Ignore: The Business Case for Big Data. Wiley and SAS Business Series
- Rose G, 2013. Ninety Percent of Everything: Inside Shipping, the Invisible Industry That Puts Clothes on Your Back, Gas in Your Car, and Food on Your Plate. Hardcover
- United Nations Conference of Trade and Development, 2021. [online] Available at: https://unctad.org/system/files/official-document/rmt2021ch3 en.pdf [Accessed 25 November 2021]
- Yingli W, 2021. Managing Digital Supply Chains for Competitive Advantage, E-Logistics 2nd Edition Kogan Page
- Vibrant Publishers, 2020. Operations and Supply Chain Management Essentials You Always Wanted to Know, Vibrant Publishers

Social Benefits Expenses and their Financing in the Member States of the European Union

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Abstract

The vast majority of Europeans regard social protection as a significant materialization of modern society, looking at it as a main instrument of continuity of social interdependence.

In Romania, social policy is a concise policy, coordinated by the Ministry of Labor and Social Solidarity and supported by the work of other ministries such as the Ministry of Education.

Romania's social policy is constantly developing as is the European Union's social policy which is constantly developing, in line with European priorities, as well as its own national priorities.

Each Member State of the European Union shall be responsible for constituting social expenditure and financing social protection systems and for agreeing and taking into account the right to social benefits providing protection, according to their historical characteristics, as well as existing political choices and public finances, and also provide quantitative aspects of the quantitative impact of mass economic and social phenomena.

Key words: social protection, public expenditure, sources of funding, financial resources **J.E.L. classification:** H55, O57

1. Introduction

The size of social security expenditure varies from country to country depending on economic potential, population structure and number, the orientation of social policy and the social security system. In some countries, social security expenditure has a significant place in total public expenditure.

Within the European Union, the financing of social protection has been, and has remained, very varied from one country to another. "There are two main financing systems: Contributory, which are based on the payment of social and non-contributory contributions, which are based on budgetary financing plus donations or other resources" (Văcărel, 2003, p.218).

There has been an attempt recently to decrease the frequency of contributions and increase taxrelated financing. This trend is still too weak to see it as a feature that will continue to mark developments in social protection financing schemes.

2. Theoretical backround

From 1989 to today, Romania has undergone a series of major social and political changes. This phase of transition from a closed authoritarian system to a free democracy and market economy has given rise to a number of difficult and complicated social options for the country's leaders and for all Romanians. The social problems that have arisen as an immediate consequence of changes in the economic system have led to the establishment of a social protection structure.

The most important European legal instruments are those of the Council of Europe, the European Union and the International Labor Organization.

Social policy is achieved at national level through specific legislative anticipation, decisions and orders of social planning, including the transfer of income to social security expenditure.

The European Union's policy on social policy focuses on balancing the labor market and the work done by citizens under normal working conditions.

The set of laws which have been drawn up by the Romanian Government in the field of social protection have been in conformity with the general provisions which are made available as information or imperative by the European Economic Community, bearing in mind that the acceptance of our country into the organization also requires respect for the social principles that the community is leading.

"All these guidelines derive from the question of the financial sustainability of social protection systems, obviously with specific features from country to country and from scheme to scheme" (Poenaru and others, 2003, p. 67).

3. Research methodology

The considerations presented in this article refer to social protection expenditure and its financing in the Member States of the European Union, comparing 15 Member States (EU-15) according to the estimates for 2020 in Eurostat databases. When the article was drawn up, we have resorted to various scientific methods of research: Induction, deduction, analysis, synthesis and comparative method.

4. Findings

Each state has a public budget reflecting expenditure and revenue. The management of the public budget shall be exercised by the Government in all the States of the European Union taking into account the fundamental principles of the European Union budget.

At European level, data on social protection are recorded in the database entitled "European System of Integrated Social Protection Statistics" (ESSPROS), namely: expenditure on sickness/health care, disability, old age, survivors, family and children, unemployment, housing and social exclusion, income by type and sector of origin, number of pension beneficiaries per sex and net social benefits.

The frequency of social protection expenditure in gross domestic product is an important benchmark in comparative estimates in this area.

Thus, the shares of social benefits expenditures according to the Eurostat-ESSPROS in 2020 are estimated to be the lowest in Hungary (18,1%), Latvia (17,7%) and Romania (13,8%), while the countries with the highest share are in France (35,7%), Austria (33,8%) and Italy (33,4%). Taking into account 2019, of the 15 countries presented, it is clear that France (33,6%), Belgium (31,8%), Austria (29,3%) and Italy (29,3%) are the top, and Romania (15,3%) is the lowest share of social benefit expenditure, followed by Malta (15,4%) and Latvia (15,7), according to Table No.1.

Table no. 1 The share of spending on social benefits in GDP

Tuote no. 1	. I've bri	The share of spenaing on social ochefus in GDI										
		Ye	ars		Increase (+) or decrease (-) the share of social							
					protection expenditure in GDP (%) (p.p.)							
	2010	2015	2019	2020	2010-2015	2015-2019	2015-2020	2010-2020				
France	33,2	34,3	33,6	35,7	1,1	-0,7	1,4	2,5				
Denmark	34,0	33,7	31,3	31,5	-0,3	-2,4	-2,2	-2,5				
Germany	30,0	29,4	30,3	32,3	-0,6	0,9	2,9	2,3				
Austria	29,6	29,9	29,3	33,8	0,3	-0,6	3,9	4,2				
Italy	28,4	29,7	29,3	33,4	1,3	-0,4	3,7	5,0				
Belgium	29,6	29,8	28,9	29,1	0,2	-0,9	-0,7	-0,5				
Norway	24,5	27,2	28,0	30,7	2,7	0,8	3,5	6,2				
Slovenia	24,4	23,8	22,2	25,0	-0,6	-1,6	1,2	0,6				
Poland	19,7	19,4	21,3	22,4	-0,3	1,9	3,0	2,7				
Cyprus	18,7	20,0	18,7	22,4	1,3	-1,3	2,4	3,7				
Hungary	22,4	19,0	16,6	18,1	-3,4	-2,4	-0,9	-4,3				
Lithuania	19,1	15,7	16,5	18,3	-3,4	0,8	2,6	-0,8				
Estonia	17,4	16,0	16,3	19,1	-1,4	0,3	3,1	1,7				
Malta	18,9	16,4	15,4	20,4	-2,5	-1,0	4,0	1,5				
Romania	17,5	14,6	15,3	13,8	-2,9	0,7	-0,8	-3,7				

UE-15 (average)	24,5	23,9	23,5	25,7	-0,6	-0,4	1,8	1,2
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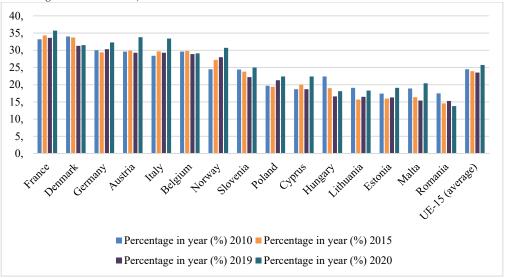
Source: Eurostat ESSPROS:

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*https://mfinante.gov.ro/documents/35673/41334/Programconvergenta2021-2024.pdf

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Figure no. 1 Share of expenditures on social benefits in GDP in the period 2010-2020 (author's processing according to Eurostat data)



Source: https://ec.europa.eu/eurostat/databrowser/view/tps00098/default/table?lang=en

It is noted that over the period 2015-2020 there has been an increase in the share of social benefit expenditure in GDP, a seemingly positive development in view of the need to ensure a higher level of social protection for the population.

One of the indicators that better reveals the differences between countries is the size of social protection expenditure per inhabitant expressed in the standard purchasing power (Purchasing Power Standards (PPS).

Taking into account the estimated expenditure for 2020 for the 15 EU Member States, it is noted that the largest were in Norway (18.155,40 euros), followed by Denmark (16.892,33 euros), Germany (12.923,39 euros), Austria (14.236,47 euros), so countries that have still promoted and promoted more generous social protection policies and the lowest ones are in Hungary (EUR 2.525,89), followed by Estonia (EUR 3.904,180) and Lithuania (EUR 3.190,90), (Table 2 and Figure no. 2).

Table no. 2 The hierarchy of EU countries according to the size of social protection expenditures per capita in 2020

		Ye	ars		EURO pee inhabitant in PCS			
	2010	2015	2019	2020	2010-2015	2015-2019	2015-2020	
Norway	10.236,00	11.997,21	12.373,64	18.155,40	11.174,24	12.004,84	13.029,93	
Denmark	10.659,40	12.003,49	12.233,18	16.892,33	11.225,74	11.894,51	12.727,48	
Germany	9.136,42	10.833,04	12.146,98	12.923,39	9.911,25	11.400,44	11.654,27	
Austria	9.595,55	11.096,95	11.501,47	14.236,47	10.254,32	11.174,79	11.685,07	
France	9.298,88	10.892,09	11.350,64	12.079,18	10.087,64	11.028,48	11.203,60	
Belgium	8.801,33	10.373,22	10.639,47	12.372,91	9.488,77	10.256,74	10.609,44	
Italy	7.698,17	8.067,80	8.669,62	9.288,74	7.781,40	8.266,77	8.437,10	
Slovenia	5.126,51	5.605,55	6.095,87	5.500,08	5.330,08	5.748,85	5.707,39	
Poland	3.397,66	4.297,40	5.441,40	3.095,89	3.788,09	4.747,69	4.472,39	
Cyprus	4.619,43	4.776,00	5.235,00	5.416,01	4.788,22	4.940,17	5.019,48	

Malta	4.047,23	4.614,71	4.800,49	5.067,24	4.261,46	4.711,78	4.771,02
Lithuania	2.992,03	3.605,60	4.519,28	3.190,90	3.211,64	3.926,77	3.804,13
Estonia	2.945,00	3.673,36	4.353,49	3.904,18	3.142,97	3.977,37	3.965,17
Hungary	3.879,77	4.084,69	4.117,90	2.525,89	3.942,79	4.040,69	3.788,23
Romania	2.308,24	2.499,30	3.584,93	:	2.319,12	3.006,48	:

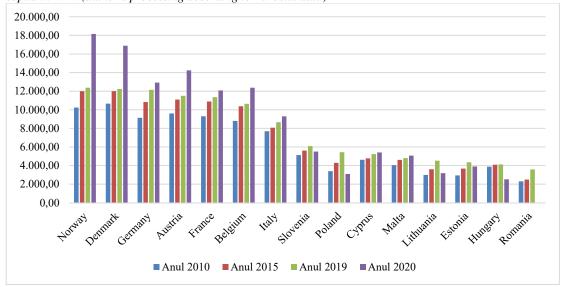
Source: Eurostat - ESSPROS

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https://ec.europa.eu/eurostat/web/social-protection/data/early-estimates

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Figure no. 2 The hierarchy of EU countries according to the size of social protection expenditures per capita in 2020 (author's processing according to Eurostat data)



Source:

https://ec.europa.eu/eurostat/databrowser/view/spr_exp_sum/default/table?lang=enhttps://ec.europa.eu/eurostat/web/social-protection/data/early-estimates

According to European statistics, in 2019 it is noted that Luxembourg (15.620,56 Euro) is the highest in terms of special protection expenditure per capita, Serbia (2.628,01 Euro) is the last highest in terms of the ranking (3.584,93 Euro).

The distribution expenditure on social benefits by the main category provides information on social issues or the accents that each country places in its social policy.

Table no. 3 Grouping social benefit expenditure by main categories in % by GDP in the years 2019-2020

	prote	ΓAL cial ction efits	Health	ness/ care + bility	Old a Surv	age + ivors	Surv	ivors	Fam Chil	2	Unempl	loyment	Soo exclu	ing + cial usion e.c.
(UE 15)	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020
Belgium	27,50	31,77	10,00	11,64	12,90	14,10	1,80	1,87	2,10	2,32	1,50	2,69	0,90	1,02
Denmark	30,00	31,52	12,20	13,82	11,30	12,48	0,20	0,25	3,30	3,40	1,20	1,44	1,30	1,36
Germany	29,10	32,25	10,00	11,60	12,80	14,07	1,70	1,84	3,40	3,78	0,90	1,74	1,20	0,16
Estonia	16,10	19,11	9,40	10,95	11,10	12,28	0,00	0,05	2,30	2,45	0,50	1,86	0,80	0,06
France	31,40	35,71	9,50	11,06	12,70	13,96	1,60	1,72	2,30	2,44	1,90	3,41	1,40	1,41
Italy	28,30	33,44	9,10	10,59	13,70	15,10	2,60	2,87	1,10	1,26	1,60	3,03	0,70	1,45
Cyprus	18,30	22,42	8,20	9,75	12,40	13,72	1,30	1,49	1,10	1,24	0,90	1,01	1,00	1,06
Lithuania	16,10	18,28	8,90	10,25	11,50	12,62	0,40	0,39	1,70	2,22	0,70	1,28	0,80	0,30
Hungary	16,30	18,12	8,40	9,78	11,90	13,05	0,80	0,82	1,90	1,91	0,30	0,48	1,10	0,33

Malta	15,20	20,36	8,10	9,48	12,30	13,52	1,20	1,29	0,90	0,95	0,20	3,31	0,80	0,27
Austria	28,60	33,80	9,30	10,73	12,70	13,93	1,60	1,70	2,60	3,04	1,50	3,44	0,80	0,84
Poland	21,00	22,41	8,70	10,37	12,70	13,82	1,60	1,59	3,00	3,81	0,20	0,22	0,70	0,33
Portugal	23,20	26,59	9,20	10,65	12,90	14,19	1,80	1,96	1,20	1,39	0,70	1,63	0,70	0,23
Slovenia	21,80	24,98	8,60	10,07	12,30	13,62	1,20	1,39	1,80	2,09	0,50	0,57	0,70	0,90
Norway	27,50	30,72	12,00	13,66	11,30	12,49	0,20	0,26	3,20	3,48	0,50	1,42	0,80	0,69

Source:

https://ec.europa.eu/eurostat/web/social-protection/data/early-estimates https://ec.europa.eu/eurostat/databrowser/view/spr exp gdp/default/table?lang=en

Thus, it is noted that the dominant part of welfare expenditure is pension (old age and survivors) and health expenditure.

In 2020, expenditure on health, healthcare and disability related benefits accounted for a share of 35,26% of total expenditure or 10,96% of GDP in all EU-15 countries analyzed. Denmark ranks first (13,82%), followed by Norway (13,66%) and France (11,06%), and Malta (9,48%).

Expenditure on old-age and survivors' pensions in 2020 represents 50,55% of total social welfare expenditure or 13,53% of GDP on average for the EU-15. Italy (15,10%) is the EU-15 ranking, followed by Portugal (14,19%) and Belgium (14,10%), and Denmark (12,48%) and Estonia (12,28%) are the last two.

Expenditure on family and children in 2020 accounts for 8,91% or 2,36% of GDP in total EU-15 expenditure, where Poland (3,81%) ranks first, followed by Germany (3,78%) and Malta (0,95%) and Cyprus (1,24%) in the last place.

Unemployment benefit expenditure accounts for 6,86% on average in the EU-15 countries or 1,84% of GDP, where the highest share is in Austria (3,44%), succeeded by France (3,41%), while the lowest share is in Poland (0,22%) and Hungary (0,48%). "Unemployment benefit figures are not always explained by the size of unemployment, as there are key differences between countries in terms of coverage of unemployment benefits and level of benefits" (Faghiura, 1993, p. 82).

The main sources of funding for social benefit systems, at the level of the Member States of the European Union, are the social contributions that fall under the obligation of employers and protected persons, as well as the resources (tax revenues) come from taxes, duties and other income.

In 2019, the analysis of the 15 EU Member States shows that France (34,3%) has the highest share of total social benefit income, followed by Denmark (33,1%) and Germany (32,1%), while Malta (15,4%) and Hungary (16,1%) account for the lowest share.

According to statistics, in 2019, Romania recorded 1,4% of tax revenues from the government, 2,8% of social insurance contributions from employers, 10,8% of social insurance contributions from protected persons and 0,1% of other income. Comparing the percentages of the 15 EU countries analyzed, it is noted that Romania has the lowest share of tax revenues (1,4%) and the highest share of social security contributions from protected persons.

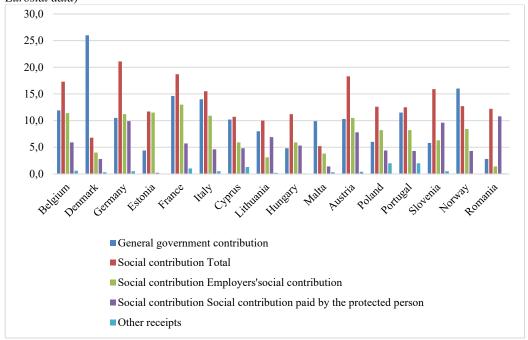
Table no. 4 Structure of social protection incomes in EU countries, in 2019 (%)

	General	*		Social contribu	tion	
	revenue	General government contribution	Total	Employers'social contribution	Social contribution paid by the protected person	Other receipts
Belgium	11,4	11,9	17,3	11,4	5,9	0,6
Denmark	4,0	26,0	6,8	4,0	2,8	0,3
Germany	11,2	10,5	21,1	11,2	9,9	0,5
Estonia	11,5	4,4	11,7	11,5	0,2	0,0
France	13,0	14,6	18,7	13,0	5,7	1,0
Italy	10,9	14,0	15,5	10,9	4,6	0,5
Cyprus	5,9	10,2	10,7	5,9	4,8	1,3
Lithuania	3,1	8,0	10,0	3,1	6,9	0,2
Hungary	5,9	4,8	11,2	5,9	5,3	0,1
Malta	3,8	9,9	5,2	3,8	1,4	0,3
Austria	10,5	10,3	18,3	10,5	7,8	0,4

Poland	8,2	6,0	12,6	8,2	4,4	2,0
Portugal	8,2	11,5	12,5	8,2	4,3	2,0
Slovenia	6,3	5,8	15,9	6,3	9,6	0,5
Norway	8,4	16,0	12,7	8,4	4,3	0,0
Romania	15,1	2,8	12,2	2,8	10,8	0,1

Source: https://ec.europa.eu/eurostat/databrowser/view/tps00108/default/table?lang=en

Figure no. 3 Structure of social protection incomes in EU countries (author's processing according to Eurostat data)



Source: https://ec.europa.eu/eurostat/databrowser/view/tps00108/default/table?lang=en

According to statistics, in 2019, the European Union (EU27) countries spent on average 28,1% of their GDP on social protection, noting that the distribution of the indicator is different according to the financial system in each country.

It is also noted that contributions also vary widely from country to country depending on the share of contributions paid by employers and employees and the tax regime for the income of self-employed workers, where there is a fixed rate due by them in some countries.

A particular influence on the establishment and management of financial resources is the situation of both the economic environment and the degree of development of the States.

Over time, economic growth has impressed the growing need for financial resources, which are of a limited nature and are essential to respect the budgetary constraint.

5. Conclusions

Romania's ratification of the revised European Social Charter by Law No 74 of 3 May 1999, adopted in Strasbourg on 3 May 1996, which is currently in force, helps to speed up the process of reform of the social sector, it gives a boost to the process of transposing the acquis communautaire into national law and brings a more favorable political impact to our country at european level.

From a financial point of view, in order to reach stability, both the high level of public expenditure as a share of gross domestic product and the question of the creditworthiness of social protection have been and still are the main indicators for research and evaluation on the revaluation of these systems.

In the countries of the European Union, the budget is subject to the limits provided for in the multiannual financial framework in which maximum annual amounts can be spent over a period of generally 7 years They agree on how the budget will be financed in the coming years and how it will be dimensioned.

The State was and is involved by including measures corresponding to each economic circumstance in reducing imbalances. Fiscal and fiscal policy thus plays a role in determining and prioritizing public expenditure and increasing public revenue.

Fiscal consolidation leads to the rate of income growth and to the constant minimum of public fraud.

The way in which the European Union's objectives are realized is tax harmonization through the adoption of a European legislative framework.

Social security provides the necessary mechanisms to prevent and combat poverty, reduce the major dispersion between social classes' incomes, for example, and develop human capital and productivity. That is, social protection is not only a means of alleviating poverty, but it is part of the development strategy which is to maximize its contribution to socio-economic development.

I believe that it is necessary to relaunch social dialog at European level, to correct social protection fairly by balancing contributions, to direct sickness policies, to balance pension systems, unemployment and dependency on all Member States Europe, at the moment, is a developing structure of social life.

6. References

- Văcărel, I., 2003. Public finances, 4th Edition. Bucharest: Didactic and Pedagogical Publishing House
- Poenaru, M., Grigorescu, C., Petcu, C., 2003. Financing social protection in the Member States of the European Union and Romania. Bucharest: Romanian Academy
- Faghiura, G.H., 1993. Theory of economic equilibrium. Bucharest: Lito A.S.E. Publishing House
- Despa, R., Zirra, D., Munteanu, D., 2010. Efficiency of investment. Bucharest: University Publishing House
- Mereuță, A., 2004. Public services management. Galati: Lower Danube Foundation
- https://ec.europa.eu/eurostat/databrowser/view/tps00098/default/table?lang=en (online)
- https://mfinante.gov.ro/documents/35673/41334/Programconvergenta2021-2024.pdf (online)
- https://ec.europa.eu/eurostat/databrowser/view/spr_exp_sum/default/table?lang=en (online)
- https://ec.europa.eu/eurostat/web/social-protection/data/early-estimates (online)
- https://ec.europa.eu/eurostat/databrowser/view/spr_exp_gdp/default/table?lang=en (online)
- https://ec.europa.eu/eurostat/databrowser/view/tps00108/default/table?lang=en (online)

Case Study on KOF Globalization Index for Greece, Czech Republic, Poland, Romania and Hungary

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Abstract

Through the decision of the European Union to extend the borders of influence and, implicitly, through the accession to western values of the states previously under Soviet authority, the process of regionalization at European level and integration of the mechanisms of the economic and financial markets has gained momentum.

This study analyzes the evolution of the compositional indicators of financial integration at the level of the Euro from 1995 until 2018, highlighting their behavior in the key moments of the history of the European Union and the degree of integration of the markets emerging from within the European Union. Using the KOF globalization index, it analyzes the level of integration of Greece, the Czech Republic, Poland, Romania and Hungary, making a parallel of the evolution of these markets since the reference year1990, as an arbitrary moment of the decision to westernize the economies of these states.

Key words: the evolution of globalization, comparative analysis of KOF, regionalization of the European Union

J.E.L. classification: E60, F40, F62

1. Introduction

The internationalization of the economic and financial markets is a subject that permanently attracts the interest of the academic and business environment. In recent decades, this process is analyzed through the prism of specific indicators, in order to quantify the advantages of the phenomena of regionalization and globalization, as well as to draw forecasts based on which the business environment to capitalize on the internationalization of markets. Researchers permanently adapt the methodologies for analyzing this phenomenon, according to the factors of influence and the social and political changes at a global level. Moreover, the degree of internationalization of financial markets entails domestic economic growth, the association of developing and emerging states with developed markets generating obvious benefits.

This paper studies through the kof globalization indicator the evolution of globalization and regionalization phenomena, in the case of the emerging countries of the European Union - the Czech Republic, Greece, Poland, Hungary and Romania, the reference period being the years 1990-2018.

2. Theoretical background

Looking at financial integration in the European Union region, a first observation is that the picture is the discrepancy when we look at the situation of Europe and non-EU states. The foreign assets of EU countries, given both those held in EU and non-EU countries, at the level of 2007, had increased by 350%. The period of 2008-2009, under the influence of the financial crisis, recorded a setback, and the recovery was made at a slower pace than the pre-crisis one.

For an analysis of the financial integration of the euro area, the financial integration indicators calculated by the European Central Bank can be used, which are based on several dozen aspects related to the integration of the business and financial environment (ECB, 2018; Hoffmann et al,

2019). In this respect, two indicators are noted: one is the one based on price, calculated according to the degree of dispersion of the return on assets between countries. The second is based on quantity and cumulating information related to foreign assets, for asset classes in different sectors (e.g. bonds or shares).

Looking at these two composite indicators, it is noted that EU countries have gradually become more financially integrated, with an accelerated growth rate since the introduction of the euro in 1999. A graphical highlighting of this trend can be found in Figure 1. It is noted that the political decisions taken in 2012 with the aim of redressing the crisis of previous years have helped to balance the financial markets and to stimulate a step-by-step recovery of financial integration. However, it should be noted that the level of recovery was still slow, as in 2019 the level was below that of 2007.

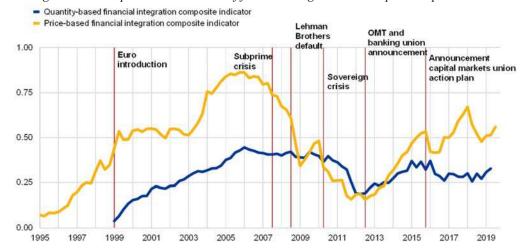


Figure no 1. Compositional indicators of financial integration in Europe in the period 1995-2019

Source: https://www.ecb.europa.eu

In this competition between globalization of deglobalization, international institutions bring their contribution in tilting the balance towards unification and integration. In the case of the European Union, currently the most complex integration project, we find in the permanent concern of international bodies the adaptation of economic and financial aggregation measures to the reality of the business environment. In the document prepared by the European Commission on harnessing globalisation opportunities (2017), the signatories state that "If we close our borders, others will do so too. That's how we would all be losers."

The same report draws attention to the fact that Europeans' view of globalisation is different. The report prepared in 2016 by the European Commission together with the Bertelsmann Stiftung shows that 45% of the population believed that from some point on, globalization poses a threat to economic opportunities, and 53% of respondents said that globalization is a threat to national identity. In our opinion, these figures are all the more worrying because the study was carried out before the health crisis, which exacerbated anti-Europeansm. Of course, financial mechanisms are not directly influenced by individual opinions, but when Euroscepticism goes beyond the boundaries of the free expression of a minority group, these ideologies cannot be ignored.

Thus, the abovementioned European Commission report discusses an adaptation of the globalisation process so that it remains competitive. A graphical representation of these trends can be found in Table 1.

Table no. 1. Globalization in the present and in future

Globalization so far	Trends influencing globalization				
Material flows of physical goods	Non-material flows of data services				
Demand for more and more diversified goods	Demand for fair trade products as well as				
and services	for sustainable and local products				
Global supply chains	Global value chains				
Flows in particular between developed	Increased participation of emerging				
economies	economies and metropolises				
Flows from states and large multinationals	The growing role of small businesses, non-				
	state actors and individuals				
Monetary quantified transactions easily	The growing importance of open sources				
	and shared content				
Technology transfer from developed	Technology transfer in both directions				
economies to emerging economies					

Sources: European Commission, McKinsey Global Institute, OECD.

In his research on globalisation and deglobalisation in Europe, Darvas (2020) shows that the European Union manages to keep the upward trend in terms of globalisation at a level far superior to other areas. In our opinion, this is primarily due to the joint effort coordinated by the international institutions and organizations, which have worked together in this regard. e Darvas notes in the European Union the support for globalisation, free trade and immigration among citizens are on the rise. On the other hand, the EU is facing negative social aspects, which are particularly visible in the countries that have weaker economic and financial results in the last decade and where the forecasts are not very optimistic. This state risks extending in the very likely event that in the coming years the EU will see a slowdown in economic developments, an increase in the unemployment rate and a slowdown in support of the globalisation process.

We find to remember the point of view of the mathematician and economist Thierry de Montbrial (2020), in which he believes that the evolution of financial integration at European level will go through several stages. Thus, in the short term, Member States will rely on mutual support, with the common aim of ending the covid-19 crisis and economic recovery; the eu's common denominator will be 'cooperation' and both developed and less developed markets will take policies in common directions. In the medium-long term, the arguments of economists will be for the free movement of capital and financial services, and it is necessary to broaden horizons, while in the long term the recovery towards globalisation will be based on institutional cooperation, the strengthening of international authorities and on financial support, exemplifying with the loans granted by the International Monetary Fund. Montbrial draws attention to the fact that without such measures Europe risks if a step backwards in terms of market integration, as a result of which the EU's two great challenges will be efficiency and democracy.

Piketty, looking at the European financial environment at the level of 2020, is of the opinion that the European Union is facing an increase in pressure on the financial markets, caused by a new sovereign debt crisis, as well as by a population with a reluctant voting right to the impositions and restrictions that Member States have implemented during the health crisis. In this regard, we share Piketty's view that the European Union is moving towards fiscal integration whose aim is to avoid a 'catastrophic bill'. However, we wonder whether it is a certainty that this integration will work in the spirit of equality or will particularly benefit the developed markets.

3. Research methodology

In order to quantify the degree of globalisation, the scientific environment has developed several calculation formulas. Among them we mention the ATKEP indicator, whose author, Keaney calculates the level of globalization using 12 variables including economic integration, social contact, technological interconnectivity and political approaches, considering a total of 62 states.

Another indicator used in scientific research is the G-Index composite globalization index, created by the World Markets Research Center (WMRC) and which quantified the level of globalization for 185 countries, based on the main variables telephone traffic, economy and Internet traffic. The NGI (New Globalization Index) was created by Vujakovic in 2009 (Vujakovic, 2010); it takes into account a database of 70 countries and 21 variables, calculating globalization since 1995. The CSGR Globalisation Index (GSCR) was proposed by the Center for Globalization and Regionalization Studies and was created with the aim of quantifying the economic, political and social dimension of globalization in the period 1982-2004.

The most used indicator in specialized studies, however, is the KOF Globalization Index (Potrafke, 2015). It is used to measure the phenomena of globalization, respectively deglobalization, in terms of economic, social and political dimensions. The KOF indicator "reflects the degree of economic, social and political globalization of the hazelnut country, without making positive or negative assessments on the result" (Adventage Austria, 2016), a composite index that incorporates different aspects of society into a single indicator that determines the state of affairs at a certain time.

KOF has been used in comparative and chronological analyses since 1970 until now, providing data whose extrapolation can support medium-term forecasts. The values of the KOF index fall within the scale 1-100, where 100 represents the maximum of a specific variable for the entire sample of the selected states, relative to the selected time period. This indicator integrates economic, social and political aspects, using equal weights, being calculated as an average of the global index of globalization KOF de facto and de jure.

4. Findings

According to the FTSE Russell report, at the end of 2020 among the Member States of the European Union, the Member States that fall under emerging market status are the Czech Republic, Greece, Romania and Poland.

In the study of their degree of globalization / deglobalization, using the composite indicator KOF, we choose as the reference period the interval 1990-2018 (the study stops at the level of 2018, there are no more recent official data at this time), in order to encompass the entire post-communist period and to be able to observe the evolution of these markets in the context of the transition to capitalist markets.

As shown in Table 2., the evolution of the globalization index was unanimously on a positive trend. At the beginning of the period we were referring to, the level of the index is close in the case of Greece, Poland and Hungary. Even if for the period 1990-1992 there are no official data, we can add to this list the Czech Republic, arguing on similar figures reported since 1993. There was a lower level in the case of Romania, which confirms the more isolated economic and political environment from which it suffered during the communist period, compared to the other states. We note that the evolution is a constantly positive one, and the negative events that have influenced at the economic and financial level have not significantly influenced the growth rate.

Year	Czech Rep.	Greece	Poland	Hungary	Romania	Global	Europe and Central Asia
1990		56	51	58	43	43	59
1991		63	52	60	47	43	52
1992		65	55	62	49	44	53
1993	66	67	58	64	52	46	55
1994	67	68	61	67	55	47	57
1995	69	68	62	68	57	48	58
1996	69	69	62	71	58	48	59
1997	71	70	63	73	60	49	61
1998	72	71	65	74	60	50	62

1999	74	73	65	75	61	51	63
2000	76	75	68	76	63	52	64
2001	77	76	68	78	64	53	65
2002	78	75	70	78	66	53	66
2003	78	77	71	78	67	54	66
2004	79	77	75	81	68	55	68
2005	80	77	75	82	72	56	68
2006	81	78	76	83	72	57	70
2007	82	80	78	84	76	58	72
2008	82	80	77	85	76	59	72
2009	82	79	77	85	76	59	72
2010	82	79	77	85	76	60	73
2011	82	80	77	85	77	60	73
2012	83	80	79	84	77	61	73
2013	83	81	79	84	78	61	73
2014	84	82	80	85	79	61	74
2015	84	81	80	84	80	61	74
2016	85	81	81	84	80	61	74
2017	85	82	80	84	80	62	75
2018	85	83	80	84	79	62	75

Source: https://kof.ethz.ch/en/forecasts-and-indicators/indicators/kof-globalisation-index.html

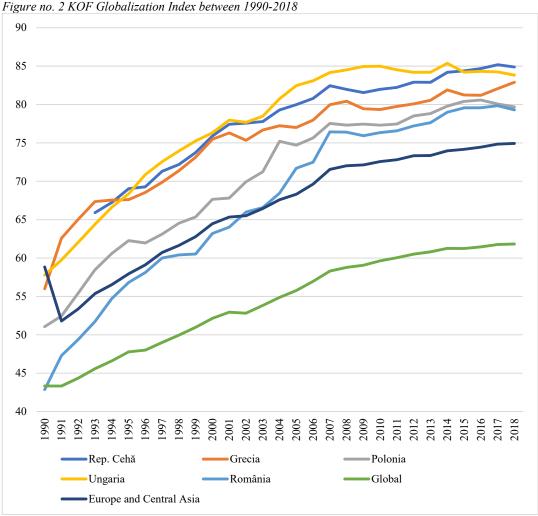
For a comparative analysis of the KOF index of these countries, we include in the observation the values recorded at global and regional level (Europe and Central Asia). Thus, it is noted that in the early '90s, the Czech Republic, Gresia, Hungary and Poland had a level of globalization similar to that of Europe and Central Asia and much higher than the global average, while Romania was comparing itself to the global level, but was much lower than the European average.

The period 1990-2020 represented for the current emerging markets of Europe an opportunity for great development, which is also demonstrated by the rapid upward pace of the KOF index. Analyzing Fig. 2. we can say that, in a favorable context and supported by the developed countries of the region in which they are located, the less developed countries have the capacity to expand globalization higher than the established markets, reaching a certain level from which the trend is no longer of significant growth and maintenance of that index.

In our opinion, among the countries studied, Romania represents the market that has taken the most advantage of the globalization process at the level of the European Union. Even if the KOF index registers lower values compared to the other emerging markets, Romania's ambitious evolution has reduced the value difference it had at the beginning of the analyzed period. It is noted that ten years after giving up being a communist market, Romania's KOF index reaches the European average, far exceeding the global index. The prospect of joining the European Union represented an impulse for the upward pace of the globalization of the Romanian market, so that the KOF index recorded in 2007 the biggest jump.

Comparing with the other European emerging markets that had a similar European path, we note that the Czech Republic's accession in 2004 to the EU did not have a significant benefit from the point of view of globalisation, unlike in Poland, for which the accession of the same year to the European market represented an impulse similar to that which Romania benefited.

At the level of 2018, there is still a difference in the KOF globalization index between Romania and the other emerging markets, but the gap is significantly reduced. It is worth mentioning that the indices recorded by all the countries declared to have emerging markets are above the European average.



Source: author processing

5. Conclusions

Scientific researchers and business specialists must be aware that changes are inevitable and the solution lies not in censoring voices contrary to our ideologies, nor in ignoring them by continuing globalization policies without taking into account the social and economic reality.

From our point of view, in the event of an involution of the globalization process, determined by the economic, political and social context at global level, a solution would be the temporary compromise of regionalisation - a de-escalation of nationalist behaviors and the contracting of markets in within their own borders, by stimulating fiscal policies at regional level, thus preserving cross-border transactions, international capitals and, implicitly, a diplomatic and competitive environment in the positive sense. However, it is important to note that the process of regionalisation also has certain challenges. A regional concentration is made around several developed markets, which tend to gain advantages and an exaggerated authority over the other players in the market, and at the same time to enter into a dangerous competition with the dominant markets of the other regions. Recalling this fact, we cannot fail to recall the Cold War conflict and not draw attention to the negative aspects that the individualistic behavior of the markets in the developed countries can have on all those participating in the integrated economic and financial mechanisms.

In view of the above, we conclude that there is no ideal solution, a perfect mechanism remains a utopia, and fiscal policies must find ways of adapting to the economic reality and shaping financial mechanisms, for the purpose of efficiency, cooperation and tempering the extreme behaviors of the players in the market. From our point of view, a correct attitude on the part of the European Union institutions remains that of focusing on regional autonomy

Regarding the study of the KOF index in the period 1990-2018 for the emerging markets of the European Union, we conclude that their evolution is a net positive one, the values of the globalization index recorded in the last two decades giving confidence to optimistic prospects regarding the integration of these markets in the European and global mechanisms.

In conclusion, even if the academic and business environment bring to the fore more and more often the phenomenon of deglobalization as a real perspective of the immediately following period, the statistical figures show us that the trend remains a favorable one for globalization. We are not saying that deglobalization is an impossible phenomenon, but rather unlikely at global level, in the current context, and the challenges that society and the markets are facing at the moment, such as the health crisis, the immigration crisis, the situation of the Middle East or relations with China are not, in our view, fundamental factors and of long duration, which pushes in a short time horizon towards a new economic and financial order worldwide.

In our opinion, the phenomenon of globalization, in parallel with that of regionalization, remains the global trend in the long term as long as the economic and financial mechanisms will be governed by the common interest of efficiency and profit. We believe that in this system, emerging markets will have nothing to gain, and a radical change that will tilt the global balance towards deglobalization will not start from the economic and financial environment, but rather from political visions and ideologies.

6. References

- Adventage Austria (2016, March). Globalisation index: Austria ranks first. *Austrian International Economy* [online], http://www.advantageaustria.org
- Darvas, Z., 2020. Resisting deglobalisation: the case of Europe, Working Paper 01, Bruegel
- De Montbrial, T., 2020a. Second letter from Thierry de Montbrial, 28 Aprilie [online], https://thierrydemont.brial.com/
- European Central Bank, 2018. Financial integration în Europe, *European Central Bank* [online], https://www.ecb.europa.eu/pub/pdf/fie/ecb.financialintegrationineurope201805.en.pdf
- Hoffmann, P., Manfred, K., Zaharia, S., 2019. Financial integration în Europe through the lens of composite indicators, Working Paper No 2319, *European Central Bank* [online], https://www.ecb.europa.eu/pub/pdf/scpwps/ecb.wp2319~3a5f3d0f70.en.pdf
- https://kof.ethz.ch/en/forecasts-and-indicators/indicators/kof-globalisation-index.html
- IMF, 2021. World Economic Outlook April 2021. Washington D.C.: International Monetary Fund.
- Piketty, T., 2020. Willing EU countries should spearhead fiscal union, interview in *Politico Publication*, April 28.
- Postelnicu, C., Dinu, V., Dabija, D.C., 2015. Economic Deglobalization From Hypothesis to Reality, *Economics and Management*, vol. 18, no. 2, pp.4-14
- Potrafke, N., 2015. The evidence on globalisation. *The World Economy*, vol. 38(3), 509–552.
- Savina, G. Haelg, F., Sturm, J.E., 2018, The KOF Globalisation Index Revisited, KOF Working Paper, no. 439.
- Spulbăr, C., Ejaz, A., Birău, R. & Trivedi, J., 2019. Sustainable Investing Based on Momentum Strategies în Emerging Stock Markets: A Case Study for Bombay Stock Exchange (BSE) of India, Scientific Annals of Economics and Business, XX (X), pp. 1-11
- Spulbăr, C., Tenea, A.C., Stanciu, C.V. & Birău, R., 2020. Is there a common path for the integration of European Union banking systems?, *Economic Research-Ekonomska Istraživanja*, vol. 33(1), pp. 399-419
- Troto (Iacob), A.I, 2020. Globalization and International Cooperation A Theoretical Approach of Financial Markets and Macroeconomic Growth, în the Context of the World Crisis, Scientific Bulletin - Economic Sciences, vol., issue 1, University of Pitesti, Romania, Faculty of Economics and Law
- Troto (Iacob) A.I, 2020. A Theoretical-conceptual Approach to the Particularities and Functions of the Stock Markets, în the Context of the Pandemic Period, Economic Sciences Series vol. XX, issue 2, Ovidius University Annals, pp. 948-956

- Trivedi, J., Spulbăr, C., Birău, R., & Mehdiabadi, A., 2021. Modelling volatility spillovers, crossmarket correlation and co-movements between stock markets in European Union: an empirical case study, Business, *Management and Economics Engineering*, vol. 19(1), pp. 70-90
- Trivedi, J., Afjal, M., Spulbăr, C., Birău, R., Inumula, K.M., Pradhan, S., 2021. Modeling emerging stock market volatility using asymmetric GARCH family models: An empirical case study for BSE Ltd. (formerly known as Bombay Stock Exchange) of India, *Revista de Științe Politice*, no. 70, pp. 167 176.
- Van Bergeijk, P.A., 2017, One is not enough! an economic history perspective on world trade collapses and deglobalization, *ISS Working Paper Series/General Series*, vol. 628, pp. 1-23.
- Vujakovic, P., 2010. How to Measure Globalisation? A New Globalisation Index (NGI), *Atlantic Economic Journal*, vol. 38, pp. 237
- www.ftserussell.com, FTSE Russel [online]

Section III

Economic and Social Studies

Study on Some Aspects of the Economic and Social Impact of the Covid 19 Pandemic

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Abstract

This paper takes the form of a meta-analysis which aims to underline some aspects identified at international and national levels as a result of the pandemic of the last two years, reflected in the economic and social fields. The results can be premises for further studies and research in the same field, both at macroeconomic and microeconomic levels.

Key words: analysis, economy, management, pandemic, human resources

J.E.L. classification: E24, M12, M20.

1. Introduction

Starting from the need to address contemporary issues and the uncertainty brought and continued by the manifestations and effects of the current pandemic; from the interest to find out more the present economic and social context and from the desire to further guide case studies and research, we considered important these approaches and analyzes of selected data and information on the economic and social impact of the pandemic manifested during in the last two years at national and global levels.

2. Theoretical background

Taking into consideration the novelty of the topic generated by the sudden appearance of the coronavirus pandemic and the limited research in this field, we started the documentation from the necessary landmarks from the competitive economy (Tănase, 2012), from effective management (Andreș, 2012; Andreș, 2006; Verboncu, 2013) as well as from the field most affected by this pandemic, the human resources one (Andreș, 2009; 2020a, 2020b; Andreș & Demyen, 2020; Nicolescu, 2003).

Romanian enterprises and organisations are also included in this analysis (Tănase, & Tănase, 2010a, 2010b; Tănase, Tănase & Franţ, 2012,). The analysis was continued with data and public statistical information, also including the harmonized legislation.

3. Research methodology

Being an incipient research in this field surrounding the pandemic impact, we conducted a metaanalysis, comparative analyzes over time and between pandemic developments and manifestations in reference countries, highlighting, in particular, the impact of the pandemic on the economy and on human resources. Some public statements and interviews of specialists were also analysed in order to be able to offer recommendations and conclusions relevant to this area.

4. Analysis of some aspects of the pandemic economic and social impact

Before analyzing the manifestation and effects of the pandemic, we need to address the context and it was easy to notice its sudden appearance, first in China in December 2019, followed by the

boom in the spread of the Covid-19 virus, which caught most countries with insufficient resources (Spănescu & Gheorghiu, 2020). Thus, pressured by time and by the fast spread of the highly contagious coronavirus, the governments and administrative leaders at all levels, hastily proposed and implemented the legal measures they considered necessary. Unfortunately, some of the these measures proved to be inadequate, generating negative effects such as decreasing economic development, rising unemployment due to the cessation of activity of several economic entities in various industrial sectors, trade, tourism, etc. In this context, the decrease of the labour force and the bankruptcy of many companies became obvious, the economic and social analysts estimating that by the end of the year, more than 350 million new unemployed people were counted in the world, compared to the numbers registered at the beginning of the COVID-19 pandemic (Spănescu & Gheorghiu, 2020).

However, with the intent to limit the spread of COVID-19 virus, large sums of money were incurred in order to purchase protective equipment and materials, expand / modernize hospitals, pay salaries for an increased number of doctors and other medical employees, thus increase their stimulation or to avoid the impact of the pandemic on the economy and the social situation by providing facilities for employees and employers.

Although there is no complete research to accurately certify or at least clearly estimate what the economic damage caused by the new global pandemic COVID-19 will be, there is still a broad agreement among economists (public data being published at the macro level being and at the micro level, including the thematically led discussions in two workshops and two round tables organized in this regard) that the pandemic will have a rather severe negative impact on the national economy and implicitly on the global economy. Early estimates also showed that if the virus causes a global pandemic, most economies would lose at least 2.4 percent of gross domestic product (GDP) during 2020, prompting economists to reduce global economic growth forecasts for 2020 and 2021 in advance. Thus, global GDP could be estimated at only 86.6 trillion US dollars in 2019 - which means that only a 0.4% decrease in economic growth can be reflected in nearly 3.5 trillion US dollars lost economic output. But since these early predictions, global stock markets have suffered several dramatic declines as a result of the outbreak, Dow Jones reporting one of the largest declines (Statistics Research Department, 2021).

After India, Brazil was the next country that registered a historical decrease in GDP, especially for the second quarter of 2020 and a significant decrease registered by almost all the world's economies following the Covid-19 pandemic. It should be noted that only China has somehow escaped the recession (HotNews, 2020). Brazil, with the largest economy in Latin America, also recorded a record collapse of 9.7% of its GDP in only a few months, between April and June 2020. The South American giant officially entered a recession, after a decline (2.5% in the first quarter) (HotNews, 2020), with the GDP now at the same level as at the end of 2009 when it was at the centre of the international financial crisis, confirmed by the IBGE Statistics Institute in a statement.

India, the emerging giant that pays a much higher price for Covid-19 (over 65,000 dead), has seen an unprecedented 23.9% drop in its GDP from year to year, not going into recession because New Delhi registered a growth of 3.1% between January and March 2020 (HotNews, 2020). In the United States, the world's largest economy, the decline was 9.5% during the second quarter, after falling by 1.3% during the first quarter, according to OECD statistics.

The only pale light came from second-largest economy in the world, China, which avoided the recession by drastically halting the epidemic. Thus, GDP returned to 11.5% growth during the second quarter after which it decreased by 10% during the first quarter. In the case of Japan during the second quarter, its GDP collapsed by 7.8% compared to the first quarter, thus registering the sharpest decline from all comparable data that were implemented starting with 1980. The GDP growth rate of the seven major world economies is presented in Figure no.1, starting with the third quarter of 2020 (Statista.com, 2021). Analyzing the situation of European countries surrounded by recession, it can be seen that the entire euro area registered a reduction in GDP of 12.1% in the spring of 2020, registering the most significant decline since 1995, according to the Eurostat European Statistical Office (HotNews, 2020). In this context, Germany, considered the largest economy in Europe, had a fall in GDP of 10.1% in the second quarter, after falling by 2% during the first quarter, although it was less affected by the pandemic than other countries on the continent. France experienced a much stricter and longer isolation than Germany, the fall being

more severe, with GDP falling by 13.8% in the spring of 2020, after falling by 5.9% in the first quarter, a decline that has not been recorded since the spring of 1968, when it was affected by the general strike in May (HotNews, 2020).

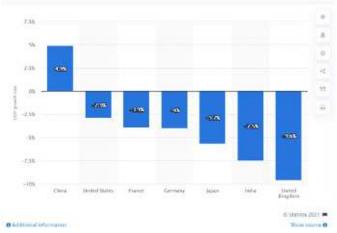


Figure no. 1. Growth rate in GDP of seven major world economies

Source: www.statista.com

Italy, which experienced a weak growth before the health crisis and with the wealthy region of Lombardy which was the European epicentre of the pandemic for several weeks, entered a recession with a 5.4% drop in GDP in the first quarter, then 12.8% in the second. In Spain, the economy fell by 18.5% in the second quarter, after 5.2% in the first, with a 60% drop in tourism revenue in the spring of 2020 and a drop of more than a third in exports. The United Kingdom, considered the European country most affected by the pandemic, suffered the worst recession on the continent, as its economy remained tied to that of the EU until the end of the year. GDP fell by 20.4% in the second quarter, after falling by 2.2% in the first quarter. On the other hand, for Russia, its economy contracted by 8.5% in the second quarter, during one year, according to the first estimate made by the Rosstat statistical agency. Besides the effects of the pandemic, the Russian giant also suffered due to the oil crisis (HotNews, 2020).

Thus, the coronavirus pandemic reached almost every country in the world, spreading to national economies and businesses to bear the costs for it, as governments struggle with new measures to fight the spread of the virus but also to ensure business resilience.

Despite the development of new vaccines and the measures required, many still wonder what recovery and resilience might look like (Jones et al., 2021).

A selection of diagrams and maps is presented to better understand the economic impact of the virus that has generated almost two difficult years for those who want a job or who have seen low incomes and expenses rising. Most countries are in recession.

If the economy grows, it generally means that there is more wealth and more new jobs, taking into account the percentage change in gross domestic product or the value of goods and services produced, usually within three months or a year. However, the IMF estimated that the global economy declined by 4.4% in 2020, with the organization describing the decline as the worst since the Great Recession of the 1930s. The only major economy registering a growth in 2020 was China, which grew by 2.3%. However, the IMF predicted an overall growth of 5.2% in 2021, with countries such as India and China at the top of the growth, forecasted to grow by 8.8% and 8.2% respectively. At the same time, the recovery of large economies, service-dependent economies that have been severely affected by the outbreak, such as the United Kingdom or Italy, is expected to develop more slowly (Jones et al., 2021).

The rapid spread of Covid -19, has placed many countries on alert and emergency, during the months of lockdown in 2020, and even now, which has significantly reduced economic activity with visible effects on social problems (Lee, 2020)..

Figure no. 2. Unemployment rate change: 2019-2020

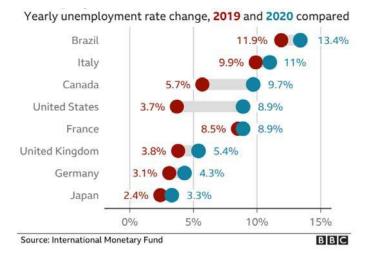


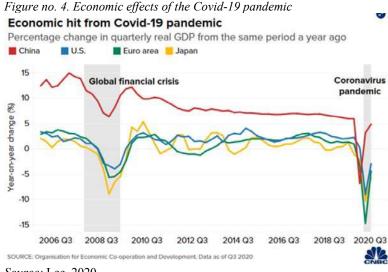
Figure no. 3. Map of GDP growth worldwide



The International Monetary Fund predicted that the global economy could decline by 4.4% in 2020, before returning to a 5.2% growth by the end of 2021. Thus, the IMF said in October 2020 that the world economy had begun to recover, but warned that returning to pre-pandemic levels would be a "long, uneven and uncertain" process. Simultaneously with the restriction of activities, there were also travel restrictions, the main feature of the coronavirus lockdown worldwide being considered the complete or partial closure of national borders, which in fact restricted a large part of international travel (Lee, 2020).

As of November 1, 2020 alone, more than 150 countries and territories have approved Covid-related travel restrictions, according to the United Nations World Tourism Organization (Lee, 2020). In this international context, the Romanian economy was at the crossroads, between the economic contraction caused by the pandemic and the opportunities offered by the financial support of the European Union during this period.

The world economy faces one of the worst economic crises since the Great Depression (1929-1933), the forecasts of economists placing its impact even beyond the magnitude of that recorded during the Great Depression. The Romanian economy could not remain unaffected by this impact, given its dependence on global economic mechanisms and its integration into European and global value chains (Kubinschi, 2020).



Source: Lee, 2020

Moreover, its structure makes the Romanian economy vulnerable to the impact of COVID-19: primary resource processing and machine building, the main areas that contribute to GDP formation, are among the most severely hit by the recession, and the services sector are also subject to the restrictions associated with the pandemic. The Romanian economy registers one of the largest contractions in Europe, of 12.3% (according to Eurostat), being surpassed only by the states whose GDP is based on tourism (Spain, Croatia, Greece, Hungary, Portugal, France, Italy) (Kubinschi, 2020).

Restrictions on international travel

Complete closure of borders
Partial closure of borders
Partial closure of borders
All travel restrictions lifted

Source: UNWTO Travel Restrictions Report Destricts on sit Nov. 1, 2020

Source: Travel restrictions report

In view of the above, it was found that the European Union's response was more prompt and concerted than ever on both strategic axes: fighting the COVID-19 pandemic but also its economic effects. European states have reached a significant level of solidarity in joint interventions, even if they were considered insufficient and did not cover all areas from the perspective of some of the most affected Member States - such as Spain, Italy, etc. (Kubinschi, 2020).

The periods of economic and financial crisis revealed that the reduction of losses and the economic recovery following the crisis crucially depended on the scale and quality of state interventions in the real economy. The paradigm of investing in public infrastructure and austerity has proven to be pro-cyclical rather than effective for states that have opted for such an approach. Moreover, states with strong financial markets, through virtually unlimited access to financial resources and the lowest costs, have been able, through the favourable interest rate differential, to

ensure better dynamics and profitability for domestic companies. EU intervention was in fact a complex set of actions, defined from several perspectives. Thus, the first set of measures aimed at relaxing the conditions for regulating economic competition. Recent crises have taught us that states that intervene quickly and massively directly in the economy are winners. Relaxing the restrictions imposed on state aid to companies, through the Temporary Framework allowed for a level of direct financial intervention in the economies of all EU Member States, which seemed impossible before the crisis Another set of measures aimed at limiting the spread of the new virus, through the SURE package, designed to provide emergency assistance to Member States through financing, centralized procurement of medicines, COVID-19 tests, specific medical equipment, specialist advice, etc. (Kubinschi, 2020).

Similarly, the European banking regulator, EBA, has relaxed liquidity, solvency and, to some extent, financial reporting requirements. Moreover, the European Central Bank has managed to consolidate a € 1.3 trillion liquidity package for the national banks of the EU member states. But the most important support mechanism set up at EU level is the Next Generation Program (NEXTGEN), which resides in allocations of financial resources of exceptional magnitudes, reaching 1,850 billion Euros, of which about 550 billion in non-reimbursable form, and the difference up to 1,850 billion in the form of loans at an extremely low interest rate. All financial assistance consolidated at European level is allocated for the period 2021-2027, so forecasts for the economic recovery outline a medium- and long-term recovery. Also, the allocation will finance both health and medical efforts and economic recovery, but in compliance with the conditions imposed by the Green Deal. For Romania, this package is the biggest opportunity to fight the effects of the pandemic, especially considering that our country would benefit from some of the most consistent allocations - about 33 billion Euros in non-reimbursable form and about 55 billion Euros in repayable form (Kubinschi, 2020).

The economic forecasts for the autumn of 2020 for Romania expressed the GDP was that it would decrease by 5.2% in 2020 and will increase by approximately 3.3% in 2021, respectively by 3.8% in 2022 (European Commission, 2020).

So the new coronavirus pandemic led to a huge shock to economies, both in the EU and globally, with serious socio-economic consequences. Romania's economy is expected to recover from declining production in the first half of the year 2021. Although the economic contraction in 2020 appears to be less severe than initially estimated, uncertainty remains very high, given the recent evolution of the pandemic, and real output is unlikely to return to pre-crisis levels by the end of 2022. It was also estimated that the budget deficit will increase significantly, as the budgetary effort needed to combat the crisis adds to past fiscal slippages (European Commission, 2020).

Table no. 1 European Economic forecasts for Romania – fall 2020

	2019	2020	2021	2022
GDP growth (%, from one year to another)	4.2	-5.2	3.3	3.8
Inflation (%, from one year to another)	3.9	2.5	2.5	2.4
Unemployment rate (%)	3.9	5.9	6.2	5.1
Budget deficit (% of GDP)	-4.4	-10.3	-11.3	-12.5
Gross public debt (% of GDP)	35.3	46.7	54.6	63.6
Current account balance (% of GDP)	-4.7	-4.6	-4.8	-4.9

Source: European Commission. General Direction of Economic and Financial Affairs

An interrupted and incomplete recovery can be easily observed. According to the economic forecasts for autumn 2020, the euro area economy would shrink by 7.8% by the end of 2020, before an increase of 4.2% in 2021 and 3% in 2022. According to forecasts, the EU economy would contract by 7.4% in 2020, before recovering with an increase of 4.1% in 2021 and 3% in 2022. Compared to the economic forecasts for the summer of 2020, the growth forecasts for the euro area and the EU are slightly more optimistic for 2020 and more temperate for 2021. Neither in the euro area nor in the EU is production expected to return to pre-pandemic levels in 2022. The economic impact of the pandemic has varied greatly in the EU and the same variability is valid in terms of recovery prospects, non-uniformity being reflected in the level of spread of the virus, the strictness of public health measures taken to control it, the sector composition of economies national

economies but also the strength of national policy responses (European Commission, 2020).

In this economic context, social measures have also been imposed, such as the population immunization and the vaccination process for COVID-19, so that as early as December 2019 a large vaccination campaign against Covid-19 began, with the aim of limit the epidemic spread of SARS CoV-2 virus, through as much vaccine coverage as possible, but without introducing compulsory vaccination or restrictive measures against unvaccinated persons, the vaccination being voluntary. In the European Union, vaccination was carried out only with vaccines authorized by the EMA, the European Medicines Agency, following a complex process of analysis and evaluation, according to the regulations and legislation in force. During the COVID-19 pandemic, conditional marketing authorization is granted by the European Medicines Agency (EMA) and is used to accelerate the approval of COVID-19 treatments and vaccines for EU countries. This is in line with EU law which stipulates that conditional marketing authorization is a rapid authorization given to pharmaceutical suppliers during public health emergencies. The authorization is an appropriate tool to allow access to COVID-19 vaccines to all EU citizens at the same time, to support mass vaccination campaigns and to save lives (Synevo, 2020).

In the context of social responsibility at the level of companies and any economic entities, the impact of the pandemic on human resources can also be seen. During 2020-2021, major changes have taken place all over the world, and the pandemic has forced us to rethink the way we work, learn, socialize and reorganize our lives, with a minimum of physical interaction. Thus, the crisis generated by the new coronavirus had as its first effect, within the companies, the relocation of some employees from the office to their own home or the reduction of working time or technical unemployment as the case may be.

Thus, if until this crisis, working from home was seen as a bonus or incentive granted to certain employees today, it has become a habit among employees. The transformations that have taken place during the last two years in the economic activity, in the context of the COVID-19 pandemic, are, in most cases, irreversible, but also beneficial for the business environment. For example, the uncertainty generated by the evolution of the pandemic and the concern of employers for the health of employees have led to flexible working hours, including long-remote work, a number of viable solutions for more and more companies. However, there are still many unclear economic and social issues, at least in the area of human resources and pay, which need to be clarified, given that long-term work tends to become a habit in the medium and long term.

Thus, in order to avoid certain risks that could arise from the improper application of procedures in the case of remote activity, organizations must ensure that they correctly understand the legal, fiscal, payroll and human resources effects that such reports work involve. Furthermore, any entity should determine what types of processes are needed to define in order to effectively manage future challenges and ensure that the strategy pursued is agile enough to capitalize all opportunities, to avoid risks and to ensure their return and growth in the future.

It is well known that after the outbreak of the pandemic, companies have had to change the way they organize processes and manage their business, especially by implementing digital and technological solutions to ensure efficient operation. Of course, all this required unforeseen investments in money, time, knowledge, practical experience and other resources, but the resulting transformations are worthwhile, as they certainly lead to streamlined processes and thus allow for real-time responses to the needs and requests from the internal level, especially from the employees, but also from the external level, from the clients and all the collaborators but also from the business partners.

Such trends are also valid in the field of human resources, especially since, with the transition to telework or remote work, there is an increasing need for optimization, debureaucratization, especially through digitalization and technology, so that those time-consuming operations and resources can be replaced with intelligent mechanisms and automated processes. Thus, many companies are increasingly turning to the implementation of processes, algorithms, applications and integrated platforms, easier to access and use, to operationalize the management and efficient management of human resources.

The impact of digitization in the field of salaries is noted by certain advantages of digitization such as reduced processing time of information and documents through the use of automated applications, such as self-service that allow an employee to get or receive transmits the information

in all required directions. Also, another advantage is the possibility to use certain IT systems or certain mechanisms to reduce the time of data processing and, implicitly, the risk of certain errors in information processing. At the same time, digitization can eliminate certain redundant, repetitive activities, and employees involved in such operations can be oriented towards more creative and innovative activities, precisely to bring significant and real added value through the work they carry out. Saving time, resources and simplifications achieved through digitization can help balance the realistic balance between career and personal life. In this context, the salary benefit plan must also be adapted to work in the virtual environment.

Therefore, the advantages of digitalization are quite obvious. However one must recognize risks also, it is recommended that human resources specialists, together with hierarchically superior management, must redesign everything, starting with their strategy, roles, activities and structure, so that all employees should not feel the absence of direct interactions and be confident in a work environment and organizational culture based on sound values, objectives and principles. In the same order of ideas, employers are required to implement modern technical systems, mandatory internal procedures and policies, clearly defined in terms of remote work, precisely in order to prevent possible legal or organizational discrepancies, especially in the work program of employee activity, taking into account compliance issues related to the fact that the workspace has moved from the company's headquarters to the employee's social, personal space.

There may also be a risk that the monthly timesheets is recorded incorrectly or inconsistent with reality or that certain efficiency problems occur (due to periods of inactivity) precisely due to difficulties in accessing internal systems, if they are especially non-performing or not adapted to current requirements.

Last but not least, there may be inconsistencies related to the flow of transmission / receipt of documents required in the field of human resources and salary calculation (in case of medical certificates, certificates required by original banking institutions, etc.), but also certain difficulties referring to employee mobility and opportunities to work remotely, even abroad.

Another field challenge for companies, namely for the human resources departments, is to adapt both the plan and the benefits policy to work in the virtual environment. The benefits recently introduced in the legislation, such as facilities for early education of employees' children, settlement of up to 400 lei per month for employees working in telework and similar, must be well analyzed and substantiated from a financial-fiscal perspective before being included in the salary package.

It can be easily seen that the purpose of digitizing internal processes is to facilitate the work of employees, to optimize their workflows, to support them to be as efficient as possible, eliminating tasks that are increasingly bureaucratic, repetitive and have no significant added value in the economy of a certain business. Although all the benefits are visible, in Romania, there are quite a few companies that were reluctant to change, postponed the implementation of digital technologies. Still these companies had to change their minds to adapt to new techniques, to adapt conditions and work restrictions imposed by the pandemic. This is also confirmed by the data of a PwC Romania study, HR Barometer, from October 2020, which shows that for 80% of the responding companies, the optimization of internal processes is their first priority.

In fact, for most companies that have invested in digitalization, during the pandemic, the benefits obtained have multiplied, extending beyond the need to organize the activity of employees and create a certain safe and healthy workspace. Only two-thirds of the companies participating in the study said that digitization helped them achieve all planned goals in advance, but so-called targets and unforeseen projects.

Thus, with employees who have complied with pandemic measures, who have moved their offices home or have joined mixed teams of employees (with a program either from home or from the office), with frequent legislative changes in the field of work, it is not wonder that the human resources departments felt the need to automate their work processes the most (www.pwc.ro/ro/media/press-release-2020), 68% of the responding companies stating that the need for digitalization was felt most intense in the human resources department, followed by the financial department (63%), then IT (56%), followed by operations (54%) and sales (46%).

If one of the employers' fears was related to the productivity of employees' work in the case of telework, this concern disappeared, especially due to the facilitation of remote work.

In conclusion, the future of human resources business will certainly be shaped by digital transformation and, in the context of increasing complexity of activities, changing the structure of the entire workforce; digitization and automation become essential components in managing labour relations. But, for full success in this regard, it is equally important that managers and specialists in human resources and salaries receive training and support from decision makers, financial-fiscal facilities and other support schemes in implementing the changes imposed by especially the pandemic.

5. Conclusions

In the pandemic context presented and analyzed within the identified information, it can be appreciated that this pandemic period had a significant economic and social impact both globally and nationally, continuing to generate effects especially in the uncertainty of its manifestation in time and space but also in the delayed state intervention such as schemes to support tourism, to support investments (example Order 1290 of 22.1.2021!), such as fiscal financial facilities with positive effects for employees and employers, but also of funds allocated by PNNR especially to support the resilience of businesses that actually energize the economy and create opportunities of a social nature for both employers and employees, implicitly for their families. The issues identified and analyzed are not exhaustive, so the paper may be subject to improvement and completion, creating challenges for further research in this area.

6. References

- Andres, S., 2006, Managementul participativ, cale de crestere a eficacității conducerii si a eficienței activității organizației. [Participative management, a way of increasing management and organisation activity efficiency]. Timisoara: Mirton Publishing House.
- Andres, S., 2009, Managementul resurselor umane. Sinteze, teste, îndrumări. [Management of Human Resources. Synthesis, tests, guidance] Eftimie Murgu Publishing House.
- Andreş, S., 2012, *Management. Sinteze, teste, îndrumări. [Management. Synthesis, tests, guidance]* Resita: Eftimie Murgu Publishing House, Resita.
- Andreş, S., 2020a, An analysis model to identify the optimal salary audits impact at the level of an
 economic entity, "Ovidius" University Annals, Economic Sciences Series Volume XX, Issue 2 /2020,
 p. 206-2011
- Andreş, S., 2020b, Management methods recommended for a small and medium enterprise, "Ovidius" University Annals, Economic Sciences Series Volume XX, Issue 2 /2020, p. 212-2018
- Andreş, S., Demyen, S, 2020, Ensuring a Positive Organizational Climate A Mandatory Performance Criterion, Proceedings of the 14th International Management Conference "Managing Sustainable Organizations", 5th – 6th November, 2020, Bucharest, Romania
- HotNews, 2020. Coronavirus: Recesiune record pentru economia mondială. [Coronavirus: record recession for global economy] [Online] Available at: https://economia-mondiala-cum-sta-fiecare-tara-doar-china-scapat.html [Accessed on: 09.03.2021].
- Jones, L., Palumbo, D. & Brown, D., 2021, *Coronavirus: How the pandemic has changed the world economy* [online], Available at https://www.bbc.com/news/business-51706225 [Accessed on 09.03.2021].
- Kubinschi, R., 2020. Economia românească la răscruce Între contracția economică provocată de pandemie și oportunitățile oferite de sprijinul financiar al Uniunii Europene, [Romanian economic at the crossroads between economic contraction as a result of the pandemic and opportunities offered by the European Union support] [online], Available at: https://www2.deloitte.com/ro/en/pages/business-continuity/articles/economia-romaneasca-la-rascruce-intre-contractia-economica-provocata-de-pandemie-si-oportunitatile-oferite-de-sprijinul-financiar-al-uniunii-europene.html [Accessed on 09.03.2021].

- Law no. 53/2003 Labour Code with subsequent modifications, [online] available at: https://www.ilo.org/dyn/travail/docs/1530/Labour%20Code%20-%20last%20version.pdf, [accessed on 20.11.2021]
- Lee. Y. N., 2020. 5 charts show what the global economy looks like heading into 2021, [online], Available at: https://www.cnbc.com/2020/12/28/5-charts-show-covid-impact-on-the-global-economy-in-2020.html [Accessed on 09.03.2021].
- Nicolescu, O. (coordinator), 2003, Sistemul organizatoric al firmei [Company organisational system] Bucharest: Economica Publishing House.
- Romanian Constitution, 1991, [online] available at: http://www.cdep.ro/pls/dic/site.page?id=339, [Accessed on 20.11.2021]
- Sauer, L., 2021. What Is Coronavirus? [Online] Available at https://www.hopkinsmedicine.org/health/conditions-and-diseases/coronavirus [Accessed on 09 03 2021]
- Spănescu, I. & Gheorghiu, A., 2020. Impactul Pandemiei Coronavirus Covid [The impact of the Covid Coronavirus Pandemic] [online] Available at: https://hyperion.ro/index.php?option=com_attachments&task=download&id=279 [Accessed on 09.03.2021].
- Statista.com, 2020. GDP growth rate of the world's seven largest economies 2020, by country. [Online] Available at: https://www.statista.com/statistics/1207780/gdp-growth-rate-of-the-world-s-seven-larg,est-economies-by-country/. [Accessed 09 03 2021].
- Statista Research Department, 2021. *Impact of the coronavirus pandemic on the global economy Statistics & Facts*. [Online], Available at: https://www.statista.com/topics/6139/covid-19-impact-on-the-global-economy/ [Accessed on: 09.03.2021].
- Synevo, 2020. Imunizarea populației și procesul de vaccinare împotriva COVID-19, [Population immunisation and the vaccination process against COVID-19] [online] Available at: https://www.synevo.ro/imunizarea-populaiei-procesul-de-vaccinare-covid-19/ [Accessed on: 09.03.2021].]
- Tănase, D., 2012, Probleme ale competitivității economiei românești, [Issues of Romanian economics competitiveness] Timisoara: Mirton Publishing House.
- Tănase, D. & Tănase, A. 2010a. Development of Entrepreneurial Activities. Premise of the Increase of Economic Competitiveness, *Annals of Faculty of Economics*, University of Oradea, Faculty of Economics, vol. 1(2), pages 335-338, December.
- Tănase, A & Tănase, D 2010b. Gender Disparities in the Entrepreneurial Field in Western Romania. *Annals of Faculty of Economics*. 1. 330-334.
- Tănase, D; Tănase, A; Franț F, 2012, Macroeconomic stability-important factor of economic competitiveness *Annals. Economic Sciences*. Timisoara, 2012
- World Health organisation, 2021. Novel Coronavirus 2019 [online], Available at: https://www.who.int/emergencies/diseases/novel-coronavirus-2019/covid-19-vaccine [Accessed on 09.03.2021].
- Verboncu, I. (coordinator), 2013, Management Eficiență, Eficacitate, Performanțe, [Management Efficiency, Efficacy, Performance] Bucharest: University Publishing House.

Student Satisfaction and Learning Outcomes during Online Course Delivery - A Case Study

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Abstract

The paper presents the results of a study on students' satisfaction concerning online teaching in general and ESP (English for Special Purposes) in particular, considering the implications of an unprecedented shift in education, a turn from the traditional face-to-face system to an emergency remote online learning, imposed by the restrictions of the COVID-19 pandemic in Romania. The results reveal a general positive attitude towards the efforts made by the teaching staff during online teaching; therefore, we are confident that the less encouraging aspects revealed by the study can be adjusted in time and improved to better suit and serve the needs of our students.

Key words: student satisfaction, learning environment, COVID-19, emergency remote online learning, ESP.

J.E.L. classification: Z13

1. Introduction

The COVID-19 pandemic, which started in 2020, disrupted and affected educational activities all over the world and hundreds of millions of students and educators were redirected to the only available option online learning (synchronous or asynchronous). Emergency remote teaching replaced traditional face to face learning overnight, in order to slow down the transmission of the virus and to continue the educational process during extensive periods of lockdown in Romania and all over the world. This newly adopted system raised adaptation concerns for instructors, as well as numerous worries about the quality of students' learning.

Under these circumstances, various changes in roles occurred- from lecturers and providers of content, teachers transformed into guides, facilitators and designers of students' learning experiences, from a solitary perspective in a classical classroom setting (indicated by teachers' position at teachers' desk), they become members of a learning team, radically changing the teacher-learner power structure. At the same time, students change from passive receivers of readymade knowledge to builders of their own knowledge. Instead of simple memorising of facts, they evolve and turn into problem solvers and approach the proposed issues from a multiple perspective. While refining and redefining their searches, students have the opportunity to discover their own answers. Group interaction is significantly increased while the group members become more cooperative and collaborative. Learning is revealed to students as a fluid concept while they work with the same tools as their instructors and become self-motivated in the learning process as they turn into managers of their own time. The observation of the instructors' expert knowledge is replaced by expertise on knowledge use.

As in the second half of 2021, online learning continued and there are serious concerns that this will continue in 2022 as well, discussions about its quality have taken centre stage. Our present study starts from the presumption that online learning satisfaction is one of the main indicators for the success of online learning and constitutes a fundamental step in students' motivation to pursue their studies. In various situations, the transfer from face to face to online teaching was at first a very fast and unprepared reaction, it represented a special challenge for those academic institutions that did not have implemented online courses and even for those who had some experience in this field, technical difficulties such as extended platforms to accommodate all classes or better

equipment, connectivity problems still occurred. The necessity to quickly train all staff and to adapt internal procedures, also proved to be a real challenge.

2. Literature review

Active learning involves discussion, collaboration, materials, hands on exercises and live lectures, it is important to set clear expectations for students, while the tone needs to be set for a supportive online community. Students' progress needs to be tracked and a good balance between formative and summative assessment needs to be created and maintained. Student satisfaction influences on the one hand students' involvement in their own educational journey (grades course participation, attendance), their relationships with professors and colleagues, and to a certain extent- their employability. On the other hand, new student recruitment efforts are in tight correlation to this factor.

Measuring student satisfaction can prove a useful instrument for academic institutions in order to highlight areas of improvement and strong points. Students' learning experience is a complex system which is influenced by various factors, going beyond the narrow forms of teacher assessments. Apart from finding out the degree of satisfaction, identifying and understanding the factors that contribute to this satisfaction is of equal importance. Our purpose in this study is to pinpoint different aspects of the educational experience, determining actions that need to be taken in order to preserve high levels of satisfaction and to improve students' learning outcome.

Online learning satisfaction is determined by numerous factors: the learning content, course design, if it fulfils, the students' learning needs, it also involves a social fulfilment component. In a research carried out in 2021, the majority of respondents pointed out that ESP classes were among the easiest to understand compared to other online disciplines. The explanation of this preference, in the author's opinion, coming from the fact that the majority of language teachers are interested in innovative teaching methods and techniques as well as in course design (Chirobocea-Tudor, 2021, p.260).

Digital technologies can become friends and enemies, weapons and tools, cure or poison, according to the manner in which we choose to use them. Theorists of this trend have warned us against the danger of digital technologies as being a cause of disorientation (Stiegler, 2008, p.66), or that they might impact our cognitive processes is in a negative way, affecting our concentration (Carr, 2010, p.107). Being able to access and process vast amounts of information in a short period of time, has had a strong impact on our consumer (of information) behaviour patterns and on our learning habits. In various cases reading has transformed into surfing/ browsing, more superficial forms of action; knowing about the topic has replaced learning about it. While knowledge and information seemed to have found two separate ways to enter our cognitive processes, in this respect, online teaching goes in the same direction with a democratic access to huge quantities of raw information flowing in a democratising manner all around us. In 2016 universities were invited to turn into producers of digital knowledge and shift from simple producers of education, as a vital requirement for their survival (Stiegler, 2016), this seems to be the right moment, more than ever.

The emotional involvement of students in the courses should not be neglected, as it is part of the complex network of factors that lead to satisfaction and better learning outcomes. As student academic life is intertwined with an emotional journey in which various categories are present, personal projects, academic projects, temporarity, spatiality, sociality, embodiment and discourse (Beard, 2007, p.250). This "emergency remote online learning" is an experience from which it is a lot to be learned and a better preparation for future situations to be effected.

Student satisfaction is correlated in previous studies with students' readiness to learn online (Joosten, Cusatis, 2020), with the quality of the social connexions and interactions they are able to establish with their instructors and peers (McFarland, Hamilton, 2005, p.30), as well as with the course content and the course design. Apart from these, we consider that students' personal abilities, attitudes and personal motivations, interests, and personal background could also bring an important contribution to their own success or preference for this type of activity.

Exploring the theories of motivation offer an insight into the complex of factors affecting satisfaction, as motivation precedes and determines satisfaction. The theory of self-efficacy places in its centre the idea that specific beliefs affect the way we think and act, determining our level of

motivation, emotional reactions and guide our choices in important decisional moments. The greater our perceived self-efficacy, the higher goals we will set, and as a result, the dedication and the final results will be higher. This theory is centred around a need for competence, relatedness and autonomy/self-determination. Competence is defined as being able to understand the means through which one's competence can be reached and being able to adopt the necessary actions (Badura, 1982).

Self-determination theory, in which education creates in students a motivation and an interest in learning, as well as a considerable amount of confidence in their capability to understand and build knowledge. Students feel intrinsically motivated and consequently this results in a high-quality type of learning and a deep understanding of the conceptual framework. This individual process of growth and adaptation leading to appropriate educational goals (Deci & Ryan, 1985, 2000).

Hence an accomplishment of basic needs for competence, relatedness and autonomy can lead to an increased level of motivation and performance in the learning process and increase the level of satisfaction afterwards. If properly organised and used, e-learning has the potential of being an impressive tool in this complex process.

3. Research methodology

The sample of this study consisted of 63 students (34 women and 29 men), enrolled in the 1st year at the Faculty of Economic Sciences, at "Ovidius" University of Constanța. Their ages range from 18 to 21. The students were interviewed during the first semester of the academic year 2021-2022.

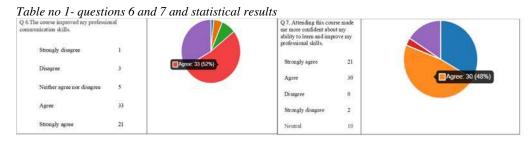
The study is based on a specially designed Microsoft Forms Questionnaire. The survey contains 14 closed-ended questions and 1 opened-ended question, which were grouped in two categories. The first group of questions investigates students' opinions on the quality of online teaching in general and its impact on their learning outcome. The second group of questions focuses on students' opinion on the quality of the ESP course they attended weekly and its impact on their professional skills. The answers are anonymous and students were offered the possibility to avoid answering uncomfortable questions in the survey.

4. Findings

Of the 15 questions mentioned above, the first three are targeted at examining students' perception on the ESP course they attended weekly. Almost 94% of the respondents considered that the instructor proved a thorough knowledge of the proposed subject content. When asked about the opportunities provided by the course to clarify their questions, 90% answered that they were offered this opportunity and that they felt encouraged to ask such questions.

Questions 4 and 3 move beyond instructor's skills and knowledge of the given topics, investigating the way the subject content of the course was communicated effectively by the professor and the subject was presented as interestingly as possible, 92% of the respondents agreed, 3% were neutral and 5% disagreed.

Questions 6 and 7 offer a deeper perspective on students' perception concerning the improvement of their professional communication skills and confidence in their abilities to learn and improve their professional skills. As we can see from the above table, in the case of Question 6. The result indicated a high level of confidence. While in the case of Question 7, the number of students being convinced that they can learn and continue improving their skills is in a slight decline, see Figure no. 1.

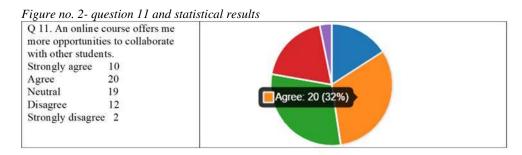


Source: Question and chart processed by the author

The second group of questions was dedicated to investigating a larger set of elements dealing with students' opinions and beliefs about their learning goals, the overall quality of the training programme, their relationship with other students, and their feeling of engagement during the attendance of online courses. Students were also asked questions concerning the opportunity of having a better management of their learning skills during online classes, the access and use of information and the possibility to better track and monitor their academic progress.

Question 8 asked students if they feel more motivated to achieve their learning goals, and the number of 79% students who agreed to this question traces an optimistic future in terms of students' academic retention. Coupled with the number of students who gave positive feedback to question 9 ("Overall, I'm satisfied with the quality of this training")- 92% of the students agreed, 7% were neutral and 1% disagreed.

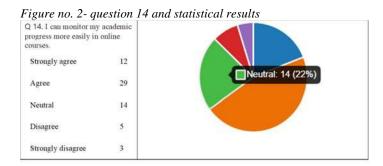
From our experience in previous year, we noticed several students making suggestions in terms of their social connectivity with other fellow students, especially during first year of study. Question 11 investigates their opportunities to socialise and collaborate with their fellows. Despite the fact that online connexions offer more multitasking options and theoretically facilitates communication, as you can see in Figure no. 2, only 30 students, meaning less than 48% of the respondents agreed.



Source: Question and chart processed by the author

A surprise was generated by the results of Question 13 ("My online experience has increased my opportunities to access and use information"), in this case considering the free use of various platforms and the multitude of online available materials, we would expect a 100% agreement. However, things are different, as only 70% of the respondents agreed, while 22% chose to be neutral and 2% disagreed.

Another issue worth being investigated in more detail comes from the answers provided at Question 14, ("I can monitor my academic progress more easily in online courses"). Here 65% of the respondents agreed, whereas 22% were neutral and 13% expressed their disagreement. Which leads us to the idea that for some students a traditional face to face type of evaluation would be a better indicator of their progress.



Source: Question and chart processed by the author

Question 15 offered students the opportunity to express their own suggestions concerning the improvements they would bring to online courses. It was an optional answer like all the other questions comprised in the present questionnaire. Surprisingly, most of the respondents chose to express their satisfaction with online courses, given the present circumstances, while some answers suggested a return to traditional formats ("Face-to-face format is more interactive") or that students should give up their shyness and overcome their fears of giving a wrong answer or asking an irrelevant question ("More courage from students in creating dialogues together"- as one student put it).

5. Conclusions

A relevant aspect to be highlighted is the fact that students appreciate the effort of university staff to overcome the difficulties of such a challenging semester by adapting their methods and digital platforms, by remaining hopeful and encouraging students to express their fears and by being interested in students' progress and their state of wellbeing, whereas offering support and meeting their learning needs has been a priority. A large part of the negative impact on learning resigned from unclear and delayed information about what students can expect from in terms of the type of teaching (face to face or online) and examination methods being used.

First year students experienced a lack of social life and collaboration and a period of continuous postponement of social contacts- "maybe next semester...", "maybe next year...". Due to the evolution of the pandemic situation procedures were unclear, decisions were delayed or taken very abruptly. This situation created frustration, tensions and dissatisfaction, despite instructors' and staff's supportive attitude, quick response, and supportive tone, problems still reside and turn into heavy emotional burdens accumulating on students' shoulders. As our study revealed, continuing with an online or hybrid format for ESP classes can be an option for the future to a considerable extent. While other aspects such as social interaction with instructors and peers can be a challenge for the development of future platforms.

Apart from the problems and negative aspects connected to this period of closure and separation, we are in front of an educational experiment carried out on an unprecedented scale which opens new directions and perspectives to investigate- the emotional impact on students of this period of online classes, student retention in difficult times, the possibility to test and improve existing systems so that they function perfectly in the future and the possibility of being rejected or ignored be reduced to minimum.

6. References

- Chirobocea-Tudor, O. (2021). Learners' Attitude towards Online Education during the COVID-19 Pandemic with Focus on ESP. "Ovidius" University Annals, Economic Sciences Series, Volume XXI, Issue 1/2021, pp. 246-254.
- Stiegler, B. (2008). Technics and Time, 2 Disorientation, Stanford, Stanford University Press.
- Carr, N. (2010). The Shallows: What the Internet is Doing to Our Brains. New York: W.W. Norton and Company.

- Steigler, B. (2016). "The formation of new reason: seven proposals for the renewal of education", in Barney, D. et al. (eds.), The Participatory Condition in the Digital Age, trans. Ross, D., University of Minnesota Press, Minneapolis and London.
- Beard C., Clegg S. and Smith K. (2007), Acknowledging the affective in higher Education, British Educational Research Journal, Vol. 33, No. 2, April, pp. 235–252.
- Joosten, T.; Cusatis, R. (2020), Online Learning Readiness. Am. J. Distance Educ., pp. 1–14.
- McFarland, D.; Hamilton, D. (2005), Factors affecting student performance and satisfaction: Online versus traditional course delivery. J. Comput. Inf. Syst., 46, pp. 25–32.
- Bandura, A. (1982). Self-efficacy mechanism in human agency. American Psychologist, 37(2), pp. 122–147. Available at: https://doi.org/10.1037/0003-066X.37.2.122
- Deci, E. L., & Ryan, R. M. (1985). Intrinsic motivation and self-determination in human behavior. New York, NY: Plenum. Available at: https://doi.org/10.1007/978-1-4899-2271-7
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. American Psychologist, 55, pp.54-67. doi:10.1006/ceps.1999.1020 Available online at http://www.idealibrary.com

The Impact of COVID 19 Pandemic on the Entrepreneurial Environment

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Abstract

The whole world, including our country, has fallen into a collapse whose limits have not been well acknowledged yet facts that make people live in an unsafe environment. It is early to foresee how things will be at the end of this epidemiological crisis.

Generally, the immediate answer under the form of emergency measures has been strong and relatively homogenous in all the countries and it has contributed substantially to the limiting of the pandemic effects on the economy in the Euro area. Since all the countries within the Euro area have been affected economically at the same time and in a similar manner, fiscal answers under the form of emergency measures have been relatively similar in terms of their dimension and the applying field of the instruments used.

Key words: pandemic COVID 19, lockdown, entrepreneurial environment, advanced technologies **J.E.L. classification:** M10, O 10

1. Introduction

The COVID 19 pandemic has changed the world, and Romania does not make any exception from this ongoing process. Possible psychological effects (caused by fear, anxiety, distancing from the loved ones) will be amplified by the social ones (isolation, lack of direct interaction, breaking-up of classic/family/entourage/ relationships/socialization) and by the economic ones (the fear of employment loss, the decrease in the standard of living). (Toderean, 2020, p.23)

This pandemic has generated a series of quite challenging questions: How will people circulate in the future (free or conditioned by an immunity certificate)? Will there be a change in life style? After the pandemic has ceased will people be able to return to their initial habits of treating flu or season colds?

The effects of this pandemic have a direct, strong and personal impact on each of us and they have affected profoundly and immediately every individual's life, communities', societies' and countries' we live in and of the whole world as well. (Toderean, 2020, p.25)

The pandemic crisis has forced many employees to transfer their activities in online. This pandemic will probably trigger technological evolutions and will probably bring about new scientific discoveries.

Digitalization and computerization will be propelled by the pandemic effects, and innovation in the digital field will be significantly pushed on. The proof lies in the fact that after months of restricting economic activities, the NASDAQ stock index which shows the investments in informational technology (IT) has recovered from its initial loss of 30% from the beginning of the pandemic.

One of the most disputed measures taken at global level during the COVID pandemic refers to social distancing (called later on physical distancing in order to avoid negative social associations). The methods of social distancing include quarantines; travel restrictions, closing of schools, of employment places, stadiums, theatres or shopping areas. Some specialists consider social distancing as the new principle of society organization. (Sfetcu, 2020, p.50)

2. Theoretical background

At the moment specialized studies on COVID 19 are currently in their infancy. The paper is based on specialized studies that try to capture and fully analyze the manifestation of this virus, how this virus will affect the world "tomorrow", how business will be conducted globally. The literature addressed in this paper aims to analyze the deep geopolitical reorientations, changes in the world economy and global finance, as well as valuable lessons in the fight against the pandemic.

What will be the differences between the lifestyle before and after the pandemic? How much the Romanians' life standard will be affected by? In what way human life quality and life style will be changed? How interpersonal and professional relationships will evolve? How the notion of personal welfare will be reinterpreted? What new meaning will satisfaction, happiness and human fulfillment get? Having so many questions without answers, social and economic research opportunities emerge to be analyzed. Over time, researchers will seek to find answers through specialized work dedicated to this virus.

3. Research methodology

The paper aims to analyze the impact of COVID 19 virus on global activities. COVID 19 has wreaked havoc worldwide, socially and economically. This epidemic has led to physical isolation, but also to an unprecedented removal of knowledge through the avalanche of false news and misinformation. Over time, the world has faced various challenges, which have been studied by many specialists.

The research method aims to assess how the global world has managed to organize itself in the face of this devastating virus. The business environment has been significantly affected, and the measures taken since the outbreak of this virus were intended to help businesses around the world avoid bankruptcy. It is difficult to make a detailed x-ray of the impact of COVID 19 on the business environment, but it is worth noting how all countries around the world have come together to reduce the shock of the global economy.

It is difficult to predict what the world will look like after this pandemic, but it is interesting how this pandemic has taken responsibility and united economies around the world by strictly adhering to measures to combat this virus.

4. Findings

4.1. COVID 19 - a major threat at global level

Despite the emerging development of new intelligent and advanced technologies, the humankind has found itself suddenly incapable of coping with such a challenge – the COVID 19 pandemic.

Anxiety has derived from both the deasease severity and especially from the lack of clear prevention and treatment means of the new virus at that moment.

The economic problems brought together in the past have become worse in our country. Therefore, at the beginning of the present crisis, Romania has started to be aware of the necessity of implementing a serious program of economic recovery and of society in general. Covid 19 crisis has made the Romanian economy be regressed and it has stopped most of the developing projects. The successes in the recovering of economy are modest due to the economic structure based on consumer society and import dependence.

It is interesting to anticipate how the world framework will look like after this epidemiological crisis ends up. Specialists are trying hard to find answers to a series of questions regarding the outbreak of this pandemic: How will life style and the quality of human life change? How will the notion of individual welfare be re-comprehended? How will happiness, satisfaction and individual fulfillment be redefined?

The strong enhancement of uncertainties and perturbations caused by Covid 19, have influenced the world economy. Trade tensions between the two big economic powers, USA and China, despite the signing of a trade agreement, have been visible and become more and more profound as it results from the analysis of more indicators.

The decline in trade exchanges has got more and more accentuated, bringing about higher and higher tensions regarding trade, a sudden decrease in demand and the products' prices in this pandemic context. All these facts have led to a decrease in and dragging of the existing investments as well as to the blocking of new investment projects.

Governmental authorities found themselves in front of some unprecedented challenges when this pandemic broke out, in 2020, triggering thus an extremely strong answer from the point of view of fiscal policy. Public budgets have been significantly affected as fiscal position, on one hand as a consequence of the increase in expenses which were made in order to combat the crisis, on the other hand, the fiscal incomes decreased leading to a pronounced recession and also due to the measures taken in order to provide companies and population with financial support.

Consequently, the share of budgetary deficit aggregated in GNP in the Euro area has increased from 0.6% in 2019 to 8% of GNP in 2020, according to the data provided by Eurostat in December 2020.

Fiscal policy has changed its orientation from a relatively expansionist character in 2019 to an accommodating one in 2020, of 4.8% of GNP, due to the powerful economic support given by the governmental authorities. These supportive measures and their dimensions have been applied differently, from one country to another depending on the emerging necessities and on the reaction of the sanitary institution to Covid 19 epidemics.

Due to previous experiences in terms of economic and sanitary crisis, regarding the rapidity and the way of applying the support provided by all the governmental authorities in the Euro area, there has been an increased capacity of reaction for the periods of crisis, instability and stress factors.

The geographic structure of international trade reflects the place and share of different countries and groups of countries in international trade exchanges, the degree of economic development being the essential factor to determine the level of export trade of a country. Therefore, the higher the development level, the higher the export and import volume is, as a consequence of production diversification and consumption demands of the population and vice versa. (Costea, 2009, p. 48)

The lockdown imposed in most countries by restrictive measures has generated a decrease of 15.3% of economic activities in the Euro area in the whole economy, only in the first half of the year.

The removal of some measures starting from the end of the second term has led to a revival of economic activities in the third one. On the occurrence of the second wave, in the autumn of 2020, the economic activity has registered a new regress and the high number of infected cases as well as the quarantine periods of the last term of the year contributed significantly to the descending slope.

At the end of the year 2020, the economic activity in the Euro area, was by 4.9% below the level prior to pandemic, showing that heterogeneity of most countries affiliated to: Spain declared a decrease by 9.1% whereas The Netherlands registered only a 3.0% one.

The same restrictive measures have led to diminution of private consumption in the Euro area, by almost 8% in 2020 and to an increased saving rate, but their amortization was made by major public transfers.

Solidarity policies which have in view the harmonization of production conditions and factors as well as the equalization of circulating conditions sustain directly the free circulation of goods, services and capitals within the European Union. (Conea, 2020, p.52)

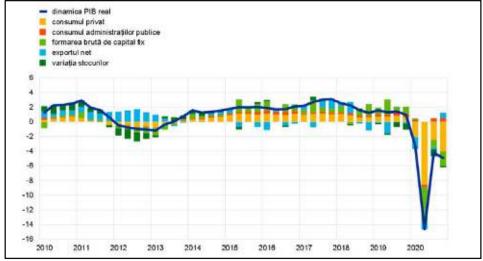


Figure no.1 . Real GDP in the Euro area

Source: http://ec.europa.eu The long-term effects of the pandemic: insights from a survey of leading companies

4.2. COVID 19 Influence on Business Environment

The impact of COVID-19 epidemics on the Business Environment in Romania shows the situation of private organizations in our country. A significant number of companies have taken measures in order to survive the crisis caused by Covid-19, the most frequent ones are the financial ones which protect the short-term and medium-term cash flow, followed by those of staff protection and those of activity pivoting.

The European Commission Report on the measures meant to help European enterprises to avoid bankruptcy throughout the pandemic allows the member states to ask for support for the enterprises affected by the Covid crisis. Of the measures aimed at by the European Commission to manage efficiently the Covid crisis the following ones should be mentioned (https://ec.europa.eu/commission/presscorner/detail/ro):

- > to provide under safety conditions of freedom of movement and to eliminate controls at internal borders;
- to provide cross border interoperability of following-up applications;
- > to provide liquidities meant to enterprises in the tourism field, especially to SME;
- > to save jobs by a financial support up to 100 billion Euros within the program SURE. This program provides member states with the possibility of covering the costs of national labour systems on short-term and of similar measures which allow enterprises to protect their places of employment;
- to inform the citizens on the local tourism offer, to promote attractions of local and European tourism as a safe touristic destination. Thus, the European Commission will collaborate with the member states in order to promote a system of vouchers within which clients should support their favourite hotels or restaurants.

The estimations made by the European Commission showed that the budgetary measures taken as reaction to Covid pandemic, have risen in the year 2020 to almost 4.2% of GDP of this year all over the Euro area.

Most supplimentary expenses approved were found either in the costs directed towards the field of public health or in supplimentary supportive measures meant to help companies and population's household.

In the Romanian environment, a strong blow was sent by the hospitality sector (HORECA) which contributes by 5% to GDP. Lately Romania's government has implemented a series of measures meant to revive these sectors affected by the pandemic crisis, as follows:

to exempt from payment the specific tax, allowance tax which is not being influenced by turnover;

- ➤ to provide temporarily technical employment as long as the individual contract of work is suspended on the employer's demand but up to 75% of the value of gross average salary approved per economy;
- > to give deductions from payment of the annual tax and also from that of real estate ones which are being used for economic activities and which are owned or rented, as well as a significant reduction from this tax for hotels and restaurants, thus providing these companies with financial support.

At present, the companies of HORECA can request and have access to public assistance systems which suppose to provide all enterprises in the field of tourism with financial support, including accommodation units, travel agencies and food service structures whose activity has been strongly affected by the Covid 19 pandemic.

5. Conclusions

The year 2020 will remain a reference year as regards the world economy which has undergone a strong recession caused by the Covid 19 pandemic. Different from the crises since 2008 and 2011-2012, the source of this recession lies beyond economy because the virus has affected by turns the developed countries and the less developed ones. World international trade chains have been seriously affected by and stability of international financial markets have reached critical phases.

The isolations and quarantines caused by the pandemic, by locking-down daily and industrial activities, including tourism, have had a strong impact on the environment and climate due to pollution decrease. In China a 25% reduction of carbon emissions and a 50% reduction of nitrogen oxide emissions were registered. (Sfetcu, 2020, p. 35)

According to a recently made study on big companies within the Euro area, the respondents mentioned most frequently as long-term effects of the pandemic, the appeal to home work and intensive use of digital technologies.

Increase in the number of virtual appointments, confinement of long-term business travels and significant increase in e-trade were also mentioned. 75% of respondents consider that online work does not diminish the employees' productivity and ,remote' working style will become a long-term decision. The time saved by the reduction in business travels, better and easier handling of family and professional commitments as well as an increase in connectiveness are real benefits which reluct against the disadvantage of the decrease in informal personal interactions. (https://ec.europa.eu)

The COVID-19 pandemic has brought about a paradigm change at world level, with powerful impact on world economy and on scenarios of long lasting development. The governments' reaction through decisive measures of supporting economies in view of moderating the impact on the economic field have led to the reduction of the external shock suffered by world economy.

6. References

- Conea, A. M., 2020. *Politicile Uniunii Europene 2019 [European Union Policies 2019]*. Bucharest: Universul Juridic Publishing House
- Costea, C. E., Saseanu, A. S., 2009. *Economia comerțului intern și internațional [Economics of internal and international]*. Bucharest: Uranus Publishing House
- Sfetcu, N., 2020. Pandemia COVID-19 Abordări filosofice [Pandemic COVID-19 Philosophical Approaches]. Bucharest: MultiMedia Publishing
- Toderean, O., Celac, S., Scutaru, G., 2020. Lumea de mâine: ce urmează după pandemie? [The World of Tomorrow: What Happens After the Pandemic]. Bucharest: Curtea Veche Publishing House
- https://ec.europa.eu, The long-term effects of the pandemic: insights from a survey of leading companies
- https://ec.europa.eu/commission/presscorner/detail/ro

Digitalization of Public Administration in Romania

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Abstract

Digitalization of public administration provides both employees and citizens with a multitude of advantages. Thus, at the level of public institutions, digitalization determines efficient management of resources and it generates opportunities of developing innovative public services.

The process of digitalization should give significant attention to citizens' needs and clearly define these ones. Reality shows that lately clients have become very demanding in terms of public administration and require simple, fast and transparent services. Efficient digitalization must be an integrated process which creates a context favorable to the reviewing of administrative procedures and to making them simpler.

Key words: pandemic COVID 19, Public Administration, digitalization, global network, change **J.E.L. classification:** H0, O3

1. Introduction

In the new world context, generated by the COVID 19 pandemic, the world is changing continuously, and Romania cannot make exception from this process. The future is already being built up now due to the imperceptible changes (psycho-social, economic, geopolitical ones) brought about by COVID 19.

The pandemic crisis has forced most employees to work in a virtual/digital environment. The fast computerization of activities (educational, economic) was followed by an unprecedented increase in cybernetics attacks, fact which intensifies the feeling of anxiety and insecurity. Practically, this pandemic will accelerate the technological evolutions that will be stimulated by tele-work and steadily rising need of digitalization and computerization in the IT field and probably will lead to new scientific discoveries and innovations. (Toderean, O, et.al, 2020, p.25).

In public administration, digitalization brings about a multitude of advantages that should be approached by strategic institutions and should be promoted by their managers. Therefore, digitalization can improve significantly institutional activity leading to efficient use of resources, costs and to technological and socio-economic progress of the institution in question. Also, digitalization can create new opportunities of making public services more accessible and directed to citizens (Roja, A, et.al, 2021, p.52)

Basically, any type of interaction with public administration may influence the citizens' perception on the quality of public management, trust, competence, honesty and predictability of public institutions. But, the trust in institutions can be determined by their confidence and reputation and less by the direct interaction with the citizen (Moller, 2020), p.20

Digitalization has a decisive impact on the employees of public institutions as well as on citizens by making activities more efficient on the whole, by providing citizens with prompt answers.

2. Theoretical background

In the new global context, driven by the pandemic crisis, digitalization has an important role to play. The new restrictive measures, the isolation of individuals, have determined the employees of companies around the world to move their activity to the virtual environment. The process of digitalization involves rethinking of the way in which the public administration in our country must

be organized and be transparent in the relationship with its citizens in order to adopt practices that should comply with the socio-economic requirements in continuous change.

The literature addressed in this paper analyzes the importance of digitalization from the new perspective, generated by COVID 19 and captures the role of digital technologies and solutions in the global evolution of society. In this sense, the paper is based on the opinions of researchers on the impact of the virus on the world as a whole, but also a series of analyzes on how employees can manage their work in compliance with the required conditions. According to the studies in force, outlined by the specialized literature considered, in this paper, our country ranks last in terms of digitalization of public services. In this sense, it is necessary to pay special attention to the development of a flexible digitization model and adapted to the changes in the Romanian public administration, generated by the pandemic virus.

3. Research methodology

The strategic objective of digitalization of public administration is to transform the relationship between public administration and society so that citizens perceive the administrative act as accessible, transparent, responsible and adapted to the digital paradigm in which we find ourselves.

The research method is based on the evaluation of some characteristics regarding the evolution of a public administration under the impact of COVID 19. In this sense, it describes the role and importance of digitalization in public administration in our country in the current period. The role of the digitization process is to revitalize trust in the administrative process through transparency, accountability and closeness to citizens, while ensuring an efficient process of modernization of public institutions.

4. Findings

The tendencies of transforming and developing the public administration in our country have already begun since the period previous to the EU integration when major changes of the administrative system were made so that new administrative methods, concepts and processes occurred, when new institutions were set up to bring up to date the quality of public services and to prepare the administrative system to get Romania adapted to future legislation and requirements.

In view of a successful bringing-up-to date of the public administration in Romania it is necessary firstly to have a perspective on the problems hindering the development of administration and secondly to find some modern combating strategies of these ones by different techniques. The need for administrative reforms in Romania is important from the point of view of our country's image and credibility in its relations with European institutions, foreign traders and its partners in all the fields of activity. These are directly interested in the quality, efficiency and credibility of public administration. (Mureşan, 2012, p.27)

The process of digitalization is one of the main directions that public administration should be focused on, by providing public institutions with a high transparency and credibility level, as well as by providing citizens with a high degree of life quality. Digitalization is the promoter of an efficient activity within public institutions in Romania. For the European Commission, the adopting of the new strategy of digitalization has become a priority for the period post 2020 which actually will define the future of Europe. In this sense, to devise, to develop and to implement future technologies of digital solutions and to bring the existing systems up to date are the most important pursuits.

From the analysis of a report made by the European Commission in the year 2018, the DESI report (Digital Economy and Society Index) respectively, Romania holds a shameful last position in the ranking formed by the 28 member states of the European Union having a score of 33.21 as against the European average whose value is of 52.25 (Fig.no.1). This report shows the fact that in 2018 in Romania only 6% of the internet users accessed the digital public services of e-government, many of them, more precisely 55% of cases, did not solve their problems and did not satisfy their needs, but the information and application loading on sites done by the governmental authorities covered a percentage of almost 65%.

Ranking according to digital economy and society index (DESI) 2018)

1 Conectivitatea 2 Capitalul uman 3 Utilizarea internetului 4 Integrarea tehnologiei digitale 5 Serviciile publice digitale

50

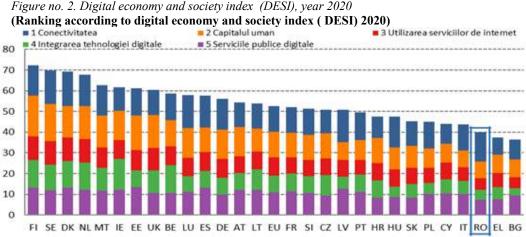
DK SE FI NL LU IE UK BE EE ES AT MT LT DE EU SI PT CZ FR LV SK CY HR HU PL IT BG EL RO

Figure no. 1. Digital economy and society index (DESI), year 2018 (Ranking according to digital economy and society index (DESI) 2018)

Source: https://ec.europa.eu/digital-single-market/en/desi

The DESI study aims on the whole at five aspects of digitalization within the European Union: connectivity, human capital, utilization of Internet services, digital services and the integration degree of these ones. These five aspects specific to the DESI study have a major impact in the process of digitalization and they are convergent as regards the increase in the digitalization capacity. (Roja, A, et. al. 2021, p.52)

In the year 2020, a new DESI report was made and its results showed that Romania held the 26th position after a two-year period of the 28 EU member states, within the Digital Economy and Society Index (DESI). As can be seen, Romania is at the ranking queue as regards the digitalization of public services.



Source: https://digital-strategy.ec.europa.eu/en/library/digital-economy-and-society-index-desi

A distinctive aspect resulting from the DESI study is the fact that Romania has an ultrafast network of communications comparable to that of other EU countries. Also, mobile communications and their availability provide the citizens with access to digital public services irrespective of location, increasing the possibility of accessing them by means of mobile devices. (Roja, A; Boc, M, 2021)

The global Internet network has become the environment which intermediates the digital interaction between citizens and public administration. The network usage degree, the level of online activities and that of transactions are important factors for public administration in terms of the digitalization of services for citizens. (Roja, A, et.al. 2021, p.45)

Again the European Commission report since 2020 shows that before the Covid-19 pandemic broke-out, Romania registered a similar success in four out of the five DESI aspects taken into consideration. This fact is manly determined by its slow evolutions, but also by its political changes because four governments have been changed in Romania over the last three years, thus leading to a profound political instability. The best position held by our country is the aspect of Connectivity, due to the fact that considerably wide ranges of very high speed and ample availability of very high capacity fixed networks, especially in urban areas, holding in this respect the fifth position.

However, under these conditions, economy has not made significant progress in terms of digitalization, having in view the fact that almost a fifth of Romanians have never used the Internet and less than a third have at least elementary digital competences.

As regards the Romanians' skills in the technological field, Romania holds the fifth position, by 5.6% of all graduates (EU average: 3.6%); but Romania has got the weakest performance of all EU countries when it comes to digital public services and Internet services.

The principle of good administration is seen as a compound of a good governing, a desideratum aimed at by every state, including international stake-holder, at world level.

Starting from the theoretical fundamentals of good administration which should also monitor, besides other issues, this field of digitalization, it is obvious that more seriousness should be given to it in order to support citizens, to respect their rights, to get them involved in the decision-making process in terms of public policies, with the intention of providing them with better governing. (Marinică, C., E., 2020, p.30)

Being aware of the fact that governments are in charge of providing citizens with good governing, it is considered that digitalization of public administration plays an important role and it is necessary for citizens to identify the best practices, instruments, technologies, services etc, but also governments should provide their citizens with efficiency and transparency.

The present day situation proves more and more the advantages of technological progress and of its use, as well as the opportunities brought about by digital public services for both citizens and employees within public institutions.

The state's development directions should foresee primarily this extremely important aspect. Although until the pandemic broke-out, the digitalization of public services in Romania was just an issue to be included in the governing programs, once the emergency situation was established, the digital services proved to very useful and this practice was maintained also in public institutions, thus turning already into a strategy to be widely implemented.

Two governmental decisions were made in view of the development of electronic communications and digitalization sector in Romania. It is about the Government Decision no. 89/2020 of 28 January 2020 which stipulates the organization and functioning of a new institution, the Authority for Romania's Digitalization (ARD). (The Government Decision no. 89/2020). According to this decision, ARD will take over the activities and structures of the Ministry of Communications and Information Society in the fields of information technology, information society and national interoperability framework.

The second Government Decision no. 90/2020 of 28 January 2020 abolishes the Ministry of Transports and the Ministry of Communications and Information Society and sets up a new entity, the Ministry of Transports, Infrastructure and Communications with tasks in the sector of electronic communications. (Government Decision no. 90/2020)

The use in digital format of public information, online trade, of different platforms to fill in forms, online tax payment as well as the submission of documents or of statements in electronic format towards different institutions are becoming gradually usual interactions with the public administration, especially in the context of this pandemic, but this practice is going to be normality in the period to follow.

At present, a few digital applications made by the public authorities are available for citizens to use, such as: the electronic system of public acquisitions (https://www.licitatii-seap.ro); national electronic system of public administration in Romania (https://saad-backup.net) as well as Ghiseul.ro.(https://www.ghiseul.ro/ghiseul/public)

In April 2020, The Government of Romania, by means of the Authority for Romania's Digitalization, in partnership with Aurachain, the Association for Advanced Technologies, Bithat and Telekom launched the digital platform aici.gov.ro, a digital instrument to register documents addressed to the public institutions which do not have their own online registry office system

Digitalization is undoubtedly a means of progress which provides efficiency and responsibility. This means decrease in the interaction with office clerks within public institutions, an increased level of authorities' responsibilities towards citizens; having in view its transparency, it is an irreversible process, all the economic activities should be adapted to this tendency and the faster and the more efficient it will be, the higher the performance will be. (Răbonţu, A, et.al 2020, p.42)

Romania should focus more on the people's improvement of technological and digital awareness and knowledge in order to develop completely its electronic and digital plan. Digital technology will increase significantly the quality level of the services provided by the Romanian public administration. Online efficient delivery of governmental services is an instrument to minimize the public administration expenses and costs, and to increase productivity efficiently and to enhance transparency and responsibility. (El Amar, et. Al, 2020, p 37)

5. Conclusions

The tendencies of transforming and developing the public administration in our country have already begun since the period previous to the EU integration when major changes of the administrative system were made so that new administrative methods, concepts and processes occurred, when new institutions were set up to bring up to date the quality of public services and to prepare the administrative system to get Romania adapted to future legislation and requirements.

In view of a successful bringing-up-to date of the public administration in Romania it is necessary firstly to have a perspective on the problems hindering the development of administration and secondly to find some modern combating strategies of these ones by different techniques.

The public administration in Romania must undergo a reforming process in which the entire attention is focused on a modern, long lasting, dynamic and efficient administration. Basically, the reform of public administration can be achieved through awareness of the importance and role played by technology.

Having in view that a digital administration reflects the image of the state in question and provides the European institutions with credibility in terms of relationships and partnerships in Romania in all fields of activity, the first ones being directly interested in the quality, efficiency and credibility of public administration, we can draw the conclusion that the image outlined by Romania regarding the digitalization of public services is not really an adequate one. Therefore, a significant reform is being required, including sustainable efforts and real involvement, with significant resources and well trained staff, are necessary in order to improve the position held by our country in the ranking of digitalization of public services.

So, digitalization of public administration is a very complex process which requires will and flexibility both from the part of public administration and that of citizens'. Among the benefits brought about by digitalization the following are mentioned: increase in labour productivity, decrease in tax evasion, increase in credibility of local public administration against citizens, transparency of decision-making, it stimulates economic growth, it prevents corruption etc. On the whole, the process of digitalization should satisfy the customers' needs which are diverse and in a contiguous change. Therefore, the citizens' trust in the administrative system will grow and they will perceive the administrative documents as being transparent and accessible.

6. References

- El Amar, Ch, Profiroiu, C.M., 2020. "Innovation in public administration reform: a strategic reform through NPM, ICT, and e-governance. A comparative analysis between Lebanon and Romania" Administrație și Management Public, 35/2020, 2020
- Marinică, C. E., 2020, Digitalizare Cheia pentru adaptarea unei bune administrări la o guvernare mai bună, [Digitization - The key to adapting good administration to better governance], Academic Journal of Law and Gouvernace, No. 8.2/2020, 2020

- Moller, F.S., 2020. Public Administration: Perspectives, Management and Challenges, New York: Nova Science Publishers
- Mureşan, D., 2012. Management public [Public Management]. Bucharest: European Institute Publishing House
- Răbonțu, C., Babucea, A. G., 2020. Digital services in Romania Present and Perspective, Annals of the "Constantin Brâncuși" University of Târgu Jiu, Economy Series, Issue 1/2020
- Roja A., Boc M., 2021. Revista Transilvană de Științe Administrative [Transylvanian Journal of Administrative Sciences]
- Toderean, O, Celac, S, Scutaru, G., 2020. Lumea de mâine: ce urmează după pandemie?: reflecții și proiecții [The world of tomorrow: what follows after the pandemic?: reflections and projections], Bucharest: Curtea Veche Publishing House
- Government Decision no. 89/2020 on the organization and functioning of the Romanian Digitization Authority, Official Gazette no. 113/13 februarie 2020
- Government Decision no. 90/2020 on the organization and functioning of the Ministry of Transport, Infrastructure and Communications, Official Gazette no. 127/19 februarie 2020.
- https://www.licitatii-seap.ro
- https://saad-backup.net
- https://www.ghiseul.ro/ghiseul/public/ accesat la data de 12.05.2021
- https://digital-strategy.ec.europa.eu/en/library/digital-economy-and-society-index-desi,
 Europeană, Digital Economy and Society Index (DESI), 2019

The Performance Potential of Future Employees in the Hospitality Industry in Terms of Cognitive Reflection Test

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Abstract

In this paper we aim to evaluate the capacity to perform of potential employees in the hospitality industry. We use Cognitive Reflection Test as a tool. We are considering possible future employees who have opted for Economics of Tourism, Trade and Services prior to the outbreak of the Covid 19 pandemic. According to our findings hospitality industry might face huge difficulties in insuring the required level of skilled resources in order to restart or increase the activity in good conditions of customer satisfaction by keeping at least same quality of the services like before the Covid 19 pandemic.

Key words: workforce, hospitality industry risks, performance, potential, Cognitive Reflection Test **J.E.L. classification:** M5

1. Introduction

The current pandemic context has led many businesses in the hospitality industry to close or reduce their activity. This has led to the loss of many jobs either as a result of people getting fired or as a result of abandoning the sector and migrating to other sectors not as much affected or, on the contrary, expanding due to the opportunities created by the pandemic.

In this context, the question arises, when we return to normality, will businesses find enough staffing on the market and at the expected quality? An indicator could be given by the number and intellectual abilities of young people who intend to work in the hospitality industry. A sub-indicator could be people who intend and apply for university programs in the field of Economics of Commerce, Tourism and Services. Based on their investigation, an assumption can be made about the performance potential of future employees in the hospitality industry.

2. Theoretical background

The literature approaches employees from the perspective of potential from several perspectives: skills, personality traits, morpho-psychology, strengths, attitudes, etc. (Burz, 2010).

The classical studying system, analyzing and classifying personalities comprises three interlinked ways - temperaments, skills and character (Popescu-Neveanu *et al*, 1996).

Character represents the relational-value side of the personality. It brings together features or particularities regarding the relations that the subject maintains with the world and the values according to which it is guided. It is mainly a set of attitudes and values. While temperament is neutral, in terms of socio moral (ethics) content, humanistic significance, character is defined mainly by the values according to which the subject is guided, by the relationships he maintains with the world and with his self being. The distinction between character and skills is even more pronounced. While ability, as an efficient operational system, is invested in the activity and is appreciated according to the results obtained, the character traits consist of the way of reporting to the various sides of reality, including one's own activity.

Temperaments represent the dynamic-energetic side of personality. Observations on the amount of energy available to the human subject, his vivacity and dynamism and the harsh way in which he organizes his conduct have been made since ancient times, finding that, in this regard, people are very different. Some are hyperactive, others are hypoactive, some are very fast and tumultuous in movement and speech, others are slow and cannot be taken out of this quiet rhythm, some are impetuous, impatient, impulsive, restless others keep calm, do not get angry easily and have no uncontrolled outbursts. Ancient research of Hippocrates and Galenus defined four types of temperaments: sanguine, phlegmatic, melancholic and choleric, while Pavlov focuses on the three characteristics of the central nervous system: strength or energy (greater or lesser resistance to stimulants), mobility (the ease with which one moves from excitement to inhibition and vice versa) and balance (distribution of force of the two processes - excitement and inhibition), which combined the following types of temperament: strong type - unbalanced - excitable (choleric temperament); strong - balanced - mobile type (bloody temperament); strong - balanced - impassive type (phlegmatic temperament); weak type (correlated with melancholic temperament). Later, C. G Yung's research followed (he finds that there are typical differences between people, thus some people are predominantly oriented towards the external world - extroverts, and others towards the internal world - introverts), Hans Eysenck (adds a new dimension to that proposed by Yung, respectively, the degree of neuroticism - stability, instability) elaborating new typologies and personality models (Constantin, 2004).

Skills represent the instrumental-operational side of personality. It shows what the individual can do, not what he knows to do. They can be elementary (all the properties of sensitivity such as visual acuity, tactile, olfactory, visual and spatial orientation, sense of rhythm; representation of objects, memory properties such as volume, durability and reproduction; qualities of attention such as concentration and distributive attention) or complex (musical, driving, etc.), special (performance sports, acting, technical activity, educational activity, etc.) or general (observation, memory, intelligence).

Theories of intelligence can also be included in this section. The concept dates back to before 1912, when W. Stern introduced the notion of intelligence quotation (IQ) (Havârneanu, 2002). The subsequent concept was developed in 1983 by H. Gardner introducing the multiple intelligence concept (Dumitru, 2001). Emotional and social intelligence are intensely addressed within multiple intelligence concept (Albrecht, 2007), (Goleman, 2017, 2018).

In 2005, Shane Frederick, from MIT, discusses the idea of the connection between cognitive reflection and decision-making. Cognitive reflections fall into two categories, intuitive and reflective. Often people do not take time to reflect and make impulsive decisions that can be wrong. Among the factors that analyze what affects decision making are time preferences, patience and preference to risk. They are identified to be correlated with intellectual abilities - IQ (Frederick, 2005).

From another perspective, the one of talents, based on a systematic study of professional excellence in all fields, conducted in the last thirty years, by interviewing over two million people were identified 34 models (natural, recurrent thinking, feelings or behaviors) that group the most widespread themes of human talent (Buckingham, 2005).

3. Methodology and results

Given our area of interest, the assessment of the potential to perform of future employees, we do not aim to identify the full psychological profile, but we will focus on the area of skills. We find in the literature numerous types of tests, (Carter *et all*, 1989, 1996), (Bodo, 2001), (Necula, 2003, 2003), (Janda, 2003), (Buckingham, 2005), (Băileșteanu *et all*, 2008), (Carter, 2007, 2015), (Craughwell, 2016), (Barrett, 2008, 2018).

Given that no clear assessment criteria can be defined and the limited time to apply, one solution is The Cognitive Reflection Test (CRT), also known in media as the world's shortest IQ test. It was developed by Shane Frederick (Frederick, 2005). CRT is a simple measure of one type of cognitive ability - the ability or disposition to reflect on a question and resist reporting the first response that comes to mind. This ability could be a good predictor for a potential high-performing employee. Being directly related to how we make decisions. Also The CRT correlates with measures of intelligence, such as IQ test, and it also correlates with various measures of mental heuristics

(Oechssler *et all*, 2009), (Toplak, 2011). The CRT contains three items (Table no. 1):

Table no. 1 The Cognitive Reflection Test (CRT)

Question	Answer
1. A bat and a ball cost £1.10 in total. The bat costs £1.00	Correct answer = 5 cents
more than the ball. How much does the ball cost?	Impulsive answer = 10 cents
2. If it takes 5 machines 5 minutes to make 5 widgets, how	Correct answer = 5 minutes
long would it take 100 machines to make 100 widgets?	Impulsive answer = 100 minutes
3. In a lake, there is a patch of lily pads. Every day, the patch doubles in size. If it takes 48 days for the patch to	Correct answer = 47 days
cover the entire lake, how long would it take for the patch to cover half of the lake?	Impulsive answer = 24 days

Source: (Frederick, 2005)

The test was applied over three years to 124 people. Given the aim, to identify the qualities of potential employees in the hospitality industry, they were selected from those who applied and enrolled in the study program Economics of Commerce, Tourism and Services at the West University of Timisoara, starting from the assumption that their intention is obvious to work in this sector.

The second hypothesis is that the West University of Timisoara has a high degree of regional attractiveness, being the best ranked university in western Romania, in the academic top QS Ranking, specific for countries in Emerging Europe and Central Asia, which would mean a quality high number of people attracted - so the identification of a maximum area potential of future employees.

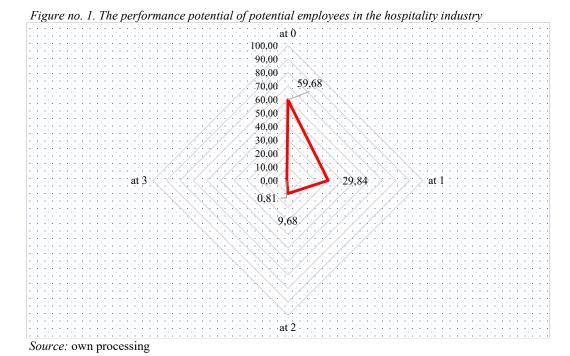
During the analyzed interval, data were collected differently. In 2018, they were collected at the end of the semester together with the evaluation in a field discipline, which allowed the segmentation by sex. In 2019 and 2020 the data were collected at the beginning of the semester, anonymously.

Table no. 2 CRT scores

			Low High						
year of data	sex	eval.	at 0	at 1	at 2	at 3	Total	avg	POTENTIAL (%)
	M	6.39	14	1	2	1	18	0.44	14.81
2018	F	6.86	16	10	2	0	28	0.50	16.67
	Total	ı	29	12	4	1	46	0.50	16.67
2019	-	-	24	14	2	0	40	0.45	15.00
2020	-	-	21	11	6	0	38	0.61	20.18
Total	-	-	74	37	12	1	124	0.52	17.20
POTENTIAL (%)	-	-	59.68	29.84	9.68	0.81			

Source: own processing

Of those tested, only one person was able to answer all the questions, 9.68% to two questions, 29.84% to one question, and the vast majority to none. The potential is obviously very low for those who want to specialize and work in the hospitality industry (Figure no. 1).



The same result emerges from the average of the answers, 0.52 compared to a maximum of 3, i.e. only 17.20%.

4. Conclusions

According to the initial model, CRT results should be lower in women than in men (Frederick, 2005). According to other tests, the model could fall victim to its own use. Once aware of the problem, users tend not to make mistakes (Haigh, 2016). In our case, this aspect is not a potential problem due to the low score obtained - it seems that the model does not have the supposed notoriety - level of education, region, country, etc. A low level could be due to the lack of interest in responding given that no direct stimuli were provided, but it is unlikely given that there are no significant differences between the different times and modes of administration (beginning - end of the semester, anonymous - non-anonymous). The results of the evaluation (standard field discipline) are correlated - both are low which can confirm the hypothesis that in fact the lack of relevant knowledge is the prominent cause of the reasoning errors. In the hospitality industry, as well as in others, patience and risk-taking are important not only for employees but also for entrepreneurs. In conclusion, the industry could face a new risk after the end of the pandemic, that one of impossibility to provide high potential talents, ready to solve problems and provide quality services.

5. References

- Albrecht, K., 2007. *Inteligența socială, noua știință a succesului [Social intelligence, the new science of success*]. Bucharest: Curtea Veche Publishing House.
- Barrett, 2008. Teste supreme de aptitudini [Supreme aptitude tests]. Bucharest: Meteor Publishing House.
- Barrett, J., 2018. Teste pentru carieră, aptitudini şi selecție [Tests for career, skills and selection].
 Bucharest: Meteor Press Publishing House.
- Băileșteanu, Gh. and Burz, R., 2008. Liderul [The leader]. Timișoara: Mirton Publishing House.
- Bodo, V., 2001. Teste de inteligență [Intelligence tests]. Cluj-Napoca: Dacia Publishing House.
- Buckingham, M. and Clifton, O.D., 2005. Descoperă-ți punctele forte cu Testul Clifton (StrengthsFinder) [Discover your strengths with the Clifton Test]. Bucharest: Alfa Publishing House.

- Burz, R., 2010. Evaluarea performanței managementului întreprinderii. Teză de doctorat [Evaluation of company's management performance. PhD Thesis]. Timișoara: West University of Timișoara.
- Carter, P. and Russell, K., 1989. *Teste de inteligență* [*Intelligence tests*]. Bucharest: Aldo Press Publishing House.
- Carter, P. and Russell, K., 1996. *Teste de inteligență* [*Intelligence tests*]. Vol. 2, Bucharest: Aldo Press Publishing House.
- Carter, P., 2007. Teste de inteligență și psihometrice [Intelligence and psychometric tests]. Bucharest: Meteor Press Publishing House.
- Carter, P., 2015. Testaţi-vă EQ-ul [Test your EQ]. Bucharest: Meteor Press Publishing House.
- Craughwell, J.T., 2016. Cine ești? Testează-ți inteligența emoțională [Who are you? Test your emotional intelligence]. Bucharest: Litera Publishing House.
- Dumitru, Al.I., 2001. *Psihologia educației* [*The psychology of education*]. Timișoara: Mirton Publishing House.
- Frederick, S., 2005. Cognitive Reflection and Decision Making. *Journal of Economic Perspectives*, 19 (4), pp.25-42.
- Goleman, D., 2017. *Inteligența emoțională [Emotional intelligence*]. Bucharest: Curtea Veche Publishing House.
- Goleman, D., 2018. *Inteligența socială, Noua știință a relațiilor umane* [Social intelligence, The new science of human relations]. Bucharest: Curtea Veche Publishing House.
- Haigh, M., 2016. Has the Standard Cognitive Reflection Test Become a Victim of Its Own Success. *Advances in Cognitive Psychology*, 12 (3), pp.145–149.
- Havârneanu, C., 2000. *Cunoașterea psihologică a persoanei* [*Psychological knowledge of the person*]. Iași: Polirom Publishing House.
- Janda, L., 2003. *Teste pentru alegerea carierei [Career selection tests*]. Bucharest: Business Tech International Press.
- Necula, A., coord., 2003. Cunoaște-l pe celălalt [Get to know the other one]. Iași: Polirom Publishing House.
- Necula, A., coord., 2003. Cunoaște-te pe tine însuți [Know yourself]. Iași: Polirom Publishing House.
- Oechssler, J., Roider A. and Schmitz, P.W., 2009. Cognitive abilities and behavioral biases. *Journal of Economic Behavior & Organization*, 72 (1), pp.147–152.
- Popescu-Neveanu, P., Zlate, M. and Creţu, T., 1996. Psihologie [Psychology]. Bucharest: Didactic and Pedagogical Publishing House.
- Toplak, M., 2011. The Cognitive Reflection Test as a predictor of performance on heuristics-and-biases tasks. *Memory and Cognition*, 39 (7), pp.1275–1289.

Assessing ESP Reading Skills. Case Study on Business Topics

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Abstract

This paper approaches several elements pertaining to the assessment of ESP reading skills. The theoretical section briefly presents several aspects of language assessment and testing, in general, such as definitions of language testing, elements influencing score measurement, ways of assessing language skills, assessment forms and functions. This theoretical section continues with the presentation of certain aspects related to reading assessment, with a focus on the elements that should be taken into account when assessing reading skills. The experiment section of the paper designs a case study to be conducted in the second semester of the academic year 2021-2022, with two groups of students, in order to see whether the employment of adequate assessment techniques furnishes learners the necessary backwash in order to further enhance their reading skills.

Key words: ESP, language testing, reading assessment, ESP skills, business English

J.E.L. classification: Z13

1. Introduction

Having in view the intensification of international relationships and the escalating pace of technological development triggered by globalization, English has been promoted as an internationalized language, rising, among many others, the scholars' interest in issues such as English language learning and testing. More and more businesses need employees that are proficient in English and that are able to understand many business situations from a cross-cultural perspective (Popescu, 2016, p. 30). Thus, upon employment, many employers test their applicants in order to establish whether they have the required English skills in order to perform well at the workplace. Moreover, some companies organize English language courses and assessments for their employees, in order to monitor their language acquisition and development and to enhance their performance.

2. Theoretical background: aspects of language testing

Language testing has been defined in various ways, connecting it to key terms such as proficiency, evaluation, assessment, knowledge, ability, skills, achievement, aptitude, scales, task, examination, test. In 1888, in "The Statistics of Examinations", Edgeworth defined language testing as "a species of sortition infinitely preferable to the ancient method of casting lots for honours and offices". A hundred years later, Black and Wiliam (1998, p. 2) professed that assessment encompasses all the endeavors and tasks – in which teachers and students engage – aimed at assessment and self-assessment, furnishing vital data that can be processed and used in order to enhance the quality of subsequent teaching and learning activities. Other scholars, such as Cheng and Fox (2017, pp. 1-2), scrutinized this definition and pinpointed the manifold dimensions engaged within the assessment process, underlying that it "involves teachers and students" and that it "can be carried out between a teacher and a student or a group of students" or "between a student and another student or among students themselves". Furthermore, these scholars also explained that the assessment process also encompasses "the classroom tests and daily assessments that we teachers use in our classroom, and the largescale tests that our students take" (Cheng and Fox, 2017, pp. 1-2).

According to Hidri (2021, p. 11), assessment should be mainly aimed at verifying the occurrence of the learning process, its extent and anticipated outcomes, as it is chiefly concerned with systematically gathering and compiling information in order to emit judgments or to make decisions in connection to certain people.

In Brown's perspective (2003, p. 8), the continuously changing teaching methodology has consistently influenced language testing tendencies, forms and conventions. In this respect, he argues that in the 1950s – against the background furnished by contrastive analysis and behaviorism – in the limelight of testing practices there were placed particular language aspects, such as the various disparities of phonological, grammatical, and lexical nature between two languages. Later, in the 1970s and 1980s, a more integrative perspective upon testing was triggered by communicative theories of language, while nowadays test designers are looking for assessment tools characterized by authenticity and validity so as to replicate the circumstances of real-world interaction (Brown, 2003, p. 8).

Bachman's research (1995, p. 350) highlighted several elements that are susceptible of influencing the candidate's score measurement i.e. the communicative language ability (involving issues related to language competences, such as those of grammatical, textual, illocutionary and sociolinguistic nature; strategic competencies and psychosociological mechanisms), the test method (implying issues connected to the environment, the rubric, the input, the expected response, and the relationships between input and response), personal characteristics (such as the candidate's cultural background and knowledge, his/her cognitive abilities, sex and age) and random factors (these regard the interactions between the previous three elements and also the errors that might occur during the measurement process). In order to assure the accuracy of a testing process, all these elements should be taken into consideration. In addition, assessors should also have in view the practical usefulness of the tests and their positive and negative effects. Brown (2003, p. 248) also states that "the variety of assessment techniques and item types and tasks is virtually infinite in that there is always some possibility for creating a unique variation"; however, he appeals to caution as the "overzealous urge to be innovative" might distract teachers "from a central focus on achieving the intended purpose and rending an appropriate evaluation of performance". Different aspects regarding test use should also be envisaged when designing tests, and the acknowledgement of the responsibility to create adequate and appropriate tests also plays a key part in ensuring the observance of standards (Brown, 2003, p. 248).

There are also other ways of assessing the students' language skills, which implement different criteria. For instance, although informal assessment is usually seen as a stage that grants students the opportunity to practice, scholars argue that it involves the teacher's constant monitoring (and praise) of the students' performance of daily classroom tasks, without grading them or without outlining a picture of their skills. In scholars' view, this assessment type is mainly formative (as it focuses particularly on the learner's improvement of his/her language skills), and may take the shape of marginal comments made by the teacher on the student's papers, the teacher's pieces of advice or suggestions regarding various issues encountered by students, such as difficulties in pronouncing certain words or in note-taking, incidental comments or responses, use of encouraging structures (see Ruiz-Primo, 2011).

In addition, Ur (2009, p. 37) considers that even homework assignment is a useful means of informal assessment as it "may in fact function as a test if the teacher's main aim in giving it is to find out whether the learners have learned some language or not". In the same scholar's perspective, the same function can also be fulfilled by "questions asked during the routine give-and-take of classroom interaction", as well as by "some textbook exercises" (Ur, 2009, p. 37). The scholar also adds that, as far as formal assessment is concerned, it does not always include tests but also projects, portfolios, or even systematic observations of a learner's frequency of oral performance or participation in class.

In Brown's perspective (2003, p. 251), alternative forms of assessment are extremely useful especially because in this case, learners do not feel the same pressure and stress as they do during an exam; moreover, the same scholar adds that they also contribute to the "effort to triangulate data about students".

Scholars have found that, in general, assessment has two major functions i.e., formative and summative (see Perera-Diltz and Moe, 2014). The former is aimed at supporting and encouraging the learner in his/her ongoing development process and therefore takes place during the skill formation process and involves the teacher's feedback, the learner's acknowledgement of the feedback and the continuation of his/her learning process and improvement (see Cullinane, 2011).

Andrade and Cizek (2010, p. 6) characterized formative assessment as a process that requires the collaboration between its main actors (i.e., learners and teachers) and that is aimed at apprehending the students' learning process and conceptual framework and at pinpointing those elements that are vital to the teaching and learning processes, such as strengths, weaknesses and spheres of improvement and development. The same scholars add that formative assessment furnishes precious information that can be capitalized by teachers in instructional planning and by learners in the expansion of their understanding and increased achievement.

In addition, Cheng and Fox (2017, p. 5) explain that this type of assessment "is in line with assessment for learning" and, since it is carried out collaboratively and concerned with "the direction in which teaching and learning should go", no mark should be related to it.

As far as summative assessment is concerned, scholars explain that it aims to quantify the learner's knowledge acquisition and academic achievement at the end of a course/ unit and focuses on the proof of the learner's accomplishment level of the respective learning objectives, without always providing with assistance for further progress. In this regard, Cheng and Fox (2017, p. 5) underline that this type of assessment "is in line with assessment of learning".

Brown (2003, p. 271) coins the phrase alternatives in assessment, which, in his perspective, is more appropriate than alternative assessment. He also highlights several advantages entailed by these alternatives in assessment, such as the opportunity to expand daily classroom activities and the employment of authentic contexts or of veridical reproductions of the real world, which highlights their nonintrusive and multiculturally sensitive nature (when administered adequately); they also furnish relevant and helpful data on the learners' strengths and weaknesses and put the limelight on both processes/procedures and results/products, demanding learners to capitalize their higher-level reasoning and problem-solving abilities (Brown, 2003, p. 271).

According to the above-mentioned scholar, teachers should have in view four main guidelines in order to efficiently implement self- and peer-assessment tasks. First, learners should be informed about the assessment goals. Second, the tasks should be coherently and precisely defined. Third, equitable performance/skill assessment should be encouraged. Fourth, follow-up tasks should be assigned for constructive washback (Brown, 2003: p. 276). He also presents several tasks that can be carried out by learners, focused on the four main language skills. As far as the reading skills are concerned, he suggests the following:

"Reading passages with self-check comprehension questions following. Reading and checking comprehension with a partner. Taking vocabulary quizzes. Taking grammar and vocabulary quizzes on the internet. Conducting self-assessment of reading habits. Setting goals for creating/increasing opportunities for reading" Brown (2003, p. 277).

Cheng and Fox (2017, pp 11-12) explain that high-quality assessment should furnish results focused on student learning. In these scholars' perspective, high-quality assessment is characterized by elements such as alignment (concordance between curriculum, instruction, standards and assessments), validity (adequate inferences, uses and assessment consequences), reliability (consistent, stable and dependable assessment results), fairness (equal opportunities demonstrating achievement; comparably valid scores), consequences (triggered by the use or misuse of assessment results), practicality and efficiency (information entailed and collected by assessment) (Cheng and Fox, 2017, pp 11-12).

3. Assessing reading

Teaching experience and research in the field have highlighted that successful reading activities should be based on clear explanations, instructions and time limits provided by the teacher. By observing learners while they perform reading tasks (individually, in pairs or in teams), teachers can collect useful information about their skills and development. In order to help learners understand how to tackle a certain type of reading activity, when checking their answers, teachers

should also ask for justifications, i.e., ask learners to specify the details or part of the reading text that helped them decide on a particular option. The roles of prompter and controller are extremely useful to teachers especially when pointing out or directing learners to certain features of the text construction and structure, aimed at clarifying ambiguities or checking the learners' comprehension. Moreover, the integration of technology into English language teaching and assessment will boost the students' performance (see Maruntelu, 2018; Nadrag Dan, 2008). Carefulness is also required when providing feedback, so as to avoid learner demotivation or distraction.

According to Eunhee Jang (2017, p. 164), the assessment of reading skills should be centered on measuring the learners' automaticity in processing essential encoding skills; it should also evaluate their ability to selectively notice and analyze significant data, and to identify, retrieve and organize information in order to create mentally a meaningful and logical representation of the text. In addition, Brown (2003, p. 185) stresses that teachers should require learners to assimilate the rules for understanding a text, but show them precisely what to do: first, the processing of distinct letters, words, and phrases requires the ability to understand and use essential bottom-up strategies, while comprehension is based on top-down strategies (which are driven conceptually); second, adequate content and formal schemata (i.e., background information and cultural experience) should be acquired and strengthened by learners as part of the top-down approach, in order to perform interpretations efficiently.

The same scholar further professes that "the assessment of reading ability does not end with the measurement of comprehension" as a reader may comprehend the message at sentence level, but lack the ability to connect sentences and understand the entire/ overall message, due to insufficient practice of the "strategies for noting the discourse conventions of that genre" (Brown 2003: 185). Therefore, consideration of the different types of written texts (i.e., academic reading, job-related reading and personal reading), of the different angles of the reading ability, of the precise tasks usually employed in the assessment of reading, and of the impalpable nature of reading is necessary.

In his turn, Harmer (2007, p. 283) makes a clear distinction between extensive (i.e., reading longer texts for pleasure) and intensive (i.e., reading certain texts from textbooks in order to shape receptive skills, such as skimming, scanning, reading for detailed comprehension or reading for inference) reading.

In Kilpatrick's perspective (2015, p. 77), reading comprehension should be approached based on "the simple view of reading", as it pays "proper instructional attention" to "each of the key components involved in learning to read"; thus, reading comprehension engages "two broad skills: word-level reading and language comprehension", which "can be further subdivided based upon research into the various components influencing those broad skills".

Brown (2003, p. 188) specifies the following criteria that should be taken into account when assessing reading skills: identifying the purpose for reading a certain text; bottom-up decoding by applying spelling rules and conventions; grasping meaning by employing lexical analysis; guessing meaning when the learner is unsure; grasping the main ideas by skimming the text; extracting specific information by scanning the text; rapid processing by employing silent reading techniques; exploring/using charts, marginal notes, semantic maps or outlines for comprehending and retaining various ideas or pieces of information; discriminating between literal and implied meanings; processing relationships by using discourse markers.

When it comes to extensive reading (i.e., books, reports, lengthy essays, short stories and articles), teachers can ask learners to perform a wide array of tasks, usually focused on meaning — which, in ESP, often raises challenges in terms of terminology and equivalences (see Chirobocea, 2016) — involving activities such as interpretation, scanning, skimming, information transfer, note taking, outlining, editing, impromptu reading plus comprehension questions, summarizing and responding, short-answer tasks, ordering. Furthermore, the employment of authentic materials will contribute to the enhancement of the learners' English skills (see Nadrag Dan and Chiru, 2016).

The assessment of perceptive reading skills usually involves tasks such as reading aloud, written response (i.e., reproducing in writing what has been read), multiple choice, picture-cued items. As far as selective reading skills are concerned, they can be assessed by tasks focused on multiple choice, matching, editing, (error identification and correction), picture-cues, gap filling.

Regarding interactive reading skills, their assessment involves longer texts and tasks that combine form-focused and meaning-focused goals, more attention being paid to the latter. Such instances are represented by cloze tasks (such as multiple-choice cloze tests, C-tests, close-elide), impromptu reading plus comprehension questions (i.e., reading followed by various text comprehension questions), short-answer tasks (i.e., open-ended reading comprehension questions) (see Kolodziejska 2003, p. 36). Tasks should be designed based on the assessment objectives and a key to, and scoring of these tasks should also be drawn up.

4. Research methodology

This section of the paper designs a case study to be conducted in the second semester of the academic year 2021-2022, with two groups (i.e., a control and an experiment group) of students from the Bachelor's degree program in the Economics of Trade, Tourism and Services, who have similar English proficiency levels (i.e., upper-intermediate).

The research methods employed will be the experiment and the observation.

This case study will verify the following hypotheses: H1. The employment of adequate assessment techniques furnishes learners the necessary backwash in order to further enhance their reading skills. H2. The employment of adequate assessment techniques provides teachers valuable evidence that contribute to the enhancement of their teaching techniques, meeting thus the learners' needs and contributing to their overall progress.

The experiment will be preceded by an initial reading assessment, in order to establish the level of the reading skills of each group involved in the experiment.

During the practice stage, students from both groups will solve reading tasks on the topics of "Tour Operators", "Dealing with Guests" and "Travel Agencies". However, the experiment group will receive Microsoft forms in order to practise reading; this group will also benefit from feedback and more practice activities, while with the control group, traditional teaching and assessment methods will be employed.

Consideration of various text genres (and, implicitly, the schemata associated with them) and of particular tasks usually employed in reading assessment, scrutiny of the reading purposes, strategies and means to retain information, and examination of different facets of the reading ability, as well as reading assessment performed by inference and adequate time limits (see Brown 2003, pp. 186-187) will be the main elements underlying the reading activities carried out with the experiment group.

The reading assessment criteria taken into consideration will be those proposed by Brown (2003, p. 188), as follows: establishing the reading objective; bottom-up decoding by applying spelling guidelines and conventions; grasping meaning by employing lexical analysis; deducing meaning of certain words or phrases (when the reader is unsure); skimming for essential ideas; scanning for particular information; rapid processing by employing silent reading strategies; grasping and retaining information by means of charts, marginal notes, semantic maps or outlines; identifying literal and implied meanings; processing interconnections by exploiting discourse markers.

Moreover, for the experiment group, the organization of different assessment tasks will be based on four types of reading performance, also tackled by the above-mentioned scholar i.e., extensive reading (for the assessment of the overall understanding of a text), perceptive (dealing with the elements of larger sections of discourse and thus learning how to read and become literate in ESP), selective reading (aimed at verifying whether the student is able to identify lexical, grammatical and discourse particularities of language within very short texts/sentences) and interactive reading (with texts of various lengths, aimed at negotiating meaning and at identifying significant traits in order to retain the processed pieces of information) (Brown, 2003, p. 189).

The experiment will end with a final module test, aimed at comparing the level of the reading skills of each group involved in the experiment.

5. Findings

We expect that the findings of the experiment conducted with the two groups (i.e., the control and the experiment group) of students from the Bachelor's degree program in the Economics of Trade, Tourism and Services will highlight the validity of the two research hypotheses. Thus, this experiment will probably emphasize that the employment of adequate assessment techniques furnishes learners the necessary backwash in order to further enhance their reading skills, and that it also provides teachers important evidence, contributing to the enhancement of their teaching methods and techniques, meeting thus the learners' needs and contributing to their general progress.

6. Conclusions

Ideally, tests should have feasible objectives and be based on comprehensive research conducted into a field of study. Moreover, criteria such as validity, reliability, face value and practicality should underlie tests. The assessment activity should also be based on the teacher's previous experience with and observation of the respective students; in addition, s/he should notice the mistakes students usually make and explain them while teaching.

It is noteworthy that the social and technical evolutions (and even crises) entailed some important changes as far as tests are concerned. For instance, the COVID-19 pandemic brought a new dimension the assessment activities, with a special focus on online testing, which, among others, put Microsoft and Google Forms in the limelight. Moreover, having in view the new generations' penchant for technical devices, teachers have to continuously adapt to these new technological breakthroughs and endeavor to incorporate them into their teaching and assessment activities, in order to support students in their English acquisition journey.

7. References

- Andrade, H. and Cizek, G. J. 2010. Handbook of Formative Assessment. Routledge.
- Bachman, L. F. 1995. Fundamental Considerations in Language Testing. Oxford University Press.
- Black, P. and Wiliam, D. 1998. "Assessment and Classroom Learning". *Assessment in Education: Principles, Policy and Practice*, (5)1, pp. 7-14.
- Brown, H. D. 2003. Language Assessment Principles and Classroom Practices. Pearson Education.
- Cheng, L. and Fox, J. 2017. Assessment in the Language Classroom. Teachers Supporting Student Learning. London: Palgrave Macmillan.
- Chirobocea, O. 2016. "The Challenges of Terminology and Equivalence in ESP Classes". Studii şi cercetări filologice. Seria limbi străine aplicate, 15, pp. 97-106.
- Cullinane, A. 2010. "Formative Assessment Classroom Techniques". *Research and Resource Guides*. 2. 1.
- Edgeworth, F. Y. 1888. "The Statistics of Examinations". *Journal of the Royal Statistical Society*, (51)3, pp. 599-635.
- Eunhee Jang E. 2017. "Cognitive Aspects of Language Assessment". In E. Shohamy, G. Iair, S. M. Or, eds. Language Testing and Assessment, 3rd ed. Springer International Publishing.
- Harmer, J. 2007. The Practice of English Language Teaching, 4th edition. Pearson Longman ELT.
- Hidri, S. 2021. Perspectives on Language Assessment Literacy. Challenges for Improved Student Learning. London and New York: Routledge.
- Kilpatrick, D. A. 2015. Essentials of Assessing, Preventing, and Overcoming Reading Difficulties. New Jersey: John Wiley and Sons Inc.
- Kolodziejska, E. and Sikorzynska, A. 2003. Teste de Limba Englezã pentru nivel avansat. Editura Teora.
- Maruntelu, C. L. 2018. "The importance of improving digital skills in modern language teaching". *Scientific Bulletin of Naval Academy*, XXI, pp. 136-139.
- Nadrag Dan, L. 2008. "Integrating Technology into English Language Teaching". Volumul Conferinței internaționale "The International Conference on Business and Economy", Constanța, 6-8 noiembrie 2008. Ed. Muntenia.

- Nadrag Dan, L. and Chiru F. 2016. "Authentic Materials and Authenticity in Foreign Language Learning and Teaching". Conference Proceedings "European Identity and National Alterity. Norm and Creativity in Linguistics, Literature, Translation Studies, Didactics and Interdisciplinarity" (EINA) Universitatea Spiru Haret, 13-14 mai 2016, Bucureşti. Milano: Rediviva Edizioni.
- Perera-Diltz, D., and Moe, J. 2014. Formative and summative assessment in online education. Journal of Research in Innovative Teaching, 7(1), pp. 130-142.
- Popescu, A. 2016. "Teaching Business English And Case Studies". *Communication, Context, Interdisciplinarity 4th ed.*, vol. 4. Tîrgu-Mureş: Arhipelag XXI Press, pp. 27-31
- Ruiz-Primo, M. A. 2011. "Informal formative assessment: The role of instructional dialogues in assessing students' learning" Studies in Educational Evaluation 37, pp. 15–2.
- Ur, P. 2009. A Course in Language Teaching. Cambridge: Cambridge University Press.

Corporate Governance During the Covid-19 Pandemic

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Abstract

The purpose of this article is to present some of the challenges that companies faced during the Covid-19 pandemic and how corporate governance practices helped them or not in adapting to the new business environment.

Boards of directors apply market defense tactics to avoid hostile bids. Various takeover defenses were shown for Standard & Poor top 500 companies in 2020 and a qualitative analysis was performed on these defense takeover tactics.

This study contributes to present literature on market reactions to Covid-19 outbreak in terms of corporate governance responses and emphasize key guidelines of good practice in takeover defense.

Key words: corporate governance, corporate citizenship, COVID-19, takeover defense. **J.E.L. classification:** G32, G34, O16.

1. Introduction

Corporate governance provides a greater degree of assurance that at company level is implemented an effective control system that guarantees that the business is conducted in the interest of shareholders and stakeholders. The agency theory points out that corporations' act like agents for the shareholders. The shareholders give custody of their resources to the officers or board of directors of the company. The theory agency explains also the relationship between the agency in which one party, the principal, appoints another party, the agent, to perform a particular service. The agency problem rises when both parties seek to maximize their benefits and the agent – officer, director, disengages from the shareholders' interests.

Corporate governance establishes a framework assembling the agent-principal relationship. The set if rules care to line up the incentives of principals with those of shareholders, preventing disruptions of corporate interest from officers and directors, so the agency theory grants the principals' duties owned to the corporation.

2. Theoretical background

With the global public economic and health crisis commenced, companies had to intensify their preoccupations more than measuring the impact on operations. The valuations generally decreased as Covid-19 impacted market volatility, inevitably attracting disruptions in credit markets, whilst partial market dislocation engaged an increase of controversial situations of mergers and acquisitions (M&A). Nonetheless, as the initial disturbance of COVID-19 and the turmoil on health and economic started to diffuse, well-resourced bodies draw their attention on identifying and seeking opportunities. Lead bidders had a multitude of factors to adopt more often hostile tactics than in recent years. Consequently, this trend raises new challenges for boards and executives as companies are more vulnerable to potential attacks compared with the *ordinary course of business* (Webster, 2021).

Like in every other crisis, there are winners and losers, and companies used these special circumstances to grow and gain new markets using takeovers. Whenever the acquiring procedure is accomplished with the management support of the target company, it's the case of a friendly takeover. Else, when the acquirer undertakes it against the will of management, bidders might consider more valuable to make a proposal directly to shareholders, resulting in a hostile takeover. The companies are mitigating this risk using strategies termed as takeover defense measures or antitakeover defense provisions.

The Covid-19 crisis offered the opportunity to analyze how different governance methods influence corporate governance. Studying and capitalizing on the pandemic outrage will make a clear image in research and practice on which corporate mechanism and why they can safeguard companies on worse crisis consequences and can support them in their rehabilitation.

In the first half of 2020, in Romania, the M&A market recorded significant increase of 28% transactions compared with the precedent year, according to Deloitte Romania, valuing around 1.2 billion Euro. Investors focus on companies that came through the Covid-19 pandemic, adapting their activities, developing new technologies and increased their performance, particularly technology companies, renewable energy sources, healthcare and real estates (Deloitte, 2021).

The main objective of the article is identifying different corporate governance measures that companies adopted in 2020 highlighting the challenges on corporate level, mainly the takeover defense measures that companies opted for in the course of the last year.

3. Research methodology

The research analysis was made on the takeover defense strategies applied by the Standard & Poor's 500 large companies listed on United States stock exchanges, divided into economic sectors. Data was accessed from Eikon Reuters Database, using an academic subscription account, selecting from the Environment Social Governance Data, the data concerning the Takeover Defense referring to the American current fiscal year (1 October 2020-30 September 2021)

4. Findings and discussions

The research refers to the *Takeover Defense Market View*, using the S&P 500, for ten types of industries, calculated for the year of 2020. Data was collected from Eikon Reuters database, a platform with subscription request access. the reason of using this population is the availability of data.

2020 was a difficult year for everybody and companies were not excepted. In times of crises there are losers and winners. To avoid hostile takeovers, companies choose to adopt various strategies to the corporate charter that will financially impact the shareholders of the target companies. The *shark repellent tactics* and *poison pill strategies* are effective in counteracting a takeover but they also translate into decline of shareholder value.

There are three categories of measures taken to avoid hostile takeovers of companies: provisions in force, board structure and the voting provisions.

Provisions in force

Poison pill is the name of a defensive method that target companies might use that will increase the cost of takeover further than the acquirer wanted to pay and discourage the takeover pursues. The tactic also reduces considerably shareholder value (Malatesta et al., 1988). Only in two economic sectors, consumer cyclicals and technology, the drastic tactic was adopted for the American public companies from the S&P 500 top.

With Staggered board of directors' tactic, the election time for directors will be different on multiyear terms, the goal is taking much longer time to vote and will discourage the potential raider to control the company and lose interest. Company management benefits from staggered board of directors but shareholders will not have any benefit from it. There were companies in every analysed sector to adopt this tactic.

Golden parachute was one of the favourites tactics in mergers and acquisitions for the top companies analysed and refers to a very high compensation or financial benefits guaranteed to the executive of a company that is overtaken and loses job. This tactic makes the company less interesting for the bidder (Brown, 2002).

Unlimited authorized capital or blank check is a stock method in which shareholders preapprove new classes of favoured stocks to be issued in the future whenever the board of directors considers. The new stick can also be created by public companies in case of a hostile bid for the company as a takeover defense and it was mostly used by the S&P 500.

Limited Shareholder Rights to Call Meetings – the members representing 5% of the share capital, entitled to vote in the general meetings of the company can call a general meeting, according to Companies Act 2006. The majority of the meetings are called by directors.

Limitations on Removal of Directors The shareholders of a company can remove the director of the company or replace the director before term though an ordinary resolution, according to Companies Act 2013.

Limitation of Director Liability – personal liabilities of a director to the company or its shareholders counteracts with its fiduciary duty, acting in good faith and integrity (Lawinsider).

Shareholders have the right to act under their *written consent* instead of meetings with no or little notice to the company.

The goal of a *Fair Price Provision* refers to mandating a 80% vote to approve certain transactions so it protects the shareholders against a hostile takeover when an acquirer buys the majority voting interest and then achieves the remaining shares by a coercive fusion paying the an amount lower then the fair value. The price is a multiple of the target company's price-to-earnings ratio (Forexbite).

The pre-emptive rights clause refers to the right of shareholders of a company to acquire the new issued stock before going on the market, with the intention to protect their ownership stake in the corporation.

Company Cross Shareholding happens when a publicly traded company owns stakes in another company of the same kind.

The *Constituency Provision* statute offers the directors of companies the right to balance interests of stakeholders instead of focusing only on shareholders value maximization in a way that would affect the long-term sustainability of the corporation.

All tactics taken by corporation in specified industries are shown in the following table.

Table no. 1 Takeover Defense - **Provisions in Force.** S&P 500

Index: S&P 500	incover Bej		Consumer					Consumer Non-	
201 000	Industrials			Technology	Utilities				Energy
Historical Poison Pill	0%	0%	9.7%	2.9%	0%	0%	0%	0%	0%
Staggered Board Structure	23.4%	35.3%	22.4%	17.3%	4%	10.7%	17.4%	7.9%	13%
Golden Parachute	98.4%	98%	98.7%	94.7%	100%				87%
Unlimited Authorized Capital or Blank Check	92.1%	98%	92%	93.5%	83.3%	96.4%	90.9%	89.2%	100%
Limited Shareholder Rights		7070	7270	73.370	03.570	20.170	70.770	07.270	10070
to Call Meetings Limitations on	98.4%	100%	100%	100%	100%	100%	100%	97.4%	100%
Removal of Directors	53.6%	59.1%	62.5%	44.9%	75%	44.2%	71.4%	33.3%	47.4%
Limitation of Director Liability	100%	100%	100%	100%	100%	100%	95.7%	100%	100%
Written Consent Requirements Fair Price	52.5%	53.1%	57.6%	42%	75%	48%	50%	69%	27.3%
Provision	83.3%	60%	78.6%	64.3%	83.3%	93.3%	83.3%	63.6%	57.1%

Pre-emptive									
Rights	5.6%	0%	5.7%	6.1%	4.3%	0%	0%	3.1%	0%
Company Cross									
Shareholding	NA	NA	0%	0%	NA	NA	NA	NA	NA
Advance Notice									
for Shareholder									
Proposals	100%	100%	100%	100%	100%	100%	100%	100%	100%
Advance Notice									
Period Days	89.9	88.8	89.2	88.7	80.9	92.5	82.8	90.3	94.2
Expanded									
Constituency									
Provision	100%	100%	100%	100%	100%	100%	100%	100%	100%

Source: Authors' selection from ESG Eikon Reuters Database, 2021

• Board Structure

The board of directors is the executive committee and represents the utmost authority in the management structure of a corporation or public traded company that supervises the activities of the company. The board controls and monitors the performances of the management and acts in the best interest of the company and of shareholders. Its size, composition, diversity, duties and powers are important corporate governance tools.

Table no. 2 - Takeover Defense - Board Structure, S&P 500

Index: S&P	Tukcover	ř	Consumer				Basic	Consumer Non-	
500	Industrials	Healthcare	Cyclicals	Technology	Utilities	Financials	Materials	Cyclicals	Energy
Board Size	10.8	10.8	10.8	10.3	12	12.8	10.7	11.9	9.9
CEO Board									
Member	98.6%	98.3%	95.1%	96.5%	100%	100%	100%	95%	100%
Number of									
Board	7.0	0.5	0.1	0.1	0.2	0.0	7.5	7.7	0.4
Meetings	7.8	8.5	8.1	9.1	9.3	9.9	7.5	7.7	8.4
Female on Board	25	27.7	28	27.2	28.4	29.2	27.1	29	23.8
Audit Board	23	21.1	26	21.2	20.4	29.2	2/.1	29	23.6
Committee	100%	100%	100%	100%	100%	100%	100%	100%	95.7%
Nomination	10070	10070	10070	10070	10070	10070	10070	10070	75.770
Board									
Committee	78.3%	75%	88.9%	88.4%	57.1%	82%	80.8%	70%	78.3%
Compensation									
Board									
Committee	100%	95%	96.3%	97.7%	82.1%	95.1%	96.2%	92.5%	100%
Corporate									
Governance									
Board	07.10/	06.70/	07.50/	1000/	1000/	00.40/	1000/	0.50/	070/
Committee CSR	97.1%	96.7%	97.5%	100%	100%	98.4%	100%	95%	87%
Sustainability									
Committee	65.2%	78.3%	63%	79.1%	96.4%	68.9%	96.2%	92.5%	95.7%
Highest	03.270	70.570	0370	75.170	70.170	00.770	70.270	72.370	75.170
Remuneration									
Package	13.8	18	19	28.6	13.4	14.6	13.4	16.2	18.8
Total Senior									
Executives									
Compensation	32.7	42	41.8	53.6	29.6	40.5	31.6	40.9	45.2
Board									
Member									_
Compensation		3.7	2.9	3.2 Reuters Dat	3.1	3.8	2.9	3.4	3

Source: Authors' selection from ESG Eikon Reuters Database, 2021

Voting provisions

Voting rights plan is a company clause that the board of directors add to the charter to regulate or restrict the voting rights of shareholders on issues if their ownership surpasses 20% of shares. Management can use the rights plans in takeover defense, preventing potential acquirers from voting pro or against of a takeover bid.

Table no. 3 - Takeover Defense -Voting Provisions, S&P 500

1000000000	1 011100 101	zejense ,	011118 - 107	isions, sai					
Index: S&P 500	Industrials	Healthcare	Consumer Cyclicals	Technology	Utilities	Financials		Consumer Non- Cyclicals	
Supermajority									
or Qualified									
Majority Vote									
Requirements	61.9%	59.2%	63%	52%	52.4%	64.3%	56.5%	29.4%	63.6%
Significant									
Company									
Transactions									
(M&A)									
Shareholders	00.50/	0.5.00/	50.50 /	20.00/	51 40/	06.407	1000/	50.1 0/	00.20/
Approval	92.5%	95.2%	70.7%	90.9%	71.4%	86.4%	100%	73.1%	88.2%
Elimination of									
Cumulative									
Voting Rights	95.7%	93%	100%	96.7%	86.4%	86.7%	94.1%	96.2%	100%
Confidential	93.770	93/0	10070	90.770	00.470	00.770	94.1 /0	90.270	10070
Voting									
Policy	91.2%	95.2%	86%	88.4%	100%	91.4%	83.3%	95.5%	100%
Shareholders									
Vote on									
Executive									
Pay	100%	100%	100%	100%	100%	100%	100%	100%	100%

For Telecommunications Services industry - N/A

Source: Authors' selection from ESG Eikon Reuters Database, 2021

5. Conclusions

Although corporate governance cannot be an evident spotlight during a pandemic, the corporate governance structures are tested for their strengths and weaknesses and make the difference in the long term for their stakeholders.

Capital management – In the Covid-19 context, there were changes within workforce and shareholders experience. The remuneration schemes were brought into discussion, like pay ratios decreases to adapt to the workforce and compensations plans and other remuneration characteristics. Shareholders would hold a higher attention to remuneration proposals for 2022, ensuring a compensation program adjusted to company's strategy and commitments to stakeholders.

Board structure – the pandemic was a great opportunity to evaluate the boards in terms of structure, size and diversity, for board of directors respectively. The diversity of the executive teams has to be assessed and especially the directors that are involved in multiple boards and have a weaker capacity of appropriate supervision in times of uncertainty. Governance and oversight processes need to perform effectively, with good attendance rates at meetings and strong planning capacity.

Risk management is another process that needs close examination for a transparent communication, together with business continuity planning and crisis management. Companies must ensure their supply chain risks are safe and respond in such environments where lockdowns and border closures can block their supply chains.

Information technology risks are a constant concern point, tough in times of crisis risks are getting greater. The internal control function and cyber security systems are vital for business continuity. Risk management and cyber governance defense framework are mandatory in times of remote work and business disruptions (FraudWatch International, 2020).

We align to the opinion of Araujo et al. (2020) considering there are three key action items to be considered in preparing for unsolicited bids. First is about a comprehending the intrinsic value of the company. Second is about evaluating the factors that might drive the company vulnerable and prepare response strategy addressing the weaknesses and emphasizing the strengths of the company. Third action is about the continuous and efficient engagement and communication with shareholders.

In a changed world, due to COVID-19 pandemic, it is needed a more complex takeover defense although boards have the same duty, responding in a clear and steady manner, taking key decisions, protecting best the interests of shareholders.

- Araujo R., Massoud P., Papadopoulos K., 2020. *Blood in the Water: COVID-19 M&A Implications* FTI Consulting, Harvard Law School Forum on Corporate Governance.
- Brown, A., 2002. Grading the Goldfield Poison Pill, adapted by Prof. Ian Giddy, New York University.
- Deloitte Romania, 2021. Deloitte analysis: the mergers and acquisitions market remains dynamic, press release
- FraudWatch International, 2020, COVID-19 has long term effects on cyber security, https://fraudwatchinternational.com/
- http://www.forexbite.com/
- https://www.lawinsider.com/
- Malatesta, Paul H., and Ralph A. Walkling, 1988, *Poison Pill Securities: Stockholder Wealth, Profitability, and Ownership Structure*, Journal of Financial Economics, 20, 347-376;
- Merriam-Webster. (n.d.). Ordinary course of business. In Merriam-Webster.com Legal dictionary, from https://www.merriam-webster.com/legal/ordinary%20course%20of%20business

Larry Page and Internet Entrepreneurship

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Abstract

In nowadays society, worldwide companies are competing in an increasingly turbulent environment and entrepreneurship has been shown to contribute to social and economic development. Presenting successful Internet entrepreneurs is essential to comprehending Internet-based companies, as well as inspiring new entrepreneurs. The purpose of this paper is to define the concept of Internet entrepreneurship and to show the case of Larry Page, one of Google's founders. The methodology of the study was based on a quantitative research method and a case study. The paper presents the mentality of the successful Internet entrepreneur and his vision about the business of Internet-based companies. The paper facilitates a deepening understanding of the concept of Internet entrepreneurship and shows that Larry Page is one of the most visionary worldwide entrepreneurs.

Key words: Larry Page, entrepreneurship, Internet entrepreneurship, Google, company

J.E.L. classification: L26

1. Introduction

In nowadays society, worldwide companies are competing in an increasingly turbulent environment (Toma and Marinescu, 2013; Toma and Marinescu, 2015) and entrepreneurship has been shown to contribute to social and economic development (Liñán, et al., 2011; Yeh, et al., 2021).

In the last three decades, all over the world, took place a rapid evolution of entrepreneurship (Gradinaru, et al., 2017; Zainea, et al., 2020). Internet-based technology changes have serious effects on entrepreneurship and economic development (Tan and Li, 2022). Moreover, the impact of the Internet on entrepreneurship is continuously growing (Batjargal, 2007). In the context of the COVID-19 pandemic, Internet-based technology businesses have been significantly developed and become the stars of the worldwide economies (Barbu, 2020; Catană, 2020; Catană, et al., 2020; Barbu, et al., 2021). Therefore, the authors considered it proper to analyze and present the life and the vision of Larry Page – one of the most successful Internet entrepreneurs

This paper presents the study of Internet entrepreneurship and the ways of applying it in practice. Thus, the article presents an analysis of the case of one of Google's founders – Larry Page to highlight an example of a successful Internet entrepreneur. The authors then review the extant literature specifically related to Internet entrepreneurship. The methodology of the study was based on a quantitative research method and a case study. The paper contains four other sections. The second part includes the literature review and is followed by research methodology (third part), results and discussion (fourth section), and conclusions (fifth part).

2. Literature review

Internet entrepreneurship is a concept, studied from multiple perspectives (Tan and Li, 2022). The scientific literature theorizes the main characteristics that are needed to achieve such an important position. Yelkikalan et al. (2010) show that internet entrepreneurship is 'the act of producing a project on a virtual platform with a financial expectation and presenting this project to the customers through Internet' (Yelkikalan, et al., 2010). Moreover, other authors define the concept as 'creating or developing economic activities in ways that cannot exist without the Internet' (Ozan and Emrah, 2016):

Internet entrepreneurship is based on individual creativity and it includes individual thinking and acting (Bahcecik, et al., 2019). Therefore, there are three important differences between Internet entrepreneurs and other types of entrepreneurs (Bahcecik, et al., 2019):

- Low initial capital requirement:
 - o no need for an office or store, opening to low-cost locations;
 - o reduce sales and marketing costs through partnerships with social networks and other websites.
- Low operating cost:
 - o Cost items such as inventory, insurance, tax, electricity are lower.
- Access to broad markets and targeted audiences:
 - o Access to a wide range of customers, regardless of time and space;
 - Ease of access to a more clearly defined audience (with search engine optimization and Internet advertising).

Thus, in a competitive business world, visionary entrepreneurship represents a key factor of progress (Catană, et al., 2020) and become a pivotal engine for economic growth (Catană and Toma, 2021). Moreover, transformational leadership allows for a much more easy and fast development in the ever-changing market (Grădinaru, et al., 2020; Toma, et al., 2020; Toma, et al., 2020). Also, innovative entrepreneurship is fundamentally based on innovations and creates enough opportunities to accomplish them (Grădinaru, et al., 2020; Toma and Catană, 2021).

3. Research methodology

The research methodology was based on a quantitative method and a case study. For the literature review, the authors use electronic databases containing various books, scientific articles, and other relevant sources from the field of entrepreneurship, in general, and Internet entrepreneurship, particularly. The documents were found in prestigious economic and business databases such as Web of Science, Science Direct, Google Scholar, JSTOR, and Emerald Insight.

Firstly, the authors studied the literature review on entrepreneurship and business, in general, and Internet entrepreneurship, particularly. Secondly, they synthesize the information, highlighting the information related to Larry Page's life and his vision of entrepreneurship. Finally, the authors concluded the paper, emphasizing the conclusions, alongside the future research directions.

4. Findings

Larry Page's real name is Lawrence Page. He was born on March 26, 1973, in Lansing, Michigan, located in the United States, in a family of computer experts. His father, Carl Page, was a pioneer in computer science and his mother was a teacher of computer programming. Following their footsteps, he earned a Bachelor of Science degree in engineering from the University of Michigan. Then, he studied computer engineering at Stanford University, where he met Sergey Brin (Biography, 2021). They were, both, interested to develop the large amount of information accumulated on the Internet (Britannica, 2021).

Larry Page and Sergey Brin were involved together in a research, at Stanford University and they created a search engine that listed results accordingly to the popularity of the pages (Biography, 2021). The first name of this engine is 'BackRub' and it was operated on Stanford servers for many months (TheFamousPeople, 2021). Further, they decided to create a company and in 1998 the project

is renamed as 'Google', after the mathematical term 'googol', which refers to the number 1 followed by 100 zeros, to reflect the mission to organize the immense amount of data available on the Internet (Biography, 2021).

Over time, the Google corporation develop various products and services, like the following (TheFamousPeople, 2021):

- 2004 Orkut, a social network;
- 2004 Google Desktop;
- 2004 Google.org to contribute towards social issues and causes;
- 2005 Google Maps, Blogger Mobile, Google Reader, iGoogle;
- 2006 acquired YouTube;
- 2006 chat feature in Gmail;
- 2008 Google Sites and a new version of Google Earth;
- 2008 released Google Health;
- 2009 announced Google Ventures;
- 2010 launched Google Apps Marketplace;

Nowadays, Google handles more than two-thirds of worldwide online search requests, placing it as the best search engine in the world (Britannica, 2021). Therefore, according to Forbes, Larry Page is one of the richest people in the world, with a net worth of 91.5 billion dollars (Forbes, 2021).

Beyond being a successful entrepreneur, Larry Page is very interested in how the internet industry is developing. Thus, over time, he highlighted several lessons, related to his business philosophy, such as (Kumar, 2020):

- The network should be denser this entrepreneurial concept promotes the idea of reaching new heights in a limited time frame and make the proper environment where everyone can achieve their goals;
- Strength shows your potential one of the main qualities of an entrepreneur, this motivates a businessman to do better and build a strong company;
- Dream big, achieve big a classic, but very important characteristic of a successful entrepreneur:
- There is a lot to do apart from technology entrepreneurs must find out the real-life problem on which the business will depend on or will try to solve.;
- *Build better* one needs to work on a product that can stand alone in the market without any major competition;
- *Eliminate the heavyweights* it is essential to be optimistic about the goals and this is one of the most important lessons in entrepreneurship;
- *Important work will eventually change the world* the idea of the business must have the power to change the world for something better and great;
- Give respect, take respect it's important to make sure that the companies are giving respect to the employees. Thus, they can give higher productivity in return;
- No college can teach you to be an entrepreneur reading can transform life and take you to the new heights of success;
- *Don't abandon your dreams* follow the ideas and build dreams in a way that can leave a huge impact on the business world.

5. Conclusions

The Internet industry constitutes one of the most competitive domains at a global level. Presenting successful Internet entrepreneurs is essential to comprehending Internet-based companies, as well as inspiring new entrepreneurs. The paper presents the mentality of the successful Internet entrepreneur and his vision about the business of Internet-based companies. Secondly, the paper shows that Larry Page is one of the most visionary worldwide entrepreneurs. Further research may identify and analyze other entrepreneurs that succeeded in the Internet environment.

- Bahcecik, Y., Akay, S. and Akdemir, A., 2019. A Review of Digital Brand Positioning Strategies of Internet Entrepreneurship in the Context of Virtual Organizations: Facebook, Instagram and Youtube Samples. Istanbul, 3rd World Conference on Technology, Innovation and Entrepreneurship (WOCTINE).
- Barbu, A., 2020. An analysis of youth behavior on social networks during the COVID-19 pandemic. Evidence from Romania. *Business Excellence and Management*, 10(1), pp.177-193.
- Barbu, A., Militaru, G., Deselnicu, D. and Catana, S.-A., 2021. Key Success Factors That Enable IT Service Providers to Achieve Organizational Performance: Evidence from Romania. Sustainability, 13, p.10996.
- Batjargal, B., 2007. Internet entrepreneurship: Social capital, human capital, and performance of Internet ventures in China. *Research Policy*, 36, pp.605-618.
- Biography, 2021. *Larry Page*. [online] Available at: https://www.biography.com/scientist/larry-page [accessed 17 November 2021].
- Britannica, 2021. Google American company. [online] Available at https://www.britannica.com/topic/Google-Inc [accessed 17 November 2021].
- Britannica, 2021. *Larry Page American computer scientist and entrepreneur*. [online] Available at: https://www.britannica.com/biography/Larry-Page [accessed 17 November 2021].
- Catană, S.-A., 2020. Coronavirus (COVID-19) pandemic effects and correlations in the European Union countries. *SEA Practical Application of Science*, 8(23), pp.169-174.
- Catană, S., Grădinaru, C. and Toma, S.-G., 2020. Sam Walton, a visionary entrepreneur. Network Intelligence Studies, VIII(16), pp.113-117.
- Catană, S.-A. and Toma, S.-G., 2021. Entrepreneurship in the hospitality industry. Case study: Marriott International. SEA - Practical Application of Science, IX(27), pp.221-225.
- Catană, S., Toma, S.-G., Grădinaru, C. and Zainea, N., 2020. How were banks involved in supporting Romanian SMEs during the COVID-19 pandemic? Annals of the "Constantin Brancusi" University of Targu Jiu, Economy Series, 5, pp.15-19.
- Forbes, 2021. *World's billionaires' list The richest in 2021*. [online] Available at: https://www.forbes.com/billionaires/ [accessed 22 November 2021].
- Grădinaru, C., Toma, S-G., and Catană, S., 2020. Innovation Around the World: An Analysis of the Top 10 Most Innovative Companies in the Period 2018-2020. "Ovidius" University Annals, Economic Sciences Series, 20(2), pp.340-346.
- Grădinaru, C., Toma, S.-G., Catană, S. and Andrisan, G., 2020. A view on transformational leadership: The case of Jeff Bezos. *Manager*, 31, pp. 93-100.
- Grădinaru, C., Toma, S.-G. and Papuc, R., 2017. Entrepreneurship in the World: The Analysis of the Global Entrepreneurship Index in the Period 2015-2017. "Ovidius" University Annals, Economic Sciences Series, Volume XVII, pp. 14-18.
- Kumar, A., 2020. 10 Most Important Lessons In Entrepreneurship From Google's Larry Page' 10X Philosophy. [online] Available at: appventurez.com/blog/lessons-from-entrepreneurs/[accessed 22 November 2021].
- Liñán, F., Rodríguez-Cohard, J. and Rueda-Cantuche, J., 2011. Factors affecting entrepreneurial intention levels: a role for education. *International Entrepreneurship and Management Journal*, Volume 7, pp. 195-218.
- Ozan, Y. and Emrah, B., 2016. İnternetin Girişimciliği Kapsamında Değişen Enformasyon Siteleri Üzerine Bir Değerlendirme. *Global Media Journal TR Edition*, 6(12), pp. 172-200.
- Tan, Y. & Li, X., 2022. The impact of internet on entrepreneurship. *International Review of Economics and Finance*, Volume 77, pp. 135-142.
- TheFamousPeople, 2021. *Larry Page Biography*. [online] Available at: https://www.thefamouspeople.com/profiles/larry-page-3344.php [accessed 22 November 2021].
- Toma, S.-G. and Catană, S.-A., 2021. Innovative entrepreneurship in the business of electronics: The case of Samsung company. *Network Intelligence Studies*, IX(18), pp.131-135.
- Toma, S.-G., Catană, S. and Grădinaru, C., 2020. Leadership: an overview. Manager, 32, pp.51-59.

- Toma, S.-G., Catană, S., Grădinaru, C. and Zainea, L., 2020. Leadership and wisdom. *Manager Journal*, 31, pp.86-92.
- Toma, S.-G. and Marinescu, P., 2013. Global strategy: the case of Nissan Motor Company. *Procedia Economics and Finance*, 6, pp.418-423.
- Toma, S.-G. and Marinescu, P., 2015. Strategy and change. Manager, 21(1), pp.145-150.
- Yeh, C.-H. et al., 2021. Investigating the relationships between entrepreneurial education and self-efficacy and performance in the context of internet entrepreneurship. *The International Journal of Management Education*, 19(3), p.100565.
- Yelkikalan, N., Akatay, A. and Altın, E., 2010. Yeni Girişimcilik Modeli ve Yeni Nesil Girişimci Profili: İnternet Girişimciliği ve Y, M, Z Kuşağı Girişimci. *Selçuk Üniversitesi Sosyal ve Ekonomik Araştırmalar Dergisi*, 14(20), pp.490-506.
- Zainea, N., Toma, S.-G., Grădinaru, C. and Catană, S., 2020. Social entrepreneurship, a key driver to improve the quality of life: The case of TOMS Company. *Business Ethics and Leadership*, 27, pp.221-225.

Development and Economic Progress in Mihail Kogălniceanu's Writings

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Abstract

Mihail Kogălniceanu (1817-1891) was an erudite historian, a lawyer, a liberal economic thinker, and an extraordinary rhetorician. He was a complex and prominent personality of the Romanian political life for more than half a century who emphasized the need for Romania to develop as a national, unified, democratic and independent state. He understood all too well the concept of progress as necessary evolution, as development in the positive way. In this paper, we identify the main coordinates of Mihail Kogălniceanu's thinking about the importance of studying history as a factor of progress and analyzing the economic and social structures of those times as a premise for reforming society. Ferment of the revolutionary climate in Moldavia, Mihail Kogălniceanu considered that knowing the historic past was a prerequisite for asserting the national consciousness of the Romanian people. His writings followed two major coordinates: the criticism of feudalism and the national emancipation.

Key words: history, reform, unification, progress, economic development, slavery, serfdom **J.E.L. classification**: B31

1. Introduction

Mihail Kogălniceanu was born in a family of freeholders (răzeși) in Iași on the 6th of September 1817. He first studied at home with the Greek Catholic monk Gherman Vida, who was a follower of the emancipation movement of the Romanians in Transylvania, known as the Transylvanian School (Scoala ardeleană). He later studied at Victor Cuenim's boarding school in Iași, together with Vasile Alecsandri and Matei Millo, and then at Miroslava, near Bucharest. In 1834 he left to study in France, at Luneville, where he studied foreign languages and humanities for one year. After being a student at the Humboldt University in Berlin, he returned home and dedicated himself to publishing. He was the editor of several newspapers and magazines (such as Dacia literară, Propășirea and later on Steaua Dunării). As a politician, he was one of the leaders of the National Liberal Party and he actively supported the rule of A. I. Cuza during which he initiated and took part in the progress of the Romanian society by putting into effect an ample program of modernization reforms. Between 1887 and 1890 he was the president of the Romanian Academy, as a sign of appreciation for his scientific and cultural merits and contributions. He was a journalist, a lawyer, a landowner and a leaseholder, a trader and a manufacturer. Therefore, Mihail Kogălniceanu had a wide experience as a practician that was an excellent starting point for his scientific writings.

2. Theoretical background

The vast scientific creation and the numerous political activities he got involved in were the basis for the large number of specialized writings that Mihail Kogălniceanu published. His rich biography was analyzed in the past by famous historians such as A.D. Xenopol (Mihail Kogălniceanu, 1895) or N. Iorga (Mihail Kogălniceanu scriitorul, omul politic și românul, 1921, [Mihail Kogălniceanu the Writer, The Politician, and the Romanian]), but also more recently by Alexandru Zub (Mihail Kogălniceanu istoric, 1974 [Mihail Kogălniceanu as a Historian] and Mihail Kogălniceanu, un arhitect al României moderne, 1978 [Mihail Kogălniceanu, an Architect

of Modern Romania], published in Romanian in 2005). Literary critic Radu Dragnea published a complex paper (Mihail Kogălniceanu) in 1921, in which he emphasized the historic context in which the writer wrote and published his main works. Among the reference books written on the economic issues in Kogălniceanu's writings is the one published by Virgil Ionescu and titled Mihail Kogălniceanu. Contribuții la cunoașterea vieții, activității și concepțiilor sale, 1963 [Mihail Kogălniceanu. Contribuțions to Knowing his Life, Activity and Views], which was republished in 1979 as Opera lui Kogălniceanu sub raportul faptei și gândirii social-economice [Kogălniceanu's Work as to Action and Socio-Economic Thinking], and which is, in fact, the author's PhD thesis. Its abstract was published as Activitatea și concepțiile social-economice ale lui Mihail Kogălniceanu [Mihail Kogălniceanu's Activity and Socio-Economic Views] in the volume titled Din gândirea economică progresistă românească, 1968 [From the Romanian Progressist Economic Thinking].

3. Research methodology

Using the qualitative research methodology, we aimed at collecting and analyzing textual data to help us synthesize Mihail Kogălniceanu's perceptions on the economic, social and political realities of his times. Our research is exploratory in nature. Our objective was to find out and present not only "what" Mihail Kogălniceanu thought about certain topics but also "why" he thought so. This research methodology allowed us to get an in-depth understanding of his writings and of how his brilliant ideas were put into practice.

4. History, civilization and progress

His rich historiography activity places Mihail Kogălniceanu among Romania's greatest historians. Out of the many publications he edited that we would like to mention is the first history magazine that was published in our country in 1840, titled *Arhiva românească* [The Romanian Archive], as well as the 1844 *Propășirea* [Prosperity] magazine in which he promoted many episodes of national history and many liberal economics writings. The peak of his journalistic activity was after the 1855 launching of the political, commercial, and literary journal *Steaua Dunării* [The Star of the Danube], in which many great personalities of those times, such as Ion Ghica, Ion Ionescu de la Brad, George Barițiu wrote their articles.

Mihail Kogălniceanu considered that ever since ancient times "thinkers had had a predilection towards history" and that, according to the Bible, history had to be, and had always been the most important book for every people and for every individual" because "from it every profession learns conduct rules, advice for their doubts, lessons for their ignorance, encouragement for praise and good deeds" (Kogălniceanu, 2018, p. 463).

In his view, history unfolds by divine will and follows the immutable path of progress. Nations, just like individuals, have a well-established purpose on earth, and, just as individuals pay for their deeds, so do nations as they are responsible for the glory they gain and for the defense they offer in keeping their ancestral territories. (Kogălniceanu, 2018 (2), p. 740). He believed that through their spiritual inheritance from the past and through free will, Romanians had to win the fight for the reformation of their society by abolishing the social privileges that generated inequity and dependency.

Kogălniceanu looked upon the development of society from a double perspective. First, as a sum of the effects of scientific actions ("the success of art, science, and industry") and of political actions (the individual – society mutual relationship). Second, as the result of the man – nature confrontation and of the confrontation of man with himself. By defeating nature, man insures his welfare and he progresses on the path of civilization. Even though Kogălniceanu noticed the importance of war as a civilization factor (he mentioned the history of Greece and Rome and talked about a double emancipation: of the conquered by the conqueror but also the other way around), he claimed that civilization is incomplete without the political emancipation of all individuals and all peoples. (Kogălniceanu, 2018 (2), p. 305-309). Beyond its progressist role, "civilization by no means banishes national ideas and vices, but merely multiplies them for the benefit of the nation in particular and of mankind in special". (Kogălniceanu, 2018 (3), p. 247).

In Kogălniceanu's opinion, the country's economic and social backwardness was because the patriarchal turned into the feudal by borrowing and using the flows of Western Europe (luxury, corruption). Kogălniceanu considered that the only way to reach true welfare and civilization is to develop national forces and he quoted Ion Ghica who had stated that "our political importance can only increase by the number of kilos of grain we shall export" (Kogălniceanu, 2018 (3), p. 251). Even though he subscribed to liberal views, Kogălniceanu surprisingly praised association as "the only godly thing that can work miracles today" (Kogălniceanu, 2018 (3), p. 253).

Kogălniceanu never stopped defending the liberal principles that were the basis for progress. The most important of them all is the sacrosanct principle of freedom, both for the individual and for society. And as freedom a priori excludes slavery, it is only natural that Mihail Kogălniceanu critically analyzed this institution that he considered to be a "black stain" in the history of peoples. From the very beginning of his 1853 study titled *Ochire istorică asupra sclaviei* [Historic View on Slavery], he showed its true origin through an explicative approach that can be easily interpreted as materialistic: once man came to the point of producing more than he needed to satisfy his own needs, the surplus was taken by "spoliation and theft" by some to the detriment of others. In time, not only the right of ownership over the results of one's work, but also the right of ownership over one's own person were trenched upon. Kogălniceanu identified four sources of slavery: prisoners of war, law verdicts (such as the ones for insolvent debtors), birth (the children of slaves were implicitly slaves themselves) and purchase (those who were forced to sell their family or themselves) (Kogălniceanu, 2018 (2), p. 875 and the following). Kogălniceanu added a fifth source that he considered to be a "shame on modern civilization": the alleged superiority of the white race over the black race.

Slavery first appeared in the southern parts of Asia and Europe because there the climate favored a faster economic development (there was more fertile land) and the surplus over one's own needs was faster obtained. Kogălniceanu continued by making two more observations: in northern areas the expanses of keeping slaves were higher because of the climate and the northern peoples were more robust ("generally more vigorous") and "harder to subdue and less prone to accepting slavery". In his analysis on the status of the slave in ancient times, Kogălniceanu explained slavery both from a theoretical point of view (he quoted Aristotel's *Politics*, that said that "the wisdom of the master is to know how to use his slave", which was perceived as the family's property, and from Xenophon's *On Ways to Increase the Income of Aticca* in which he recommended the centralized exploitation of the slaves), and a practical point of view (in Sparta the masters of the Helots got them drunk to show their children the degradation brought about by drinking).

Mihail Kogălniceanu identified economic causes for the genesis of slavery. He also identified economic causes for its demise. The work of slaves was worth half the work of the free laborers and this competition led to the emergence of large estates and large workshops and the disappearing of the small ones. Slave owners noticed that by being motivated, slaves increased their work productivity: the possibility for them to regain their freedom was much more efficient than the whip. Because of the barbarians' raids, the economic climate deteriorated as the number of the slaves' riots increased and as the market for the produce of large estates and establishments decreased.

5. Economy, economic development, and progress

In *Dorințele partidei naționale în Moldova* (1848) [The Wishes of the National Party in Moldavia], Mihail Kogălniceanu drew a set of 34 institutional demands (law and economics-related) considered to be essential for the development and the modernization of the country. Among them there are several that we consider to be relevant for the author's economic point of view:

- Issuing a law to eradicate corruption;
- Eliminating the taxes on grain, cattle and national products exports; also, item 7 in the *Moldavian Unionists' Program* in March 1857 stated "the right of the Principalities to establish commercial relations according to their interests" (Constantinescu-Iași, Berindei (coord.), 1966, p. 103)

• Enabling free trade and free labor through the following: a law of the credit that could insure the payment of debts "without exception to persons"; the establishment of a national discount bank; setting up professional schools; building channels and communication ways; price ("tariffs") regulation; payment for public labor (Kogălniceanu, 2018 (2), p. 1115-1116).

Kogălniceanu wished for the personal and birth privileges to be abolished and replaced by the principles of universality and income proportionality.

In an 1845 article titled *Despre pauperism* [On Pauperism], Mihail Kogălniceanu expressed his concern for the faith of the poor, the sick, the less fortunate and advanced measures of social protection that are still valid today: setting up a hospital for the incurable patients; setting up orphanages; setting up retreat homes for the elderly; paying for the labor of the inmates; measures to stop the spread of venereal diseases and alcoholism; insuring the work of those who had seasonal jobs; establishing a savings bank. (Kogălniceanu, 2018, p. 354-355)

Mihail Kogălniceanu noticed the determining role of the ownership within the economic and social architecture of the country and fought to change it by abolishing the corvée (the boyar-like) and implicitly the serfdom, and by making all "village householders" landowners, by "giving a rightful compensation to the former owners" (Kogălniceanu, 2018 (2), p. 899). His ideas on changing the system of ownership on land place Kogălniceanu among the visionary liberal economic thinkers. He gave arguments from a double perspective. On the one hand, ownership is the "most powerful element for civilization", and private ownership on land is an indestructible base for patriotism ("Only a country that has many landowners is strong"). On the other hand, the abolishment of the corvée would lead to the increase in the price of land and especially to the increase in the efficiency of its exploitation: "a given surface would bring more profit than the double surface brings today" because "free labor is more efficient than forced labor". There would be both an increase in production (this mercantilist idea makes the author believe that a numerous population gives more strength to the national state) and a positive evolution in the character and mentality of the workers who have become owners. (Kogălniceanu, 2018 (2), p. 1122-1123)

Kogalniceanu's supreme creed was the fact that imposing these reforms meant uniting the Principalities: "it is the only way to consolidate the Romanians' nationality, to give them dignity, power and the means to fulfill their mission on the land that God has given them to inherit" (Constantinescu-Iași, Berindei (coord.), 1966, p. 69). The unification was necessary because "without it, it was not possible to solve the social issues [...]" (Constantinescu-Iași, Berindei (coord.) 1966, p. 269-270).

In his speech after the Elective Meeting of Moldavia on the 5th of January 1657 that had elected Alexandru ioan Cuza as the ruler of Moldavia, Kogălniceanu expressed his hope and his confidence in the destiny of the Romanian nation and its return to the glorious times of Alexandru the Good who had claimed that "Romania has no one to defend it but God Himself and His sword!" (Constantinescu-Iasi, Berindei (coord.) 1966, p. 230)

6. Conclusions

Shortly before his death, the great 1848 thinker summarized his thoughts: the abolishment of church privileges (by impropriating the properties of monasteries), the emancipation of the peasants (by making them landowners) and the manumission of the Gypsies (Zub, 2005, p. 97)

Despite all their flaws, the Treaty of Adrianople and the Organic Regulation had significant positive consequences for Romania: "they introduced the commercial freedom system as the first highly efficient means for the idea of economic freedom" (Demetrescu, 2005, p. 27). Once the Constitution was issued in 1866, Kogălniceanu's demands were institutionalized and put into practice in the newly-unified Romania.

In his biographical book published in 1921, Radu Dragnea pointed out Mihail Kogălniceanu's place in the history of the Romanian civilization: "in the history of the Romanian modern civilization, Kogălniceanu has an equal place to that of the state itself in civilizing the country and in establishing the political, social, cultural and economic institutions". (Dragnea, 2005, p. 182)

- Constantinescu-Iași, P., Berindei, D., (coord.), 1966. *Gândirea social-politică despre Unire (1859)* [The Social and Political Thinking on the Unification (1859)], Bucharest: Politică Publishing House
- Demetrescu, E., 2005, *Influența școlii economice liberale în România în veacul al XIX-lea* [The Influence of the Economic Liberal School on the 19th Century Romania] Bucharest: Do-MinoR Publishing House
- Dragnea, R., 2005, Mihail Kogălniceanu, București: Do-MinoR Publishing House
- Kogălniceanu, M., 2018, Opere, Vol. II [Works], vol. II, Bucharest: Academia Română. Fundația Națională pentru Știință și Artă Publishing House
- Kogălniceanu, M., 2018 (2), *Opere*, Vol. III [Works], vol. III, Bucharest: Academia Română. Fundația Națională pentru Știință și Artă Publishing House
- Kogălniceanu, M., 2018 (3), *Opere*, Vol. I [Works], vol. I, Bucharest: Academia Română. Fundația Națională pentru Știință și Artă Publishing House
- Zub, Al., 2005, *Mihail Kogălniceanu, un arhitect al României moderne* [Mihail Kogălniceanu, an Architect of Modern Romania], Iași: Institutul European Publishing House

Nicolae Bălcescu and the History-Economics-Sociology Triad

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Abstract

Nicolae Bălcescu (1819-1852) was a politician, a historian, and a patriot who was in favor of economic and political emancipation for the Romanian people. Even though historical issues were of the utmost interest for him, he paid attention to sociology and economics as well. While analyzing the specific social structures in the Romania, he emphasized their causes, as well as the need for change towards the revolution seen as a historic necessity on the way towards progress. In this paper we present Bălcescu's analytical approach of the economic issues, starting from two assumptions. The first one: economic backwardness by comparison to other countries. Bălcescu looked into the causes and issued political economy recommendations to insure economic development. The second one: at the core of the Romanian economic problem was the agrarian situation. Bălcescu studied the origins and the evolution of agricultural land ownership, as well as the status of peasantry.

Key words: patriotism, revolution, agrarian reform, national unity, freedom, corvée, land ownership

J.E.L. classification: B31

1. Introduction

Nicolae Bălcescu was born in a family of small boyars in Bucharest on the 29th of June 1819. He attended Sf. Sava College and was characterized as a child who was "endowed by nature with a broad intelligence, a rich imagination and a rare memory" (Nestorescu-Bălcești, 1988, p. 75). At the age of 19 he joined the military as a cadet and succeeded in establishing a school for the military in 1839. In 1840 he took part in a conspiracy against the governance and he got himself arrested. In 1834, alongside Ion Ghica and Christian Tell, he set up *Frăția* secret society, which was to become the heart of the 1848 revolutionary movement. After taking part in the French Revolution in February 1848, he came back to Bucharest and got involved in the revolution in Wallachia in June 1848 and afterwards was appointed Ministry of Foreign Affairs. Once the Revolution was repressed, he was arrested but he eventually ran away and exiled himself in Paris. After many other revolutionary deeds, he died of tuberculosis in Palermo on the 29th of November 1852.

Nicolae Bălcescu lived in times of economic, social and political changes that took place both in the Romanian Principalities and in Europe. Both his ideas and his activities show his constant powerful patriotic feeling. The revolutionary waves in the Romanian Principalities in 1821 and 1848 were a preamble of the end of feudalism and the beginning of capitalism, even though the main powers, Tsarist Russia, the Ottoman Empire and the Habsburg Empire, were against it. Bălcescu was the proponent of a brilliant idea: to merge the arguments for a radical economic and social reform with the arguments for an act of setting the nation free from foreign dependence.

Nicolae Bălcescu's work was an instrument to unite the Romanian Principalities, a realistic depiction of the evolution stage of the Romanian society in those times, and last but not least, a prophetic enunciation of the path to follow in the future. Considered to have been the "most prolific and most substantial participant in the 1848 Romanian revolution" (Murgescu, 1994, p. 71). Nicolae Bălcescu left us a precious scientific and literary legacy that conveys his historic, economic and sociologic ideas.

2. Theoretical background

The importance of Nicolae Bălcescu' writings has been proven by the numerous scientific papers that have focused both on the biographic aspects and on the analytical research into his scientific work. Among the biographies that have been written we point out those by J. Voinescu (1853), Gr. Tocilescu (1876) and P.P. Panaitescu (1920). Also worth mentioning are the works of Horia Nestorescu-Bălcesti Nicolae Bălcescu. Urme în bronzul istoriei (1988) [Nicolae Bălcescu. Traces in the Bronze of History] and Antonie Chelcea, Sorin Damean and Nicolae Mihai Nicolae Bălcescu și epoca sa. Perspective istoriografice și politici memorial, 2018[Nicolae Bălcescu and His Times. Historiography Perspectives and Memorial Policies]. Other significant studies on him are Studii și referate despre N. Bălcescu, 1953 [Studies and Papers on N. Bălcescu], Studii despre N. Bălcescu, 1969 [Studies on N. Bălcescu] and especially the series of 20 studies signed by G. Zane and included in the volume N.Bălcescu. Opera.Omul.Epoca, 1977 [N. Bălcescu. The Work. The Man. The Age]. Bălcescu's social thinking was presented by C.I. Gulian from an obvious Marxist-Leninist perspective in his paper Gândirea social-politică a lui Nicolae Bălcescu, 1954 [Nicolae Bălcescu's Socio-Political Thinking]. Nicolae Bălcescu has his rightful place in the history of economic thought in Romania. And this is proven by the academic lectures written by Sultana Sută-Selejan (Istoria doctrinelor economice, 1964 [The History of Economic Doctrines] and Nicolae Ivanciu-Văleanu Tratat de doctrine economice, 1996 [Treatese on Economic Doctrines]. Sultana Sută-Selejan's Gândirea economică a lui Nicolae Bălcescu, 1967 [Nicolae Bălcescu's Economic Thinking] is a representative work on Bălcescu, and, if separated from its ideological Marxist-Leninist content, offers a good and wide perspective on Bălcescu's ideas.

3. Research methodology

The methodology of our synthetic paper is based upon bibliographical research and documenting activity on specialized literature that includes monographies, biographies, studies, and articles. We looked into Bălcescu's concepts, opinions and solutions on Romania's economic development upon reading the Romanian editions of his works.

4. The history component of the triad

Nicolae Bălcescu viewed history as the history of the Romanian people, whose ideas and feelings had been expressed by the great personalities of our people. Their role in history was promoted by publishing several biographies (Ioan Tăutu, Miron Costin, Ioan Cantacuzino, Constantin Cantacuzino, Răzvan Vodă and Mihai Viteazul), in which he showed great portraying skills.

Bălcescu studied the writings of chroniclers such as Grigore Ureche, Miron Costin, Dimitrie Cantemir, Ion Neculce and examined historic documents from the past, especially legislative ones. To better grasp the realities of his times, he paid special attention to the works of his contemporaries, both Romanians, such as Dionisie Fotino, Mihail Kogălniceanu, and foreigners, such as Jules Michelet, Edward Gibbon etc.

He considered that history was meant to prove "the progressive movement of mankind, the development of the human sentiment and mind, in all interior and exterior forms, in time and in space" (Bălcescu, 2017, p. 4). By mentioning and analyzing certain essential historic events, Bălcescu tried and succeeded in discovering explanations, causal links, particularities and solutions that were appropriate for reaching his major goals: national unity and freedom for the Romanian people. As a researcher of the past, he considered that it was not "a series of random acts", but a streak of logical and objective transformations that unfolded according to the "laws" of evolution. He pointed out the connection between different historic ages and claimed that historic development went from inferior to superior. According to his ideas, the antagonism between old and new caused social inequity but also generated a constant struggle for progress. As a reaction to the conviction of the classical school of political economy on labor division, but also to the Physiocrats' Natural Order, Bălcescu wrote: "When dividing functions, the peoples of the world, as

well as the individuals in society, generate, through their mere diversity, the harmony of the whole, the unity of it." (Bălcescu, 2017, p. 5)

Being aware of the tight relation between all aspects of historic phenomena, of their interconnection, Bălcescu believed that the main object for historic research must be the people. He thus places himself within the tradition of the romantic historiography in France (represented by authors such as Michelet and Thierry), even though his historic thinking can be placed in a certain direction.

5. The sociology component of the triad

The most prominent personality of the revolutionary year 1848, Nicolae Bălcescu was interested in analyzing the structure and the evolution of the Romanian society. In his paper *Despre starea socială a munictorilor plugari în Principatele române în deosebite timpuri (1846)* [On the Social Status of Ploughmen in the Romanian Principalities in Various Times], he made a complex and thorough social X-ray of the Romanian rural world. Bălcescu noticed the determinant role of the economic conditions in explaining historic phenomena and processes and understood the importance of land ownership in the development of society. In his opinion, there are two main forms of social organization. The first one, specific to areas that have been previously colonized (by Romans, Greeks, Phoenicians, Carthaginians) and common among most of the European peoples, is based upon the private ownership of the land and upon agriculture since the colonizers had practiced it and then had left the territories in search of material wealth. They had not enslaved the local people, they had respected their customs, and they had integrated and accepted them as citizens as long as they respected the rules. The second one, specific to areas previously occupied by force and conquest (Asia, South America, Africa), is based upon the state owwnership on land and upon taking the local farmers' produces by force. (Bălcescu, 2017 (2), p. 187)

When the Romans colonized Dacia they divided the land among the colonists, according to their custom, and these, in turn, leased the land to the locals, and thus both parties involved had their share of benefits. Once the Romans withdrew from Dacia, the people from the mountain areas came back to the plain areas. Nicolae Bălcescu strongly rejected the idea that rulers such as Radu Negru (a.k.a. Negru Vodă) in Wallachia or Bogdan I in Moldavia divided agricultural land as they pleased and therefore laid the foundations of feudalism. The primary reason that "ended the ancient equality of rights and status in our countries and gave way to that social monstrosity when an entire country slaved for a few owners" was completely different in Bălcescu's opinion. According to him, it was the corvée: "and the owner of the land divided his estate into three parts, and he divided two thirds into small parts and gave them to farmers and he had them work the third part for him as corvée, meaning a given number of labor days". (Bălcescu, 2017 (2), p. 190) In time, the number of small pieces of land or estates owned by farmers significantly decreased while large pieces of land came under the ownership of a small number of rich landowners.

In his works, Nicolae Bălcescu made a detailed analysis of how feudal ownership emerged and evolved in Romania. The historic periods of time between the rules of Matei Basarab and Vasile Lupu and those of Constantin Brâncoveanu and Dimitrie Cantemir experienced a significant decrease in the number of small estates and an intense vassalage of the farmers through the corvée system just as the country was being spoliated by the Turks, the Austrians and the Hungarians.

In his work *Despre împroprietărirea țăranilor* (1848) [On Making Peasants Landowners], the author stated three essential conditions that a social measure needed to meet in order to be "truly good": 1. To be in accordance with the national interest; 2. To be moral and "fair"; 3. To be for the benefit of everyone, meaning not to favor just one social category, but to contribute to general progress.

In his work *Mersul revoluției în istoria românilor* (1850) [The Way Revolution Has Worked in the History of Romanians], the author considered the 1848 Revolution a "natural" stage of that "providential movement that placed the Romanian nation alongside the entire humanity on the limitless path towards a progressive, regular development, towards the lofty target where God hides Himself and waits for us". These lines prove the Universalist and fundamentally Christian dimension of Nicolae Bălcescu's thinking. (Bălcescu, 2017 (2), p. 472). The constant progress at a historic scale brought about consecutive transformations to the government in Romania: first it was

absolutist, then aristocratic (boyar like), and then Phanariot (city like), then bureaucratic, and later democratic (Romanian nationalism).

The Revolution in the Romanian Principalities was determined by the internal historic conditions of the country's economic and social development and was influenced by the revolutionary current that was sweeping across the continent. It had a profound national character, aiming at throwing aside the foreign domination. Bălcescu blamed the boyars who had seized the lands and had become a privileged class; "but the interests of the many can never be in the hands of the few (Bălcescu, 2017 (2), p. 467-468). From a sociological point of view, Bălcescu's remarks are innovative: he noticed that in time the boyars were being replaced by a bureaucratic class made up in the context of the Phanariot system (*ciocoimea*), with outside support from Russia which constantly "aimed at getting the Romanian territories" (the threat of Pan-Slavism).

Showing erudition and a deep analytical spirit, Nicolae Bălcescu proved to know well the history of our nation and presented it in a dynamic manner, emphasizing the social aspects. His interest in the field of history is under the influence of a constant juxtaposition of the national and the social causes of the Romanian people. History was his main passion and he considered it one of the powerful national forces to help solve the problems of the Romanian nation. The basic condition for the science of history to insure this role is to study the people, both as a nation, all the inhabitants of the country, and as masses. Bălcescu was among the first to point out the role of the masses as an agent that can transform society on its revolutionary path. The nation, as the final stage in mankind's evolution, is the result of a people's becoming aware of itself and of its feeling of nationality. From here Bălcescu derived the principle of nationalities: the right of a people to establish a national state, to be free from other peoples and to be equal with them.

The national issue has two components: unity and independence. His views place Bălcescu among the founders of the Romanian national ideology and among the first to have considered the Romanian people's national and political unity. In its turn, national unity has two elements: moral unity (the people's sense of self, in competition with spiritual elements that constitute the nation, such as language, religion, customs, the past) and political unity (the development of the national state).

The social ideal, which is democracy, can be reached by means of the revolution. Bălcescu conferred it the progressive role of transforming society. Revolution can take the form of a popular insurrection, an action of the people which establishes a new order, or a revolutionary war to free the people from foreign domination. Any revolutionary phenomenon has an "inevitable" character (the revolution in 1848 resulted from the one in 1821) and a "necessary" character. "The next revolution will not be limited to wanting the Romanians to be free, equal, to own the land and the capital and to be brothers towards common progress. It will not be only about asking for internal liberty which is not possible without external liberty, but about national liberty and unity". (Bălcescu, 2017 (2), p. 106-107)

6. The economics component of the triad

In Bălcescu's writings, the analysis of economic issues came naturally as a continuation of his views on history as a science, but also as an analytical approach complementary to his political activity. As far as his method of research and analysis is concerned, given the fact that he studied the economic issues as they evolved, Nicolae Bălcescu can be considered a forerunner of the historic school of economic thinking. From another perspective, that of the solutions he submitted in order to solve fundamental economic issues, Nicolae Bălcescu proved to be a democratic reformer focused on nationalism and closely influenced by the doctrine of the French socialists. Judging by the importance he gave to agriculture within the nation's economy and within the social architecture of the country, we can say that Nicolae Bălcescu embraced the views of the Physiocrat school.

Bălcescu's major economic convictions emerge both from his economic writings, (Despre starea socială a muncitorilor plugari în Principatele române în deosebite timpuri (1846) [On the Social Status of Ploughmen in the Romanian Principalities in Various Times], Despre împroprietărirea țăranilor (1848) [On Making Peasants Landowners], and especially Reforma socială la români (1850) [Social Reform in Romania], published in Paris as Question economique

des Principautes Danubiennes [The Economic Issue in the Romanian Prinipalities], and from his history, political or literary writings, the most prominent being *Românii supt Mihai Voievod Viteazul* [Romanians under the Rule of Michael the Brave], published between 1861 and 1863.

G. Zane identified three major economic directions in Bălcescu's works that had to do with "the peasants becoming emancipated and landowners, the taxation system and the organization of the credit" (Zane, 1977, p. 230).

The fundamental internal socio-economic issue in those times was about land ownership and agrarian relations. According to Bălcescu's economic ideology, solving this agrarian issue implied the emancipation of the peasantry through social revolution. He understood the fundamental idea that the nature of the ownership determines the character of society. By analyzing the historic process of how the big land ownership came into being in our country, Bălcescu concluded that the corvée was at the basis and that is was both sociologically and economically determined. Once the common land ownership and the private one were fraudulently taken over, the corvée system (which was at first paid as rent in labor) and later on serfdom emerged.

Nicolae Bălcescu identified three main causes why the peasants lost their lands: "interest", "need", and "force".

The first one, named somehow inappropriately "interest" had to do with the free peasants' decision to give away their lands (and implicitly to give up on their individual liberty) because the boyars had the privilege to have dependent peasants on their lands that had to pay taxes only to the them, and not to the feudal ruler. As the abuses of the ruler's officials were increasing, many peasants chose to become dependent, hoping to get by on the little money they got when selling their lands.

The second one, the "need", derived from the fact that the free peasants were forced to join the army and therefore could no longer work the land to pay back the money they had borrowed from the boyars in order to be able to live and pay their taxes to the feudal ruler. As a consequence, they had no other option but to sell their lands.

The third cause, the "force", meant that the small land owners were forcefully and violently taken the land, often because of abuses by the law they could not fight against.

In these ways, in time, big land ownership became dominant. Bălcescu was the one to shine the light on why the situation of peasants worsened both from an economic point of view, as the number of labor days worked as corvée increased and other additional obligations (produce, labor, money) came into being, and from a legal point of view, as personal liberty diminished and even disappeared.

The solution that Nicolae Bălcescu put forth was to give land to the peasants and make them rightful owners. It meant that the peasants had to have the necessary means to buy their lands back. There was need for a system of state credit institutions to finance the small peasant households. The existence of this public credit system meant that the state had to obtain supplementary financial resources and Bălcescu believed that there was only one way to do so: by abolishing the boyars' tax privileges as they did not pay any taxes. A new fiscal organization was needed and it had to rest on the principles of general contribution and equity.

Inspired by the French socialist economic thinkers, Nicolae Bălcescu militated for the establishment of a national credit institution to finance not only the agrarian reform but the entire national economy. This highly avant-garde and utopian view is quite valuable as it showed that the state could finance credit issuing both bonds and banknotes.

7. Conclusions

Nicolae Bălcescu is one of the greatest Romanian thinkers. He is the author of a theoretical corpus of everlasting contemporaneousness. His economic ideas are still valid today. "For our country requires numerous improvements, as everything needs to be done. The agriculture needs to be improved, the mines that are untouched need to be mined, centuries-old forests that rot away need to be exploited, waters need to be channeled, communication ways that only exist in projects need to be built, such as railways, trade and factories need to be developed for mass consumption[...]" (***, 1960, p. 121).

Nicolae Bălcescu is an exceptional personality in the Romanian national history who greatly supported changing the faith of Romanians. "A patriot that built up" as Dan Berindei called him, a "rhetorical writer" as Tudor Vianu described him, Nicolae Bălcescu surpassed his predecessors and wrote a modern history of mentalities, institutions, traditions and customs; alongside Mihail Kogălniceanu, he is considered the founder of the modern national historiography.

He had an astute sense of social justice and his original view on how to make peasants landowners was highly appreciated by Kogălniceanu, who took the Biblical advice and "rendered onto Caesar the things that are Caesar's".

- ***, 1960, Texte din literatura economică în România [Texts of Economic Literature in Romania], Bucharest: Academiei Republicii Populare Române Publishing House
- Bălcescu, N., 2017 (2), *Opere*, vol. I, [Works], vol. I, Bucharest: Academia Română. Fundația Națională pentru Știință și Artă. Muzeul Național al Literaturii Române Publishing House
- Bălcescu, N., 2017, Opere, vol. II, [Works], vol. II, Bucharest: Academia Română. Fundația Națională pentru Știință și Artă. Muzeul Național al Literaturii Române Publishing House
- Murgescu, C., 1994, *Mersul ideilor economice la români*, vol. I [The Development of Economic Ideas among the Romanians], vol. 1, Bucharest: Enciclopedică Publishing House
- Nestorescu-Bălcești, H., 1988, *Nicolae Bălcescu. Urme în bronzul istoriei* [Nicolae Bălcescu. Traces in the Bronze of History], Craiova: Scrisul Românesc Publishing House
- Zane, G., 1977, *N.Bălcescu. Opera.Omul.Epoca* [N. Bălcescu. The Work. The Man. The Age], Bucharest: Eminescu Publishing House

Assessing the Current Situation of the Grape Market in Romania

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Abstract

Romania's high potential for grape production is due to its geographical position, climatic conditions, and sandy soils, conducive to the cultivation of vines. This branch of agriculture has an old tradition, being at the same time an opportunity for economic growth if the vine is exploited in different forms for export. In the last decade, domestic grape producers have lacked competitiveness due to the high level of imports and unsatisfactory prices for them. The present paper aims to identify the main problems in the sector, analyze Romania's ability to support a sufficient quantity for the entire population, and find practical solutions, both for boosting the wine market and increasing competitiveness in the European market. The analysis of the wine sector is carried out throughout the study of statistical data provided by the National Statistical Institute to delineate framework aspects on the evolution of this market segment, focusing on indicators such as price flow, production, and cultivated area, consumption, and trade balance.

Key words: grapes, market, foreign trade, consumption

J.E.L. classification: Q13

1. Introduction

Viticulture presents essential aspects due to the flexibility of adapting the crops to soils unsuitable for other crops, capitalizing on the sloping land with sandy soils, obtaining the equivalent production of 5-10 ha of cereal crops in one hectare.

The proper area for this type of culture is the hilly area, bringing an economic benefit to the population living in this region.

Wine or "liquor left by the gods" as it was called in ancient cultures, consumed in reasonable quantities has increased benefits for the body due to the chemical composition with a high content of sugars (glucose, fructose) 12-25%, organic acids (tartaric, citric, malic) 1-2%, mineral salts (Ca, Fe, K, P, etc.) about 1%, nitrogenous compounds 0.15-0.2%, vitamins (C, B1, B2, PP, A, E), enzymes, polyphenols.

Grapes are the most cultivated and appreciated fruits globally, so table grapes' production remained at 24.7 million tons in 2020, below the record recorded in 2017-2018. For this year (2021), record figures of up to 3.4 million tons were estimated in imports and exports.

The total area that includes vine crops worldwide, planted for various purposes, namely wine production, table grapes, or raisin production, totals approximately 7.4 million ha.

The most prominent part of the grape market is occupied by the wine sector or the production and marketing of wines. The increased variety of the winemaking branch is derminated by factors such as grape variety, territories, types of aging or winemaking methods.

2. Literature review

Specific to the temperate continental zone, the vine culture is a multiannual one that dates back to 7000 BC on the territory of our country, suffering various modifications and derivations over time. The development of this crop was possible due to the favorable climatic conditions and the sandy soils on the hills of Romania.

Also, rainfall in hilly areas and temperatures make annual harvests increase progressively, making this culture of national importance (Stefan et al., 2017). Besides the positive effects of vine cultivation on the environment, especially soils, the main externality is represented by the occupation of problematic lands (sloped, sandy, and poorly solificated land) that could not be used in agriculture because it does not offer favorable results conditions for crops development. (Popescu et al., 2009)

The economic importance of wine-growing crops materializes through the wine production and processing sector (Borcea, 2017), grapes being the raw material for compotes, preserves, juices, raisins, jams. Besides all these, grape seeds are used intensively in oil production.

The socio-economic impotence of the vineyards is illustrated by the generation of jobs for people active in the agricultural sector, serving at the same time as a market and consumption for the plant protection products chain (pesticides, insecticides, fungicides, herbicides, etc.).

Another positive aspect brought by the wine culture to the human consumer is the ratio of nutrients and antioxidants with a mineralizing and active therapeutic role. Vines is a culture with tradition in many rural areas of Romania, the center of social and economic life. (Vasile, 2015)

The largest area of land cultivated with vines in Romania was reached in 1976 and totaled 100,000 hectares. There was a progressive decrease, reaching that in 2005 only 79000 hectares to be cultivated with vines. (David, 2014)

In 2020, the National Institute of Statistics registered an area of 180000 hectares, of which less than half is in the south-eastern region. (NIS, 2021)

Although Romania is one of the largest grape growers in the EU, it faces difficulties in responsibly applying the circular economy and sustainability principles, which can unbalance the economic and social life of farmers and the entire population. (Chiurciu et al., 2018)

As the primary desideratum, the Romanian wine sector must increase the competitiveness of domestic producers towards foreign producers and increase the level of exports of Romanian wines on the European market. So that once the appreciation of consumers is increased, a modest price increase is expected so that Romanian farmers can financially support themselves and purchase more land to increase grape production. (Popescu et al., 2009)

3. Research methodology

The main objective of this paper is to draw a complete picture of the Romanian grape market and examines in detail the indicators such as the total cultivated area, the average yield per hectare and the total, the price, the average consumption, and the external trade.

This study uses both qualitative and quantitative methods of researching statistical data from 2015-2020 taken from the National Institute of Statistics database to provide an overview of the current market situation.

4. Findings

According to the data taken from the National Institute of Statistics database in the period 2015-2020, the area cultivated with vines in Romania recorded small fluctuations from year to year. More specifically, in 2020, we have a crop that stretches over 177387 hectares, less by 731 hectares compared to 2015 when an area of 178118 hectares was registered.

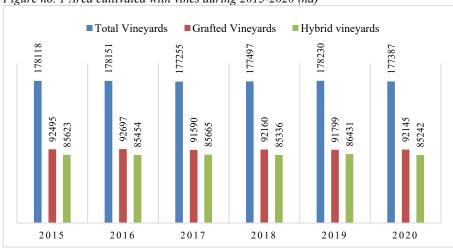
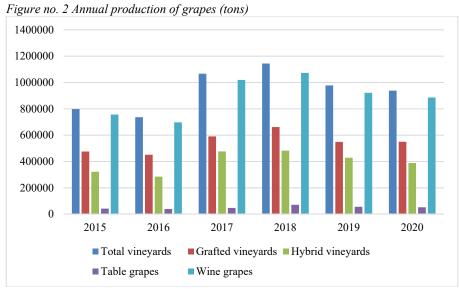


Figure no. 1 Area cultivated with vines during 2015-2020 (ha)

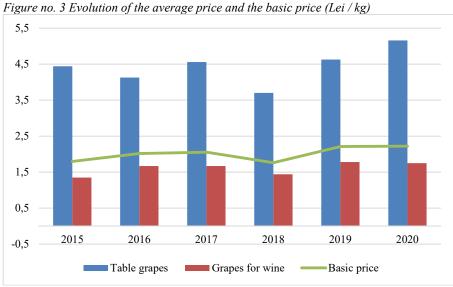
Source: Own processing based on National Institute of Statistics data

In terms of total production at the national level, 2018 has the highest grape production. The quantity in this period slightly exceeds 1,144,000 tons, subsequently decreasing by 18%, reaching the value of 938244 tons in 2020. It can be seen that more than half of the quantity comes from the culture of grafted vines and 41.4% from hybrid vineyard cultivation, while 94.4% of production are grapes for wine and only 5.57% are table grapes.



Source: Own processing based on National Institute of Statistics data

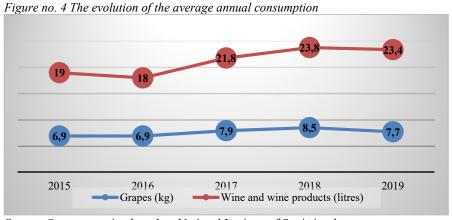
The evolution of the average grape production per hectare in the analyzed period is oscillating. Thus, the quantity increases from 4136 kg / ha in 2016 to the value of 6447 kg / ha in 2018, then decreases to the average quantity of 5289 kg / ha per hectare in 2020.



Source: Own processing based on National Institute of Statistics data

Analyzing chart no.3 we can deduce that the base price per kilogram in the case of vine culture has a predominantly upward trend, the minimum value being recorded in 2018 when a kilogram of grape cost 1.76 lei, and the maximum value of 2.22 lei per kilogram was reached in 2020.

Regarding the average price, a substantial difference between the category of table grapes and those for wine can be noticed. The values of this indicator fluctuate but with an increasing trend. Thus, the average price for table grapes is increased by 0.72 lei/kg from 2015 to 2020, while the value for one kilogram of grapes for wine increased from 1.35 lei/kg in 2015 to the value of 1.75 lei/kg in 2020.



Source: Own processing based on National Institute of Statistics data

The evolution of the average annual consumption results in the Romanian people preferring to consume wine and its derived products at the expense of fresh grapes. Thus, we can deduct from graph 3 that the consumption of wine increased from the value of 19 liters per person in 2015 to 23.4 liters per person in 2019, while the consumption of grapes in fresh form increases to the value of 8.5 kg in 2018 and decreases to a value of 7.7 kg the following year.

Table no. 1 Foreign trade

Trade	Product	2015	2016	2017	2018	2019	2020
(Mii euro)							
Export	Grape	300	920	756	440	367	438
Export	Fruit juices	13942	13853	18077	17789	17891	12981
Export	Wines of fresh grapes	24053	22518	26771	30464	30849	30885
Import	Grape	32766	42393	48376	46772	50426	52167
Import	Fruit juices	30144	33980	37849	41953	45931	42490
Import	Wines of fresh grapes	44581	49692	59162	62694	62836	70561
Balance	Grape	-32466	-41473	-47620	-46332	-50059	-51729
Balance	Fruit juices	-16202	-20127	-19772	-24164	-28040	-29509
Balance	Wines of fresh grapes	-20528	-27174	-32391	-32230	-31987	-39676

Source: Own processing based on National Institute of Statistics data

According to the analyzed data, we can see that the value of grape import has a positive evolution and has increased from 32766 thousand euros in 2015 to 52167 thousand euros in 2020, and the import of fruit juice increases from 13942 thousand euros in 2015 to 17891 thousand euros in 2019 and sharply decreases the humbling year to the value of 12981 thousand euros.

The highest growth rate is found in the fresh grape wines category, where the import increased by 58.2 percent in 2020 compared to 2015.

Analyzing the above table, we deduce that the export value is reduced by 7.4% in the fruit juice category in 2020 compared to 2017 and by 52.4 percent in the case of grapes in 2020 compared to 2016, and the export value of fresh grape wines is increased from 22518 thousand euros in 2016 to 30885 thousand euros in 2020.

SWOT Analysis

Strengths

- High pedological potential conducive to grape cultivation
- Varieties and technologies with a vast history
- Continuous development of varieties
- The emergence of modern technologies in the processing process
- Wide range of products
- Expanding production by amplifying investments
- High profitability rate

Weaknesses

- Deficient quantity of raw materials
- Poor production quality
- Too high production costs
- Lack of a country brand and a well-defined strategy
- Insufficient agricultural roads
- Poor competitiveness on the external market
- The prospecting of the internal and external market is inexistent

Opportunities

- Creating a strategy to increase competitiveness
- Modernization of existing infrastructure
- Intensive promotion of wine abroad
- Increased export due to high global demand
- Attracting foreign investors

Threats

- Increase in raw material costs
- Mass import of wine products

- Continuous reduction of surfaces cultivated with grapes
- The emergence of new protection measures on foreign markets
- Inability to attract foreign investments due to the volatility of the economic environment

5. Conclusions

From the processed data, the area cultivated with rapeseed in 2015 -2020 has a negative evolution, decreasing from 178118 hectares in 2015 to the minimum value of 177387 hectares in 2020.

The total production and the average yield per hectare of grapes show fluctuating values over the analyzed period. Thus, the total production reaches the maximum value in 2018 with a national harvest of 1144305 tons of grapes, and the minimum being recorded in 2016 with a value of 736892 tons. The average yield per hectare decreases by 348 tons in 2016 compared to 2015, increases to the threshold of 6447 tons per hectare in 2018, then decreases again until 2020 (5289 tons 1 a hectare).

The basic price for one kilogram of grapes in the reference period is variable; it has slight increases from 2015 (1.80 lei / kg) until 2017 (2.06 lei / kg), then decreases in 2018 (1.76 lei / kg), and will increase significantly by 2020 (2.22 lei / kg).

A large part of Romania's foreign trade was capitalized by selling wines from fresh grapes. In 2020 the import reached the maximum value of 70561 thousand euros, 56.2% lower than the maximum value (30885 thousand euros) of the export in the same year.

The trade balance for the grape trade is an unfavourable one, but with values increasing from one year to the next.

The Romanian grape market has undergone drastic changes in recent years, and it is expected that the trade deficit will deepen in the next period. The event that will influence the market the most in the next period is the covid-19 pandemic and the adverse weather phenomena.

6. Acknowledgement

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- Borcea, Ş., 2017, Where are the most famous wine-growing areas in Romania and what superior wines are produced in these vineyards. *Adevărul Newspaper* [online] Available at: https://adevarul.ro/locale/focsani/unde-cele-mai-cunoscute-zone-viticole-romania-vinuri-superioare-produse-podgorii-1_59bbb9365ab6550cb8322361/index.html, Accessed on 28.11.2021.
- Chiurciu, I.A, Chereji, A.I., Soare, E., Chereji, I.Jr., 2018. Study on the evolution of agriculture in the North-West Development Region. Annals of the University of Oradea, Fascicle: Ecotoxicology, Animal Husbandry and Food Science and Technology, Vol. XVII/A, 2018, 9-16.
- David, I., 2014. Map of Romanian wine. Financial Newspaper. [online] Available at: https://www.zf.ro/companii/harta-vinului-romanesc-cu-opt-regiuni-viticole-37-de-podgorii-si-180-000-de-hectare-de-vie-romania-se-afla-pe-locul-cinci-in-europa-13386089, Accessed on 28.11.2021.
- National Institute of Statistics, Tempo Database, 2021. [online] Available at http://statistici.insse.ro:8077/tempo-online/#/pages/tables/insse-table [Accessed November 27, 2021]
- Popescu, A., Enache, V., Simion, C., Donici, A., Tabaranu, G., 2009. Grape production forecast based on the evolution of climatic factors. *Bulletin of University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca. Horticulture*, 66(1): 666.
- Ştefan, P., Mann, S., Fintineru, G., Creţu, R.C., 2017. Study regarding the situation of wine producers in Romania. Scientific Papers. Series Management, Economic Engineering in Agriculture and rural development, Vol. 17(3):391-396.
- Vasile, V., 2015. Viticulture, millennial occupation inherited from the Dacians. România rurală, No. 33/July 2015, p.3 [online] Available at: http://madr.ro/docs/dezvoltare-rurala/rndr/RR33.pdf, Accessed on 27.11.2021.

Study Regarding the Tourism Sector in Romanian Economy

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Abstract

The tourism sector is a driver for the socio-economic development of a country. According to World Travel & Tourism Council, the tourism sector contributes with 5,9% to the formation of Romania's GDP. The purpose of this article is to highlight the significance of the tourism sector in the national economy of Romania. The main conclusion that can be drawn from this study is that the Romanian tourism sector has developed much over the years, but to be competitive worldwide it must increase the quality of products and services offered, and also is needed a better promotion abroad.

Key words: tourism, Romania, accommodation

J.E.L. classification: L83, Z30

1. Introduction

The tourism sector has shown continuous growth over the last decades, both in terms of locations and geographical areas, as well as in terms of the offer of services and packages. At the same time, new forms of tourism, such as rural tourism, cultural tourism, wilderness tourism, in recent years highlighting gastronomic tourism and artistic tourism based on theater, film, music, and art festivals developed. Given the development and evolution of the tourism sector, it is noticeable that the offer of tourism products and services, as well as their quality, has improved considerably in recent decades.

One may ask why tourism services have developed so rapidly and are so sought after and appreciated. We can find the answer in the experiences we can live only through travel and exploring new geographical and cultural areas: from breathtaking landscapes to the cultural heritage and traditions specific to each nation. However, the uncontrolled expansion of tourism can also create less pleasant situations, mainly in terms of protecting natural areas and cultural heritage, as well as preserving national traditions and socio-cultural heritage.

The purpose of this article is to highlight the importance of the tourism sector in the Romanian economy by analyzing the evolution of the main socio-economic indicators that characterized the development of this sector. Thus, it is pursued to provide a clear image of the extend of the tourism sector of Romania.

The paper begins with the introduction of the research topic and states the purpose of the study. The second section exposes the research methodology and the third section is dedicated to the presentation of results. The last section of the paper reveals the conclusions of the study.

2. Theoretical background

The report "World, Transformed Megatrends and Their Implications for Travel & Tourism" published by World Travel and Tourism Council (2019) highlights the importance of the tourism sector in the global economy and economic growth. According to this report, the tourism sector contributes with 10.4% to the formation of the world's GDP and provides 10% of the total jobs worldwide.

The tourism sector represents a real force for local, regional, and national economic development, increasing the populations' well-being (Scheyvens, 2002). The innovative and dynamic character of the tourist services makes tourism enterprises the "engine" that ensures tourism development (Baggio & Cooper, 2010).

The development of entrepreneurship and the SMEs in the tourism sector has facilitated information and knowledge sharing, brought innovation for business development (Baggio & Cooper, 2010), and created job opportunities (Solvoll, Alsos, & Bulanova, 2015). Due to the complex nature of products and services offered in the tourism industry, job creation is not limited to companies directly involved in the provision of tourism services, but also involves the construction, telecommunications, transport, production, and trade of goods and services adjacent.

In other words, the tourism sector has a "multiplier effect", generating additional income for the community and contributing to poverty alleviation (Medina-Muñoz, Medina-Muñoz, & Gutiérrez-Pérez, 2016). Pascariu & Ibănescu (2018) study the "multiplier effect" of tourism on GDP and show that the business environment, international openness, and infrastructure are the main determinants, while the multiplier effect of tourism on job creation is determined by international openness and GDP per capita.

The tourism sector is, therefore, a catalyst for the growth and socio-economic development of a country. However, Wang (2009) highlights the sensitivity of the tourism sector to economic changes, and Ballia, Shahzadb & Uddin (2018) enhance the negative impact of economic policy uncertainties on tourism demand. Therefore, Demira & Gozgor (2018) conclude that sustainable tourism development can be ensured only by strong national economic policies.

3. Research methodology

The present article is a descriptive study of the Romanian tourism sector, aiming to provide evidence of the development of this economic sector by analyzing the evolution of the main socio-economic indicators that characterized it. Therefore, the main research method used in this paper is the method of the case study, which aims to focus the research on the Romanian tourism sector and its evolution.

Other research methods used are bibliographic study by scientific reading used for theoretical documentation regarding the approached topic; synthesis of the references and data used; comparison of the research results obtained by other authors, but also of and data between years and regions; graphical representation of data. The data used for this study were retrieved from the Eurostat database.

The paper is using the quantitative method in order to focus the research on the systematization of bibliographic information, as well as the evidence of economic indicators which characterize the tourism sector and its evolution in Romania.

4. Findings

The development of the tourism sector can be assessed by observing the evolution of several socio-economic indicators. The first indicator found to be important for this purpose is the number of establishments that can provide accommodation for tourists. Comparing the regions, it is noted the larger number of establishments in Centru, Sud-Est, Nord-Vest, and Nord-Est, these regions owning the most tourist attractions. It can be noted an increase in the number of hotels, and other short-stay accommodation, camping grounds, recreational vehicle parks, and trailer parks between 2012 and 2020 in all eight Romanian regions (Figure no. 1). Excepting Bucuresti – Ilfov, the larger increase is held be establishments located in rural areas (between 204% in Sud-Est and 52% in Sud-Vest Oltenia).

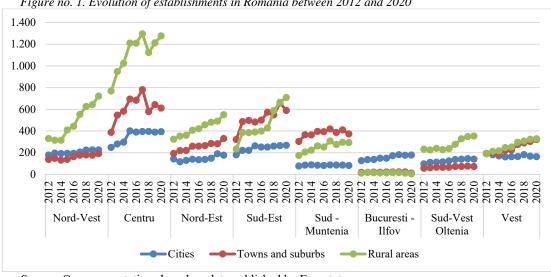
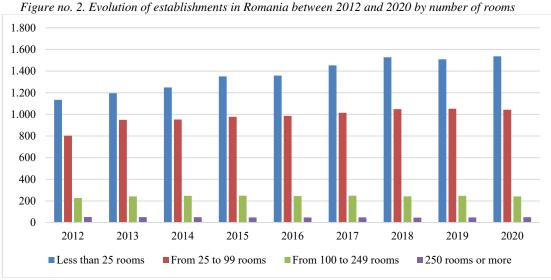


Figure no. 1. Evolution of establishments in Romania between 2012 and 2020

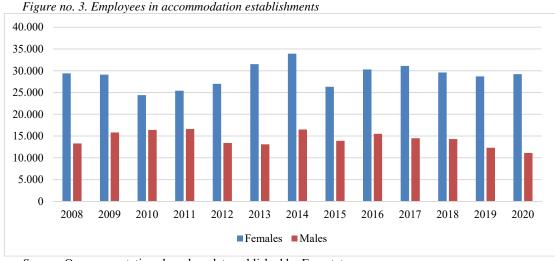
Source: Own computations based on data published by Eurostat

The tourism entablements can be classified by the number of rooms that can be occupied by tourists. Therefore, in Romania, the number of rooms disposable for tourists increased by 30% between 2012 and 2020. Most of these rooms are found in establishments with less than 25 rooms (36%) and establishments having between 25 and 99 rooms (30%). The number of establishments having over 250 rooms decreased by 4% between 2012 and 2020 (Figure no. 2).



Source: Own computations based on data published by Eurostat

The employees that ensure the accommodation services in these locations remained constant between 2008 and 2020 (Figure no. 3). However, it can be noted a slight decrease in 2010-2012 and 2015. The distribution between gender shows the preponderance of females working in accommodation establishments.



Source: Own computations based on data published by Eurostat

An important indicator in characterizing the tourism industry is the net occupancy rate of bedplaces and bedrooms. It is noted the increase of these indicators in Nord – Vest (6%, respectively 11%), Sud-Est (6%, respectively 10%), Sud – Muntenia (6%, respectively 5%) and Bucuresti – Ilfov (15% in case of both indicators). In Nord - Est, Sud - Vest Oltenia, and Vest the net occupancy rate of bedrooms decreased by 3%, 21% respectively 13%, but the net occupancy rate of bed-places increased by 7%, 4% respectively 12% (Figure no. 4).

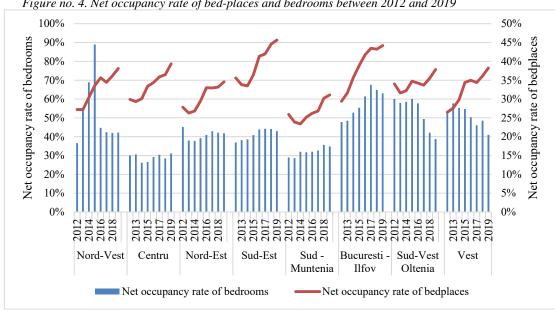


Figure no. 4. Net occupancy rate of bed-places and bedrooms between 2012 and 2019

Source: Own computations based on data published by Eurostat

Regarding the tourists' typology, it is noted the predominance of local tourists, even if the percentage of foreign tourists increased over the years (Figure no. 5). Between 1990 and 2019 under 30% of the total tourists of Romania were foreigners, except the Bucuresti - Ilfov region, where over 55% of tourists are from a foreign country.

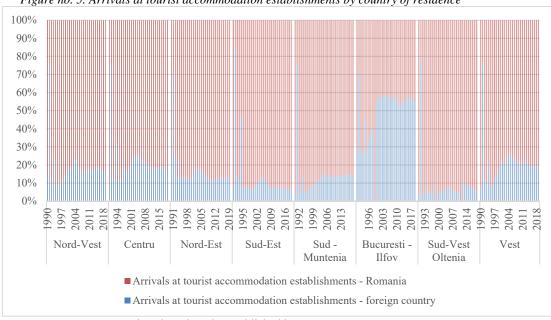
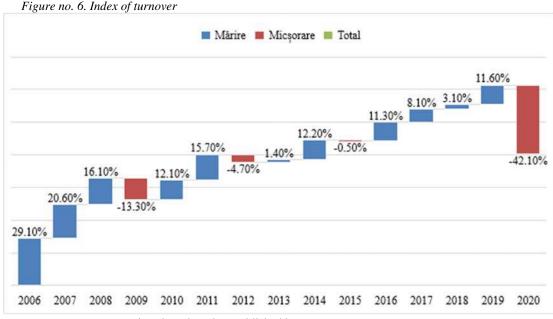


Figure no. 5. Arrivals at tourist accommodation establishments by country of residence

Source: Own computations based on data published by Eurostat

The index of turnover of accommodation services purchased by tourists, expressed by the percentage change since the previous year, presents on average an increase of 5,38% between 2006 and 2020. As can be noted 2009, 2012, and 2020 represent years of economic shrinking with a decrease in the index of turnover (Figure no. 6).



Source: Own computations based on data published by Eurostat

5. Discussions and conclusions

The study regarding the Romanian tourism sector showed the development of this economic sector, by increasing the number of accommodation places, especially in rural areas. The development of the Romanian tourism sector is seen in the increased number of rooms disposable for tourists. These evolutions suggest the development of rural tourism meeting the need of the population for spending time in nature, experiencing "country life" and traditional customs. However, urban tourism is also appreciated, mostly in the Bucuresti – Ilfov area, where the offers of shows, sightseeing, exhibitions, and other activities are various.

The development of the Romanian tourism sector is also expressed by the net occupancy rate of bedrooms and bed-places, both indicators having increased in the analyzed period. As the typology of a tourist shows the predominance of local tourists, these evolutions reflect the growing demand for tourism products and services of the Romanian population given the increased wellbeing. However, the Romanian tourism sector must be better promoted abroad and the quality of tourism products and services must increase to be competitive worldwide, even more now in the pandemic framework.

- Baggio, R., & Cooper, C., 2010. Knowledge transfer in a tourism destination: The effects of a network structure. *Service Industries Journal*, 30(10), 1757–1771.
- Ballia, F., Shahzadb, S.J.H., Uddin, G.S., 2018. A tale of two shocks: What do we learn from the impacts of economic policy uncertainties on tourism?. *Tourism Management*, 68, 470–475
- Demira, E., Gozgorb, G., 2018. Does economic policy uncertainty affect Tourism?. *Annals of Tourism Research*, 69, 15–17
- Medina-Muñoz, D. R., Medina-Muñoz, R. D., & Gutiérrez-Pérez, F. J., 2016. The impacts of tourism on poverty alleviation: An integrated research framework. *Journal of Sustainable Tourism*, 24(2), 270–298.
- Pascariu, G.C., Ibănescu, B.C., 2018. Determinants and Implications of the Tourism Multiplier Effect in EU Economies. Towards a CorePeriphery Pattern?. Amfiteatru Economic, 20 (Special no. 12), 982-997
- Scheyvens, R., 2002. *Tourism for development: Empowering communities*. Harlow, England: Prentice Hall.
- Solvoll, S., Alsos, G. A., & Bulanova, O., 2015. Tourism entrepreneurship review and future directions. *Scandinavian Journal of Hospitality and Tourism*, 15(sup1), 120–137. https://doi.org/10.1080/15022250.2015.1065592.
- Wang, Y. S., 2009. The impact of crisis events and macroeconomic activity on Taiwan's international inbound tourism demand. *Tourism Management*, 30(1), 75–82.
- World Travel and Tourism Council, 2019. World, Transformed Megatrends and Their Implications for Travel & Tourism.

Specific Aspects Regarding Tourism and Travel in European Union

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Abstract

The experiences that can be lived only by traveling and exploring new geographical and cultural areas, made tourism one of the most developed industry generating over 10% of worldwide GDP. The purpose of the paper is to provide evidence of the development of the tourism and travel sector in the European Union. The conclusion that can be drawn from this article is the openness of European countries for the international flow of tourists and the better promotion of countries less new in the international tourism flow, European Union being one the greatest players in the tourism industry.

Key words: tourist, travel, European Union.

J.E.L. classification: L83, Z30.

1. Introduction

World Tourism Organization (1993) defined tourism as all tourism and accommodation activities for leisure or business purposes in other locations than the place of residence and work. Tourism can be seen as the possibility to make trips, to visit and to know new places and communities. Butler (2015) enhances tourism as an activity that characterized human behavior for centuries, being driven by different motivations and many purposes: disconnection from the daily routine, relaxation, holidays, education, business, or professional purposes.

In Europe, the tourism sector contributes with 9.7% to GDP and 9.7% of total jobs (World Travel & Tourism Council, 2019), being a driver of socio-economic growth and development. If in 1950 the main tourist destinations were represented by the states of northwestern Europe and North America, since 1999 the countries with economies in transition in Southeast Asia, Central, and Eastern Europe, and Latin America have become highly sought as tourist destinations. Areas like the Balearic Islands or the Maldives benefited a lot from the openness to tourism activities.

European Union is one of the greatest players in the tourism industry and made a goal to become the world's leading tourism destination. The main directions of action established were sustainable tourism, developing innovation, and cross-border tourism initiatives. Tourism has an important "contagion effect", Romao, Guerreiro & Rodrigues (2017) show that tourism growth in one region lead positively influences tourism in neighboring regions, and Kang, Kim & Nicholls (2014) prove that internal public policy impacts the patterns of tourism demand worldwide.

The purpose of this paper is to provide evidence of the development of the tourism and travel sector in the European Union, given the fact that the tourism industry is an engine for growth and socio-economic development. However, sustainable economic growth through tourism is possible only by eliminating cultural, social, economic, and financial barriers.

The paper is organized into five sections, beginning with the introduction of the topic and stating the purpose of the paper. The second section presents a brief literature review regarding tourism and travel. The third section is providing the research methodology and the fourth section compounds the findings of the paper. The last section exposes the conclusions of the paper.

2. Brief literature review

The tourism sector has shown a continuous development over the last decades, both in terms of locations and geographical areas, as well as in terms of services offered and tourist packages, but also in terms of quality of tourism services. Therefore, the competitiveness of the tourism providers increased in the latest years, and according to Crouch (2011), the advantage is given by creating memorable experiences. Competitiveness in the tourism sector is related to drowning and satisfying potential tourists at all levels of tourism service providers (Enright & Newton, 2004).

Understanding tourists' emotions and preferences are the only way to create memorable travel experiences (Hogertz, 2010). Nowadays the fast development of technology provides tools that can give insights regarding the wishes of tourism services customers. The new technologies allow the interpretation of digital information to identify the preferences of the population, thus being useful for personalizing tourist offers, individualizing tourist packages, and creating unique experiences. The analysis of biometric data, using the Internet of Things (IoT), and machine learning are only some examples of these new technologies. In this context, to remain competitive, the tourism sector needs to adapt to new trends in information technology and data processing, differentiation and customer focus are key elements for increasing competitiveness (WTTC, 2019).

Focusing on the consumer means understanding his needs and motivation. According to Iso-Ahola (1982), all people seek activities that provide both novel experiences and psychological rewards, allowing them to escape from personal problems. Tourism and traveling provide positive outcomes such as positive emotions, renewed energy, new insights, or the ability to solve problems (Gilbert & Abdullah, 2004; Mitas, Yarnal, Adams, & Ram, 2012).

In the travel context, giving up the daily routine, changing the time zone, the new gastronomy, or temperature differences can be just a few of the causes of anxiety and stress. Tourists step out of their comfort zone and invest time, effort, and money (Lehto, O'Leary & Morrision, 2004) to have positive, relaxing, and unforgettable experiences (Gnoth et al., 2000). Therefore, to maintain wellbeing, it is necessary to know consumers as well as possible by using their data based on trust and honesty. On the other hand, it is noted the blurring of the line between work and leisure, so travel is often included in everyday life. As a result, tourism products and services must be adapted to this new reality and offer continuity and diverse and creative activities (WTTC, 2019).

3. Research methodology

This article is descriptive research regarding the development of the tourism and travel sector in the European Union. For this purpose, it was analyzed the evolution of several indicators that characterized this sector. The data used in this article was retrieved from the database of the World Bank and Eurostat.

The paper is a quantitative research aiming to systematize the bibliographic information and the economic indicators regarding the tourism and travel industry in European Union. The research method used for this purpose is the bibliographic study of scientific references for the theoretical documentation regarding tourism and traveling; synthesis of the research results of other authors, but also the synthesis of the data used; graphical representation of data.

4. Findings

According to Kozak (1999), the tourism sector can be assessed eighter by the input data like tourist facilities, infrastructure, endowment, human capital, expenses or by the output data like the number of tourist arrivals, tourism revenues, and productivity. Following the author's suggestion, it was analyzed the evolution of indicators in European Union.

Accommodation and catering establishments in European Union in the period 2011 - 2018 registered an increase of 33% in the case of accommodation units, respectively of 6% in the case of public catering units. There are approximately 5 times more public catering establishments than accommodation units. The number of employees increased by 26% between 2011 and 2018, the largest share being held by people employed in public catering units (Figure no. 1).

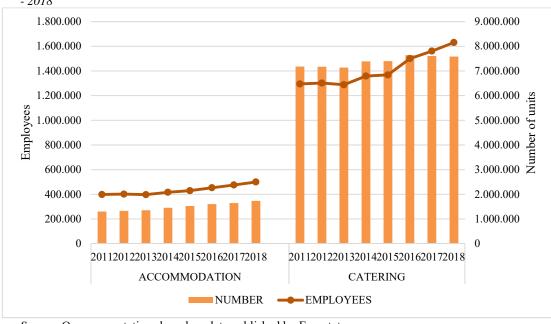


Figure no. 1. Evolution of accommodation and catering establishments European Union, in the period 2011 - 2018

Source: Own computations based on data published by Eurostat

In European Union, the tourism sector increased in the period 2003 - 2019, both in terms of the number of people who came and the number of people who left for tourism. Arrivals for tourism in the European Union increased by 55% during that period, while departures for tourism increased by 51% (Figure no. 2). The main causes that determined the travel to the European Union in the period 2012-2019 are personal reasons (47%), professional or business purpose (10%), vacation or leisure (20%), visiting relatives (20%), and other personal reasons (3%).

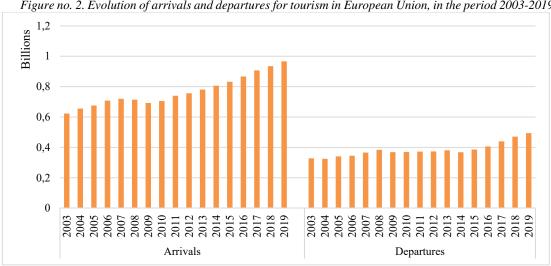
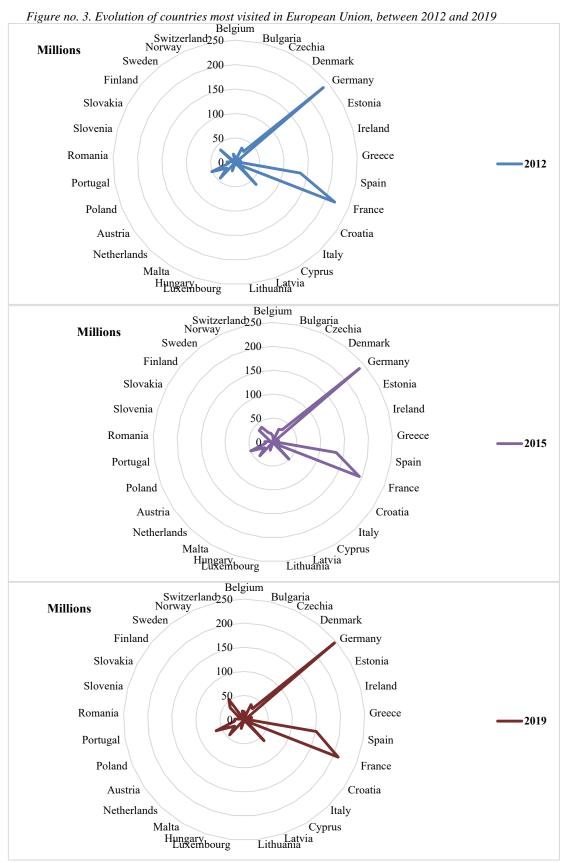


Figure no. 2. Evolution of arrivals and departures for tourism in European Union, in the period 2003-2019

Source: Own computations based on data published by World Bank

The countries most visited are Germany, France, Spain, Poland, and Italy (Figure no. 3). Between 2012 and 2019 the number of tourists increased by 94% in Slovakia, by 82% in Malta, by 78% in Estonia, by 57% in Luxembourg, and by 46% in Belgium. There was a decrease in the number of tourists between 2012 and 2019 in Croatia (32%), Latvia (25%), Greece (14%), Finland, Italy and France (4%), Netherlands (2%).



Source: Own computations based on data published by Eurostat

Regarding the economic results of accommodation and catering companies in the European Union, it is noted that turnover and value-added increased between 2011 and 2018 with about 50% in the case of accommodation units and by about 30% in the case of catering establishments (Figure no.4).

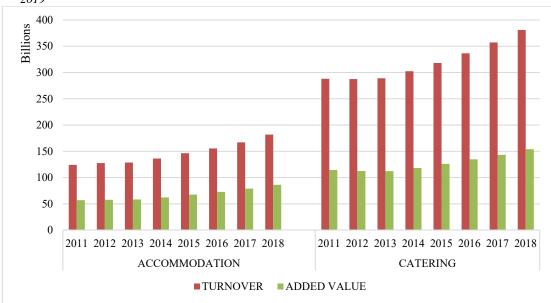


Figure no. 4. Evolution of turnover and value-added of tourism in European Union, in the period 2003-2019

Source: Own computations based on data published by Eurostat

5. Conclusions

The tourism sector of the European Union increased in the last years both in terms of accommodation establishments and catering units. The turnover and value-added of the tourism sector increased between 2011 and 2018 with about 50% in the case of accommodation units and by about 30% in the case of catering establishments. These evolutions reflect the fact that European Union is one the greatest players in the tourism industry.

The flow of tourists increased, the most visited countries being Germany, France, and Spain. Also, Slovakia, Malta, and Estonia succeed to attract over 75% more tourists in 2019 compared with 2012. These evolutions show the openness and better promotion of countries less new in the international tourism flow.

The COVID-19 pandemics put a lot of pressure on the tourism industry given the need for social distancing that imposes the temporary suspension of activity. The impact of this pandemic will be seen, meanwhile, the governments must implement policies to increase the labor security and the well-being of the population. In terms of tourism and travel, policies that support international openness and promote traveling in safe conditions are essentials.

- Butler, R., 2015. The evolution of tourism and tourism research. *Tourism Recreation Research*, 40(1), 16-27.
- Crouch, G. I., 2011. Destination competitiveness: An analysis of determinant attributes. *Journal of Travel Research*, 50(1), 27–45.
- Enright, M. J., Newton, J., 2005. Determinants of tourism destination competitiveness in the Asia Pacific: Comprehensiveness and universality. *Journal of Travel Research*, 43, 339–350.
- Gilbert, D., Abdullah, J., 2004. Holiday taking and the sense of well-being. *Annals of Tourism Research*, 31(1), 103–121.

- Gnoth, J., Zins, A., Lenmueller, R., Boshoff, C., 2000. Emotions, mood, flow, and motivations to travel. *Journal of Travel and Tourism Marketing*, 9(3), 23–34.
- Hogertz, C., 2010. *Emotions of the Urban Pedestrian: Sensory Mapping*. In PQN Final Report, Part B4: Documentation-Measuring Walking (pp. 31–52). Cheltenham, UK.
- Iso-Ahola, S. E., 1982. Toward a social psychological theory of tourism motivation: A rejoinder. *Annals of Tourism Research*, 9(2), 256-262.
- Kang, S., Kim, J., Nicholls, S., 2014. National tourism policy and spatial patterns of domestic tourism in South Korea', journal of travel research. *SAGE Publications*, 53(6), 791-804.
- Kozak, M., 1999. Destination competitiveness measurement: analysis of effective factors and indicators. 39th Congress of the European Regional Science Association: "Regional Cohesion and Competitiveness in 21st Century Europe", August 23 27, 1999, Dublin, Ireland, European Regional Science Association (ERSA), Louvain-la-Neuve.
- Lehto, X. Y., O'Leary, J. T., Morrision, A. M., 2004. The effects of prior experience on vacation behavior. *Annals of Tourism Research*, 31(4), 801–818.
- Mitas, O., Yarnal, C., Adams, R., Ram, N., 2012. Taking a 'peak' at leisure travelers' positive emotions. *Leisure Sciences*, 34(2), 115–135.
- Romao, J., Guerreiro, J., & Rodrigues, P. M. M., 2017. Territory and sustainable tourism development: A space-time analysis on European regions'. *The Region*, 4(3), 1-17.
- World Tourism Organization, 1993. Recommendations on Tourism Statistics. Spain.
- World Travel & Tourism Council, 2019. Travel & Tourism Benchmarking Research Trends, How Does Travel & Tourism Compare to Other Sectors?.
- World Travel & Tourism Council, 2019. World, Transformed Megatrends and Their Implications for Travel & Tourism.

The Discursive Features of the Written Tourism Discourse Specific to the Travel Guide

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Abstract

Along with the other tourism writings, travel guides are the result of a socio-discursive practice, since they are created in professional situations. As a social activity, the travel guide introduces, within the framework of human exchanges, a specific type of discourse which shares certain characteristics with other genres, while maintaining a specificity that distinguishes it from the others. The question that arises is: "What are the characteristics that contribute to the conceptualization of the notion of discourse, especially tourism discourse?". This paper relates to the theoretical-methodological journey carried out during my PhD thesis, as part of the analysis of the travel guide's tourism discourse. Our paper, situated within the written discourse analysis, aims to answer the question: "Which are the features shared with other types of discourse and which are the characteristics specific to tourism discourse?". The aim is to provide an overview of this type of discourse.

Key words: travel, euphoria, tautology, monologue, magic.

J.E.L. classification: Z30, Z39

1. Introduction

In our society, tourism discourse has become ubiquitous and familiar as it is part of the promotional language used by mass-media, but it is also found in various other interactions. It is characterized by a number of particularities which allow its individualization in relation to other types of discourse.

Our paper is part of a larger investigation regarding the analysis of the written tourism discourse, in Romanian and French. For this research, we have focused on the travel guides printed in both languages. Although it has been and still is an extensively studied and researched field from an economic, sociological and political point of view, tourism has not generated great interest from a linguistic viewpoint, and the travel guide has not been the central object of a linguistic analysis in the specialized literature of our country. This paper is part of an original bilingual study within which we have implemented a comparative study, through which we have compared the written tourism discourse of the Romanian writer with that of the French writer, discourses that present both similarities and differences.

2. Theoretical background

In order to be properly understood, tourism discourse must respect several stages of communication, and its objectives must be clearly set out. According to Boyer and Viallon (1994, p. 92), the first objective of this type of discourse is to present the destination with the help of advertising, in order to build a reputation, the increase in notoriety being an important objective of tourism communication. Along with already existing institutions, the newly established ones have the interest of making themselves known, by attracting a large audience. Thus, informing the public is a major objective due to social evolution, namely information has become a positive cultural value. Regarding the second objective, tourism specialists aim to present a positive image of the destination so as to capture the readers' attention, to impress them so that in the end their offer can become

attractive and desired (*Faire-aimer*) (Frochot & Legohérel, 2007/2014, p. 205). These objectives can only be achieved by creating connections between the destination and the reader with the help of evocative images and a specially chosen lexicon. As for the third goal, it aims to persuade the readers to react, by provoking an emotional reaction and encouraging them to go on the journey. Therefore, through this discourse, the writer of the guide seeks to sell an imaginary space, which triggers a dream which impresses the reader, the former being the bearer of an emotional message, referring to an oneiric, timeless world, in which the destination becomes a product desired above all else (Peja, 2015, p. 60). Having said that, the objective of the travel guide – and of the tourism communication in general – is to convince the reader to move from the phase of ignorance to that of action, as Frochot & Legohérel stated (2007/2014, p. 205).

3. Research methodology

According to specialists, the discourse is a text within a context, a unit which belongs, in general, to a field of activity. This activity is based on the discursive contract established between the partners and made following certain strategic choices. Dominique Maingueneau (1998, pp. 38-41), referring to the way in which the discourse is perceived, completes the definition of the discourse by listing some aspects present in each discursive activity, namely: the discourse is an *oriented*, *active*, *interactive*, *contextualized*, *assumed by the subject*, *normative*, *interdiscursive* unit and it has a *transphrastic* structure. Thus, he describes the essential features of the discourse, which we also find in tourism discourse and which will be briefly presented in this paper.

4. Findings

The discourse is a transphrastic organization (beyond the phrase); it has a different structure from that of the phrase. The discourse is subject to the rules of organization existing within a certain social group, relating to the plan of the text, the length of the enunciation, etc. The discourse is oriented; it develops over time according to the purpose chosen by the addresser. From the very beginning, it is built to have a purpose, and the addresser gives his discourse a certain direction that can be interrupted or deflected by a possible addressee. In this case, the linear evolution of the discourse changes depending on the type of enunciation: monologue or dialogue. In the case of the tourism discourse, the writer of the guide directs his discourse in terms of well-defined goals, relying on several twists, such as anticipation, repetition, etc. (especially in the narrative sequence).

Discourse is a form of action: any enunciation is a language act aimed at changing a situation. The language acts are part of a certain type of discourse and are aimed at producing a modification involving the addressees. As Peja states (2015, p. 59), through the various language acts, such as *inviting, advising, suggesting*, etc., the discourse of a guide's writer tries to modify or act upon the reader's behavior, transforming him from a passive reader into a real traveler, since the captivating presentation of the tourist destinations acts upon him, convincing him to visit the place described.

Moreover, the discourse is interactive: any discourse involves a verbal exchange between two partners, in the form of an oral interaction, for example, the case of a conversation based on interactive discourses; however, one should remember that a discourse is not always based on a conversation. In general, a discourse is interactive if there is an exchange of oral or written lines, but, in particular, any enunciation produced in the absence of a recipient constitutes interactivity, being considered an exchange of lines, explicitly or implicitly, with other addressors, virtual or real. In the case of travel guides, the guide's writer constructs his message, imagining himself to be face to face with the readers, depending on the representations he has of the latter.

The discourse is contextualized: we cannot assign any meaning to the discourse outside the context. The same enunciation in two different places can represent two distinct discourses. In addition, the discourse helps define the context, which it can modify during the discourse. In tourism discourse, what the guide's writer/author states is interpreted according to a context. That is why, in French, in the example "Les plages y sont bien paradisiaques" (GRC, 2017, p. 13), the adverb of place «y» cannot receive any other reference than «Corsica».

The discourse is assumed: the enunciating subject "I" assumes the responsibility of his discourse and chooses an enunciative attitude. Thus, the discourse entails a "deictic center" and a source of the person, time and space references, involving certain relationships between those who are in interaction. In the tourism discourse, the guide's writer is rendered by the first-person plural pronoun and by the verb endings, and in French also with the help of the indefinite pronoun "on".

The discourse is governed by norms, thus, it is based on general social norms and specific discourse norms, given that each act of enunciation is part of a type of discourse involving a set of norms which must be observed by the participants in the discourse. The tourism discourse will follow a system of rules which relate to a specific discursive practice, characterized by a certain organization of the discourse and a specific linguistic code.

In addition to these features, Dann (1996, pp. 55-64), referring to the tourism discourse, claims that it has characteristics in common with other types of discourse, but also its own features, which distinguish it from them, such as: the absence of the addressee, the monologue, the euphoria, and the tautology. Regarding the unique characteristics of the tourism discourse, unlike other forms of communication in which the author is well defined, in tourism discourse the author is not known. The absence of the author is also highlighted by Peja (2015, p. 70), who makes the following clarification: in the travel guides, the presence of the authors is not canceled, but their absence is presented, and the modalities of presenting "de la mise en absence" represent one of the editorial peculiarities of this discursive genre.

Another specificity of tourism discourse is the use *of tautologies*. Dann (1996, p. 65) explains that tourists primarily participate in the events presented in tourism writings, called by the author *"pseudo-events"*, because tourists do not travel in order to check if the image corresponds to reality, but rather to check if the reality discovered corresponds to the image described in the travel guide. That is the reason why travel becomes a tautology.

The commendation of the tourist destination is carried out especially by using a very rich adjectival system. Considered essential elements in persuading, attracting and seducing readers, adjectives are the triggering elements for readers who have to choose where they will go, what they will visit or what they will buy, etc., the persuasive function being highlighted by the *euphoric* language of the guide's writer. Thus, the discourse of the travel guide is a discourse of celebration with a strong epideictic character, whose main purpose is to praise a product, which will have as finality the challenge to "buy" tourism (Kerbrat Orecchioni, 2004, p. 147). It is an exhortative discourse that borrows the features of evaluative and more precisely laudatory discourse, which generally works according to the inferential mechanism typical to any advertising enunciation - the strategy of persuasion or "seduction" - a mechanism involving not only idyllic photographs, but also the intervention at the linguistic level: for example, the presence in large numbers of metaphors and evaluative adjectives, superlatives or hyperboles. We can conclude that tourism discourse distinguishes itself by the euphoric aspect rendered not only at the stylistic level, but also by means of images, which contribute to the creation of a blissful, holiday atmosphere.

If Boyer and Viallon (1990, p. 40) denounce the excessive use of euphoric elements present in the travel guide, firmly supporting the simplicity of the texts, Agorni (2012) and Kerbrat-Orecchioni (2004) mention that these elements are characteristics of the "*travel guide*" genre, and the relationship between seduction and information strategies varies according to each text (Kelly, 1997, p. 37).

Taking into account that the type of text which interests us is entirely a written medium, the reader of the travel guide will only understand or follow the sequence of ideas of the text produced according to what has been written. Regarding the *monologue* nature of the written communication, underlined by Dann (1996, p. 64), the reasons why tourism discourse is considered a monologue discourse are the following: firstly, within the guide, there is no verbal interaction because the addressee is not present, the message is directed to the addressee, and behind the addresser can stand a group of people who make up the editorial staff. While in the case of an oral communication, the roles of the two change, each becoming in turn addresser and addressee, in the written discourse this does not happen, and the *absence of the addressee* at the time of the enunciation will result in a gap between the moment of delivering the message and that of receiving the message.

Along with magic, another characteristic of tourism discourse is represented by the element of time. In Dann's opinion (1996, pp. 60-64), the journey does not necessarily mean moving from one place to another, but also the journey in time more often in the past and less in the future, because

tourism writings focus more on the authenticity, antiquity and history of the destinations. Nevertheless, at the same time, the journey is presented as an event which must take place in the near future, the ultimate goal being the escape of the readers from the rhythm of the daily life and possibly going on a trip.

The discourse of a guide's writer, like any written text, has other specific syntactic-semantic characteristics which distinguish it from the oral text, but the presence of orality in the travel guide is signaled by the use of certain grammatical procedures and enunciative strategies. According to Hagège (1985 apud Bidaud and Magherbi, 2005, p. 2), the human being seems biologically predisposed to become "un homme de parole" which will probably, but not surely, become "un homme de l'écrit".

Firstly, being "un discours différé" or at a distance, the written tourism discourse has certain differences in relation to oral discourse, some of which are mentioned in this paper. The first criterion for the differentiation is distance. If a conversation most often unfolds face to face, the written discourse of the travel guides is characterized "par une interaction différée dans le temps et l'espace" (Adam et Bonhomme, 2012, p. 36). Thus, unlike oral communication, where all the material signs that support it and that can take over both the meaning and the context itself, such as gestures, mimic, intonation, attitude, in written communication, as a remote interaction, the participants do not share the same context. The absence of the common context will involve, in most cases, an explicit completion by the addresser, thus resorting to describing the situational context or using punctuation marks, but which will not be able to capture everything that is transmitted through oral communication. Peytard and Genouvrier (1970, p. 17) argue that (regarding the use of descriptions) in the case of a novel (which is a written text) there are more descriptions than in a play, which is acted and spoken in a setting which takes the place of the situational context, resulting in the fact that written messages need much more detail than oral messages. Moreover, oral discourse exploits several sensory channels, especially auditory and visual, while the written text only the visual one (Kerbrat-Orecchioni, 2005, p. 30). What we can remember from the above is that both oral and written discourse are only two forms of language, two different ways of communicating, which have similarities and differences, but which are not mutually exclusive given that oral discourse can be constructed by resorting to writing, and vice versa.

The discourse of the guide's writer is part of the specialized discourses because it is a discourse delivered by experts to the general public, in a field which includes many sectors of activity, each having a specific lexicon. Although less studied, due probably to the "insaisissable" linguistic physiognomy, tourism discourse, the object of our analysis, can be considered a special discourse, because, although characterized by a thematic component resulting from the combination of various technical and disciplinary fields, it is attributed to a well-defined professional environment present in different sectors of the tourism field (Calvi, 2011, pp. 153-158), and also because it has information, ignored by the readers (or unknown to them), who are looking for it in the travel guide. We can say that the discourse of the travel guides, as a professional discourse, contains pragmatic and enunciative elements, but also specific linguistic elements that differentiate it from the discourses resulting from everyday life interactions.

Like any communication situation, this discourse constitutes an act of enunciation. In creating his message, the guide's writer resorts to information, for example, from the history of art, from different disciplines, but also from the history of civilization (civil, military and religious architecture) which are joined by painting, sculpture, urbanism, regional and national histories along with cultural and social traditions. All this knowledge is fundamental to him, because it is an inexhaustible source for the message he will convey. In conclusion, the readers-travelers are informed or acquire knowledge about the place of destination due to the discourses of guides' writers. According to Dufiet (2012, p. 18), a guide's writer is a "parleur", because his discourse shows, narrates, describes, explains and comments based on the extra-linguistic world, that is, on the chosen referent. And vice versa, the reader is a "viewer" and a "listener" and as a result, we expect the discourse of a guide's writer to be that of a professional.

5. Conclusions

Part of a larger research on tourism discourse analysis, this paper shows the interest of tourism for discourse analysts and explores discursive mechanisms for researchers in all fields of tourism.

For discourse analysts, it is a "dreamy" object because discursive phenomena collide therein that link the discourse to the social: the image of the tourist, of tour operators, routine and authoritative discursive genres, generic hybridity, the enunciation scene, the singular and collective ethos ... For researchers who focus on tourism, discursive analyses expose and list phenomena that remain unnoticed in studies that neglect micro-analysis and do not feed on its contributions.

6. References

- Adam, J.-M., Bonhomme M., 2012. L'argumentation publicitaire: Rhétorique de l'éloge et de la persuasion, Paris: Armand Colin
- Boyer, M. et Viallon, P., 1994. La communication touristique, Paris: PUF
- Calvi, M. V., 2011. Los géneros discursivos en la lengua del turismo: una propuesta de clasificación, Ibérica 19, pp. 9-32, [online] Available at:
 http://www.aelfe.org/documents/01_19_Calvi.pdf> [Accessed 14 November 2021].
- Dann, G., 1996. The language of tourism. A sociolinguistic perspective, Wallingford: Cab International.
- Dufiet, J. P., 2012. Les visites guidées. Discours, intéraction, multimodalite, in *Labirinti*, no. 138, pp. 17-54.
- Frochot, I., Legoherel, P., 2007/2014. Marketing du Tourisme. 3ème édition, Paris: Dunod.
- Kelly, D. 1997. The translation of texts from the tourist sector: textual conventions, cultural distance and other constraints, in *TRANS: Revue de littérature générale et comparée*, no. 2, Paris: Presses de la Sorbonne Nouvelle, pp. 33-42.
- Kerbrat-Orecchioni, C., 2005. Les actes de langage dans le discours, Paris: Armand Colin.
- Kerbrat-Orecchioni, C., 2004. Suivez le guide! Les modalités de l'invitation au voyage dans les guides touristiques: l'exemple de l'île d'Aphrodite in Baider, F. et al. (éds.), *La communication touristique.* Approches discursives de l'identité et de l'altérité, Paris: L'Harmattan, pp. 133-150.
- Le Guide du Routard-Corse, 2017. Paris: Hachette (GRC)
- Maingueneau, D., 1998. Analyser les textes de communication, Paris: Ed. Dunod.

Linear Fuzzy Regressions versus Power Fuzzy Regressions

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Abstract

Under the current conditions, the input data (values of the point cloud coordinates) necessary to achieve correlations and regressions between two variables representing two economic indicators are highly uncertain.

However, by consulting a consistent number of specialists (a minimum of 3), by ordering and grouping the values obtained from them in 3 groups we can obtain, as arithmetic mean of the groups, modeling of the input data with triangular fuzzy numbers.

In the article we presented the working method for obtaining linear fuzzy regressions and power fuzzy regressions then we compared the two types of fuzzy regressions by calculating the associated correlation coefficients.

Key words: linear fuzzy regressions, fuzzy power regressions, triangular fuzzy numbers

J.E.L. classification: C40, D80

1. Introduction

The modeling in a variable economic and social context is at a standstill because nowadays the uncertainty of information has exceeded all the forecasts of specialists.

The input data for the application of classical methods for solving various economic models are difficult to estimate.

This requires the use of fuzzy numbers to model the uncertainty of the data.

And when we try to determine the existence of correlations and regressions between two economic and social indicators, we encounter the same shortcomings.

The aim of the article is to draw the way for obtaining linear and power fuzzy regression functions by using triangular fuzzy numbers and their specific operations.

2. Literature review

In order to achieve the objective proposed in the article, theoretical notions from two fields are needed: linear and power type regressions as well as triangular fuzzy numbers and operations with them.

The specialized literature on the field of regressions is particularly rich and is centuries old.

Just as an example we mention here chronologically, the following works: (Țarcă, 1979), (Jaba, 1986), (Gromîco, 1990), (Baron *et al*, 1996), (Biji *et al*, 2000) etc.

Even if the fuzzy theory is only a few decades old (over half a century) the specialized literature that has it as its main subject is just as rich and very topical.

Also as an example we list here the following works: (Zadeh, 1965) believed as the first work of fuzzy theory, (Kaufmann, 1973), (Negoiță *et al*, 1974), (Tacu *et al*, 1994), (Bojadziev *et al*, 1995) etc.

Another view on operations and functions with fuzzy numbers is described in the works of (Gherasim, 2005), (Gherasim, 2008), (Alecu, 2011), (Alecu *et al*, 2021) and so on.

This view consists in the much more restrictive definition of operations with fuzzy numbers but has great advantages by preserving the associated center of gravity and preserving the type of operators.

Thus the operations with triangular fuzzy numbers also result in triangular fuzzy numbers.

In this article, triangular fuzzy numbers allow the design of an algorithm for obtaining linear and power fuzzy regressions.

3. Research methodology

For the use of triangular fuzzy numbers in the article, we briefly present the basics of operations with them.

A fuzzy triangular number is an ordered triplet of real numbers:

$$\widetilde{\mathbf{u}} = (\mathbf{u}_1, \mathbf{u}_2, \mathbf{u}_3) \quad , \ \mathbf{u}_1 \le \mathbf{u}_2 \le \mathbf{u}_3$$
 (1)

The center of gravity, the multiplication with a real scalar, the addition, the subtraction, the multiplication, the division and order with triangular fuzzy numbers are found in (Gherasim, 2008, p.110) and are defined by the following relations:

$$<\widetilde{u}> = \frac{u_1 + 2 \cdot u_2 + u_3}{4} \in \mathbf{R}$$

$$\mathbf{t} \cdot < \widetilde{\mathbf{u}} > = \begin{cases} (\mathbf{t} \cdot \mathbf{u}_1, \mathbf{t} \cdot \mathbf{u}_2, \mathbf{t} \cdot \mathbf{u}_3), \mathbf{t} \ge 0 \\ \mathbf{t} \cdot \mathbf{u}_3, \mathbf{t} \cdot \mathbf{u}_2, \mathbf{t} \cdot \mathbf{u}_1), \mathbf{t} < 0 \end{cases}, \ \mathbf{t} \in \mathbf{R}$$

$$\widetilde{\mathbf{u}} + \widetilde{\mathbf{v}} = (\mathbf{u}_1 + \mathbf{v}_1, \mathbf{u}_2 + \mathbf{v}_3, \mathbf{u}_3 + \mathbf{v}_4)$$

$$\widetilde{\mathbf{u}} - \widetilde{\mathbf{v}} = (\mathbf{u}_1 - \mathbf{v}_3, \mathbf{u}_2 - \mathbf{v}_2, \mathbf{u}_3 - \mathbf{v}_1)$$

$$\widetilde{\mathbf{u}}\cdot\widetilde{\mathbf{v}}=\frac{<\widetilde{\mathbf{u}}>\cdot\widetilde{\mathbf{v}}+<\widetilde{\mathbf{v}}>\cdot\widetilde{\mathbf{u}}}{2}$$

$$\frac{\widetilde{u}}{\widetilde{v}} = \frac{\widetilde{u} \cdot \widetilde{v}}{<\widetilde{v}>^2} = \frac{<\widetilde{u}> \widetilde{v}+<\widetilde{v}> \widetilde{u}}{2\cdot <\widetilde{v}>^2}$$

$$<\widetilde{\mathfrak{u}}><<\widetilde{\mathfrak{v}}>$$
 \Longrightarrow $\widetilde{\mathfrak{u}}\prec\widetilde{\mathfrak{v}}$

(2) the associated center of gravity

- (3) the multiplication with a real scalar
- (4) the addition
- (5) the subtraction
- (6) the multiplication
- (7) the division
- (8) the order relation (first criterion)

The article also uses some fuzzy variable functions that are calculated with the following relation (Gherasim, 2008, pp.29-30):

$$f(\widetilde{u}) = \frac{f(<\widetilde{u}>)}{<\widetilde{u}>} \cdot \widetilde{u}$$

(9) functions of variable fuzzy number

To clarify how to work with fuzzy triangular numbers we will provide the following examples:

$$\langle (2,7,8) \rangle = \frac{2+2\cdot7+8}{4} = \frac{24}{4} = 6 \Rightarrow (2,7,8)_{6} \qquad (1,2,3)_{2}$$

$$2 \cdot (1,2,3)_{2} = (2\cdot1,2\cdot2,2\cdot3) = (2,4,6)_{4}, \qquad (-2) \cdot (1,2,3)_{2} = (-2\cdot3,-2\cdot2,-2\cdot1) = (-6,-4,-2)_{-4}$$

$$\frac{(1,2,3)_{2}}{2} = \frac{1}{2} \cdot (1,2,3)_{2} = (\frac{1}{2}\cdot1,\frac{1}{2}\cdot2,\frac{1}{2}\cdot3) = (0.5,1,1.5)_{2}$$

$$(2,7,8)_{6} + (1,2,3)_{2} = (2+1,7+2,8+3) = (3,9,11)_{8}$$

$$(2,7,8)_{6} - (1,2,3)_{2} = (2-3,7-2,8-1) = (-1,5,7)_{4}$$

$$(2,7,8)_{6} \cdot (1,2,3)_{2} = \frac{6\cdot(1,2,3)+2\cdot(2,7,8)}{2} = \frac{(6+4,12+14,18+16)}{2} = (5,13,17)_{12}$$

$$\frac{(2,7,8)_{6}}{(1,2,3)_{2}} = \frac{(2,7,8)_{6}\cdot(1,2,3)_{2}}{2^{2}} = \frac{6\cdot(1,2,3)+2\cdot(2,7,8)}{2\cdot4} = \frac{(5,13,17)}{4} = (1.25,3.25,4.25)_{3}$$

$$6>2 \Rightarrow (2,7,8)_{6} > (1,2,3)_{2}$$

$$\ln(2,4,6)_{4} = \frac{\ln 4}{4} \cdot (2,4,6) \approx \frac{1.386}{4} \cdot (2,4,6) \approx 0.346 \cdot (2,4,6) = (0.693,1.386,2.079)_{1.386}$$

$$e^{(1,2,3)_{2}} = \frac{e^{2}}{2} \cdot (1,2,3) \approx 3.6945 \cdot (1,2,3) = (3.695,7.389,11.084)_{7.389}$$

$$(2,4,6)_4^{(1,2,3)_2} = \frac{4^2}{4} \cdot (2,4,6) = (8,16,24)_{16}, \qquad \sqrt{(2,4,6)_4} = \frac{\sqrt{4}}{4} \cdot (2,4,6) = \frac{(2,4,6)}{\sqrt{4}} = (1,2,3)_2.$$

To establish a linear regression $y = a \cdot x + b$ between the independent variable x and the dependent variable y, consider a cloud composed of n points $\{P_k(x_k, y_k)\}_{k=\overline{l,n}}$.

The right line for which the sum of the squares of the distances from the cloud points to the right is minimal is obtained by determining the parameters a and b that define it.

The relations by which the two parameters are calculated are found in many works of which we give the following example (Jaba, 1986, pp.207-209), (Gromîco, 1990, pp.135-137):

$$a = \frac{n \cdot S_{xy} - S_x \cdot S_y}{n \cdot S_{xx} - S_x \cdot S_x} , \qquad b = \frac{S_{xx} \cdot S_y - S_x \cdot S_{xy}}{n \cdot S_{xx} - S_x \cdot S_x}$$
 (10)

where:

$$S_{x} = \sum_{k=1}^{n} X_{k}, \quad S_{y} = \sum_{k=1}^{n} Y_{k}, \quad S_{xx} = \sum_{k=1}^{n} (X_{k} \cdot X_{k}), \quad S_{xy} = \sum_{k=1}^{n} (X_{k} \cdot Y_{k})$$
 (11)

In order to establish a power type regression $y = q \cdot x^p$, one can notice that by logarithm we also obtain a linear relation:

$$y = q \cdot x^p$$
 $\stackrel{ln}{\Leftrightarrow}$ $\ln y = p \cdot \ln x + \ln q$ \iff $\hat{y} = p \cdot \hat{x} + \hat{q}$,where: $\ln w = \hat{w}$

Due to the fact above, the relations for the calculation of the two defining parameters p and q are deduced from the relations (10) - (11), for example in the paper (Țarcă, 1979, pp.106-108):

$$p = \frac{n \cdot S_{\hat{x}\hat{y}} - S_{\hat{x}} \cdot S_{\hat{y}}}{n \cdot S_{\hat{x}\hat{x}} - S_{\hat{x}} \cdot S_{\hat{x}}}, \qquad \hat{q} = \ln q = \frac{S_{\hat{x}\hat{x}} \cdot S_{\hat{y}} - S_{\hat{x}} \cdot S_{\hat{x}\hat{y}}}{n \cdot S_{\hat{x}\hat{x}} - S_{\hat{x}} \cdot S_{\hat{x}}}, \qquad q = e^{\hat{q}}$$
(12)

where:

$$S_{\hat{x}} = \sum_{k=1}^{n} \hat{x}_{k}, \quad S_{\hat{y}} = \sum_{k=1}^{n} \hat{y}_{k}, \quad S_{\hat{x}\hat{x}} = \sum_{k=1}^{n} (\hat{x}_{k} \cdot \hat{x}_{k}), \quad S_{\hat{x}\hat{y}} = \sum_{k=1}^{n} (\hat{x}_{k} \cdot \hat{y}_{k})$$
 (13)

In order to establish which of the two regressions is more appropriate, we will associate to each the Pearson correlation coefficient (Baron *et al*, 1996, p.173), (Biji *et al*, 2000, pp.306-307) and so forth:

$$R_{Lin} = \sqrt{1 - \frac{\sum_{k=1}^{n} (y_k - y_{(x_k)}^{(lin)})^2}{\sum_{k=1}^{n} (y_k - \overline{y})^2}}, \qquad R_{Ptr} = \sqrt{1 - \frac{\sum_{k=1}^{n} (y_k - y_{(x_k)}^{(Ptr)})^2}{\sum_{k=1}^{n} (y_k - \overline{y})^2}}$$
(14)

Where y is the average of the values of the dependent variable in the point cloud:

$$\frac{1}{y} = \frac{S_y}{n} = \frac{\sum_{k=1}^{n} y_k}{n}$$
 (15)

The most appropriate regression is the one with the R value closest to 1 (highest R).

The classical methods such as the method described above can no longer be applied in conditions of increased uncertainty in a variable economic and social environment.

Thus, the coordinates of the cloud points have a high degree of uncertainty.

For this reason it is necessary to consult a large number of specialists ($s \ge 3$), from which to obtain s values for each coordinate of the cloud points.

After ordering the s values we will choose the first (with the lowest value) as the first component of that coordinate, the last (with the highest value) as the third component and the average of the other s-2 values as the second component of that coordinate:

$$x_{1}^{(k)} = \min_{i=1,s} v_{i} = v_{1}, \quad x_{3}^{(k)} = \max_{i=1,s} v_{i} = v_{s}, \qquad x_{2}^{(k)} = \frac{\sum_{i=2}^{s-1} v_{i}}{s-2}, \qquad \widetilde{x}^{k} = (x_{1}^{(k)}, x_{2}^{(k)}, x_{3}^{(k)}) \quad (16)$$

The described procedure must be applied to all the coordinates of the points in the cloud.

After having performed all the operations, a cloud composed of n fuzzy points is obtained:

$$\left\{ \widetilde{P}_{k}\left(\widetilde{\mathbf{X}}^{(k)},\widetilde{\mathbf{y}}^{(k)}\right) \right\}_{k=\overline{l,n}} \tag{17}$$

Now one can apply the algorithm described in the relations (10) - (15) by which one can obtain linear and power fuzzy regressions:

$$\widetilde{y} = \widetilde{a} \cdot \widetilde{x} + \widetilde{b}$$
 Namely $\widetilde{y} = \widetilde{q} \cdot \widetilde{x}^{\widetilde{p}}$ (18)

All the necessary calculations are performed according to the operations with triangular fuzzy numbers described in detail in the relations (1) - (12).

4. Findings

Next we will try to clarify the operating mode in order to obtain the two types of fuzzy regressions through a hypothetical case study.

Thus, with the help of our own software, dedicated to this article, we randomly generated the coordinates of a cloud $\left\{\widetilde{P}_{k}\left(\widetilde{x}^{(k)},\widetilde{y}^{(k)}\right)\right\}_{k=\overline{l,n}}$ made of n=30 fuzzy points.

The generated coordinates are the triangular fuzzy numbers presented in the following table:

Table no. 1. The coordinates of the cloud composed of n = 30 *fuzzy points*

k	$\widetilde{\mathbf{X}}^{(k)}$	$\widetilde{\mathbf{y}}^{(k)}$	k	$\widetilde{\mathbf{X}}^{(\mathbf{k})}$	$\widetilde{\mathbf{y}}^{(\mathbf{k})}$
1	$(7, 10, 13)_{10}$	$(5, 6, 8)_{6.25}$	16	$(30, 34, 59)_{39.25}$	$(156, 215, 285)_{217.75}$
2	$(7, 10, 16)_{10.75}$	$(7, 10, 13)_{10}$	17	$(22, 47, 54)_{42.5}$	$(114, 233, 329)_{227.25}$
3	$(9, 13, 17)_{13}$	$(8, 14, 20)_{14}$	18	$(26, 46, 66)_{46}$	$(190, 244, 329)_{251.75}$
4	$(8, 16, 24)_{16}$	$(15, 23, 27)_{22}$	19	$(36, 51, 62)_{50}$	$(207, 313, 350)_{295.75}$
5	$(10, 21, 23)_{18.75}$	$(19, 28, 40)_{28.75}$	20	$(34, 55, 68)_{53}$	$(211, 303, 479)_{324}$
6	$(16, 17, 24)_{18.5}$	$(25, 36, 44)_{35.25}$	21	$(36, 51, 68)_{51.5}$	$(177, 389, 495)_{362.5}$
7	$(11, 21, 31)_{21}$	$(26, 47, 55)_{43.75}$	22	$(31, 59, 75)_{56}$	$(261, 413, 472)_{389.75}$
8	$(19, 21, 32)_{23.25}$	$(35, 59, 74)_{56.75}$	23	$(39, 61, 69)_{57.5}$	$(227, 433, 596)_{422.25}$
9	$(20, 24, 38)_{26.5}$	$(45, 63, 85)_{64}$	24	$(32, 59, 83)_{58.25}$	$(244, 455, 587)_{435.25}$
10	$(18, 26, 34)_{26}$	$(41, 90, 101)_{80.5}$	25	$(39, 68, 78)_{63.25}$	$(297, 487, 707)_{494.5}$
11	$(19, 29, 38)_{28.75}$	$(60, 105, 140)_{102.5}$	26	$(47, 53, 89)_{60.5}$	$(351, 535, 714)_{533.75}$
12	$(23, 36, 40)_{33.75}$	$(80, 116, 171)_{120.75}$	27	$(47, 58, 88)_{62.75}$	$(339, 593, 757)_{570.5}$
13	$(24, 36, 48)_{36}$	$(105, 140, 182)_{141.75}$	28	$(39, 60, 83)_{60.5}$	$(367, 708, 826)_{652.25}$
14	$(23, 35, 44)_{34.25}$	$(117, 156, 210)_{159.75}$	29	$(38, 53, 98)_{60.5}$	$(382, 658, 863)_{640.25}$
15	$(24, 36, 52)_{37}$	(139, 174, 215) _{175.5}	30	$(34, 65, 99)_{65.75}$	(572, 824, 946) _{791.5}

Source: randomly generated data on the computer

In order to obtain the linear fuzzy regression we will calculate the four fuzzy amounts with the relations (11) and their results will be replaced in the relations (10).

We mention that all the calculations were made with our own dedicated software with a large number of decimals, made by the author in the Microsoft Visual FoxPro programming language.

The results listed below in the article are rounded to 2–3 decimals for those with modules less than 0.1 or even whole numbers for those with modules in the hundreds and over.

$$\widetilde{S}_{\widetilde{x}} = \sum_{k=1}^{n} \widetilde{x}^{(k)} = (768, 1171, 1613)_{1181}, \qquad \widetilde{S}_{\widetilde{y}} = \sum_{k=1}^{n} \widetilde{y}^{(k)} = (4822, 7870, 10120)_{7671}$$

The products of the form $\widetilde{x}^{(k)} \cdot \widetilde{x}^{(k)}$ and $\widetilde{x}^{(k)} \cdot \widetilde{y}^{(k)}$ were calculated according to relations (6) and are listed in the table below:

Table no. 2. The product of the form $\widetilde{x}^{(k)} \cdot \widetilde{x}^{(k)}$ and $\widetilde{x}^{(k)} \cdot \widetilde{y}^{(k)}$

k	$\widetilde{\mathbf{X}}^{(k)}\cdot\widetilde{\mathbf{X}}^{(k)}$	$\widetilde{\mathbf{x}}^{(k)} \cdot \widetilde{\mathbf{y}}^{(k)}$
1	$(70, 100, 130)_{100}$	(46.9, 61.3, 80.6) _{62.5}
2	$(75.25, 107.5, 172)_{115.6}$	$(72.6, 103.8, 149.9)_{107.5}$
	•••	
30	$(2236, 4274, 6509)_{4323}$	$(32260, 52813, 70279)_{52041}$

Source: the author's calculations

The amounts of these products on the two columns are as follows:

$$\begin{split} \widetilde{S}_{\widetilde{x}\widetilde{x}} &= \sum_{k=1}^{n} \left(\widetilde{x}^{(k)} \cdot \widetilde{x}^{(k)} \right) \approx (36167, 55503, 76825)_{55999} \\ \widetilde{S}_{\widetilde{x}\widetilde{y}} &= \sum_{k=1}^{n} \left(\widetilde{x}^{(k)} \cdot \widetilde{y}^{(k)} \right) \approx (261708, 416024, 560203)_{413490} \end{split}$$

The parameters \widetilde{a} and \widetilde{b} that define the linear fuzzy regression $\widetilde{y} = \widetilde{a} \cdot \widetilde{x} + \widetilde{b}$ are calculated according to the relations (10), as follows:

$$\widetilde{a} = \frac{n \cdot \widetilde{S}_{\widetilde{x}\widetilde{y}} - \widetilde{S}_{\widetilde{x}} \cdot \widetilde{S}_{\widetilde{y}}}{n \cdot \widetilde{S}_{\widetilde{x}\widetilde{x}} - \widetilde{S}_{\widetilde{x}} \cdot \widetilde{S}_{\widetilde{y}}} = \frac{(-4309602, 3343399, 11013834)_{3347757}}{(-819532, 282417, 1397919)_{285805}} \approx (-24.3, 11.6, 47.9)_{11.7}$$

$$\widetilde{b} = \frac{\widetilde{S}_{\widetilde{x}\widetilde{x}} \cdot \widetilde{S}_{\widetilde{y}} - \widetilde{S}_{\widetilde{x}} \cdot \widetilde{S}_{\widetilde{x}\widetilde{y}}}{n \cdot \widetilde{S}_{\widetilde{y}\widetilde{y}} - \widetilde{S}_{\widetilde{y}} \cdot \widetilde{S}_{\widetilde{y}}} = \frac{(-390485119, -54485946, 264710811)_{-58686550}}{(-819532, 282417, 1397919)_{285805}} \approx (-389, -197, -39)_{-205}$$

The linear fuzzy regression is of the following form:

$$\widetilde{y} = (-24.3, 11.6, 47.9)_{11.7} \cdot \widetilde{x} - (39,197,389)_{205}$$

In order to obtain the fuzzy power type regression, it is necessary to first perform some logarithmic operations performed according to relation (9), then the achievements of products and amounts of the logarithms.

For instance:
$$\ln \widetilde{x}^{(1)} = \ln(7,10,13)_{10} = \frac{\ln 10}{10} \cdot (7,10,13)_{10} \approx (1.6, 2.3, 3.0)_{2.3}$$

Table no. 3 The logarithmization of triangular fuzzy numbers and products of logarithms

k	$\ln \widetilde{x}^{(k)}$	$\ln \widetilde{y}^{\scriptscriptstyle (k)}$	k	$\ln \widetilde{x}^{(k)} . \ln \widetilde{x}^{(k)}$	$\ln \widetilde{x}^{(k)}. \ln \widetilde{y}^{(k)}$
1	$(1.6, 2.3, 3.0)_{2.3}$	$(1.5, 1.8, 2.3)_{1.8}$	1	$(3.7, 5.3, 6.9)_{5.3}$	$(3.2, 4.1, 5.4)_{4.2}$
2	$(1.5, 2.2, 3.5)_{2.4}$	$(1.6, 2.3, 3.0)_{2.3}$	2	$(3.7, 5.2, 8.4)_{5.6}$	$(3.7, 5.3, 7.6)_{5.5}$
	•••	•••		•••	•••
30	$(2.2, 4.1, 6.3)_{4.2}$	$(4.8, 6.9, 8.0)_{6.7}$	30	$(9.1, 17.3, 26.4)_{17.5}$	$(17.3, 28.4, 37.7)_{27.9}$

Source: the author's calculations

The results of the sums with logarithms and with the products of logarithms calculated according to the relations (13) are the following:

$$\begin{split} \widetilde{S}_{\frac{\hat{x}}{\hat{x}}} &= \sum_{k=l}^{n} \left(\ln \widetilde{x}^{(k)} \right) = (69.5, 105, 144.7)_{106} \,, & \widetilde{S}_{\frac{\hat{y}}{\hat{y}}} &= \sum_{k=l}^{n} \left(\ln \widetilde{y}^{(k)} \right) = (95, 151, 196)_{148} \\ \widetilde{S}_{\frac{\hat{x}\hat{x}}{\hat{x}\hat{x}}} &= \sum_{k=l}^{n} \left(\ln \widetilde{x}^{(k)} \cdot \ln \widetilde{x}^{(k)} \right) = (251, 382, 525)_{385} \,, & \widetilde{S}_{\frac{\hat{x}\hat{y}}{\hat{y}}} &= \sum_{k=l}^{n} \left(\ln \widetilde{x}^{(k)} \cdot \ln \widetilde{y}^{(k)} \right) = (352, 549, 734)_{546} \,. \end{split}$$

The parameters \tilde{p} and \tilde{q} that define the power fuzzy regression $\tilde{y} = \tilde{q} \cdot \tilde{x}^{\tilde{p}}$ are calculated similarly to the operations performed at the linear fuzzy regression, with the relations (12), as follows:

$$\begin{split} \widetilde{p} &= \frac{n \cdot \widetilde{S}_{\hat{x}\hat{\hat{y}}} - \widetilde{S}_{\hat{\hat{x}}} \cdot \widetilde{S}_{\hat{\hat{y}}}}{n \cdot \widetilde{S}_{\hat{x}\hat{\hat{x}}} - \widetilde{S}_{\hat{\hat{x}}} \cdot \widetilde{S}_{\hat{\hat{y}}}} = \frac{(-10533,\ 668,\ 11836)_{\ 660}}{(-7823,\ 279,\ 8377)_{\ 278}} \approx (-52,\ 2.4,\ 57)_{\ 2.4} \\ \widehat{\widetilde{q}} &= \ln \widetilde{q} = \frac{\widetilde{S}_{\hat{x}\hat{x}} \cdot \widetilde{S}_{\hat{y}} - \widetilde{S}_{\hat{x}} \cdot \widetilde{S}_{\hat{x}\hat{y}}}{n \cdot \widetilde{S}_{\hat{x}\hat{x}} - \widetilde{S}_{\hat{x}} \cdot \widetilde{S}_{\hat{x}}} = \frac{(-41601, -558, 38868)_{-962}}{(-7823, 279, 8377)_{278}} \approx (-26,\ -2.7,\ 17.8)_{-3.5} \\ \widetilde{q} &= e^{\frac{\widehat{q}}{q}} = \frac{e^{-\widehat{q}}}{e^{-\widehat{q}}} \cdot \widehat{\widetilde{q}} = \frac{e^{-3.5}}{-3.5} \cdot (-26,\ -2.7,\ 17.8)_{-3.5} \\ \widetilde{q} \approx -0.0086 \cdot (-26,\ -2.7,\ 17.8)_{-3.5} \approx (-0.15, 0.023, 0.224)_{0.03} \end{split}$$

The fuzzy power regression is of the following form:

$$\widetilde{y} = (-0.15, 0.023, 0.224)_{0.03} \cdot \widetilde{x}^{(-52, 2.4, 57)_{2.4}}$$

In order to compare the two fuzzy regressions and establish the form of the most appropriate regression model, we will make some calculations beforehand.

The average fuzzy value is:

$$\overline{\widetilde{y}} = \frac{\widetilde{S}_{\widetilde{y}}}{n} = \frac{1}{30} \cdot (4822, 7870, 10120)_{7671} \approx (161, 262, 337)_{256}.$$

By applying the two regressions

$$\begin{split} \widetilde{y}_{\text{Lin}}^{(k)} &= (-24.3, 11.6, 47.9)_{11.7} \cdot \widetilde{x}^{(k)} - (39, 197, 389)_{205} \\ \widetilde{y}_{\text{Ptr}}^{(k)} &= (-0.15, \ 0.023, \ 0.224)_{0.03} \cdot \widetilde{x}^{(k)^{(-52, \ 2.4, \ 57)_{24}}} \end{split} \quad , k = \overline{1, n} \end{split}$$

the following fuzzy values are obtained for the dependent variable:

Table no. 4 Values (triangular fuzzy numbers) obtained by applying fuzzy regressions

k	$\widetilde{\mathtt{y}}_{Lin}^{(k)}$	$\widetilde{\widetilde{\mathbf{y}}}_{ ext{Ptr}}^{(ext{k})}$
1	$(-469, -80, 277)_{-88}$	(-16.4, 6.6, 32.7) _{7.4}
2	$(-479, -76, 312)_{-79.4}$	$(-19.7, 7.6, 39.6)_{8.8}$
	•••	•••
30	(-990, 566, 2116) ₅₆₅	$(-1484, 572, 2910)_{643}$

Source: the author's calculations

The fuzzy sums of the squares of the differences are as follows:

$$\begin{split} \widetilde{S}_{\text{Med}} &= \sum_{k=1}^{n} \left(\widetilde{y}^{(k)} - \overline{\widetilde{y}} \right)^2 = (310584, 1542184, 2531132)_{1481521} \\ \widetilde{S}_{\text{Lin}} &= \sum_{k=1}^{n} \left(\widetilde{y}^{(k)} - \widetilde{y}^{(k)}_{\text{Lin}} \right)^2 = (-2043799, 207177, 2327033)_{174397} \\ \widetilde{S}_{\text{Ptr}} &= \sum_{k=1}^{n} \left(\widetilde{y}^{(k)} - \widetilde{y}^{(k)}_{\text{Lin}} \right)^2 = (-1474920, 102190, 1565087)_{73637} \end{split}$$

The correlation coefficients corresponding to the two fuzzy regressions are:

$$\begin{split} \widetilde{R}_{\text{Lin}} &= \sqrt{(1,1,1)_1 - \frac{\widetilde{S}_{\text{Lin}}}{\widetilde{S}_{\text{Med}}}} = \sqrt{(0.11,0.87,1.68)_{0.88}} = (0.12,\ 0.93,\ 1.79)_{0.94} \\ \widetilde{R}_{\text{Ptr}} &= \sqrt{(1,1,1)_1 - \frac{\widetilde{S}_{\text{Ptr}}}{\widetilde{S}_{\text{Med}}}} = \sqrt{(0.429,0.940,1.493)_{0.950}} = (0.44,0.964,\ 1.531)_{0.98} \end{split}$$

Even if the centers of gravity (0.94 < 0.98) are both close to 1 and suggest that the two fuzzy correlations are strong, the fuzzy power regression is the most appropriate because its correlation coefficient has a higher center of gravity.

5. Conclusions

In order to establish the validity and credibility of the method for performing fuzzy regressions, we studied the results obtained in terms of reducing them to the associated centers of gravity.

Thus, the two fuzzy regressions now become classical regressions in real numbers:

$$\begin{array}{l} <\widetilde{y}_{\rm Lin}^{(k)}> = 11.7 \cdot <\widetilde{x}^{(k)}> -205 \\ <\widetilde{y}_{\rm Ptr}^{(k)}> = 0.03 \cdot <\widetilde{x}^{(k)}>^{2.4} \end{array} \hspace{0.5cm} , k=\overline{1,n}$$

By applying these two regressions the following values are obtained for the dependent variable:

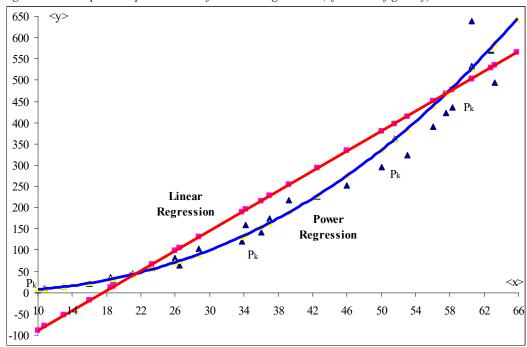
Table no. 5 Values obtained by applying classical regressions

k	$<\widetilde{\mathbf{x}}^{(k)}>$	$<\widetilde{y}^{(k)}>$	$<\widetilde{y}_{\scriptscriptstyle Lin}^{\scriptscriptstyle (k)}>$	$<\widetilde{y}_{Ptr}^{(k)}>$
1	10	6.25	-88	7.39
2	10.75	10	-79.4	8.8
3	13	14	-53	13.8
	•••	•••	•••	
30	65.75	791.50	565	643

Source: the author's calculations

The graphical representation of the cloud of points formed by the centers of gravity and of the two curves $<\widetilde{y}_{\text{Lin}}^{(k)}>$ and $<\widetilde{y}_{\text{Ptr}}^{(k)}>$ is presented as follows:

Figure no. 1. Graphical representation of classical regressions (of centers of gravity)



Source: graphs made by the author

The two curves $y_{(x)} = 11.7 \cdot x - 205$ and $y_{(x)} = 0.03 \cdot x^{2.4}$ allow a pragmatic understanding of the analysis of the linear fuzzy regression function versus the power fuzzy regression function.

By developing the conceptual framework for the uncertain representation of data by triangular fuzzy numbers and the development of the instrument panel with the two regression models (linear and power) an important contribution is made, from a theoretical and practical standpoint, of great topicality to the uncertainty management.

The two regression models come to cover a long-standing gap that requires more and more interdisciplinary contributions within economic and social processes.

6. References

- Alecu, I.C., Lepădatu, D., Isopescu, D., Cucoş, I., Agavriloaie, M.O., Antonescu, I., 2021. Helix Spin Economy and Plasma Waste Recovery in Construction and Building Materials Industry, Environmental Engineering & Management Journal (EEMJ), 2021, Vol. 20, Issue 4, pp.559-568.
- Alecu, I.C, 2011. Epistemic analysis of methods using elementary triangular fuzzy numbers with associated indicators, *The Yearbook of the "Gh. Zane" Institute of Economic Researches*, Vol. 20, Issue 1, pp.5-12.
- Baron, T., Biji, E., Tovissi, L., Wagner, P., Isaic-Maniu, Al., Korka, M., Porojan, D., 1996. Statistică teoretică şi economică (Theoretical and economic statistics), Bucharest: Didactic and Pedagogical Publishing House
- Biji, E.M., Lilea, E., Roşca, E. R., Vătui, M., 2000. Statistică aplicată în economie (Applied statistics in economics). Bucharest: Universal Dalsi Publishing House
- Bojadziev, G., Bojadziev, M., 1995. Fuzzy sets, fuzzy logic, application, London.
- Gherasim, O., 2005. Matematica numerelor fuzzy triunghiulare (Mathematics of triangular fuzzy numbers). Iasi: Performantica Publishing House
- Gherasim, O., 2008. Fuzzy Techniques Applied in Economy. Iasi: Performantica Publishing House
- Jaba, E., 1986. Statistică I-II. Sistem metodologic. Aplicații (Statistics I-II. Methodological system. Applications). "Al. I. Cuza" University of Iași, Faculty of Economy and Business Administration
- Kaufmann, A., 1973. Introduction a la théorie des sous-ensembles flous (Fuzzy sets theory). Paris: Masson et Cie Edition
- Negoiță, V., Ralescu, D.A., 1974. *Mulțimi vagi și aplicațiile lor (Vague sets and their applications)*. Bucharest: Tehnic Publishing House
- Țarcă, M., 1979. Statistică II (Statistics II), "Al. I. Cuza" University of Iași, Faculty of Economy and Business Administration
- Tacu, Al.P., Gil-Aluja, J., Teodorescu, H.N., 1994. Fuzzy Systems in Economy and Engineering, Bucharest: Publishing House of the Romanian Academy
- Zadeh, L. A., 1965. Fuzzy sets Information and Control, 8th volume.

Regulations Regarding Nonfinancial Reporting and Socially Responsible Behavior

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Abstract

The socially responsible behaviour of economic entities and non-financial reporting are subjects of maximum interest in the business environment, given that they have had a major impact on the way economic activities are conducted, from the perspective of stakeholders. They are interested in the impact of the companies on the society as a whole, wishing to be informed about non-financial issues in addition to those of a financial nature. The purpose of this paper is to highlight certain regulations and norms that were meant to implement in corporate conduct the socially responsible behavior or that provided directions to be followed in terms of non-financial reporting. In this respect, an evolutionary analysis of the main regulations was carried out, highlighting defining aspects for each of them, independently and comparatively. The results of the research have highlighted the existence of many regulations concerning non-financial reporting, each with a different audience, with the desire to harmonise the regulations concerning non-financial reporting being highlighted.

Key words: Corporate social Responsibility, Nonfinancial reporting, GRI, SASB, IIRC.

J.E.L. classification: M41

1. Introduction

The implementation of particular CSR (Corporate Social Responsibility) principles has been a difficulty for businesses in recent years, in that it had to be done in a way that created a clear image of the influence that CSR policies had on firms, but notably on society as a whole (Wang, 2016, p. 534). In this sense, CSR may be seen of as a tool that is used at the organizational level to convey the actions that are carried out in order to accomplish CSR objectives. Companies might convey their social responsibility initiatives to stakeholders by reporting information on CSR operations (OECD, 2014). According to a KPMG, research released in 2017, despite the fact that non-financial reporting was not mandated, there was a rise in non-financial information disclosed by economic organizations.

Companies reported on their sustainability performance while not being obligated to do so. Many factors contributed to the rise in sustainability reports, but the primary cause may be traced back to the same factors that drove their social responsibility efforts in the first place. Businesses that implement CSR policies will take real steps to address environmental, social, and economic challenges, which will be documented in publicly available sustainability reports to justify and explain their activities to stakeholders.

Stakeholders are currently asking firms for information on their social effects, environmental impact, and corporate governance structure, which must meet particular integrity and inclusiveness requirements (OECD, 2014). To address these additional information obligations, businesses have been given a variety of tools and approaches to help them with their non-financial reporting. As a result, a number of concepts, rules, or standards may be highlighted at the international level that aid in the compilation of sustainability reports. Even more, there's presently no common referential reporting for entities, so each one does what it wants, affecting the degree of homogeneity and comparability of the data supplied in their reports. Principles, guidelines, or conceptual frameworks

that give help to reporting entities in the compilation of non-financial sustainability reports may be identified at the international level to make the process easier.

2. Research methodology

In order to determine the elements that had a significant impact on the implementation of the principles of sustainable development and socially responsible behavior in the business strategy, the main regulations and customs that had a role in this regard were analyzed, highlighting the characteristics, implications or influences they had in the process of non-financial reporting carried out by economic entities. Comparative aspects were highlighted between the elements under analysis and the highlighting of certain elements of similarity or differentiation.

3. Literature review

The increased openness and accountability requirements of stakeholders have led to the production of corporate social responsibility (CSR) reports by significant corporations. Traditional reports, which exclusively featured financial information regarding a company's performance and financial status, gave information that was significant from the standpoint of stakeholders, but did not provide a full view of a company's market position. Companies published CSR reports in order to completely and honestly educate stakeholders, by posting non-financial information alongside financial information, but which presented an image of the potential that a business may take advantage of, as well as the hazards to which it is exposed.

Financial data was linked to the company's social effects, its environmental impact, and information on corporate governance. The disclosure of non-financial information that had both financial and non-financial ramifications for stakeholders has evolved throughout time, as evidenced by the manner the companies were reporting.

Corporate social responsibility is more than simply a need for a corporation to act morally, socially, and environmentally right; it also has the connotation of a strategic goal capable of ensuring the civil society's approval of the firm's activities in its economic context (Mironiuc, 2009, p. 158).

Corporate reporting has progressed from the disclosure of simply financial information to the production of CSR reports, and now to the publication of so-called integrated reports. Integrated reports are a technique of providing financial data, a company's social and environmental effect, and governance data in a single report that summarizes an entity's overall performance. Because stakeholders make decisions based on both financial and non-financial data, integrated reporting appears to be the best option for corporate reporting. Currently, presenting non-financial information in a superficial or brief manner can have a significant influence on a company's economic success, given the significance that interested parties place on this information.

The primary motivation for corporations disclosing information to interested parties is to comply with company-wide standards (Ashforth, 1990, p. 185). Financial data has historically been the primary source of information for stakeholders. Although it incurs more expenditures, a corporation can sustain and attract new consumers, partners, or investors who can help to the upkeep and continuation in a given market by disposing of non-financial information. Stakeholders want objective information that is characterized by transparency and accountability, as well as information on strategic objectives that will provide insight into a company's past while also outlining how it plans to achieve its strategic objectives by presenting opportunities and risks. Traditional information is insufficient to offer consumers with this level of detail.

Apart from the fact that it is the right thing to do (Juholin, 2004, p. 25), the following factors motivate companies to engage in and report on CSR: 1. Economic and business benefits, such as reputational growth, cost reduction, increased efficiency, and increased profits); 2. Corporate and management benefits, such as increasing employee engagement, facilitating internal communication of the organization's mission, and increasing employee morale; 3. Strategic advantages such as increased competitiveness, improved investor relations, easier analysis of planned and achieved objectives, increased market credibility through increased information openness, and increased capacity to connect with stakeholders (Kolk, 2004, p. 56).

The disclosure of the most comprehensive information, which provides a complete picture of an economic entity's financial condition and performance, in particular CSR information, contributes to a rise in a company's economic performance (Fogel, 2015, p. 86). Various studies on the impact of CSR on a company's activity have found that disclosing this information lowers risk associated with an economic entity), lowers capital costs lowers borrowing costs, increases stock market performance in times of crisis, and positively influences market analyst predictions (Orlitzky et. al, 2003, p. 425). At the same time, past research on corporate CSR reporting has found a relationship between it and environmental performance (De Villiers et. al, 2011, 510), governance features (Rupley et. al, 2012, p. 610), and public shareholders (Cormier et. al, 2003, p. 50). One thing to keep in mind about reporting organizations in general is that they prefer to disclose only material that shows them in a positive way, often concealing behaviors that would cause stakeholders to express dissatisfaction (Wang, 2016, p. 540).

4. Findings

At the international level, a set of principles may be highlighted that aid in the implementation of specific policies relating to an economic entity's activity, policies relating to changes in business strategy, and policies relating to the organization's influence on society in general. The ten principles defined by the United Nations Global Compact might be mentioned in this regard.

More than 8000 business enterprises from more than 150 nations are urged to follow the above-mentioned principles, with the goal of addressing unusual problems like corruption, human rights violation, and environmental regulations through them. At the same time, they help to meet the United Nations Sustainable Development Goals (UN Global Compact, 2018b).

The annual reports that the entities present to stakeholders to highlight the progress made in implementing the principles are called cop (Communication on Progress). The reporting organizations must post the information contained in the COP annual report on the UN Global Compact website, with sanctions for entities who do not comply.

A lot of things that must be present in a COP report might be highlighted when it comes to its substance. The Executive Director's statement, in which he attests to the implementation of the UN Global Compact principles, which outlines the actions conducted in this respect and analyzes the outcomes produced, is an example of an aspect included in this report. There are three levels of conformity assessment for COP reports, and they can be classified as COP reports that meet the minimum requirements, known as GC Active, and more advanced COP reports, known as GC Advanced, which include the elements in GC Active, as well as elements related to the company's strategy for implementing the best business practices in accordance with the 10 Principles. The GC Learner classification is the third level of categorization, and it relates to COP reports that fail to fulfill one or more basic standards.

The principles set out in the UN Global Compact have the role of making business more responsible, of acting responsibly with regard to the environment and society, requiring economic entities to contribute to solving problems that concern social or environmental issues. Summarizing the above, economic entities are required to become active actors in the implementation of the objectives for sustainable development. The principles contained in the UN Global Compact are 1. Respect for and upholding human rights as defined at international level; 2. Respect of fundamental human rights; 3. Upholding the right of association and recognition of the right to collective bargaining; 4. Elimination of abusive or forced labour; 5. Elimination of exploitation of minors 7. Caution regarding actions that may affect the environment 8. Initiating initiatives that promote environmental responsibility; 9. Promotion of clean technologies; 10. Fight against corruption in all its forms, such as blackmail or bribery.

In 2015, 193 countries signed up to the United Nations' Sustainable Development Goals (SDGs). These goals were preceded by the United Nations' so-called "Millennium Development Goals (MDGs)," which were approved in 2000 and focused on eight areas of interest: poverty, education, gender equality, infant mortality, the environment, disease control, health, and global collaboration. Companies have had to put in a lot of work in order to meet the Sustainable Development Goals. Despite this, firms have begun to share information on the attainment of these goals, demonstrating the actual steps they are making to assist initiatives for sustainable development. The information on

SDGs has the significant benefit of being simple to grasp for all types of stakeholders, providing incentives for reporting entities to interact with them. One difficulty that develops is when companies link CSR efforts to sustainable development goals without incorporating CSR concepts into long-term company policies and plans (KPMG, 2017). This distorts information transmission to stakeholders, who want to know about an entity's influence on the ecological, social, or economic levels, which is also the goal of sustainability reporting.

A variety of standards guiding the responsible behavior of economic enterprises may also be noticed at the worldwide level, in addition to the above-mentioned principles released by the UN Global Compact. The International Standardization Organization 26000 is a classic example of such guidelines (ISO 26000).

The ISO 26000 guidance, which was issued in 2010, intends to strengthen reporting organizations' social responsibility, therefore supporting efforts for sustainable development via tangible measures at the economic, social, and environmental levels. Because the material in this handbook is presented as suggestions, there are no mechanisms to validate that the actions outlined in it have been implemented. ISO is a significant organization that develops international standards on a voluntary basis. The following factors contribute to the ISO 26000 guide's credibility and applicability (ISO, 2016): It is designed to be implemented in any cultural or organizational context, as well as in any region or country around the world; - It has a high degree of flexibility, allowing it to be tailored to the needs of organizations; It has been negotiated at an international level, taking into account the needs of stakeholders as well as the various human typologies, in order to reflect diversity; It is based on real-world experiences.

ISO 26000 is founded on a set of seven principles: transparency, ethical conduct, accountability, stakeholder interests, legal compliance, international standards compliance, and fundamental human rights compliance. These seven principles serve as the foundation for this framework, which governs socially responsible decision-making and establishes a link between firms that follow the same values on a global scale. This guidance also emphasizes that CSR actions are just one part of a larger process that changes over time.

In addition to the 7 principles mentioned above, there are also 7 basic aspects defined in this guide. These aspects are Corporate Governance, Human Rights, Work Practices, Environment, Fair Work Practices, Consumers and Involvement in Community Development. For each of these aspects, a number of issues addressed for each of them are found, as it follows: Principle 1 - Corporate governance (Decision-making process and its structure); Principle 2 - Human rights (1. Checking the past; 2. Risks relating to human rights; 3. Non-involvement in activities that do not respect human rights; 4. Resolution of complaints; 5. Discrimination and vulnerable groups; 6. Civil and political rights; 7. Social, cultural and economic rights; 8. Principles and rights of essence with regard to work); Principle 3 - Work practices (1. Labor force; 2. Working conditions and social protection; 3. Social dialogue; 4. Health and safety conditions at work; 5. The development of the human factor in the workplace); Principle 4 – Environment (1. Pollution prevention; 2. Sustainable use of resources; 3. Adaptation to climate change; 4. Protecting the environment, ensuring biodiversity and restoring destroyed habitats); Principle 5 - Fair work practices (1. Fight against corruption; 2. Responsible political involvement; 3. Competitiveness under the right conditions); Principle 6 – Consumer (1. Marketing campaigns with neutral and real information, legal contractual practices; 2. Protecting the health and safety of consumers 3. Rational consumption; 4. Consumer aid and complaints-solving system; 5. Protection of consumers personal data; 6. Access to essential services; 7 Education and awareness); Principle 7 - Involvement in community development (1. Social involvement; 2. Education and culture; 3. Workforce development; 4. Technological development; 5. Wealth and income creation 6. Health; 7. Investments of a social nature (ISO 26000, 2016).

The OECD Guidelines for Multinational entities is another guide that gives guidelines for entities that aim to be socially responsible. The adoption of this guidance is unusual in that it occurs at the level of a state's executive power, yet it is directed at private groups. Governments that embrace this guide's suggestions are urged to follow them to the letter in order to maximize the influence of economic entities on the phenomena of sustainable development.

The guide establishes voluntary principles and standards that address issues such as labor, human rights, the environment, information reporting, anti-corruption, consumer interest, technological progress, competitiveness, and the tax regime in order to achieve the goals of doing business responsibly.

In the case of reporting organizations, the OECD standards do not specify a report format, but they do provide some control procedures via which the extent to which the principles given out are followed precisely may be examined. As a result, "National Control Points" are developed, which stakeholders may use to judge if a company is acting responsibly in its business practices.

As previously stated, OECD recommendations are implemented at the government level, and are one of the few vehicles via which the public authority may implement specific policies affecting economic enterprises' social responsibility, for those firms that conduct business in OECD member nations. It is worth noting the important role that governments play in putting these recommendations into action, which should encourage multinational economic entities to engage in activities that have a positive impact on the economy, environment, or society while also minimizing the challenges they may face, by establishing a local framework for corporate social responsibility (OECD, 2008). It should be emphasized that the OECD's suggestions do not always have an impact at the level of the entities' reports, since they primarily affect local legislation on social responsibility. National Contact Points' reports to the OECD, on the other hand, may be taken into account.

In addition to the aspects listed above, conceptual frameworks are available to assist entities in determining how a report should be prepared in the context of sustainability reporting. The International Integrated Reporting Framework, issued by the IIRC in 2013, is the first conceptual framework examined (International Integrated Reporting Council).

This framework takes an integrated approach to financial and non-financial reporting by requiring economic entities to issue yearly reports that include both financial and non-financial information at the same time, known as integrated reports. Specifically, through Integrated Reporting, organizations demonstrated how they created long-term value and communicated information on governance, strategy, performance, and opportunities to stakeholders in the context of carrying out activities in an unstable environment, in order to show them how added value would be created in the short, medium, and long term (IIRC, 2013).

Capital, which symbolizes valuable assets that change as a result of actions or outcomes acquired by an economic body, is the basic notion of Integrated Reporting (IIRC, 2013). There are six different forms of capital:1. financial capital (own capital or funds raised through bond issuance); 2. working capital (equipment and public infrastructure); 3. intellectual capital (technologies, patents, research and development, procedures, protocols, and internal systems of an organization); 4. human capital (employee experience and skills); 5. the capital represented by the various stakeholders' links; 6. natural capital (water, minerals, land, and other natural resources).

Because of its versatility, Integrated Reporting is an easy-to-use reporting solution. As previously stated, capital is one of the primary components of Integrated Reporting, although it is not the sole reporting choice.

Reporting entities can tailor their capital model to their specific requirements, taking into consideration the proportional importance of each source of capital as well as the reality that they are sometimes not even held by the business. As a result, this conceptual framework for non-financial reporting is focused on principles rather than a rigid structure that businesses must follow. This principles-based approach strives to design adaptable rules that can be tailored for all economic entities on a case-by-case basis, in a framework where the conditions in which they carry out their operations vary greatly. The goal is to guarantee that information produced by economic entities is comparable and satisfies the information demands of stakeholders in this way (IIRC, 2013).

This reporting framework's primary receivers are private sector for-profit enterprises of all sizes, but it may also be successfully utilized in the public sector or by non-profit organizations with certain modifications. Considering the primary receivers of this standard, it is worth noting that the primary goal of an integrated report is to demonstrate to financial capital providers how an organization delivers value over a specific time period. However, any stakeholders that are interested in how the organization will produce value, such as employees, suppliers, local governments, national governments, or commercial partners, may use the information presented in such reports. In terms of

substance, an integrated report must include a statement from those responsible for corporate governance.

In the absence of this statement, the integrated report should emphasize the participation of individuals responsible for corporate governance in the report's creation and how the submission of the preceding statement referred to in future reports is internally planned. A number of requirements pertaining to the content of an integrated report can be found in addition to these principles.

An integrated report will be built on eight content aspects that must be handled in its creation, according to these standards. It's critical to remember that the content parts don't have to follow any particular sequence or structure, and they can be presented in any way that the reporting organization deems suitable, as long as the elements are linked as organically as possible. The following are the eight content aspects that must be covered in an integrated report: 1. Organizational presentation: a high-level summary of the company's internal and external environments; 2. Corporate governance: the manner in which corporate governance managers promote the generation of value in the short, medium, and long term through tangible measures; 3. The organization's business model; 4. Opportunities and dangers that may impact the organization's ability to create value; 5. Strategies and resource allocation; 6. Achieved performance; 7. External environment assessment: uncertainty or problems that the company may face in accomplishing strategic goals; 8. The presidency's foundation: how the organization determines what goes into an integrated report and what doesn't.

A second reporting framework for non-financial reporting is the Global Reporting Initiative (GRI). These standards are the most used internationally for sustainability reporting (GRI, 2018). Over 93% of the 250 largest companies produce sustainability reports (KPMG, 2017). Currently, the GRI database contains sustainability reports published by over 12,000 companies. It is worth mentioning that starting with 2021, no new sustainability reports will be uploaded in this database.

The Exxon Valdez oil ship was the main player in what many believe to be the worst environmental disaster in history which took place on March 24, 1989. More than 260,000 barrels of oil were released into the marine seas of the Alaska area as a result of the oil leak caused by the oil tanker's failure. This can be considered the beginning of contemporary sustainable reporting. Following this environmental disaster, the need for a coalition for responsible investing was brought to the public's attention, as was the necessity for firms to provide more detailed information about their environmental effect. Following the Alaskan oil disaster in 1989, the Coalition for Environmentally Responsible Economies (CERES) was formed. The CERES coalition offered 10 principles, dubbed the Valdez principles, that illustrated various notions of environmental protection as well as facts that needed to be made public in order to prevent a repeat of the tragedy. CERES developed the GRI (Global Reporting Initiative) standards in 1997, with the goal of establishing a uniform non-financial reporting framework that included all economic components, governance, and CSR criteria. In other words, an attempt was made to develop a conceptual framework for sustainability reporting (Gilbert, 2002, pp. 18-26). In addition to established reporting requirements, GRI intended to reach a consensus on the elements that should be included in a sustainability report, as well as how to evaluate these elements (CERES, 2002). Following that, in 2000, the GRI produced the so-called GRI Guidelines, which established the first conceptual framework for sustainable reporting. The Guidelines, which were first issued in 2000, were immediately embraced by big corporations, with one-third of all sustainability reports being written in conformity with them within a year (Kolk, 2004, p. 60). The Guidelines released in 2000 were updated in 2002 to better match the current market needs, following changes at the international level in the measures required to support efforts for sustainable development.

By emphasizing precise indications and definitions, the new Guidelines focused on verification and assurance. The GRI standards were amended again in 2006, and are now known as the GRI G3 Guidelines, which removed several indicators from the prior edition that were no longer considered useful for stakeholders. In 2013, a fresh version was completed to defend the G4 GRI Guidelines. The new amended guidelines include a number of additional measures, such as the publishing of material performance indicators in terms of business risks, as well as new governance and ethical indicators. The GRI Standards were published in 2016, and they are still in use today. By using the GRI Standards, a company may report to stakeholders on problems such as its environmental, social, and economic performance, or how it contributes to long-term sustainability. The following is a thorough examination of the GRI's development.

The Sustainability Accounting Standards Board is a third entity that aims to regulate non-financial/integrated reporting (SASB). SASB is a non-profit organization founded in 2011 with the mission of developing accounting standards for long-term sustainability. The increased demand for non-financial information by stakeholders prompted the establishment of this agency, and a single framework is needed to govern the reporting of this sort of data. The SASB's mission is to establish globally recognized standards for the form and content of non-financial/integrated reporting for all economic organizations, ensuring that the data revealed is relevant and comparable across industries. The SASB Standards, which were supposed to go into effect in October of 2018, were launched in London in 2018. The development of this standard was the culmination of more than seven years of study in which the best alternatives for evaluating and reporting important problems like as the environment, social participation, and corporate governance were explored (Environment, Social, Governance - ESG). This standard aimed to develop a clear and comprehensive reporting structure for non-financial data, akin to the IASB or FASB's financial reporting standards.

As previously stated, a number of rules have been established to control the disclosure of non-financial information for the purpose of reporting. GRI Standards and SASB Standards are two of the most essential of these types of standards. If SASB standards focus primarily on material/significant ESG components from an investor perspective, GRI standards shift the focus, with material/significant factors for all stakeholders at the center. As a result, it is possible to say that these two standards are complimentary to one another.

5. Conclusions

As can be seen from the above, as the socio-economic landscape has changed, so has the volume and variety of information produced by economic organizations. This is mostly due to a shift in the disclosure needs of interested parties who sought information on non-financial matters in addition to traditional financial data.

To fulfill these new criteria, a number of meetings including business leaders, investors, communication experts, and sustainability experts were held, with the goal of establishing the appropriate framework for economic entities to adapt to the new economic realities.

Numerous aids, such as the UNGC, ISO26000, and the OECD Guidelines, have emerged to govern socially responsible behavior. The GRI, SASB, and IIRC are three conceptual frameworks for non-financial reporting of economic organizations that might be referenced here.

CERES established the Global Reporting Initiative (GRI) in 1997 as a result of increased efforts for sustainable development, which increased the importance of non-financial information to stakeholders. The GRI aimed to create a unified non-financial reporting framework encompassing all existing economic aspects, governance, and CSR standards. In other words, an attempt was made to develop a conceptual framework for sustainability reporting. GRI, like conventional reporting standards, aims to establish an agreement on the problems that should be included in a sustainability report, as well as how to evaluate these features.

The International Integrated Reporting Committee (IIRC) was founded in 2011, and it brings together strategy, financial performance, governance, and the pillars of sustainability (social, environmental, and economic) to give stakeholders a complete picture of an entity's financial and non-financial performance

The International Integrated Reporting Council published the International Integrated Reporting Framework in 2013. (IIRC). This methodology takes an integrated approach to reporting economic entities by issuing yearly reports that include both financial and non-financial data. In particular, through integrated reporting, the organizations demonstrated how they created long-term value and communicated information on governance, strategy, performance, and opportunities to stakeholders in the context of operating in an unstable environment, in order to show them how added value would be created in the future.

The Sustainability Accounting Standards Board (SASB) brings together businesses and investors to discuss sustainability's financial implications. SASB Standards help companies all around the globe discover, manage, and present financially important sustainability information to investors. SASB Standards are industry-specific and are intended to help investors make informed decisions

while also being cost-effective for businesses. They are created through an evidence-based and market-driven approach.

Despite the fact that the three conceptual frameworks are all aimed at the same goal, namely the regulation of non-financial reporting, there are a few variances in their approaches to the problem. The GRI guidelines are designed to assist businesses and governments in communicating to stakeholders the most important concerns surrounding some crucial aspects of sustainability. The Integrated Reporting Framework tries to illustrate how economic organizations might use integrated reporting to provide financial or non-financial value in the short, medium, and long term. SASB seeks to assist investors all around the globe in identifying and evaluating crucial aspects connected to sustainability. Thus, GRI emphasizes a company's impact on the socio-economic environment in which it operates, the Integrated Reporting Framework aims to communicate information in a structured manner based on adherence to certain principles, and SASB emphasizes the socio-economic environment's impact on an economic entity's financial performance.

The assessments for SASB and GRI can go much deeper. There are two significant discrepancies between the two standards. The first, as previously said, concerns the primary beneficiaries of the reports prepared. In the case of GRI, all types of stakeholders are considered beneficiaries. They are concerned in all of the social impacts of an organization's work, with materiality defined in this context as the influence that an economic entity has on society. In the case of SASB, the primary audience is represented by investors, with materiality defined in terms of an ESG issue's financial importance.

The second feature that distinguishes the two standards is their goal. As a result, they might be seen as complimentary to one another, as they were established to address different concerns. The GRI looks at society as a whole, finding issues that aren't currently financially substantial or important but might become so in the future. This occurs as a result of the stakeholders' activities, i.e., the decisions they make, such as the purchase of a product, the decision to work for a specific organization, and so on. These stakeholder actions have the potential to transform a non-material problem into a material concern for an investment.

6. References

- Ashforth, B., & Gibbs, B., 1990. The double-edge of organizational legitimation. *Or- ganization Science*, 1, 177–194.
- CERES, 2002. 2001 Annual report: Life in the edge environment. Boston, MA: Coalition for Environmentally Responsible Economies.
- Cormier, D., & Magnan, M., 2003. Environmental reporting management: A continental European perspective. *Journal of Accounting and Public Policy*, 22 (1), 43–62.
- de Villiers, C. J., & van Staden, C. J., 2011. Where firms choose to disclose voluntary environmental information. *Journal of Accounting and Public Policy*, 30 (6), 504–525.
- Fogel, K., El-Khatib, R., Feng, N. C., & Torres-Spelliscy, C., 2015. Compliance costs and disclosure requirement mandate: Some evidence. Research in Accounting Regulation, 27 (1), 83–87
- Gilbert, S., 2002. The transparency evolution. The Environmental Forum, 18–26
- GRI, 2018b. Consolidated Set of GRI Sustainability Reporting Standards 2018, Amsterdam.
- International Integrated Reporting Council (IIRC) (2013). Consultation Draft of the International Framework.
- ISO, 2016. ISO 26000 Basic training material. ISO 26000 Post Publication Organisation (PPO).
- Juholin, E. (2004). For business or for the good of all? A Finnish approach to corporate social responsibility. Corporate Governance, Vol. 4 No. 3, pp. 20-32
- KPMG, 2017. Survey of Corporate Responsibility Reporting 2017.
- Kolk A, 2004. A Decade of Sustainability Reporting: Developments and Significance. *International Journal for Environmental and Sustainable Development* Vol. 3, No. 1, 51-64
- Mironiuc M., 2009. Analiza financiara versus analiza extra-financiara in masurarea performantelor intreprinderii durabile [Financial analysis versus extra-financial analysis in measuring the performance of the sustainable enterprise], Supplement of Theoretical and applied economics Revue, Bucharest, 151-158
- Rupley, K., Brown, D., & Marshall, R. S., 2012. Governance, media and the quality of environmental disclosure. *Journal of Accounting and Public Policy*, 31 (6), 610–640.

- OECD, 2008. OECD Guidelines for Multinational Enterprises
- OECD, 2014. *The Evolution of Corporate Reporting for Integrated Performance*. Background paper for the 30th Round Table on Sustainable Development.
- Orlitzky, M., Schmidt, F. L., & Rynes, S. L., 2003. Corporate social and financial performance: A meta-analysis. *Organization Studies*, 24 (3), 403–441.
- UN Global Compact, 2018b. The Communication on Progress in brief
- Wang H., Tong L., Takeuchi R. and George G., 2016. Corporate Social Responsibility: An overview and new research directions. *Academy of Management Journal* 2016, Vol.59, No. 2, pp. 534-544.

The Evolution of Corporate Social Responsibility and the Impact on the Organizations

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Abstract

With the increase of the interest of the interested parties for the non-financial performance of an economic entity, at the level of the practices of the economic entities it could be noticed the appearance of concrete actions to support their involvement in increasing social welfare and environmental protection. In this paper, the evolution of corporate social responsibility policies was reviewed. The methodology used aims at analyzing the historical evolution of CSR practices, by highlighting their impact on the activity carried out by organizations. Following the analysis, there were highlighted the aspects that had a major impact on the evolution of CSR, the way in which it impacted the economic activity and the temporal delimitation of the stages that influenced the appearance, evolution and existence of CSR.

Key words: Corporate social Responsibility, Global Reporting Initiative, Nonfinancial reporting **J.E.L. classification:** M41

1. Introduction

Because of the ramifications it has on the operations carried out, Corporate Social Responsibility (CSR) is a topic of interest at the level of economic organizations. Since the period of the Roman Empire, early forms of socially responsible conduct have been discovered. The laws of the Roman legal system governed socially responsible behavior, which was manifested in the construction of poor people's residences, asylums, hospitals and orphanages. Regulations aimed at the socially responsible behavior of economic entities can be found in the laws existing in the English legal system from the fall of the Roman Empire in the fifth century to somewhere in the XVII century. These regulations had ramifications at the academic level, in municipalities and in a variety of religious organisations. Furthermore, there has been an extension of regions that control socially responsible behavior as a result of the British Crown's aggressive colonization activities in the XVI-XVII centuries, which saw economic organizations as a way of social growth. As a result, the English Empire expanded dramatically in the sixteenth and seventeenth centuries, imposing its laws, particularly those governing social responsibility of economic enterprises, on the new colonies.

In the XVIII and XIX centuries it can be highlighted the existence of a theological approach which paved the way for social reforms which addressed a variety of social challenges such as poverty, ignorance and children's labor (Carroll, 2008, p.27). By the end of the XIX century, the attention had shifted to the working class and the formation of relief programs to help the poor (Harrison, 1966, p. 362). This program have taken on a new perspective since the late XIX century and the beginning of the XX century, with the goal of protecting and retaining employees, as well as a paternalistic approach aimed at improving the workforce's quality of life. It is possible to highlight an increase in the social involvement of organizations that were engaged in various actions of this nature, such as making donations for the construction of asylums, schools, or other elements of social interest, as well as taking actions to improve the quality of life of employees.

During this time, there is also a rapid increase in urbanization and of the industrialization. Various aspects of the labor market can be highlighted in this context, such as the new challenges faced by the small businesses to keep up with a fast-growing economy, the formation of trade unions aimed at improving employee quality of life, and social concerns about the blurring of religious and family values in the context of that period's accelerated industrialization. Organizations were formed to adapt to the new problems posed by increased industrialization by promoting traditional values and improving people's working circumstances.

Economic organizations have had the task of optimizing outcomes in a way that takes into consideration customer demands, employee working conditions, and the influence they have on the community since the 1920s. As a result, the organisations took on economic and social duties at the community level, where they carried out their activities (Carroll, 2008, p.35). Following WWII, corporations' social responsibility was seen as a natural part of doing business. At this time, the question was raised as to what precisely an organization's social duties were.

2. Research methodology

The subject of CSR is intensely debated at the academic level as papers on this subject can be noted since the 1930s. In this context, the research methodology consisted in the analysis of the most important scientific papers on the emergence and evolution of CSR, thus highlighting historical landmarks in the appearance and development of the subject, as well as the delimitation of certain stages that have finalized the concept of CSR as it is known today.

3. Literature review

The foundations of corporate social responsibility (CSR) are not new, however the notion gained traction in the first decades of the twentieth century. Responsible behavior emerged about the time that individuals began to form business ties, but it has only recently been acknowledged as vital and consistent with the company's purpose of profit and social welfare. (Mironiuc, 2008, p.3).

The contemporary notion of Corporate Social Responsibility (CSR) may be traced back to the 1950s, when it was established precisely what duties should be accepted by businesses. The notion of CSR has undergone continual evolution following WWII, as well as in the 1950s, defined by adjustments and alterations dictated by the changing social situation. Moreover, it should be highlighted that CSR-type operations were almost solely restricted to charity initiatives throughout this time period, with only a few exceptions (Carroll, 2008, p.22).

The emphasis on an organization's influence at the societal level has been a major development in this time on CSR. Large economic entities have a considerable social effect as a result of their activities, necessitating a shift in the decision-making process to account for the influence on society. Decisions made by decision-makers in a business have a direct influence on stakeholders, consumers, and workers, altering society's overall quality of life. As a result, a basic contemporary definition of social responsibility is "the obligation of organizational decision-makers to adopt policies, take acts, and make choices commensurate with the values, beliefs, and purposes of the community in which they operate" (Bowen, 1953, p.147). This is the earliest contemporary definition of CSR, and it distinguishes itself by emphasizing the importance of an organization's management strategy in enhancing its social effect.

Bowen's formulation is called the "Father of Corporate Social Responsibility" since it was the first academic publication to focus on the notion of corporate social responsibility (Carroll, 1999, p. 277). Other viewpoints on CSR may be seen in the 1950s and 1960s, depending on the societal setting of the time. One viewpoint is that, during a period when inflation was skyrocketing, powerful economic organizations were not as worried about social responsibility as they should have been (Eells, 1956, p. 203).

The rapid rise of the population, pollution, and resource depletion characterized the major social issues of the 1960s (Du Pisani, 2006, p.90). To address all of these issues, social movements focused at environmental conservation and worker rights were formed (Carroll, 1999, p.93).

The social setting of the 1960s was marked by a rise in protests led by various activists, as well as ordinary people, with the primary goal of respecting people's civil rights or avoiding new wars. These demonstrations put pressure on economic entities (banks, financial bodies, and huge firms) that the protesters believed were destructive to society and the environment, causing them to take action to alter their conduct (Waterhouse, 2017, p.15).

During this time, there were also some critical viewpoints on what corporate social responsibility entails, with some writers believing that in a capitalist system, an economic entity's sole goal should be to make a profit. Furthermore, CSR policies were seen as an inefficient use of a company's resources, resulting in unjustifiable expenditures in order to assure a social contribution.

CSR was viewed as a reaction to the challenges, demands, and expectations of the emerging modern society at the academic level. Economic, social, and political developments have put ongoing pressure on businesses to define their position in society and, as a result, their social responsibility (Davis, 1960, p.70). Given that social responsibility is to some extent connected with the level of an economic entity's revenues, corporations have duties to society in terms of respect for economic, cultural, human, or social values (Davis, 1960, p.70).

As can be seen, there were several approaches to CSR at the social and academic levels during the 1950s and 1960s, however these activities remained charitable in nature (Carroll, 2008, p.19). During this time, however, the pressure exerted on businesses through various protest actions might be highlighted in order to alter their conduct in accordance with specific societal norms.

In the early 1970s, the US economy had a severe downturn, which accelerated the inflationary process, culminating in a major energy crisis (Waterhouse, 2017, p.16). The US federal government has prioritized the elaboration of regulations that would influence the behavior of organizations in terms of social and environmental impact as a result of these problems, as well as the protests in the streets. All of these rules were designed to hold organizations accountable for particular societal issues that existed at the time (Carroll, 2015, p.87).

CSR is very popularized in the 1970s, gaining traction and being used by a large number of businesses throughout the world. However, one issue that has arisen as a result of the popularization of CSR is that it has been implemented by enterprises from all areas of activity, each in their own way, resulting in a loss of understanding of what CSR means, with each organization having its own interpretation of the same idea (Sethi, 1975, p.60). There were differing viewpoints in academic field. According to certain authors, companies had a social obligation that was clearly defined by specific bounds, and anything that went beyond those limits was not deemed required. Exceeding such restrictions had no bearing on what it meant to fulfill an organization's fundamental goals; rather, those extra activities may be considered wasteful use of resources. Also, according to the same source, an organization is only accountable for the issues that occur as a consequence of the direct activities in which it is engaged, and not for the problems that arise at the level of society.

Other scholars argue that an organization's social responsibility should be linked to societal standards, human values, and social expectations, and that it should be mandated (Sethi, 1975, p.60). This ambiguity concerning the concept of CSR persisted until the end of the 1970s, more precisely until 1979, when CSR was defined as follows: "Corporate social responsibility covers the economic, legal, ethical, and discretionary demands of society on a corporation throughout time" (Carroll, 1979, p.507). One of the most essential aspects of this concept is that social and economic goals are not placed in opposition to one another, but rather as an inherent component of the corporate strategy for social responsibility.

The most straightforward method to comprehend how CSR was operationalized in the 1980s is to explore the challenges that were regarded significant at the time. The international concern for sustainable development is worth highlighting in this respect. A number of significant factors from the time period might be recognized in order to help efforts for sustainable development. The Directorate of the European Commission for Environmental Issues was founded in 1981, the World Commission for Environment and Development (WCED) was established in 1983 by Norway's Prime Minister, Gro Harlem Brundtland, and the Chernobyl nuclear tragedy occurred in 1986, In 1987, the Brundtland Commission released the report Our Common Future, in which the idea of sustainable development was established for the first time.

These events have raised international awareness of the need to protect the environment and support initiatives for sustainable development, thereby influencing the conduct of businesses to meet these new criteria. The key societal challenges that needed firms to model their behavior in the 1980s were pollution, degradation of urban living quality, abusive activities by multinational corporations, and employee well-being and safety (Carroll, 2008, p.19). Corporate ethics and stakeholder management have been popular topics in business operations throughout this time.

A slew of worldwide events can be traced back to the 1990s, the majority of which focused on social responsibility and sustainable development. The European Environment Agency is established in 1990, and the United Nations Summit on Development and the Environment in Rio de Janeiro is held in 1992, with the Rio Declaration for Environment and Development and the introduction of Agenda 21 for Sustainable Development. The UN Framework Convention on Climate Change (UNFCCC) was established in 1992, and the Kyoto Protocol was enacted in 1997. All of the international regulatory bodies that were established, as well as the rules that were enacted, had the goal of emphasizing the importance of climate issues and the responsibility of organizations in resolving these concerns.

In 1991, the so-called "Pyramid of Corporate Social Responsibility" was also unveiled (Carroll, 1991, p.40). The fundamental goal of this pyramid was to offer policymakers with a method that satisfies both the needs of shareholders and those of other stakeholders. Companies have four primary obligations with this tool: 1. Economic responsibilities, which form the foundation for the pyramid's other elements; 2. Legal responsibilities; 3. Ethical responsibilities, which shape an organization's behavior beyond regulation; and 4. Philanthropic responsibilities, which refer to concrete actions taken to improve the social quality of life. In addition to these obligations, an economic entity is required to be a good corporate citizen in society.

The 2000s were a time when the continual evolution of CSR was highlighted, and features such as organizational recognition, extension, and execution of CSR policies, as well as a strategic approach to CSR, were highlighted in papers published during the time period under consideration. The establishment of the United Nations Global Compact (UNGC) in July 2000 is one event that might be considered to have had a significant influence on CSR. The UNGC's goal was to build a tool that would guarantee that governance flaws in terms of human rights, social issues, and environmental issues were addressed while also introducing universal social principles.

The United Nations enacted the Millennium Declaration in the early 2000s, which featured eight Millennium Development Goals (MDGs), setting the worldwide agenda for the following 15 years. Despite the fact that the MDGs did not specifically target CSR policies, the United Nations Development Programme (UNDP) pointed out that they might be utilized as a working framework for the private sector to accomplish their suggested goals, with worldwide acceptance of the notion of CSR growing.

Regarding the literature on CSR that existed throughout the 2000s, a number of studies may be mentioned that have made major contributions to the concept's evolution. As a result of the implicit social compact created between organizations and society, CSR requires enterprises to consider long-term goals and requirements articulated at the societal level, maximizing positive impacts and minimizing negative effects of their activities at the company level. CSR may be addressed as a strategic element when it is an inherent component of the management strategies of profit-oriented enterprises, according to the same author. CSR is given a strategic component in the literature of the 2000s, with a variety of traits peculiar to the social setting of the period. Some authors, on the other hand, did not believe that CSR activities should be limited to those that bring economic advantages. There were works that stated that organizations should be operated in a way that considers the requirements of a broader variety of stakeholders (Friedman, 2002, p.16), and others that stated that economic entities had duties to suppliers, consumers, employees, or the local community (Freeman, 2001, p.144).

It is also emphasized that organizations can gain competitive advantages through their strategic approach to CSR, explaining that they can address the competitive context in which they find themselves through a strategic approach that creates value for society as a whole while increasing the organization's competitiveness. According to the same authors, a business should first assess the social impact of its operations across the logistical chain, highlighting both good and negative consequences, before focusing on those activities that have strategic value. The influence of the

external environment on productivity and company strategy must then be assessed (Porter et. al, 2006, p.7)

From the standpoint of an economic organization, the strategic approach to CSR offers two significant advantages (Husted, 2007, p.594). The first is that a strategic approach to CSR offers new opportunities by focusing on value creation all of the time, which eventually leads to innovation. The second benefit is that it is linked to the fulfillment of an organization's social duties when CSR is used strategically in order to produce value.

Other perspectives in the literature on competitive advantages and value creation through a strategic approach to CSR said that no matter how customized various CSR activities may be, they are all founded on a set of general principles (Heslin et al, 2008, p.125). According to them, a company's CSR efforts are guided by seven principles: increasing labor skills, finding new markets, safeguarding worker well-being, decreasing negative environmental consequences, profiting from by-products, involving consumers, and an ecological logistics chain.

After 2010, the notion of shared value creation underwent significant changes. This was regarded as a significant step forward in the evolution of organizations in light of the new social context, and was defined as "a set of operational policies and practices that improve an organization's competitiveness while adhering to certain economic or social requirements established at the community level where they operate. The identification and expansion of the relationships between social and economic advancement is at the heart of the value generated collectively". (Porter et. al, 2011, p.12).

The requirement for collaborative value creation, according to the same authors, stems from business plans with a restricted scope, which fail to account for the full variety of elements that influence an economic entity's long-term performance. They place CSR policies in this category, deeming it an out-of-date notion whose significance was determined by the possibilities of boosting a company's reputation. As a result, it is proposed that corporate social responsibility be replaced with the notion of shared value creation (Porter et. al, 2011, p.13). The authors go on to say that "the aim of an organization must be redefined as the production of shared value," and that "the first step in this respect is to identify diverse demands at the societal level, as well as the benefits and drawbacks that an organization has through its products."

The literature emphasizes the notion of CSR's continual evolution and adoption as a major element in an organization's strategic decision-making process, as well as in the performance of operational operations. The essential goal of CSR strategic strategy is to produce value in a sustainable manner. In this way, a new dimension of CSR strategic approach, namely the optimization of the value generated, is added. This element implies that organizations should not aim to maximize profits as their primary goal, but rather to maximize the value created over time by focusing on the activities in which they are most skilled, resulting in a reorientation of efforts toward the joint creation of value rather than profit maximization. Other scholars believe that the concepts of stakeholder involvement, stakeholder management, business ethics, corporate citizen, corporate sustainability, and the creation of shared value are intertwined and should be incorporated into the concept of CSR, which is defined as the central reference element for social responsibility (Carroll, 2015, p.87).

4. Findings

The evolution of CSR has known a continuous evolution throughout history, adapting to the changes in the socio-economic environment. Incipient forms of CSR can be located since the time of the Roman Empire, when economic entities were required by law to take certain actions aimed at increasing social welfare. After the fall of the Roman Empire, the main historical source regarding the responsible social behavior of economic entities is the English legal system. Until the seventeenth century, in the English legal system can be found the most important regulations regarding the responsible social behavior of economic entities. Moreover, as a result of the expansionist activity of the British Empire, one can notice the territorial extension of the regulations on responsible social behavior, as a result of the intense colonization carried out.

In the XVIII-XIX centuries, the socially responsible behavior has a philanthropic character, aiming mainly at programs meant to help the needy and later, the workers. After the 1920s, one can notice the accelerated growth of industrialization and urbanization, which led to new challenges in terms of the socially responsible behavior of economic entities, which had to assume certain obligations that had a strong social character.

After the WWII, in the context of huge firms' rapid expansion, it was thought that an organization's duty went beyond its legal and economic requirements, with organizations being required to be actively involved in politics, social welfare, and employee education and quality of life The ideological shifts of the 1950s and 1960s resulted in legislative changes, some of which concerned the impact that a particular organization must have on improving the economic or social conditions of a given period, with social responsibility as an element that highlighted the relationship between society and business.

After the Second World War, socially responsible behavior is an increasingly important element in the activity of an economic entity, in 1953 appeared the first concrete definition of CSR, namely "the obligation of organizational decision-makers to adopt policies, take acts, and make choices commensurate with the values, beliefs, and purposes of the community in which they operate". In the 60's we can mention the intensification of protest activities aimed at improving working conditions and reducing pollution, which led to various legislative changes, but also to changes in the way activities are carried out by companies. Thus, the protest activities aimed to put pressure on entities to correct their behavior in accordance with the social norms in force.

In the 1970s, there was a lack of faith in organizations to meet the many requirements and expectations that society had of them (Waterhouse, 2017, p.17). The oil spill in Santa Barbara, California in 1969, which prompted several demonstrations from civil society, heightened this sense of distrust in institutions. Earth Day was born as a result of these demonstrations. It was originally conducted in 1970, and was accompanied by several protest actions advocating for a clean and sustainable environment, as well as the battle against pollution, which was mostly caused by companies, as a result of oil spills, garbage dumping, or polluting factories. As a result of the increase of protests and the new rules enacted in the 1970s, CSR policies had a significant impact on a variety of factors. The notion of CSR has been hotly contested at the academic level, with a variety of perspectives on its practical implications. Companies faced a significant challenge in terms of CSR since they were required to comply with new regulations that required them to fulfill specific environmental, product safety, and working conditions criteria All of these factors contributed to the need to figure out how to put CSR policies into practice, a topic that was highlighted in the 1980s.

The 1970s saw the creation of various rules that addressed the social issues of the period and assigned more responsibility to businesses in order to address these issues. In the 1980s, there was a shift in strategy, with the government lessening the pressure on businesses in order to lower inflation. The new strategy entailed attaining economic growth as naturally as possible with as little government involvement as feasible. In order to do this, the US has seen a dramatic drop in regulations aimed at the private sector, as well as tax breaks for businesses.

With the reduction of governments' involvement in regulating private sector activity, economic organizations faced the challenge of satisfying the expectations of numerous interest groups, who, while social responsibility was no longer strictly controlled, nonetheless expected firms to behave responsibly.

The 1990s were marked by the ongoing progression of the globalization phenomenon, which resulted in the worldwide expansion of huge businesses. Large corporations' expansion has created worries about their competitiveness, reputation, market visibility, and stakeholder relationships (Carroll, 2015, p.87).

The expansion of roles and duties in each social sector has resulted in a new approach to CSR as a strategic response to the current issues facing organizations. Firms are addressing the difficulties they confront by incorporating CSR into the structure and policies of their organizations at various levels (Marrewijk, 2003, p. 126).

After 2000, the importance of social responsibility has grown, with CSR progressing from a voluntary commitment to a strategic imperative. In order to provide organizations a durable competitive edge, successful strategic integration of CSR must be done by making a solid commitment to change and self-analysis at all hierarchical levels, including the operational element.

The essential point to remember is that CSR has evolved into a strategic imperative for an organization's survival in the market. CSR policies intensified their evolution in the 2000s, both on an international and European level, underscoring the role they may play in producing value for businesses while also providing value for diverse stakeholders or society as a whole. Companies should use these policies in this framework to create value together and meet social duties.

After 2010, CSR is defined as the point at which economic organizations assess the impact of social and global issues on their operations, even if some of those issues are not immediately related to the core activities (Trapp, 2012, p.468). This generation has arisen as a consequence of changes in the duties and responsibilities of each sector of society, with the private, public, and social sectors becoming increasingly interdependent. As a result, this version of CSR may be regarded as a result of firms' understanding of their new position in society and the actions that these new responsibilities involve. The strategic approach to CSR may be considered as a major factor in strategic decisions, as well as operational activity decisions, dictating that firms can produce goods and offer services in a socially responsible manner in this way

5. Conclusions

The contemporary notion of CSR has evolved through time, and incipient elements of CSR have been detectable since the 1930s, when the social responsibility of commercial enterprises was first called into question. However, the initial definition of CSR did not occur until the 1950s, when economic social responsibility was defined as decision-making in accordance with existing societal norms. The term "corporate social responsibility" (CSR) was given a new meaning in the 1960s, emphasizing the interaction between an economic organization and society, focusing on topics such as maintaining employee well-being or taking activities to improve societal welfare. During that period, CSR was primarily intended to provide financial advantages at the organizational level. The 1970s saw a rise in public awareness of concerns such as the environment, human rights, and working conditions, leading to a rise in society's expectations of economic organizations in terms of their social influence. In this context, it was assumed that economic organizations are required to accept far greater social duties than they did previously, based on the growth of the social compact between society and organizations. As a result, CSR became popular in the 1970s, but on a limited scale and with a restricted range of concerns addressed, including as waste disposal, pollution, human rights, and working conditions. The notion of CSR had been assigned multiple uses and definitions by the end of the 1970s, resulting in a blurring of the term's meaning. This ambiguity concerning the meaning of CSR persisted until the end of the 1970s, namely until 1979, when CSR came to be connected with economic, legal, ethical, or discretionary duties and expectations from organizations. At the same time, it was stressed that an organization's social and economic goals are complementary, not contradictory, components of its business plan.

This new approach served as the foundation for the operationalization of CSR in the 1980s and early 1990s, when it was characterized as a decision-making process and numerous models and frameworks were established to aid its implementation. In 1991, the so-called "Pyramid of Corporate Social Responsibility" was introduced, which emphasized an organization's four most significant obligations and thoroughly defined what they include. During this time, there was an increase in international interest in sustainable development, which led to the conclusion of certain international agreements that indirectly aimed at the social behavior of organizations (the World Commission for Environment and Development (WCED) was established in 1983, the report Our Common Future was published in 1987, the Montreal Protocol was adopted in 1987, and the Intergovernmental Panel of Experts on Climate Change was established in 1988). All of these factors have resulted in a shift in the meaning of CSR, which is now considered as a factor in assisting firms in seizing opportunities and overcoming obstacles. The institutionalization of CSR begins in these conditions.

In 1996, it was questioned whether the strategic application of CSR may lead to the development of measurable and traceable value in the form of economic advantages acquired by an organization, and a novel approach to the notion of CSR was proposed, sparking discussions about its operationalization. It was recognized in the late 1990s that there was no universally acknowledged definition of CSR at the worldwide level.

With the adoption of the MDGs and the establishment of the UNGC in 2000, the concept of social responsibility was given a new dimension, with additional duties for firms being allocated. These additional responsibilities included environmental protection, human rights and working conditions, anti-corruption efforts, and long-term growth. International authorities, such as the European Commission, have regarded CSR as a means of addressing new difficulties at the business level, resulting in a stronger appreciation of CSR in the first decade of the 2000s.

The definitions given to CSR in the 2000s reflect the new role allocated to organizations in society, which must be much more active in what societal expectations entail and be driven by attaining sustainability, which necessitates specific strategic decisions.

The advantages of the CSR strategic approach are now being debated, with the conclusion being reached in the early 2010s that a firm may develop value collaboratively while enhancing competitiveness by implementing the CSR strategic approach holistically.

6. References

- Bowen, H. R., 1953. Social responsibilities of the businessman. University of Iowa Press, 138-150.
- Carroll, A. B., 1999. Corporate social responsibility. Business & Society, 38(3), 268–295.
- Carroll, A. B., 1979. A three-dimensional conceptual model of corporate performance. Academy of management review, 4(4), 497–505.
- Carroll, A. B., 1991. The pyramid of corporate social responsibility: Toward the moral management of organizational stakeholders. *Business Horizons*, 34(4), 39–48.
- Carroll, A. B., 1999. Corporate social responsibility. *Business & Society, 38*(3), 268–295.
- Carroll, A. B., 2008. A history of corporate social responsibility: concepts and practices. In A. M. Andrew Crane, D. Matten, J. Moon, & D. Siegel (Eds.), *The Oxford handbook of corporate social responsibility* (pp. 19–46). New York: Oxford University Press
- Carroll, A. B., 2015. Corporate social responsibility: The centerpiece of competing and complementary frameworks. *Organizational Dynamics*, 44(2), 87–96.
- Davis, K., 1960. Can business afford to ignore social responsibilities? *California Management Review*, 2(3), 70–76.
- Du Pisani, J. A., 2006. Sustainable development historical roots of the concept. Environmental Sciences, 3(2), 83–96.
- Eells, R. S. F., 1956. Corporation giving in a free society. New York: Harper.
- Freeman, R. E., 2001. A stakeholder theory of the modern corporation. *Perspectives in Business Ethics Sie, 3*, 144.
- Friedman, A. L., & Miles, S., 2002. Developing stakeholder theory. *Journal of management studies*, 39(1), 1–21.
- Harrison, B., 1966. Philanthropy and the Victorians. Victorian Studies, 9(4), 353–374.
- Heald, M., 1970. *The social responsibilities of business: company and community 1900–1960*. United States of America: Pr. of Case Western Reserve Univ.
- Heslin, P. A., & Ochoa, J. D., 2008. Understanding and developing strategic corporate social responsibility. Organizational Dynamics, 37(2), 125–144.
- Husted, B. W., & Allen, D. B., 2007. Strategic corporate social responsibility and value creation among large firms: Lessons from the Spanish experience. *Long Range Planning*, 40(6), 594–610.
- Pillay, R., 2015. The changing nature of corporate social responsibility: CSR and development the case of Mauritius. New York: Taylor & Francis.
- Marrewijk, M., 2003. Concepts and Definitions of CSR and Corporate Sustainability: Between Agency and Communion (Vol. 44).
- Mironiuc, M, 2008. La Responsabilité Sociale et L'éthique Environnementale Éléments de la Culture Écologique dans les Entreprises du XXIe Siècle: L'etude sur les entreprises roumaines [Social Responsibility and En," MPRA Paper 9423, University Library of Munich, Germany.
- Porter, M. E., & Kramer, M. R., 2006. Strategy & Society. Harvard Business Review, December, 1–16.
- Porter, M. E., & Kramer, M. R., 2011. Creating shared value. Harvard Business Review (January-February), 4-17
- Sethi, S. P., 1975. Dimensions of corporate social performance: An analytical framework. *California Management Review*, 17(3), 58–64.
- Schaltegger S and Sturm A., 1990. Ökologische Rationalität. Die Unternehmung Vol. 44, No. 4, 273-290

- Trapp, N. L., 2012. Corporation as climate ambassador: Transcending business sector boundaries in a Swedish CSR campaign. *Public Relations Review*, *38*(3), 458–465.
- Waterhouse, B. C., 2017. The personal, the political and the profitable: Business and protest culture, 1960s-1980s. *Financial History, Spring, 2017*, 14–17.

The Importance of Implementing Quality Systems in the Economic Development of the Constanta Metropolitan Area

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Abstract

In the context of global economic development, the issue of convergence of actions at local communities, regional structures and national entities, targeting a sustainable development, is becoming crucial. This article highlights the contribution of citizens and local authorities to finding new and creative ways to cope with the pressures they face, given the climate of crisis in recent years. The paper also highlights the importance of implementing quality management systems in the activity of central and local public administration. Local communities need to identify new tools and strategies like quality management ones in order to determine collaboration between citizens, institutions and representatives of different sectors of activity, in order to plan the future of the community. All these elements change both the nature of the problems at the local level and the way in which they are fixed.

Key words: metropolitan area, sustainable development, local community, economic development strategies

J.E.L. classification: H11, M14, M20, M38, O11, O20.

1. Introduction

However, there are factors that limit the possibilities for economic growth, one of the most important being the degradation of the environment, having as a direct effect the decrease of natural resources and, implicitly, of the quality of life. Common successfully measures like gross domestic product or the consumer price index, encourage consumption or waste of resources to create new jobs. Producers and traders make the profit based on the prices, the profit thus resulting not reflecting the social, environmental or health costs that society has to bear.(Colas,2004)

The introduction of quality assurance in the public administration sector implies a greater degree of difficulty. First of all, in the private enterprise, the estimation of the yield is materialized according to the economic benefit obtained and the number of customers. However, this perspective is not valid in public institutions, which do not pursue economic benefit, but the satisfaction of citizens, the community or certain consumers of social services or public interest. Secondly, the concept of customer, as it is understood in the private domain, does not have the same

2. Theoretical background

2.1. Sustainable economic development and community

Sustainable development is one of the most widely used concepts in recent years. The phrase is used worldwide by politicians, scientists, business leaders, or nonprofits. However, the full significance of the concept escapes many of those who should contribute to its implementation.

Growth is the principle on which the states of the world have largely based their organization over the last hundred years. Human activity has expanded continuously, economic growth has become the goal of every society, be it rich or poor. People are struggling to raise their living standards, politicians promise faster growth, business performance is appreciated by their growth rate. However, there are factors that limit the possibilities for economic growth, one of the most important being the degradation of the environment, having as a direct effect the decrease of natural resources and, implicitly, of the quality of life.

Recognizing the existence of the limits of growth requires reorienting the manner of action, for all kind of activity, from a quantitative point of view to a qualitative one, described by sustainable development. In a sustainable society, development is based on human-induced qualitative improvement and the rational use of resources to the detriment of a quantitative increase in resource-intensive and energy-intensive activities.(Hossu et all,2004)

The concept of sustainable development is inextricably linked to that of life and includes the achievement of three goals: economic well-being, social stability and environmental protection. In this regard:

- economic well-being aims at generating a maximum income stream by maintaining over time the capital that produced these benefits;
- the stability of social and cultural systems ensures the condition of human capital necessary for any type of development, including by reducing destructive conflicts;
- from the point of view of environmental protection, sustainable development aims to preserve the biological and physical stability of natural systems.

For most community leaders, the idea of sustainable development is still a novelty, and many who have heard of the concept consider it abstract and theoretical, with no practical value. For sustainable development to achieve its goal, the concept will need to be integrated into community performance planning and measurement systems. Most of the time, when we refer to the term community, we think of spatial delimitations such as village - town or neighborhood or neighborhood. The community can be defined according to other criteria, other than the geographical-spatial ones. We can define communities based on linguistic, religious, or cultural distinctions. Each of us can be part of several communities at the same time. Also, we need to keep in mind that not everyone who populates a particular area automatically belongs to a community. The type of relationships that an individual has with others (emotional ties to places) define for each individual his or her membership or non-belonging to a community.

The community can be defined, more simply, as a group whose members have certain ties that associate or bring them together in a permanent way. (Colas, 2004)

Community development must be transformed into a process in which a community can become more responsible, while being able to better organize and plan its resources. Community development is the process by which one tries to change the conditions and factors that act at the community level so that, as a result of these changes, the community registers high standards of living. (Hossu et all,2004)

By community development we will understand the planned evolution of all important aspects at the level of a community (economic, social, environmental and cultural), evolution in which collective actions can be recorded, situations in which members of a community act together to solve common problems. Local development initiatives may differ in scope, depending on the size of the initiative group or the objectives it proposes. (Hossu et all,2004)

Community development can be defined as the conscious process of social interaction and that technique specific to social assistance which have at least one of the following objectives:

- addressing basic needs and maintaining a balance between the needs and resources of a community;
- helping people to deal more effectively with their problems and goals, by supporting them
 to develop, strengthen and maintain their qualities of participation, self-control and
 cooperation;
- obtaining changes in community and group relations as well as at the level of community decision-making centers. (Alexiu et all, 2001)

Community development is done by people. Community development practitioners are involved in organizing meetings and conducting community-level research to identify problems, identify urban endowments, locate resources, analyze local power structures, assess population needs, and investigate other issues. Community development must take place in practice as a cyclical iterative process that includes research, reflection and action.

Given the above, we can say that the practice of community development can be described as a process of solving problems with clear steps and necessary to achieve a desired goal in preventing or ameliorating community problems.

2.2. The need for quality management systems

The role and main importance of quality and quality management for public administration stems from the link between these concepts and the satisfaction of citizens or consumers of public services. If in the past the purpose of public administration was to provide a number of services of public interest to citizens, being considered the main provider of services of public interest, now the purpose of public institutions is to provide quality public services, services that through the high level of quality lead to a high degree of satisfaction of the needs of citizens or consumers of public services.

Therefore, quality, respectively quality management, can be considered the basis for ensuring or increasing the satisfaction of citizens or consumers of public services. Growth is the principle on which the states of the world have largely based their organization over the last hundred years. Human activity has expanded continuously, economic growth has become the goal of every society, be it rich or poor. People are struggling to raise their living standards, politicians promise faster growth, business performance is appreciated by their growth rate.

3. Research methodology

The approach we chose in writing this paper is basically an analysis and and an overview as well in what concerns the role of public administration in starting and supporting actions at the level of local communities in order to ensure a sustainable development. Our research is mainly a qualitative one and uses data concerning the Integrated Development Plan for the Constanța Metropolitan Area. This study tends also to fill the gap in understanding the challenges of staged implementation of quality assurance systems in public authorities and institutions and methods of observation and description were used to identify the opportunities related to this objective. The documentary research allowed the collection of information and represented both a theoretical support and a basis for investigation.

4. Findings

4.1. Economic development strategy of the growth pole of the Constanța Metropolitan Area analysis

Born from the need to evolve at the level of similar European settlements, the Constanța Metropolitan Area is established following a partnership concluded between 14 localities.

Located in southeastern Romania, in Dobrogea, on the Romanian Black Sea strip, the Constanta Metropolitan Area has a population of about 500,000 inhabitants, being the second largest urban agglomeration in the country, after the capital Bucharest and the second largest contributor to the National Budget. The localities affiliated to the Constanța Metropolitan Area are concentrated around the nucleus that determines the interdependence processes, respectively the municipality of Constanța, the most important tourist city of the country. With a history of 2500 years, Constanța has developed as a commercial hub between east and west. A large part of the city's industrial and commercial activities are served by the Port of Constanta, the most important harbour on the Black Sea and the fourth most important in Europe.

Also, the Constanţa Metropolitan Area has a multitude of tourist objectives combining historical vestiges with the creations of the contemporary world. Benefiting from the advantage of settling on the Black Sea Coast, the tourism activity is an importantorientation inside the Metropolitan Area. Within the Metropolitan Area of Constanţa there are 5 resorts: Năvodari, Mamaia, Eforie Nord, Eforie Sud and Techirghiol that cater to all age groups and the most demanding tastes, providing

extensive beaches, fine sand, leisure areas, amusement parks, clubs, restaurants and ample accommodation in treatment facilities and hotels. The development vision of the National Growth Pole - Constanța considers the imposition of the Constanța Metropolitan Area as a competitive multifunctional center of Romania and the main economic polarizer in the Black Sea region, taking into account the sustainable development of the entire area and reducing disparities between emerging localities.

The aim is to transform Constanța into a European metropolis, an expanding tourist area, with a rapidly growing economy and a high standard of living for all inhabitants.

The strategic objectives of the Constanţa National Growth Pole were established in accordance with: increasing the economic and social role by adopting a polycentric approach, which would stimulate the balanced development of Constanţa and 14 localities in the Metropolitan Area; improving accessibility inside and outside Constanţa and its area of influence; a more important contribution of tourism to the development of the National Growth Pole Constanta, increasing the quality of social infrastructure, increasing competitiveness in order to stimulate the local business environment.

During this period, sustainable territorial development and consolidation of zonal structures is a priority, being absolutely necessary a sustainable approach to all development processes, intense cooperation between administrative-territorial units at the metropolitan level to meet the multiple challenges of the transition period. decentralization.

The balanced development of the Metropolitan Area requires a joint planning, an active collaboration and the initiation of a common decision-making process within the local councils in order to:strengthening the roles of the administrative-territorial units;responsible management of natural resources and environmental protection;balancing and increasing the pace of economic development;structuring and developing communities;developing the cultural identity of communities;developing the integrated accessibility of localities;ensuring a high-performance and competitive public administration and related public services;improving the living conditions of people and human communities;promoting information and communication technology;protection and enhancement of the built and natural cultural heritage;controlled expansion of built-up areas;protecting localities against natural disasters;increasing access to resources, namely government funds, European funds and international funds.

The Integrated Development Plan of the National Growth Pole Constanţa represents the beginning of the cooperation of the metropolitan partners, in order to integrate the projects and sectorial approaches at the level of the whole area, in order to maximize the impact of the invested public funds, for the benefit of the partner communities.

4.2. The structure of the Integrated Development Plan of the Constanța National Growth Pole

The Integrated Development Plan of the Constanta National Growth Pole was structured according to a clear and logical flow of information starting from the existing situation in the county, geographically relevant, and reaching the implementation and monitoring measures.

The planning process is structured in five main parts as follows:(http://old.fonduri-ue.ro/res/filepicker_users/cd25a597fd-62/Doc_prog/CSNR/1_CSNR_2007-2013_(eng.).pdf)

- auditing or evaluating the existing socio-economic situation, the environment and the level of technical and social equipment;
- development strategy that includes elements of vision, objectives, strategic, policies and programs and priorities;
- spatial profile and areas of intervention;
- action plan;
- the management of the implementation of the integrated plan.

The main objectives of the Integrated Development Plan of the National Growth Pole Constanța are as follows:

- Strategic objective 1: The constance of the residents and its goals are: improving the living conditions of the inhabitants and increasing the attractiveness of the area, so that it becomes a pleasant place to work, study, live; access of all inhabitants to a quality infrastructure (urban, basic public services, transport infrastructure, communications, etc.); access to decent, safe housing, access

to health services, education and culture services and quality social services in a sustainable environment.

- Strategic objective 2: The constance of tourists and aims to create a maritime tourist area, attractive and competitive for Romanian and foreign tourists by:its geographical position with a great tourist potential;the status of the most important tourist center of the country;the possibility of practicing different forms of tourism: seaside, spa and leisure, cultural, religious, ethnic, ecotourism, business tourism and congresses, etc.,exploiting the favorable natural potential of the city of Constanţa and its area of influence;capitalizing on the cultural, historical and archaeological heritage;launching new tourist products meant to perpetuate the interest on the area throughout the year;sustainable development of tourism.All this will lead to the raising of the coastal tourist offer to western standards, to the revitalization of all the resorts that are part of the Constanţa Metropolitan Area and in particular to the recovery of the status of Mamaia resort as pearl of the Romanian river.
- Strategic Objective 3: Investor constance, meaning increasing the long-term competitiveness of the local economy aims at sustainable economic development, achieving a stable and predictable business environment and creating new jobs by: increasing of foreign direct investments, but also domestic ones, especially in the branches with high economic growth potential;encouraging the tertiary sector and those economic activities that generate high added value;the development of high-performance interconnection infrastructures at regional, national and European level, coherently ranked (maritime / river / air);the development of cross-border cooperation within the Black Sea Euroregion and the Romania-Bulgaria cross-border cooperation, the development of human resources, the increase of the employment rate in highly specialized trades and professions and the use of human resources as a factor of economic development.

4.3. The implementation of quality management in the public administration

The implementation of quality management is an expected result of the Strategy for consolidating public administration 2014-2020 (SCAP 2014 - 2020) and included actions for the development and sustainable use of quality management in public administration in Romania.

Topics on quality management addressed in assessing the needs of stakeholders in the use of quality management systems and tools, public authorities and institutions in Romania addressed issues related to: the inclusion of quality management systems and tools by public authorities and institutions; identifying ways to consolidate quality management in the organizational culture of public institutions.

Other recommendations in the analysis that can support the efficient use and management of quality management systems and tools were:

-Establishment of a central structure, for example within the Government working structures, with attributions regarding the organization of the process of promoting the quality management systems and tools in Romania and the coordination of the training activities at national level;

-Implementation of actions to promote the systems of quality management tools, with emphasis on the value of the addition that they can generate within the authorities and public institutions;

-Training and organization of the staff of the authorities and public institutions for the use of quality management;

-Providing support for all categories of authorities and public institutions for the implementation of quality management systems.

In order to ensure and strengthen the quality management of public administration, were included in the strategic documents that were issued certain coherent measures, especially regarding the improvement of the level of quality in public services, as follows:

- -Monitoring and evaluation of services and professional activity of officials based on quality standards;
- -Rationalization of the number of civil servants by categories in accordance with the established quality standards;
 - Introduction of strategic planning for each public authority depending on the services provided;
 - Motivating employees to increase quality and stimulate innovation;
- -Introduction of the Citizens' Quality Charter, in order to introduce and evaluate quality standards for public services;
 - Institutional self-assessment based on an assessment guide;

- -Public interventions for the development and increase of the efficiency of electronic public services;
 - -Development of an integrated system for issuing documents and renewing marital status.

Thus, it can be stated that the most important objectives regarding quality management in public administration are in this context: reducing bureaucracy, professionalizing the civil service for introducing quality in public services, providing highly professional public services, modernizing institutional structures, developing an oriented administration. to the citizen. (Matei et al., 2011)

4.4. Analysis

The management of the Consultative Process of the Integrated Development Plan of the Constanţa Metropolitan Area, aimed at the following elements: (https://www.ziuaconstanta.ro/english/latest/public-debate-on-environment-report-for-metropolitan-area-72141-266717.html)

- Representativeness: the consultation involved the interaction in a legal and institutional framework between decision-makers and stakeholders stakeholders. The consultation was carried out at administrative level, with the main stakeholders, professional associations, employers' and trade unions, decentralized services, regional development agency, non-governmental organizations, representatives of academia and scientific research and business; at the political level, by consulting and informing the 14 mayors of the Constanța Metropolitan Area and the local councils; at the civic level, with the citizens of the city and with the representatives of the civil society, in some public debates.
- Ensuring the representation of diversity (socio-demographic, residential, political orientation, gender) In order to represent all those potentially affected by the proposed public policy). The identification and analysis of all groups and organizations interested in the process of elaboration and implementation of the Integrated Development Plan of the National Growth Pole Constanta was considered; any risks to those concerned as a result of the implementation of the newly proposed policy; as well as their active involvement in the process of elaboration and implementation of the Integrated Development Plan of the National Growth Pole Constanța¹⁰.
- Transparency decisional transparency was a key ingredient in the consultative process, including in the process of identifying problem areas within metropolitan areas, solving problems and formulating the vision for the development of the National Growth Pole Constanta and its area of influence.
- Communication or information was a basic tool for ensuring a quality consultative process and took into account the good information of all those potentially affected by the proposed new public policy.
- Facilitation and moderation the consultation process included a series of actions that materialized through an organized public dialogue.
- The moderators of this dialogue were professionals with expertise in this field (Executive Director of the Programs and Development Department of Constanta City Hall, Coordinator of Strategies and Programs of the Constanta Metropolitan Area, project team involved in developing the Integrated Development Plan of the Constanta Metropolitan Area)⁹.
- Post-consultation included post-consultation reports / questionnaires that led to increased confidence in the usefulness of the proposed public policy and in public administration.

The implementation of quality management systems in public administration has become in the current economic and social context an undisputed necessity and involves the use of significant financial, technological and human resources and the promotion of quality management systems / tools within organizations, along with motivation staff for involvement in this endeavor, in the conditions of a wide access to information and an efficient communication. (Matei et all, 2011)

5. Conclusions

The recent adoption of the Integrated Development Plan of the Constanţa Metropolitan Area, as a result of the designation of Constanţa as a national growth pole, has generated the opportunity to finance important infrastructure and local development projects through the Structural Funds.

The development vision of the National Growth Pole - Constanţa considers the imposition of the Constanţa metropolitan area as a competitive multifunctional center of Romania and the main economic polarizer in the Black Sea region, from the sustainable development point of view of the entire area and reducing current development disparities among the 14 localities that make up the metropolitan area.

Constanta has all the arguments to become a European metropolis, an expanding tourist area, with a rapidly growing economy and a high standard of living for all its inhabitants.

The traditional economic profile of the Constanţa Growth Pole focuses both on the specific economic activities of the port and the tertiary sector, as well as on tourism. At the same time, its geostrategic position gives the Constanţa Growth Pole important economic opportunities in terms of the exploitation of hydrocarbon resources in the Black Sea basin, as well as the wind energy potential of the area. Another economic side with an important growth potential in the next period is the agrifood industry, encouraged by the fact that the Constanţa Metropolitan Area, located in an important agricultural basin, is a significant market, especially during the summer season, as well as a gateway for the export of these products to other markets.

In this context, the unitary development of public infrastructure in the Constanta Metropolitan Area is an important goal in order to reduce development disparities between the 14 localities of the Growth Pole and also aims to send message to potential investors in this region. in the sense that the development of the area will be carried out in an integrated way, based on common strategies, objectives and action plans. Also, the delimitation of the main functional areas at the level of the metropolitan area will stimulate an unprecedented investment influx in this area and will distribute in a balanced way, at the level of the entire metropolitan territory, the current investment pressure currently existing in Constanța.

Analyzing the list of projects proposed by the Constanţa Metropolitan Area within the Integrated Development Plan, we find that a significant part of them is addressed to the tourism field. We also note that private investment in tourism continues to exist, despite the economic crisis.

In the context in which, during the peak period of the summer season, the occupancy rate in Mamaia resort approaches 100%, the real stake for the development of tourism and, implicitly, of the local economy is the extension of the season and the increase of occupancy and number of tourists visiting the resort and the city in the off-season.

In order to achieve this goal, new tourist products are needed, regardless of the weather situation. Leisure and leisure activities during the day should be developed, especially sports and water activities. Another important sub-domain is the cultural and historical tourism, and the peninsular area of the municipality has in this sense an important potential, still untapped.

Also, considering the economic scope of Constanta and the Constanta Metropolitan Area, another insufficiently exploited niche is represented by business tourism. In this sense, in addition to the recently developed private facilities, there is an acute need to develop public infrastructure for conference and congress halls, as is the case in most European metropolises.

Most of these ideas are reflected in the list of projects in the Integrated Development Plan, and the medium-term development of the Constanța Metropolitan Area depends on the success of the absorption of European funds.

The first set of quality standards applied in public administration was ISO 9000 series, followed by ISO 14000 series environmental standards and technical regulations in the field of public administration, ISO 17020 and 17025. The application of ISO standards is extremely useful to organizations where there is a lack of transparency in written rules, structures and procedures.

The first important steps in introducing quality management systems in the Romanian public administration were made in 2004, when CAF was applied in a pilot phase within two directorates of the Ministry of Administration and Interior and the National Agency of Civil Servants. has been extended to all ministries, prefectures, county councils, etc. from Romania.

6. References

- Alexiu, I., Teodor, M., Anastasoiei, T.2001. Community Development, Waldpress Publishing House
- Colas, D., 2004. *Dictionary of Political Thought*, Larousse. Bucharest: Universe Enciclopedic Publishing House
- Hosu, I., Miresan, M, 2004. Sustainable development in the context of the globalization process. Miercurea Ciuc: Civitas Foundation Publishing House
- Matei, L., Lazăr, C.G., 2011. Quality management and administration reform in some countries in south-eastern Europe. Comparative analysis. *Theoretical and applied economics*, Vol. XVIII (2011), No. 4(557), pp. 65-98.
- * * * The action plan for the staged implementation of quality management in public authorities and institutions 2016-2020. [online] Available at:
 < https://www.mdlpa.ro/uploads/articole/attachments/5daea36dcb808160190781.pdf > [Accessed on
- * * * Government of Romania, *National Development Plan 2007-2013*. [online]Available at: http://old.fonduri-ue.ro/res/filepicker_users/cd25a597fd-62/Doc_prog/CSNR/1_CSNR_2007-2013 (eng.).pdf [Accessed on November 2021]
- *** The Government of Romania, the Ministry of Environment and Sustainable Development and the United Nations Development Program National Center for Sustainable Development, Romania's National Strategy for Sustainable Development Horizons 2013-2020-2030. [online]Availableat:https://sustainabledevelopment.un.org/index.php?page=view&nr=623&type=50 4&menu=139>[Accessed on November 2021]
- * * * Public debate on environment report for Constanţa Metropolitan Area Integrated Development Plan for the Constanţa Growth Pole-Constanţa Metropolitan Area. [online] Available at:
 https://www.ziuaconstanta.ro/english/latest/public-debate-on-environment-report-for-metropolitan-area-72141-266717.html > [Accessed on November 2021]
- www.fonduri-structurale.ro
- www.primaria-constanta.ro
- www.pol-constanta.ro

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Employability Skills: Correspondent Hard and Soft Employability Skills for Main Economic Sectors

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Abstract

Employability skills identification is becoming a key instrument to match the workforce demand in the current labor market. Which professional and general skills specific to the labor market are formed because of graduating from a certain level of education, are they different from the skills held in the labor supply and the skills needs in the labor market? A marked imbalance in the labor market is due to many inactive population and the inability of employers to find qualified staff and to fill vacancies. For this article the competencies considered essential for the main economic sectors in Romania for optimizing the integration of potential employees in the labor market were listed, the employers emphasizing that it is necessary to increase the current level of employability skills. The triangle of actors responsible for developing the skills needed to obtain and maintain a decent job is composed of the governments, the social partners, and the individuals.

Key words: labor market, soft general skills, employment growth

J.E.L. classification: E24, J21, J23

1. Introduction

In recent years, more and more articles, studies, national and international employment, and training policies have drawn up lists with the abilities, aptitudes, and general competencies needed for the newly formed jobs, for career development skills, career advancement, mobility training, and the formation of a lifelong learning culture. National and international education, training, and employment training strategies and policies have several common ideas, which converge towards the same goal, increasing employment by preparing the workforce for the new labor market, qualified labor force appropriate to market needs, developing mobility, and flexibility along with the training of skills needed for future changes and opportunities. (World Economic Forum, 2020)

National and European education and employment strategies aim to develop human capital, emphasizing the need to update technical, specific, digital, and transversal skills held by individuals to increase economic competitiveness. The proposed directions of action are to stimulate the participation of adults in lifelong learning programs through counseling and career guidance, participation in continuing education courses. These national and European strategies are aimed at ensuring a balance between supply and demand in the labor market through measures aimed to reduce the imbalances between the technical and transversal competencies needed by those trying to fulfill a job vacancy.

2. Literature review

What professional and general skills specific to the labor market are formed as a result of graduating from a certain level of education, are they different from the skills held in the labor supply and the skills needs in the labor market? Another imbalance highlighted by these strategies, also found in studies, is due to a large number of inactive population and the inability of employers to find qualified staff and to fill vacancies.

The International Labor Office defines employability as the ability of the individual to use the skills and qualifications acquired through education and training to obtain and maintain a decent job, to ensure continuous professional progress, to adapt to changes in the labor market, and of the technological ones. (ILO, 2013, ILO 2016)

Employability from the perspective of the individual is characterized by the dimensions: choice of job, the period between graduation and employment, professional characteristics, desire for continuing professional training, set of specific and general skills. (Institute for Employment Studies, 2020)

Individual employability, defined by the benefit of the individual, the community, and economic growth, is a set of skills, abilities, and achievements that make it easier for the graduate to obtain, maintain a job and advance professionally. (Knight and Yorke, 2006) (Tymon, 2013)

In the literature, the skills needed for a job are listed as transversal, specific, key, soft, generic skills. These competencies define skills, abilities, professional characteristics, qualities, values. Some authors analyzed the skills needed to develop employability, a comparison between the perspectives of relevant actors in the labor market. (Harvey, 2001)

Creating a model that includes the factors that determine an individual's employability is actually quite complex. The educational units through its programs offer several opportunities to develop the employability of students, including training the skills needed to get and keep a job, as well as the skills needed for career training and career advancement. The curriculum of educational institutions and vocational training centers provides the training of the skills to complete the CV, presentation, and communication skills necessary for the candidate's interview to obtain the desired job.

3. Research methodology

Research methodology proceeded in literature review of the employment concept defined by the abilities developed as a result of completing education and the skills demanded by the employers. The major objective of this study was to research employment and education strategies and agendas to determine whether there is a list of employability competencies list commonly excepted.

The hypotheses are that: there is a common list of specific job skills demanded by companies in the main economic sectors, there is an acknowledged list of transversal employability skills for the main economic sectors.

In view of the strategies, agendas, and data published by the Ministry of Labor and Social Justice, IRES, MTS, INCSMPS that has been identified a common list of the specific employability list and a transversal skills list of occupations among the main economic sectors, and a list of the insufficient held competences by the employers.

4. Findings

For a complex definition of the concept of employability, it is proposed to follow the indicators of employability, such as the employment rate of graduates, the time between graduation and employment of the graduate, the connection of the job obtained with the level and field of training completed, the employment index skills and competencies learned and developed during school or as a result of training programs, career development, and career advancement. (ILO, 2013, CEDEFOP 2020)

Sectorial plan of the Employment, Research, and Development of Ministry of Labor and Social Justice, developed through the Strategy for the Romanian Skills Agenda 2020- 2025 makes a complete report with the results of the studies carried out and updated data of the necessary skills to meet the needs of enterprises, the needs of the current labor market. (Ministry of Labor and Social Justice, 2019)

Tabel no. 1 Employment specific skills insufficient held by workers

Economic Sectors/ Skills	Technic al skills	Equipm ent use skills	Document writing skills	Nume rical skills	Management / coordination skills	Professio nal ICT Skills	Skills for efficient use of raw materials and energy	Science process Skills
Agriculture, forestry, and fishing	66.70%	57.80%	41.50%	36.70%	42.40%	33.20%	46.70%	32.50%
Extractive industry	72.90%	92.40%	83.20%	40.10%	84.20%	64.70%	67.40%	64.70%
Manufacturing industry	67.30%	56.30%	38.60%	31.50%	45.10%	31.80%	58.80%	30.20%
Production and supply of electricity and heat, gas, hot water, and air conditioning	37.40%	19.70%	37.40%	19.70%	25.50%	33.30%	19.70%	27.60%
Water distribution, sanitation, waste management, decontaminatio n activities	58.20%	55.70%	43.50%	19.10%	37.10%	32.30%	53.00%	22.90%
Construction	68.40%	59.20%	46.00%	34.80%	48.00%	35.10%	47.20%	31.10%
Wholesale and retail trade; repair of motor vehicles and motorcycles	52.50%	46.70%	41.00%	37.30%	50.50%	37.80%	46.10%	23.50%
Transport and storage	54.90%	52.10%	39.80%	35.30%	40.90%	42.00%	42.60%	25.00%
Hotels and restaurants	56.90%	63.70%	51.90%	44.70%	57.60%	38.40%	65.20%	23.60%
Information and communications	60.90%	26.20%	30.00%	19.80%	62.10%	51.00%	29.90%	36.40%
Financial intermediation and insurance	27.20%	33.50%	27.20%	27.20%	61.60%	41.10%	33.50%	27.20%
Real estate transactions	36.10%	28.10%	35.40%	14.90%	58.40%	29.50%	37.40%	19.70%
Professional, scientific, and technical activities	55.00%	35.40%	34.40%	25.10%	51.50%	31.20%	33.20%	23.30%
Administrative and support service activities	42.80%	47.00%	35.10%	20.90%	47.80%	27.80%	47.50%	24.00%
Health and social work	53.40%	46.20%	30.20%	16.30%	44.20%	37.70%	29.50%	30.30%
Other activities	62.70%	45.70%	40.10%	29.40%	42.30% omanian Skills	25.10%	50.80%	21.30%

Source: Ministry of Labor and Social Justice, 2019. Romanian Skills Agenda 2020- 2025, Report 2, pg. 158

 $Tabel\ no\ .\ 2\ Employment\ general\ skills\ insufficient\ held\ by\ workers$

Economic Sectors/ Skills	Communication skills	Foreign language skills	Teamwork skills	Problem- solving and decision- making skills	Personal, social, civic, and multicultural skills	Competence in learning to learn	General ICT skills
Agriculture, forestry, and fishing	54.80%	39.20%	57.70%	42.70%	39.60%	56.80%	33.20%
Extractive industry	51.50%	47.70%	64.70%	64.70%	31.00%	84.20%	67.30%
Manufacturing industry	53.40%	35.50%	62.30%	56.60%	37.30%	66.10%	33.40%
Production and supply of electricity and heat, gas, hot water, and air conditioning	45.30%	33.00%	27.60%	45.30%	19.70%	51.20%	15.70%
Water distribution, sanitation, waste management, decontamination activities	50.10%	21.80%	48.40%	40.70%	39.80%	45.40%	34.00%
Construction	53.10%	37.40%	58.60%	53.90%	32.80%	57.70%	39.50%
Wholesale and retail trade; repair of motor vehicles and motorcycles	63.10%	35.50%	66.90%	54.40%	39.60%	63.00%	42.40%
Transport and storage	60.60%	50.40%	56.90%	51.70%	39.30%	59.10%	44.10%
Hotels and restaurants	76.60%	65.90%	75.90%	59.20%	43.90%	75.90%	46.40%
Information and communications	61.50%	44.70%	70.60%	69.20%	50.10%	69.60%	36.80%
Financial intermediation and insurance	73.50%	41.10%	61.60%	61.60%	33.50%	47.40%	47.40%
Real estate transactions	50.80%	33.40%	32.90%	54.10%	38.00%	51.00%	29.50%
Professional, scientific, and technical activities	52.80%	48.40%	62.00%	48.70%	30.20%	51.80%	32.10%
Administrative and support service activities	66.80%	44.50%	73.60%	54.90%	47.60%	65.70%	34.00%
Health and social work	57.30%	25.90%	50.00%	44.30%	25.50%	39.00%	36.30%
Other activities	62.70%	60.10%	36.40%	62.60%	57.50%	21.30%	31.80%

Source: Ministry of Labor and Social Justice, 2019. Romanian Skills Agenda 2020- 2025, Report 2, pg. 158

These tables identify the skills required by employers for the sustainable development of the company's economic activity.

The skills agenda highlights that the outcome of active labor market policies has not been as expected, it has had a limited impact, the measures have focused on financial incentives and not on personalized approaches to current labor market needs.

According to the study Identifying the fundamental competencies for the 21st century from the perspective of employers and job seekers (INCSMPS, 2018), for the productivity of companies and carrying out economic activity in optimal conditions, employers have identified, in the right of employees, the following essential competencies which should be improved:

- use of the company's equipment
- efficient use of raw materials and energy
- coordination and organization
- understanding and writing documents
- general digital
- professional digital
- calculation
- in the field of science, technology, and engineering
- to work in a team
- to learn to learn
- techniques of communication
- problem solving and decision making
- communication in foreign languages
- personal, social, civic, and multicultural

Source: Identifying the core competencies for the 21st century from the perspective of employers and job seekers. (INCSMPS, 2018), pg. 155

Is there a list of general and transversal professional skills common to the main economic sectors? The report on the skills agenda ROMANIA 2020 - 2025 identifies job-specific skills in each economic sector but also the common cross-cutting skills needed by employers as insufficiently held by employees but also by candidates for job vacancies.

In table no. 1 shows the necessary professional skills insufficiently held by workers in each economic sector, and in the following table, table no. 2, the transversal competencies are displayed.

Table 2 shows the general, transversal competencies: communication skills and teamwork skills and the lifelong learning ability to occupy the first three places in the needs of employers in order to fill vacancies and to obtain an efficient job performance. the company. General competencies are more related to the behavioral skills, personality, and desire for personal and professional development of the individual, but for employers are important criteria for selecting candidates for available jobs.

The competencies formed after graduating from a form of education or a professional specialization program were not in line with those sought by employers according to the analysis of the relevance of the education system. This report contains a list of skills needed for vacancies in each economic sector in Romania, but also a list of skills insufficiently held by workers in these economic sectors. The objectives of this strategy emphasize the need to correlate the school curriculum, by the level of education, depending on the needs of the labor market, according to the results of studies conducted, surveys among employers. (Ministry of Labor and Social Justice, 2019, IRES, MTS, 2018)

5. Conclusions

The quoted reports and listed skills are considered realistic and dated as it identifies the current needs of the labor market and contain the weaknesses, but also the strengths of education and training policies, and useful recommendations. This report highlights the need for the development of career guidance and counseling services and their use by students, young people, and job seekers. The report mentions the need to validate learning outcomes in informal and non-formal contexts.

Among the weaknesses is the lack of a system for recognizing the transversal competences acquired by future employees by participating in non-formal education activities, a system through which the accumulation and development of transversal competencies by employers would be proven. An important step will be to capitalize on the knowledge about skills needs and the training and development of these skills for graduates who will be seen in the satisfaction of employers. (Souto-Otero M. et al, 2012)

These skills are considered essential for optimizing the integration of potential employees into the labor market, with employers stressing the need to increase their skills.

Who is responsible for training and developing the skills and abilities needed in the labor market? The ILO lists three people in charge of Increasing Youth Employment. The importance of the key skills needed for the job. (ILO, 2013) The triangle of actors responsible for developing the skills needed to obtain and maintain a decent job: governments, social partners, and individuals.

Among the main responsibilities of governments and countries, decision-makers are education, guidance, and training through counseling services and pre-employment training programs, basic skills training, training of the unemployed and people with special needs. (ILO, 2013) The social partners play a significant role in obtaining and maintaining employment through continuing vocational training, the provision, and the provision of work experience. Individuals have the responsibility to take advantage of education and training opportunities, opportunities for professional development, and participation in lifelong learning programs.

Equal funding opportunities for all businesses ensure investment in human capital and new technologies. The design and management of the framework programs, a set of personal skills and abilities, for adult education, training, and professional qualification, is mandatory for obtaining and maintaining a good job. This indicates a need for measures that must focus on the importance of lifelong learning, in order to to have economic growth along with the prosperity of the employer and the employees.

6. References

- Andriotis Nikos, 2019, Five things to do after a skills gap analysis https://elearningindustry.com/things-do-after-skills-gap-analysis, [last accessed 16th May 2021]
- Harvey L., 2001, Defining and Measuring Employability, Quality in Higher Education, Vol. 7, No. 2, 97–109,
 https://www.qualityresearchinternational.com/Harvey%20papers/Harvey%202001%20Defining%20a

nd%20measuring%20employability%20QHE7(2).pdf, [last accessed 16th May 2021]

- Souto-Otero M. et al, 2012, Study on the impact of Non-Formal Education in youth organisations on young people's employability, European Youth Forum, https://www.youthforum.org/sites/default/files/publication-pdfs/Study,%20No-Formal%20Education.pdf, [last accessed 8th July 2021]
- Tymon A, 2013, The student perspective on employability, Studies in Higher Education, 2013
- Vol. 38, No. 6, 841–856, https://blogs.ncl.ac.uk/icmresearchfunding/files/2019/05/Alex-Tymon-Employability.pdf [last accessed 8th July 2021]
- Yorke and Knight, 2006, *Embedding employability into the curriculum*, HEFCE, https://www.qualityresearchinternational.com/esecttools/esectpubs/yorkeknightembedding.pdf
- CEDEFOP, 2020, Romania: Mismatch priority occupations, https://skillspanorama.cedefop.europa.eu/en/analytical_highlights/romania-mismatch-priority-occupations, [last accessed 8th July 2021]
- INCSMPS, 2018, Education, Continuing Education and Relationship with the Labor Market, Bucharest, http://www.incsmps.ro/documente/conferinta%2020%20ani/rezultate/4%20-%20EDUCATIE-PREGATIRE%20CONTINUA-%20RELATIA%20PIATA%20MUNCII.pdf, [last accessed 16th May, 2021]
- International Labour Organization, 2013, Enhancing youth employability: The importance of core work skills, https://www.ilo.org/wcmsp5/groups/public/---ed_emp/--- ifp skills/documents/publication/wcms 234467.pdf, [last accessed 8th July 2021]
- International Labour Organization, 2016, World Employment Social Outlook 2016 Trends for Youth, https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/----publ/documents/publication/wcms 513739.pdf, [last accessed 8th July 2021]

- Institute for Employment Studies, 2020, https://www.employment-studies.co.uk/report-summary-employability-developing-framework-policy-analysis
- IRES, MTS, 2018, Forecast of Labor Market Evolution and Trends Threats and Opportunities, Bucharest, 2018, http://mts.ro/wp-content/uploads/2019/07/Prognoza-evolu%C8%9Biei-%C8%99i-tendin%C8%9Belor-pie%C8%9Bei-muncii-Amenin%C8%9B%C4%83ri-%C8%99i-oportunit%C4%83%C8%9Bi-pentru-tineri-2018.pdf
- Ministry of Labor and Social Justice, 2019, "Skills Agenda for ROMÂNIA 2020, 2025", https://mmuncii.ro/j33/images/Documente/MMPS/Rapoarte si studii MMPS/DPOCM/2018 - Agenda pentru competene ROMNIA 2020 2025 Raport 2.pdf, [last accessed 1st November 2021]
- World Economic Forum, 2020, The Future of Jobs Report 2020 http://www3.weforum.org/docs/WEF Future of Jobs 2020.pdf, [last accessed 1st November 2021]

Prevalence of Depression in Adults in Constanta County, Romania, Before and During the Covid-19 Pandemic

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Abstract

The COVID-19 pandemic and its management measures were a priority in 2020 with unknown effects on the mental health of the population. The study aims to estimate the evolution of the prevalence and risk factors associated with depressive symptoms among adults in Constanta before and during the COVID-19 pandemic, using data gathered from Health Insurance House of Constanta County. We also analyze some effects of the pandemic on adults suffering from depression and other mental disorders, as well as on the costs supported by the healthcare system, and we suggest some actions to be taken by public policies.

Key words: Covid-19, depression prevalence, associated costs

J.E.L. classification: I130, I180

1. Introduction

The 2019 coronavirus pandemic (COVID-19) and the policies to contain it affected almost all Romanian population in 2020. Being a situation with a negative impact in all physical, emotional and psychological aspects, COVID-19 pandemic can be, per se, considered as a traumatic event. As recently underlined in a paper by Druss (2020), a medical field that experienced significant consequences associated to the pandemic and the accompanying society changes is the one of the psychiatry. There are indeed studies suggesting that there could be a general decline in the health state of the population affected by the pandemic.

2. Literature review

A study involving 1210 participants from 194 cities in China at the beginning of 2020 found that 54% of the subjects considered as moderate or severe the psychological impact of the COVID-19 outburst, 29% reported moderate to severe anxiety symptoms and 17% reported depressive to severe symptoms (Wang et al, 2020). A similar tendency was noticed in a study conducted in the USA by the American Psychiatric Association (2020). Other recent proofs from published studies suggest that COVID-19 pandemic is associated with mental disorders. Among the workers in the public health system in China that were exposed to COVID-19 patients, 50.4% reported depressive symptoms (Lai J, Ma S, Wang Y, et al.,, 2020), while another research discovered that reduced sleeping and rest time have been associated with higher levels of anxiety and stress (Xiao H, Zhang Y, Kong D, Li S, Yang N). A study on students from medical schools in China identified a high prevalence of anxiety (Cao W, Fang Z, Hou G, et al). Most studies in the field of COVID-19 effects on mental health have been conducted in Asia and targeted reduced sub-populations such as health workers or medicine students. More relevant for the current research is a study conducted by Nelson et al (Nelson LM, Simard JF, Oluyomi A, et al.) about COVID-19, symptoms and answers to the pandemic over 9009 social-media questionnaires. They found out that 67.3% of the participants had been very or extremely concerned about COVID-19 and that 48.8% of the respondents self-isolated most of the time to avoid the contamination with the virus. As far as we know, there is no relevant

study on mental health during the pandemic, for the population in Constanta County, Romania. Moreover, there is no such study conducted prior the pandemic, to allow reference comparison Aiming to address this knowledge gap, we assessed the prevalence of the symptoms associated with depression and the costs involved within the population from Constanta County, during COVID-19 pandemic and we compared it with data gathered before the pandemic through the same instruments. We also tried to understand the factors associated to depression symptoms before and during COVID-19.

3. Research methodology

This cohort study has been conducted by analyzing the data offered by Constanta County Health Insurance Body, for patients over 18 years old, that received health services for different depressive forms and associated symptoms.

All instruments to gather and analyze the data took into consideration the protection of patients personal data, as stipulated by the national and European legislation.

To study in dynamic the effects of the COVID-19 pandemic on the mental health state of the population with depressive symptoms and the costs associated to the disease, data for 2016-2020 period were analyzed.

The patients have been grouped in categories by age and sex, the under-18 years old being removed form the research sample. Also, the data regarding costs, have been grouped around the main categories of health services paid by Constanta County Health Insurance Body, for patients with depression and associated symptoms, during January 1st 2016-December 31st 2020.

Gathered data have been compared and analyzed afterwards in order to understand the impact generated by COVID-19 upon Constanta County population, on one side, and the effects that the pandemic had on public healthcare system, on the other hand and to try identifying some measures that could improve these effects.

The symptoms of depression were assessed according to ICD 10, using the Hamilton 17 questionnaire MADRAS (over 7) [(Minor depression (7-19), Moderate depression (20-34), severe depression (35-60)].

We assessed 13 stressors based on prior studies conducted in US and Europe. Examples of COVID-19 stressors included change in lifestyle, losing a job, death of someone close to you owing to COVID-19, and having financial problems.

Limitations. Collected date couldn't have been segmented under some other socio-demographic aspects that could have brought a more qualitative insight to the present study. Moreover, being limited to only one county from Romania, we cannot assume correctly extrapolating the results at the national level. These two aspects, segmenting the data based on multiple criteria (professional categories, levels of income, living environment, etc) as well as collecting data for a representative sample at the national level, would constitute the subject for further research.

4. Results

A total of 18,209 participants received medical services on mental health in 2020 of which 11,744 women, 6,465 men. The total number of cases with depressive symptoms in the sample group remained relatively constant during 2016-2019, with a small decrease in 2018. In 2020, after COVID-19 pandemic outburst, we can notice a sharp increase in the number of depression cases, in all its forms, as we can see in the Table 1 bellow.

Table no. 1. Evolution of depression cases in 2016-2020 period

Depression cases during the period	2016	2017	2018	2019	2020
Total number of cases	17.982	18.027	17.663	18.443	21.013
Total number of cases women	11.375	11.427	11.113	11.555	13.556
Total number of women in the study	9.844	9.767	9.421	9.669	11.746
Total number of cases men	6.607	6.600	6.550	6.888	7.457
Total number of cases men in the study	5.719	5.698	5.554	5.765	6.463
Total number of case sunder 18	2.419	2.562	2.688	3.009	2.804
Total number of cases in the study	15.563	15.465	14.975	15.434	18.209

Source: Authors data compilation based on Health Insurance House of Constanta County

Analyzing the data from Table 1 we notice an increased prevalence of depression symptoms among women, compared to men during the entire period, with a sharper increase in 2020. On a cumulative basis, the prevalence increased by 18% in 2020 compared to 2019, but the evolution was different for men and women: 21.4% increase for women compared to 12.1% for men. Regarding the healthcare associated costs for patients with different forms of depression, the data presented in Table 2 show that COVID-19 pandemic led to a moderate increase of costs for associated medical services, by just 6% in 2020 compared to 2019, half the average yearly increase by 12% from 2016-2019 period.

Table no. 2 The evolution of costs with medical services associated to patients with depressive disorders during 2016-2020

Depression associated costs per type of	2016	2017	2018	2019	2020
Number of hospitalization days	20.188	21.339	22.398	21.008	15.682
Hospitalization costs	4.414.651,67	4.439.671,07	4.268.661,28	4.045.793,86	3.058.764,10
Increase N/N-1		1,00	0,96	0,94	0,75
Number of outpatient consultations	45.212	50.099	51.088	53.932	55.150
Costs for outpatient consultations	2.049.033,54	2.508.576,55	3.063.260,77	3.651.098,76	4.433.767,71
Increase N/N-1		1,22	1,22	1,19	1,21
Number of consultations in primary care system	46.062	47.166	45.634	46.635	51.044
Costs with the consultations in primary care system	507.409,00	591.405,30	709.633,24	844.714,50	1.016.555,75
Increase N/N-1		1,16	1,19	1,19	1,20
Number of consultations psychotherapy	17.632	20.972	24.308	29.409	30.850
Costs with consultations psychotherapy	1.077.397,80	1.405.507,20	1.946.656,50	2.648.968,20	3.300.685,50

Increase N/N-1		1,30	1,38	1,36	1,24
Number of days sick leaves	2.168	3.535	3.354	3.953	4.533
Costs days sick leaves	174.722,00	330.964,00	410.258,00	598.207,00	789.331,00
Total costs healthcare services	8.223.214,01	9.276.124,12	10.398.469,7 9	11.788.782,3	12.599.104,0 6
Increase N/N-1		1,12	1,12	1,13	1,06

Source: Authors data compilation based on Health Insurance House of Constanta County

By groups of services, we notice a sharp decrease of hospitalization costs associated to patients with depression, during 2016-2019 period, a moderate increase of outpatient consultations and primary healthcare consultations costs and a significant increase of costs for prevention (psychotherapy).

Thus, the cost with hospitalization services decreased by 31% during 2016-2020 period, due both to the reduction of hospitalization days and the decrease of average hospitalization per-diem cost.. In comparison, the outpatient consultations cost increased by 84% from 2016 to 2020, the cost of primary healthcare consultations increased by 74% and the cost for prevention (psychotherapy) increased by 128% during the same period.

While the number of consultations in primary healthcare system and the outpatient consultations had moderate increase, cumulating 10 to 20% during the analyzed period, the number of consultations in psychotherapy almost doubled, simultaneously with an increase by 75% of the average settled cost of medical intervention.

Regarding the costs with sick leaves, we notice a moderate increase trend of number of leave days ask for settlement during 2017-2020, simultaneously with doubling the settled cost per-day of sick leave.

The evolution regarding costs with psychotherapy and sick leaves suggest a tendency to shift the focus from treatment to prevention, for this diseases, which led to a tempering trend of increased general costs for associated healthcare services, during the period.

According to a study conducted by the Centre for Disease Control in the USA (CDC) (Vahratian et all, 2021), confirmed also by Romanian patients, the main causes that generated depressive symptoms and other mental disorders during the lockdown period in 2020 were the following:

- Anxiety about its own health state and about the health state of the beloved ones;
- Anxiety caused by job loss and declining income;
- Changes in sleep or eating habits, including more frequent use of tobacco and alcohol;
- Difficulties in sleeping or concentrating;
- Worsening of chronic health problems, due to insufficient access to health system services.

On another level, the most present negative effects associated with pandemic identified for patients with depression aged 18 to 69, are, according to the study, much more acutely felt, compared with the rest of the adult population:

- The general cessation of social activities is felt much more acutely by patients with depression (74% versus 59%)
- Lack of a daily structured routine affects 75% of patients with depression versus 39% common patients;
- Sedentary lifestyle lack of physical activity (80% vs 62%) and the stay in bed more often (48% vs 21%) -is another unwanted effect with medium term implications;
- Lack of motivation and energy for the daily activities (84% versus 39% general population);
- Sleep worsening was noted by 63% of the patients with depression compared to 26% of the rest:
- Healthcare it was felt to be more precarious during the pandemic by 56% of people with depression versus 30% of the rest. Only 14% of the patients with depression said to be used digital methods for prevention and treatment and only 40% declared they would be willing to use, when there's no other options.

5. Conclusions

Although we cannot exclude alternative explanations, the results of the present research suggest that the mental health of the general population from Constanta County is negatively affected by the COVID-19 pandemic. The increase of depression symptoms prevalence during the pandemic is higher than the one recorded after some other major traumatic social events. Although we don't know exactly how many patients with depression included in the study have been diagnosed with COVID-19, to comment in a more relevant way the difference in mental health of those infected and those not infected, we can still assume that, while the virus spreads, the symptoms of the mental afflictions become more frequent among the population. Women are more impacted than men. The depression prevalence in Constanta County population increased by 18% on average during the first pandemic year. Among women, it increased by 21.3% while among men it increased by 12% only. Moreover, the data show an increase of costs with healthcare services associated to mental health by 7% in 2020 compared to 2019. These results confirm the data presented in other relevant international studies American Psychiatric Association, 2020, Wang et al, 2020, Sonderskov KM, Dinesen PT, Santini ZI and Ostergaard SD, 2020). Besides that, the results suggest that the context matters, the combination between pandemic and its socio-economic consequences generated an increase of the total number of mental afflictions among the adults in Constanta County.

Offering proper healthcare services for these patients would be an useful and interesting debate for the healthcare professionals, the more so as an important number of depression cases could be assigned to situational factors. While we need more data to correctly assess the depression trajectory within adult population and the type of treatment that need to be offered, it seems important to admit the potential of COVID-19 to generate large scale mental health issues, to admit that these are long-lasting effects and it reclaims adequate prevention and treatment public policies, especially focused toward the population exposed to major risk-factors

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7. References

- American Psychiatric Association, 2020. New Poll: COVID-19 Impacting Mental, Well-Being.
 Available at https://www.psychiatry.org/newsroom/news-releases/new-poll-covid-19-impacting-mental-well-being-americans-feeling-anxiousespecially-for-loved-ones-older-adults-are-less-anxious.
- Cao W., Fang Z., Hou G., et al., 2020. The psychological impact of the COVID-19 epidemic on college students in China. *Psychiatry Res.* 2020; 287:112934. doi:10.1016/j.psychres.2020.112934
- Druss B.G., 2020. Addressing the COVID-19 pandemic in populations withserious mental illness. *JAMA Psychiatry*. doi: 10.1001/jamapsychiatry.2020.0894.
- Lai J., Ma S., Wang Y., et al., 2019. Factors associated with mental health outcomes among health care
 workers exposed to coronavirus disease 2019. *JAMA Netw Open*. 3(3):e203976-e203976.
 doi:10.1001/jamanetworkopen.2020.3976
- Nelson L.M., Simard J.F., Oluyomi A., et al., 2020. US public concerns about the COVID-19 pandemic from results of a survey given via social media. *JAMA Intern Med.* 2020. doi:10.1001/jamainternmed.2020.1369
- Sønderskov K.M., Dinesen P.T., Santini Z.I., and Østergaard S.D., 2020 The depressive state of Denmark during the COVID-19 pandemic. Acta Neuropsychiatrica 32:226–228. doi: 10.1017/neu.2020.15
- Vahratian A., Blumberg S.J., Terlizzi E.P., Schiller J.S., 2021. Symptoms of Anxiety or Depressive Disorder and Use of Mental Health Care Among Adults During the COVID-19 Pandemic — United

- States, August 2020–February 2021. MMWR Morb Mortal Wkly Rep 2021;70:490–494. DOI: http://dx.doi.org/10.15585/mmwr.mm7013e2external.icon
- Wang C., Pan R., Wan X., et al., 2020. Immediate psychological responses and associated factors during the initial stage of the 2019 coronavirus disease, (COVID-19) epidemic among the general population in China, *International Journal of Environmental Research and Public Health* 17(5). pii: E1729. doi: 10.3390/ijerph17051729.
- Xiao H., Zhang Y., Kong D., Li S., Yang N., 2020. The effects of social support on sleep quality of medical staff treating patients with Coronavirus disease 2019 (COVID-19) in January and February 2020 in China. *Med Sci Monit*. 2020; 26:e923549-1-e923549-8. doi:10.12659/MSM.923549

Zonulin as a Biomarker in Mental Illness - Review

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Abstract

Mental health conditions are on the rise worldwide. This has determined an acceleration in the last two years in research focusing on mental health and brain-gut microbiome axis, highlighting the relevance of bidirectional communication. This systematic review aimed to gather evidence from studies of intestinal permeability biomarkers, in adults diagnosed with mental disorders, by following the guidelines of the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA). The selected articles provided evidence of intestinal permeability in adults diagnosed with neurocognitive impairment in Alzheimer's disease, schizophrenia, depression and suicide risk, bipolar affective disorder and alcohol consumption. Research shows that increased permeability and changes in the intestinal microbiota contribute to the pathogenesis of mental disorders. These findings support that this intestinal permeability biomarker had a role in mental disorders, but more information is needed for shedding light on this topic.

Key words: biomarkers, mental disorders, Zonulin.

J.E.L. classification: I130, I180

1. Introduction

Mental health problems are a major cause of disability (GBD 2017 Disease and Injury Incidence and Prevalence Collaborators, 2018), thus there is of a great necessity to identify new therapeutic approaches based on the clarification of pathophysiological processes.

Multiple studies investigating intestinal permeability in patients suffering from mental disorders are published. Asbjornsdottir et al. (2020) selected five papers focusing on children for their systematic review, where the intestinal permeability was determined by altered levels of zonulin. While in some particular studies zonulin level is correlated with the severity of the condition (i.e., corelated with Childhood Autism Rating Scale; Esnafoglu et al., 2017) or subtypes (i.e., in ADHD patients; Özyurt et al., 2018), other studies come in a certain contradiction when testing with the relevance of the age. While Esnafoglu et al. (2017) reported that zonulin level does not seems to be correlated with age, but rather with body mass index in children with autism spectrum disorder (ASD), Józefczuk et al. (2018) showed a positive correlation between zonulin level and age, in children of 5 years old the zonulin level being higher than in older children. Thus, more studies are needed for better understanding the correlations between zonulin level and specific parameters or mental disorders.

This systematic review aimed to gather evidence from studies of intestinal permeability biomarkers in adults diagnosed with mental disorders by following the guidelines of the Preferred Reporting Items for Systematic Reviews and Meta Analysis (PRISMA).

2. Theoretical background

Alterations in the composition of gut microbiota determine increased permeability of the gut barrier and immune activation, leading to systemic inflammation, which in turn may impair the blood-brain barrier and promote neuroinflammation, neural injury, and ultimately neurodegeneration (Mulak et al. 2019).

Research focusing on mental health and the brain-gut-microbiome axis has accelerated in the last decade (Foster et al, 2017; Grenham et al, 2011; Iannone et al, 2019) highlighting the relevance of the bidirectional communication on the brain-gut- microbiome axis in mental disorders. The gut and the central nervous system (CNS) have communication network which includes the enteric nervous system (ENS), sympathetic and parasympathetic branches of the autonomic nervous system (ANS), neuroendocrine signaling pathways, and neuro-immune systems (Grenham et al, 2011; Foster et al, 2017). Dysbiosis increases the permeability of the gut-blood barrier, translocating gut microbiota. It may cause immune system activation, with local and systemic proinflammatory state and more permissive intestinal barrier (Iannone et al, 2019). Chronic inflammation and activated immune could be a pathogenesis for mental disorders (Mulak et al, 2021).

Zonulin has been identified as a pre-haptoglobin, a molecule that has been initially considered the inactive precursor of haptoglobin 2. However, data suggest pre-HP2 is a multifunctional molecule that, in a single-chain intact form, regulates intestinal permeability and in a split form, with two chains, is a precursor for hemoglobin (Fasano, 2012). Zonulin is probably the most important biomarker of intestinal permeability, an increased concentration of this protein being correlated with increased intestinal permeability (Fasano, 2012). This intracellular protein of the tight junction complex has an atomic mass of 47 kilodaltons (kDa) and binds the cell cytoskeleton to tight transmembrane junction proteins. In the epithelial cells, it acts as a modulator of intracellular tight junctions and paracellular permeability in the intestine-blood and brain-blood barriers (Lu et al, 2000).

3. Research methodology

This systematic review followed items according to the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) guidelines (Moher et al, 2010). The database includes records found in libraries available on PubMed, Cochrane Library, Web of Science, Springer Link, Science Direct, and Scopus, using as inclusion criterion the analysis of intestinal permeability biomarkers in studies to adults with mental disorders. The keywords used for the search were biomarkers, mental disorders, and zonulin. Data collected included general information, characterististics, statistical methods, number of participants involved, and conclusions.

4. Findings

Of the 56 records identified in the systematic search, 8 articles were selected for this review (Table 1), encompassing a total of 537 participants who provided evidence of intestinal permeability in addition to the diagnosis of mental disorders. From the total of selected articles, 1 neurocognitive impairment in Alzheimer's diseases, 1 investigated the connection between zonulin level and schizophrenia, 2 depression and suicide risk, 3 bipolar affective disorder, 1 alcohol.

Table no. 1 Summary of the main findings and conclusions

First author, year, journal	Participants (n)	Main findings	Conclusions
Wang X, 2020, Acta Neurologica Scandinavica	AD, n=110 MCI, n=110 Control, n=110	The zonulin and C type lectin like receptor-2 (CLEC-2) levels were higher in Alzheimer disease (AD) patients compared with mild cognitive impairment (MCI) patients. Increased zonulin and CLEC-2 levels were significantly associated with reduced Mini-Mental State Examination (MMSE) score.	Increased zonulin and CLEC-2 are the significant factors for reduced MMSE score in MCI and AD.

Usta A, 2021, European Archives of Psychiatry and Clinical Neuroscience	Schizophrenia, n=50 control, n=50	The mean serum zonulin levels were significantly increased in patients with schizophrenia when compared to the control group. Also, in patients with schizophrenia serum claudin-5 levels were decreased when compared to the control group.	The study assumes that zonulin and claudin-5 may be involved in the etiopathogenesis of schizophrenia.
Ohlsson L, 2019, Acta Psychiatrica Scandinavica	rSA, n=54 no history of suicide attempt, n=13 control, n=17	The recent suicide attempt (rSA) group displayed lower zonulin levels and higher I-FABP compared with both the nsMDD and the control group. Zonulin was negatively correlated with IL-6, but for I-FABP a positive correlation was found with IL-6.	Patients with suicidal behavior have alterations in gut permeability markers. The 'leaky gut hypotheses' may help explain part of the immune activation in individuals with suicidal behavior.
Liśkiewicz P, 2021, Progress in Neuro- Psychopharmacology & Biological Psychiatry	MDD, n=16	Fecal zonulin levels was not correlated with the clinical status Hamilton Depression Rating Scale (HDRS24) in patients with major depressive disorder (MDD). There was a positive correlation with changes in fecal calprotectin during hospitalization, i.e., calprotectin decreases during the study with better clinical outcome.	The severity of depressive symptoms was associated with gut microbiota. These findings do not serve as predictors of symptomatic improvement during antidepressant treatment in inpatient treatment for MDD.
Maget A, 2021, Journal of Affective Disorders	Depression, n=76 Euthymia, n=45	Zonulin level was significantly higher in women than in men, independent from affective status. Also, zonulin level was increased in euthymic women comparing to euthymic men. Specific psychopharmacotherapy did not induce any difference in zonulin levels between groups	Epithelial permeability poses an interesting potential factor in neuropsychiatric entities. The severity of the depression was not related to the zonulin level.
Aydın O, 2020, Journal of Neural Transmission	BD type I, n=30 control, n=29	In bipolar disorders (BD) type I no significant correlations were found between plasma zonulin and duration of illness, total count of manic and depressive attacks, treatment duration, and hospital admission counts.	Plasma zonulin levels did not oscillate in patients with BD type I between symptom exacerbation and treatment response. Furthermore, plasma zonulin levels did not vary between control and BD.

Kılıç F, 2020, Journal of Affective Disorders	Manic, n=20 In remission, n=21 control, n=41	In patients with manic episodes the mean serum zonulin and claudin-5 levels were significantly higher compared to healthy controls. No difference was found between patients with manic episodes and patients in remission in zonulin and claudin-5 levels.	The findings may contribute to the role of intestinal permeability or brain-blood-barrier in the pathogenesis of bipolar disorder
Jung F, 2021, Nutrients	ALD, n= 37 control, n=17	Zonulin protein concentrations and I-FABP were lower in Alcohol-Related Liver Disease (ALD) patients before alcohol withdrawal, compared to healthy controls, but without reaching the significance level. The concentrations of both zonulin and I-FABP increased almost to the level of controls after the alcohol withdrawal.	Increased bacterial toxin levels are directly related to alcohol intake, the functioning of intestinal barrier markers being altered. After one week of abstinence these alterations are remarkably improved, in association with an improvement of liver healthiness.

Source: Authors' own contribution

Neurocognitive disease. In a study conducted on patients suffering from Alzheimer's dementia (AD, n = 110), mild cognitive impairment (MCI, n = 110) and healthy controls (n = 110, mean age over 75 years for all groups), increased zonulin levels, measured using ELISA assay, were observed (Wang et al, 2019). In AD patients serum zonulin levels were significantly higher (5.37 \pm 2.18 ng/mL) than those in MCI patients (3.20 \pm 0.18 ng/mL) or healthy patients (2.68 \pm 0.27 ng/mL). In addition, in this study, a high level of zonulin was positively correlated with a high level of C-type lectin-like receptor 2.

Schizofrenia. Usta et al (2021) showed that zonulin levels were high in patients diagnosed with schizophrenia. In this study, serum zonulin levels in schizophrenia patients (n = 50) were higher than in the healthy controls (n = 50; t = 3107, p = 0.002). In addition, zonulin was positively correlated with BMI (r = 0.413, p = 0.003), but not with age or disease duration. No significant correlation was found between serum zonulin concentration and the total Scale for the Assessment of Negative Symptoms (SANS) score (r = -0.259, p = 0.070), but a negative correlation was identified between serum zonulin concentration and the positive schizophrenia symptoms evaluated through the Scale for the Assessment of Positive Symptoms (SAPS) (r = -0.306, p = -0.031).

Depression and suicidal behavior. In a study held by Ohlsson et al, (2019), investigating biomarkers of gut permeability in patients with suicidal behavior (n = 54 with recent suicid attempt), depressed patient without a history of suicid attempt (n = 13 with major depressive disorder) and healthy controls (n = 17), zonulin was negatively correlated with the intestinal fatty acid binding protein (I-FABP)(r = 0.46, p < 0.001), with IL-6 (r = 0.25, p < 0.05) and with MADRAS Scores (r = -0.21, p = 0.07).

Another study (Liśkiewicza et al, 2021) investigated patients with mild depressive episode (n = 1), moderate depression (n = 8) and severe depressive episode (n = 7) in treatment with escitalopram, during 6 weeks and showed median results: In week 0, median result of zonulin was 70.97 (ng/ml) (60.69–99.84), in week 6 median results of zonulin was 55.0 (ng/ml), (43.69–102.82). In week 0, median result of calprotectin was 21.76 (µg/ml), (12.96–42.24), in week 6 median results of calprotectin was 14.35 (µg/ml), W6 (9.52–33.83). The authors found the severity of depressive symptom correlated with gut microbiota and no correlation between severity of depressive symptom and fecal zonulin level (Liśkiewicza et al, 2021).

There was no significant correlation between fecal zonulin levels and the clinical status Hamilton Depression Rating Scale (HDRS24). There was a positive correlation with changes in fecal calprotectin during hospitalization (i.e., calprotectin decreases during the study with better clinical outcome).

Bipolar affective disorder. Kılıç et al (2020) observed 41 patients diagnosed with bipolar affective disorder (21 in remission and 20 with manic episodes) and 41 healthy controls and showed an increase level of serum zonulin claudin-5 levels than healthy controls, with no difference zonulin and claudin-5 levels between patients with manic episodes and patients in remission.

Marget et al (2021) conducted a study on patients with depression (n = 76) and patients considered euthymic (n = 45), showing that serum zonulin level is significantly higher in women compared to men, independent from affective status. (z = -2.412, p = 0.016). Women showed higher zonulin levels than men in the euthymic subgroup (z = -2.114, p = 0.035). No difference in zonulin serum levels was found in individuals taking psychopharmacotherapy and no correlation was found with depression severity.

In another study, focussing on patients suffering from bipolar disorder type I (Aydın et al, , 2020), diagnosed patients (n = 30) and healthy controls (n = 29) the plasma zonulin levels did not significantly differed between groups (Wilks' Lambda; F(1,56) = 0.57; p = 0.45; $\eta \rho 2 = 0.01$) or treatment response period (Wilks Lambda; F(1,56) = 0.67; p = 0.51; $\eta \rho 2 = 0.03$) when analyzed using enzyme-linked immunoassay (ELISA) method. Also, there were no associations between plasma zonulin-level and disease symptoms and intestinal barrier integrity was not altered among patients.

Alcohol. Jung et al (2021) conducted research following patients suffering from alcohol related liver disease (ALD, n = 37) and healthy controls (n = 17), where zonulin and I-IFAB levels in plasma were found to be lower before alcohol withdrawal, but not significantly (p=0.006 for zonulin and p=0.27 for I-FAB). After one week of alcohol withdrawal, zonulin and I-FAB levels increased significantly, almost to the level of controls (p<0.05 for both). This effect is a primary result of a restored intestinal mucosa, the patients showing also an improvement of liver healthiness. As a direct consequence of alcohol withdrawal, markers of intestinal permeability are rapidly improved in patients with ALD.

5. Conclusions

The intestines serve as an important barrier between the external environment and the body and play an important role in the transfer of certain antigens to the body and in the development of an immune response (Wei et al, 2005). The study of Usta et al (2021) assumes that zonulin may be involved in the etiopathogenesis of schizophrenia.

The study of (Wang et al, 2019) reveals increased zonulin and C type lectin like receptor-2 as significant factors for reduced Mini-Mental State Examination score in mild cognitive impairment and Alzheimer disease. Some studies reveal the importance of the gut-brain axis in the etiology of schizophrenia. The study of Usta et al (2021) shows that zonulin is negatively correlated with the symptoms evaluated on the SAPS scale. Research findings show patients diagnosed with depression and other mental conditions have demonstrated gut microbiome dysbiosis (Sherwin et al, 2016). Ohlsson et al (2019) suggest that "leacky gut hypothesis" may induce part of immune respons reported in humans with suicidal attempt, because of the importance of the alterations in gut permeability markers. Zonulin and I-FAB have different aspects in gut permeability, in depression lower levels of zonulin could indicate in fact compromise gut integrity and higher levels showing gut epithelial cell death or dysfunction, and I-FAB indicating enterocyte damage. Liśkiewicza et al (2021) find associations between the severity of depressive symptoms and gut microbiota but no significant correlation between zonulin levels and the clinical status. These findings do not serve as predictors of symptomatic improvement during antidepressant treatment in inpatient treatment for MDD. Zonulin as a marker of intestinal permeability in patients with depression need more research also could be focus on the comparison of zonulin with other promising biomarkers like I FABP (Liśkiewicza et al, 2021). Kılıç et al (2020) found that zonulin and claudin-5 levels are higher in patients with manic phase of bipolar disorder. The authors highlight the potential of the findings to contribute to the role of intestinal permeability or brain-blood-barrier in the pathogenesis of bipolar

disorder (Marget et al, 2021). At patients with bipolar disorders no correlation was found between zonulin levels and the severity of the depression, neither between BD type I symptom exacerbation nor treatment response (Aydın et al, 2020). Mentioned, zonulin level was significantly higher in women than in men, independent from affective status. (Marget et al, 2021). Alcohol related liver disease (ALD) included conditions from steatosis to hepatitis, fibrosis and cirrhosis (Mueller et al, 2014). The results of the study (Jung et al, 2021) support the hypothesis that in-creased bacterial toxin levels are directly related to alcohol intake in ALD patients and that markers of intestinal barrier function are altered. The fact that only one week of abstinence improved the state of patients is a primary result of a restored intestinal mucosa, the patients showing also an improvement of liver healthiness. As a direct consequence of alcohol withdrawal, markers of intestinal permeability are rapidly improved in patients with ALD.

The limiting factors identified within the reviewed papers, (i) small sample size, (ii) intestinal microbiota composition not assessed, (iii) unmeasured sociodemographic and lifestyle variables (i.e., smoking, alcohol intake and dietary habits), (iv) the influence of medications (e.g., cholinergic drugs), constitute important confounding factor which should be taken under consideration in further studies.

All in all, research shows that increased permeability and changes in the intestinal microbiota contribute to the pathogenesis of mental disorders. An increased level of zonulin was found in (i) neurocognitive disorders in Alzheimer's disease and were correlated with low results on Mini-Mental State Exam (MMSE); and in (ii) patients with bipolar disorder or schizophrenia. On the other hand, low level of zonulin was found along with an elevated level of intestinal fatty acid-binding protein (I-FABP) in patients with recent suicide attempts, I-FABP being positively correlated with major depression and Montgomery-Asberg-Depression Rating Scale (MADRAS) results.

Further research should aim to evaluate the therapeutic potential of epithelial barrier amelioration and focus on the comparison of zonulin with other promising biomarkers like FABP. To assess time-dependent dynamics in the interaction of those biomarkers and the course of disease, longitudinal study designs should be preferred.

6. Acknowledgment

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7. References

- Asbjornsdottir, B., Snorradottir, H., Andresdottir, E., Fasano, A., Lauth, B., Gudmundsson, L.S., Gottfredsson, M., Halldorsson, T.I. and Birgisdottir, B.E., 2020. Zonulin-dependent intestinal permeability in children diagnosed with mental disorders: a systematic review and meta-analysis. *Nutrients*, 12(7), pp.1-27.
- Banks, W.A. and Erickson, M.A., 2010. The blood-brain barrier and immune function and dysfunction. *Neurobiology of disease*, 37(1), pp.26-32.
- Esnafoglu, E., Cırrık, S., Ayyıldız, S.N., Erdil, A., Ertürk, E.Y., Daglı, A. and Noyan, T., 2017.
 Increased serum zonulin levels as an intestinal permeability marker in autistic subjects. *The Journal of pediatrics*, 188, pp.240-244.
- Fasano, A., 2012. Zonulin, regulation of tight junctions, and autoimmune diseases. *Annals of the New York Academy of Sciences*, 1258(1), p.25.
- Foster, J.A., Rinaman, L. and Cryan, J.F., 2017. Stress & the gut-brain axis: regulation by the microbiome. *Neurobiology of stress*, 7, pp.124-136.
- Collaborators, G.B.D., 2018. Global, regional, and national incidence, prevalence, and years lived with disability for 354 diseases and injuries for 195 countries and territories, 1990-2017: a systematic analysis for the Global Burden of Disease Study 2017.
- Grenham, S., Clarke, G., Cryan, J.F. and Dinan, T.G., 2011. Brain-gut-microbe communication in health and disease. *Frontiers in physiology*, 2, p.94.

- Iannone, L.F., Preda, A., Blottière, H.M., Clarke, G., Albani, D., Belcastro, V., Carotenuto, M., Cattaneo, A., Citraro, R., Ferraris, C. and Ronchi, F., 2019. Microbiota-gut brain axis involvement in neuropsychiatric disorders. *Expert review of neurotherapeutics*, 19(10), pp.1037-1050.
- Józefczuk, J., Konopka, E., Bierła, J.B., Trojanowska, I., Sowińska, A., Czarnecki, R., Sobol, L., Józefczuk, P., Surdy, W. and Cukrowska, B., 2018. The occurrence of antibodies against gluten in children with autism spectrum disorders does not correlate with serological markers of impaired intestinal permeability. *Journal of medicinal food*, 21(2), pp.181-187.
- Jung, F., Burger, K., Staltner, R., Brandt, A., Mueller, S. and Bergheim, I., 2021. Markers of Intestinal Permeability Are Rapidly Improved by Alcohol Withdrawal in Patients with Alcohol-Related Liver Disease. *Nutrients*, 13(5), p.1659
- Kılıç, F., Işık, Ü., Demirdaş, A., Doğuç, D.K. and Bozkurt, M., 2020. Serum zonulin and claudin-5 levels in patients with bipolar disorder. *Journal of affective disorders*, 266, pp.37-42..
- Liśkiewicz, P., Kaczmarczyk, M., Misiak, B., Wroński, M., Bąba-Kubiś, A., Skonieczna-Żydecka, K., Marlicz, W., Bieńkowski, P., Misera, A., Pełka-Wysiecka, J. and Kucharska-Mazur, J., 2021. Analysis of gut microbiota and intestinal integrity markers of inpatients with major depressive disorder. *Progress in Neuro-Psychopharmacology and Biological Psychiatry*, 106, p.110076.
- Lu, R., Wang, W., Uzzau, S., Vigorito, R., Zielke, H.R. and Fasano, A., 2000. Affinity purification and partial characterization of the zonulin/zonula occludens toxin (Zot) receptor from human brain. *Journal of neurochemistry*, 74(1), pp.320-326.
- Maget, A., Dalkner, N., Hamm, C., Bengesser, S.A., Fellendorf, F.T., Platzer, M., Queissner, R., Birner, A., Lenger, M., Mörkl, S. and Kohlhammer-Dohr, A., 2021. Sex differences in zonulin in affective disorders and associations with current mood symptoms. *Journal of Affective Disorders*, 294, pp.441-446
- Page, M.J. and Moher, D., 2017. Evaluations of the uptake and impact of the Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) Statement and extensions: a scoping review. *Systematic reviews*, 6(1), pp.1-14.
- Mueller, S., Seitz, H.K. and Rausch, V., 2014. Non-invasive diagnosis of alcoholic liver disease. World journal of gastroenterology: *WJG*, 20(40), p.14626.
- Kowalski, K. and Mulak, A., 2019. Brain-gut-microbiota axis in Alzheimer's disease. Journal of neurogastroenterology and motility, 25(1), p.48.
- Kowalski, K. and Mulak, A., 2019. Brain-gut-microbiota axis in Alzheimer's disease. *Journal of neurogastroenterology and motility*, 25(1), p.48.
- Ohlsson et al, 2019. Leaky gut biomarkers in depression and suicidal behavior.. *Acta Psychiatrica Scandinavica*, pp. 139(2), 185-193.
- Özyurt, G., Öztürk, Y., Appak, Y.Ç., Arslan, F.D., Baran, M., Karakoyun, İ., Tufan, A.E. and Pekcanlar, A.A., 2018. Increased zonulin is associated with hyperactivity and social dysfunctions in children with attention deficit hyperactivity disorder. *Comprehensive psychiatry*, 87, pp.138-142.
- Aydın, O., Kocabaş, T., Sarandöl, A., Taştan, İ., Onur, E., Aydemir, Ö. and Esen-Danacı, A., 2020. Examination of plasma zonulin levels in bipolar I disorder: a case—control study with follow-up. *Journal of Neural Transmission*, 127(10), pp.1419-1426..
- Sherwin, E., Rea, K., Dinan, T.G. and Cryan, J.F., 2016. A gut (microbiome) feeling about the brain. *Current opinion in gastroenterology*, 32(2), pp.96-102.
- Usta et al, 2021. Serum zonulin and claudin-5 levels in patients with schizophrenia. *European Archives of Psychiatry and Clinical Neuroscience*, pp. 271(4), 767-773
- Wang, X., Liu, G.J., Gao, Q., Li, N. and Wang, R.T., 2020. C-type lectin-like receptor 2 and zonulin
 are associated with mild cognitive impairment and Alzheimer's disease. *Acta Neurologica Scandinavica*, 141(3), pp.250-255.
- Wei, J. and Hemmings, G.P., 2005. Gene, gut and schizophrenia: The meeting point for the gene-environment interaction in developing schizophrenia. *Medical hypotheses*, 64(3), pp.547-552

Strategy for the Transfer of River Freight Transport, From the Danube, on an Inland Canal in the South of Romania

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Abstract

Currently, the transport on the Danube River, on the sectors in Romania, depends a lot on the water level and the quotas in the navigation areas. The study, analysis and then construction of a navigable canal, parallel to the Danube and close to it, starting from Calarasi, to Drobeta Turnu-Severin, can be the technical and economic solution to solve the problem of lowering the water level on the Danube, water supply for irrigation and population consumption, pollution reduction and economic recovery of Romania. The paper follows the technical, economic aspects and strategies that must be established for the realization of a large-scale work, of this kind, the "South Canal".

Key words: river, canal, development, strategy **J.E.L. classification**: M 21, R 11, R 58

1. Introduction

The Danube issue currently involves several situations related to direct transport, freight and passengers, dams, flood protection, irrigation, protection of ecosystems specific to the Romanian area and especially the Danube Delta. Over time, transport on the Danube has been affected by many natural causes, from falling water levels due to drought, floods and exceeding warning levels, to freezing of the river or the detachment of ice floes and their floating. A major problem is the ecological protection of the river, protected areas and the Delta. For freight and passenger transport, the biggest problems concern:

- **A. Lowering the water level.** This is a permanent, observed and recorded situation that helps state authorities and operators (NIHWM, 2021, pp. 1-2). Negative effects: safe navigation can no longer be carried out, it is impossible for ships to dock at port berths, so they can no longer be operated; long duration of time, of lowering the water level, which produces great disturbances in the normal development of the transport.
- **B.** Water freezing. Interventions for this situation have been regulated and on this basis, activities are organized for raising the ice, (MTI, 2012, pg. 1-6). Problems: navigation can only be carried out with the help of vessels specialized in breaking ice, which increase operating costs, and after a passage of ships in the convoy, there is a risk that the water will freeze again; ships may be trapped in the harbor or in stationary areas, freeze water and ice and affect the resilience of ships.
- C. Rising water levels above flood levels. This is considered the most dangerous situation, against which, over the last 50 years, several containment measures have been adopted for protection (Bularda, et al, 2014, pg. 5-6, 9-11). Negative effects: ships are affected by rising water levels, due to the fact that berths at port berths may be affected and ships can no longer berth; when ships are at the quay, during loading and unloading operations, they may be affected or stopped for a long time.
- **D.** Clogging of the waterway. Considering the fact that on the Danube River, there are many places where the water depth is reduced, these being the most critical places for navigation, especially in the periods when the water level is low, the phenomenon of channel clogging also appear. This phenomenon is dangerous, permanent and involves great efforts for the River Administration, in the area of responsibility, to carry out extensive dredging works. These works are expensive, they must be carried out permanently, in accordance with the regulations of the

European Danube Convention, (MFA, 1948, pg.1-2). The problem is that a river ship or a convoy, when engaged in the riverbed with a difficult passage, it must sail in the middle of the channel, where the main current and the greatest depth, and in the case of meetings with other ships in these conditions, must adopt a series of measures imposed by the Danube Navigation Regulation, (MT-RND, 2013, pg.14, 18, 49-50). Hence another big problem, that of dredging the waterway on the Danube, in the area of responsibility of Romania. Dredging is also a problem for Serbia and Bulgaria, in the sectors they manage. From the data published by the Romanian river administrations, it results that they fulfilled their tasks regarding the dredging in the critical areas, (LRDA, 2019, pg.6-7). But what ship-owners and seafarers say is far from the situations presented in official reports. Over time, there have been situations and conflicts, related to the fact that the Bulgarian authorities have not fulfilled their tasks in the areas of responsibility, which has created major problems for ships (Toma, 2015, pg.1). All these situations have repercussions on the transport and operation costs, lead to very long delays in the delivery of goods, negatively influence the transport activity on the Danube. Therefore, the construction of a canal, between Călărași and Drobeta Turnu Severin, could solve many of the current problems of navigation on the Danube.

2. Theoretical background. Study on the geographical area regarding the construction of the "South Canal"

There are a number of concerns regarding traffic on the Danube, the elimination of difficult situations and problems caused by the river, but also the lack of organization of the competent authorities. Considering the fact that for a very long time, none of these presented situations are solved, I carried out a series of theoretical studies and documentary visits, in order to understand if a canal can be built between Călărași and Drobeta Turnu Severin (South Canal). În Călărași, an industrial port was designed and started, in a basin that is connected to the "Borcea" river arm (part of Danube), by a 4.8 km navigable canal (IANATD, 2003, pp. 316-317). The problem is that the entrance on this canal is clogged and there is a risk that this canal will be closed by the alluvium brought by the "Borcea" river arm. This situation is known at the level of the leadership of the Ministry of Transport and Infrastructure. Following a parliamentary interpellation, the Minister of Transport replied: "it was found that the phenomenon of natural clogging of this secondary arm of the Danube quickly led to deterioration of navigation conditions, the need for dredging being much increased compared to the initial situation", (Câju, 2021, pg.1). What does this mean? That additional costs are needed to maintain a canal, on which navigation is no longer carried out, because the "Siderca" Steel Plant, for which it was built, has closed. Thus, a generous project, with great prospects, became unusable. Figure 1 shows the canal and the industrial port. There was an idea to build another canal from this "Siderca" canal, which would be connected to the Bucharest-Danube canal, at north of the city of Oltenita. The Bucharest-Danube Canal has not been completed and there is currently no completion project. The project of the South Canal can be designed and realized starting from this canal, from the basin from the southwest of the city of Călărași or even from the exit point to the Borcea arm, as shown in figure 2. In this figure is presented the first segment between Călărași and Chiselet, 33 km long.

Figure no. 1. Călărași canal and industrial port



Source: google.maps

Figure no. 2. Calarasi-Chiselet segment



Source: author's study, google.maps

Table no. 1 shows the channel segments and their distances.

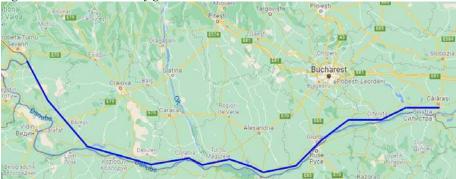
Table no. 1. South canal segments

CHANNEL SEGMENT	LENGTH	CHANNEL SEGMENT	LENGTH
Călărași – Chiselet	33 km	Pietroșani – Zimnicea South	24 km
Chiselet – Spanţov	10 km	Zimnicea South – Suhaia	13 km
Spanţov – Olteniţa	13 km	Suhaia – Ciuperceni	25 km
Connection Olteniţa-Argeş	2,5 km	Ciuperceni – Gura Oltului	11 km
Olteniţa – Greaca	23 km	Gura Oltului – Corabia North	11 km
Greaca – Puieni	12 km	Corabia Nord – Dăbuleni	31 km
Puieni – Gostinu	11 km	Dăbuleni – Jiu	24 km
Gostinu – Giurgiu North-East	12 km	Jiu – Negoi	35 km
Segment Mocănașu Island - Plant Canal -	10,5 km	Negoi – Gemeni	38 km
Giurgiu South-West			
South-West Giurgiu – Vedea	15 km	Gemeni – Recea	23 km
Vedea – Pietroșani	14 km	Recea – Hinova	26 km
_	Total	_	417 km

Source: author's study, google.maps.

In total, the canal will have approx. 417 km, with an approximate configuration as in figure 3. If we compare with the distance between Călărași and Drobeta Turnu Severin, measured on the Danube, which is 561 km, there is a difference of 144 km. This difference can be appreciated as one that, under normal navigation conditions, a river tug with a speed of 10 km/h, upstream, travels in approx. 14-16 hours. So the use of the canal, in terms of travel time, will not lead to a substantial reduction, especially since it will depend on the number of locks through which ships and convoys will pass. But the benefits of this channel will be particularly important. The problem of locks and connections with the main rivers, which flows into the Danube, between Călărași and Negoi, in Dolj County, is a very important one, which will raise a series of challenges for designers and builders. The canal will intersect with the following rivers: Mostiștea, Argeș, Vedea, Călmăţui, Olt and Jiu. The intersection with the small rivers is not a special problem, but the biggest challenges will be at the crossings of the rivers Argeș, Olt and Jiu.

Figure 3. South Channel configuration



Source: author's study, google.maps.

Also, substantial arrangements will be needed in the ports of Calarasi, Oltenita and Giurgiu. The canal will pass at a certain distance from the localities near the Danube, then from the western part of the Romanian plain and in the southern part of the "Getic" plateau, from Mehedinți county. When passing by the ports of Zimnicea, Turnu Măgurele, Corabia and Bechet, due to the configuration of these ports, it is not possible to make the direct connection with the Danube in these ports. This will be possible only on the nearby rivers, which will make them arranged on the portion from the intersection with the canal, until the discharge into the Danube. In the case of the 4 localities, it will be necessary to arrange some ports on the canal, in order to connect the roads and the railway, which are close to these localities-ports.

3. Research methodology

For the elaboration of this work, I studied several works in this field, checked and studied the navigation maps called "Danube Road" (LDRA, 2021, maps, km 297-1045), but also the terrestrial maps of the area in the south of the country. I traveled along the Danube, from Călărași, through Oltenița, Giurgiu, Zimnicea, Turnu Măgurele, Corabia, Calafat, to Dorbeta Turnu Severin and I noticed the characteristics of the area near the river, the intersections with localities, ports, rivers and adjacent areas. In the works I studied and found few concrete solutions to solve the issues related to the Danube road, navigation conditions, Danube quotas in ports and waterways, dredging and problems related to water freezing, but also constraints that arise each season. I systematized the information, centralized it and introduced it in this study. The literature makes no reference to such a project.

The methodology used consisted of the systematic, oriented and coherent study, in accordance with the principles used in a scientific investigation in the field of economic development strategies, of making large-scale investments, with a special impact on the entire national economy. I used the method of "transfer of concepts", which consists in taking from scientific papers and legislation, some ideas, concepts and methods important for this type of study. Added my own studies and ideas to find the best solutions for carrying out such a project.

4. Findings

The transfer of river transport from the Danube, on the South Channel, is the first strategic point of the project. From a technical point of view, the realization of the channel means the following:

- The construction of the canal itself, of the locks, of the monitoring stations, of the road and railway bridges over the canal, the modernization and arrangement of the main ports, their endowment with operating installations and the realization of the logistic spaces.
- Connecting the current irrigation systems with the canal to ensure the water needed in agriculture, given that many irrigation systems have been built and most of them are now derelict. Realization of dam systems, for the protection of the areas adjacent to the rivers that intersect the canal.
- Construction of a system of photovoltaic panels on the banks of the canal, to provide electricity and a power supply system, electric river vessels, according to the system used for electric trolleybuses.
 - Creation of a "green line", consisting of trees planted on the edges of the canal.
- 1. The projection and construction of the canal itself, locks and traffic monitoring and control stations. Considering the previous experiences regarding the construction of the Danube-Black Sea canal, the "Poarta Albă-Midia Năvodari" canal, the "Călărași-Siderca" canal and the "Bucharest-Danube" canal (unfinished), which represent large-scale and very expensive works, from the point of view of the implementation strategy, the following steps are required:
- **A).** Study and understanding of the location of the South Canal. These must be preceded by field geodetic measurements along the entire length. Only on the basis of measurements, it will be possible to choose the exact routes, to establish the areas where the locks will be located, the areas of connection with rivers and ports, where the canal will pass. It can be appreciated that such a canal can be built in any area of the plain in the south of the country, but I think it is best for this canal to be built near the Danube, in the area where the river was flooded, closer to the river. The reasons why I think this area is the best are the following:
- *Danube meadow*. This is an area recovered from the flooded areas of the river. In many such areas there were lands arranged for rice paddies, and now there are agricultural lands. Between Călărași and Negoi, the canal is not too far from the Danube.
- Ecological impact. I think the negative effect is small, because the ponds and swamps have been drained for a long time, then protective dams have been made over a very long distance, especially where the ground level was close to the water surface and was periodically flooded. A problem will be given by the passage through the forested areas, but I consider that on the edge of this canal, later, it will be possible to plant a very large number of trees, which will compensate for

any deforested parts of the forest. Due to the fact that there will be drainage channels for "overflow" and bringing water into the canal, with each opening of the locks, fish populations and other aquatic animals will not be affected. An environmental impact study is needed, but solutions will be found to all the problems that will be discovered.

- *The final area*. A problem will be on the segments between Gemeni-Recea and Recea-Hinova, where the relief forms change and the area of the sub-Carpathian hills appears. In this area, there will probably be some route changes, to avoid areas with hills.
- *The cost of land*. Where they have been used for restitution, it is much lower than in normal plain areas, but near localities, land prices will be higher.
- B). The technical aspects of the channel. The largest work in Romania, the Danube Canal -Black Sea, has the following technical characteristics (ANC, 2021, pg.1-2): length = 64.4 km; navigable channel width = 90 m; channel depth = 7 m; maximum weighing of ships = 5.5 m; height at bridges = 16.5 m. The shape of the channel is trapezoidal. On this channel can sail in parallel, in the opposite direction, convoys with a length between 275-285 m, with a width of approx. 34.2 m, with a large tonnage of approx. 27,000 tdw. Following all the areas between Călărași and Negoi, the distance between the canal and the Danube could be between 300 m and 3 km maximum, depending on the populated areas next to which it will pass. This minimum distance of approx. 300 m, compared to the Danube shore, is a safety one, in the area where the construction works would not affect the area immediately adjacent to the shore. These distances, between the canal and the Danube, will be chosen according to the geodetic situation in each area. Ideally, this canal should cross as close as possible to the Danube, so as not to need more road bridges, in the areas of the localities, which have cultivated agricultural areas, between them and the river. The remaining area between the canal and the Danube can be used for replanting with trees, so as to ensure a green area along the entire length of the canal. Depending on this distance, the width of the navigable channel will also be chosen, depending on the size of the ships that will sail on this channel. The maximum width of 90 m of the channel, with the maximum width at ground level of approx. 110-120 m, plus protection areas of approx. 10 m on each side, would lead to a width of approx. 130-140 m. In addition, there will be connection areas, ports and locks, which will occupy a certain space. In order to adopt the optimal solution of the technical characteristics of the canal, simulations regarding the transport of goods will be necessary, mainly, the dimensions of the ships and convoys, which will sail on the canal, after the completion of the construction.
- **2.** Making bridges over the canal. Assessing the situation of the intersections of the canal with the roads and railways, a number of 33 road bridges, 3 railway bridges and 4 mixed bridges, road and railway will be needed. These are presented in table 2, where: E = European road, NR = national road, CR = county road, RLI = road of local interest. RF = road in the field.

Table no. 2. Road and railway bridges over the canal

		ruitway ortages over the canal
No	TYPE OF	LOCATIONS AND AREAS
	CONSTRUCTION	
1.	Road bridges	1.Călărași West-NR 3. 2.Bogata-RF. 3.Olteniţa-NR 4.
		4.Gostinu-CR 507. 5.Comasca-RF. 6.Malu-RF.
		7.Pietroşani-RF. 8.Zimnicea-NR 51. 9.The Lake Suhaia-RF.
		10.Poiana-RLI 34. 11.Turnu Măgurele-NR 52. 12.Islaz East-NR 54. 13.Islaz North-
		CR 642. 14.Islaz West-NR 54. 15.Corabia East-CR 543. 16.Corabia North-RLI 124.
		17.Corabia West-NR 54. 18.Orlea East-NR 54 A. 19.Bechet-NR 55. 20.Negoi-NR
		55 A. 21.Rastu Nou-CR 561 D. 22.Rastu Nou-CR 561 E. 23.Moţăţei West-NR 56 (E
		79). 24.Cetate North-CR 552. 25.Dârvari West-CR 562. 26.Cearângu-CR 563.
		27.Recea-NR 56 A. 28.Nicolae Bălcescu-CR 564. 29.Hotărani-CR 606. 30.Rogova
		South-CR 562 A. 31.Rogova West-NR 56 A. 32.Hinova South-NR 56 A. 33.Hinova
		Port-NR 56 B.
2.	Railway bridges	1. Olteniţa. 2. Zimnicea. 3. Turnu Măgurele.
3.	Mixed bridges:	1. Giurgiu East. 2. Giurgiu Port. 3. Giurgiu West. 4. Moţăţei-Station.
	road and railway	
		·

Source: author's study.

- 3. Arrangement of ports and connections with large rivers. A particularly important aspect is the arrangement of the main ports (Călărași, Oltenița, Giurgiu), the secondary ones (Zimnicea, Turnu Măgurele, Corabia) and the connections with the big rivers (Argeș, Olt and Jiu), with the small rivers and canals of irrigation and drainage. Following the configuration of the mouths of the main rivers, the areas of their discharge into the Danube can be arranged, allowing the entrances on the South Canal. Basically, the entrances and exits on the canal would be in Călărași, Oltenița, Giurgiu, Olt, Jiu and Hinova. The other rivers (Vedea, Călmățui) and the irrigation canals have small dimensions and flows, which would require dredging and special arrangements, which would make them navigable from the intersection with the canal to the Danube. The completion of the Bucharest Danube canal would also lead to the arrangement of the Oltenita port, which would be integrated in the South Canal project. Considering the current situation of the river ports, most of them abandoned, it is necessary the modernization and arrangement of the ports, their endowment with operating installations, the realization of the logistic spaces, their real integration on the multimodal transport circuits.
- **4.** Connecting the current irrigation systems with the canal. Given the fact that throughout the year, the water level in the canal will remain almost constant, it can provide the necessary water in agriculture, which currently, in small quantities, is obtained from the Danube. Considering the fact that many irrigation systems, among those that have been built, and currently many of them are in ruins, the irrigation program can be relaunched throughout the "Romanian Plain". The second strategic role of the South Canal is to obtain a strategic reserve of drinking water, in a constant amount.
- **5. Photovoltaic panel system**. Extensive areas of photovoltaic panels can be installed on the banks of the canal, which can provide the electricity needed for the operation of all monitoring, control, lighting and lock installations. Considering the construction projects of some electric river ships, from these panels, stations can be arranged for the supply of electricity to the river ships. The remaining electricity can be transferred to the national energy system. It is also possible to build a power supply system for electric river vessels, according to the system used for electric trolleybuses.
- **6. Dam systems**. Before the points of intersection with the canal, it will be necessary to make some embankment systems, for the protection of the areas adjacent to the rivers and of the entrance areas on the canal, but also the waiting ports of the ships.
- 7. "Green line". On the edge of the canal, in the adjacent space, a green line can be made, formed by planted trees. It would also have a role in consolidating the areas, in order to reduce soil erosion near the canal.
- **8. Fish farms**. On the canal, fish farms can be arranged, for the protection of the Danube species, but also for the consumption of the population and for sport fishing.
- 9. Transfer of freight from land to canal. The transfer of freight transport, from roads, to the canal is the third strategic reason, which justifies its realization. Freight transport, in large quantities, will be oriented towards the transfer from inland roads and railways, to river vessels, which will sail on this canal. An integrated information system on freight transport on the canal can be used by manufacturers, carriers and beneficiaries. The transfer by road will lead to substantial savings and the reduction of pollution generated by heavy road transport vehicles. The connection of the capital Bucharest with Constanţa to the east, on canals and river and to the west, towards Drobeta Turnu Severin, will lead to the decrease of the costs per ton of transported goods. With the help of this channel, the main freight flows, from the port of Constanţa, to the interior of the country, will be oriented as in figure 4, which will have major implications on the development of multimodal transport. As well as the reverse flows, they will come from inside the country and will use the southern channel, on both East-West directions. The blue arrows indicate the directions on the water, and with red, the ones on land, on the roads and railways.

Figure no. 4. Freight flows from the port of Constanta

Source: author's study, google.maps

10. Bucharest-Danube Canal. It is not completed, but must be considered, as a first step, for the start of the big project. This canal was designed to have a length = 73 km, a width = 80 m, the minimum water depth = 4.5 m, the level difference of 53 m (10 m above sea level in Olteniţa and 63 m in Bucharest). The plan includes four locks and three ports: two in Bucharest, the first near 1 Decembrie commune on Argeş and the second in Glina, on the Dâmboviţa river, and the third in Olteniţa. From this it was made approx. 70%, but in 31 years since the cessation of construction, large parts of the works were damaged and a number of components was stolen. In 2008, an attempt was made to resume its construction, but the project remained unfinished. The advantages of building this canal can be summarized as follows: reducing the cost of freight transport, on East-Center-West flows and setting up a large container terminal in Bucharest; reducing road traffic on the routes between Constanţa, Bucharest, Craiova, Drobeta Turnu Severin and Timişoara; construction of micro hydropower plants at hydro technical nodes; water use for irrigation of over 150,000 ha of arable land; elimination of the flood danger for 11 localities and approx. 30,000 ha of agricultural land.

5. Sources of financing and costs

The European Union has developed several strategies for the sustainable development of river and inland waterway transport, and the Danube occupies a central place among them (EC, 2010, pp. 44-50). Legislation exists, as do funds, which can be obtained through various local, regional and transnational funding programs. But, as assessed in the documents prepared by the European Court of Auditors, (ECA, 2018, pp. 14-15, 38), "it was found that EU strategies for inland waterway transport do not have a solid and comprehensive analytical basis, and the cost of eliminating traffic bottlenecks in Europe (around ϵ 16 billion) far exceeded the funding available from the EU budget for inland waterway infrastructure. Therefore, additional funding from national and/or private sources is needed to address this shortfall". And Romania is on one of the last places, in terms of investments in the field of river transport. From the point of view of the specialized literature, many works and reports have been published, regarding the river transports, starting with the legal, technical, environmental and economic aspects.

Such a "Southern Canal" project is large-scale and can be defined in simple terms as a true "Country Project". Considering the experience of building the "Danube-Black Sea", "Poarta Albă-Midia Năvodari" and "Călărași-Siderca" canals, certain parallels can be made and even certain information can be used. In 2012, Romania submitted a project to the "European Strategy for the Danube Region", for the resumption of works on the "Bucharest-Danube" Canal, with a financing estimate of approx. 800 million euros. A joint statement of the foreign ministers of the countries from the Danube region followed (MFA, 2013, page 1) and since then, nothing has been done until this year. On 23.02.2021, the tender for the launch of a new feasibility study for the completion of this channel was launched. The feasibility study will be carried out over 11 months. From the latest estimates, the cost of completion would reach approx. 1.44 billion euros without VAT (Andone, 2021, pg.1), and the canal will be ready in approx. 5 years. The completion of the "Bucharest-Danube" Canal would have a series of advantages related to financing, design-evaluation, restitution of related lands, construction, endowment and especially, the experience of those who

will be involved in this project. I consider that it is a first stage, very important, in order to be able to move on to the "South Canal" project. Following the costs for the construction of the "Danube-Black Sea" Canal, they were estimated at approx. 10,000 billion lei 1984. This is a lot. But the construction of the canal was done by the Army, 40 km, the Communist Youth Union (pupils and students), 10 km, and the remaining 16.4 km, by civilian workers. The design was made by approx. 1,000 specialists, and currently, 50,000 people worked on the canal. The construction lasted 8 years. The very high costs were primarily due to the very large number of people. Even if the military in term, the pupils and students were not paid in full salaries, still, the value of their work was transferred to the institutions to which they belonged. Comparing and analyzing the situation then, with the possibilities of the current economy of Romania, it can be appreciated that a series of changes have appeared, which are directly constituted in advantages, as in table 3.

Table no. 3. Advantages of southern canal construction

No	CURRENT	ADVANTAGES
	SITUATION OF	
	THE ECONOMY	
1.	Computer aided	- Design is much easier, simulations and tests can be done.
	design.	- Will work with a small number of specialists.
2.	Use of modern	- Digging machines have high speeds and working capacities.
	equipment.	- Increased the transport capacity of the excavated soil, by using high speed and
		capacity conveyor belts.
		- The working perimeters are established with the help of satellites, through the
		GPS system and Google Maps.
3.	The problem of	- It will be used for: dams, strengthening the banks of rivers that intersect the canal
	excavated land.	and other adjacent areas.
4.	Project financing.	- European Union funds.
		- The state budget.
		- The budgets of the County and Local Councils from the 6 counties (Călărași,
		Giurgiu, Teleorman, Olt, Dolj and Mehedinţi).
5.	Creating new jobs.	- In research, at specialized institutes and partner universities.
		- To the companies that will win the tenders and perform the works.
		- In the administration and maintenance of the new canal.
6.	Providing the	- Water for irrigation and consumption.
	necessary drinking	- Preservation of a large amount of water, as a strategic reserve of the state.
	water.	
7.	Constant water level.	- Constant navigation throughout the year.
8.	Container transport	- From the roads and the railway, on the canal, considering that there is a highway
	transfer.	only between Feteşti and Bucharest, and between Bucharest, Alexandria, Craiova,
		Turnu Severin, there are national roads, which are not modernized.
9.	Other activities.	- Fish farming, sports and leisure.

Source: author's study

Carrying out a series of documentations regarding the prices of some excavation works, of the hydro technical works, of the construction of the public roads and of the bridges, we obtained an amount of approx. 25 billion euros, without VAT, with an additional reserve of approx. 3 billion euros. This amount is necessary for the construction of canals, locks, ports, bridges, paved and paved roads, port facilities, monitoring and control centers, solar panels, tree plantations, fish farms, etc. The estimated duration is as follows: 1 year for carrying out legal proceedings, 1 year for launching and carrying out the feasibility study, 2 years for designing the canal and all related elements, and then expropriating the land and carrying out the works. For approx. 100 km, an estimated working time of approx. 4 years, because the area between Călărași and Negoi is on soft ground, easy to dig. Finally, a term of approx. 22-25 years, it is reasonable to achieve it.

Funding must be done in the following stages:

- Preparation and elaboration of documents, by the National Company "Administration of Navigable Canals", which must make all the initial legal steps of the project, informing the Ministry of Transport and Infrastructure, ministries of finance, research, environment and foreign, etc., followed by informing the European Union and Danube Commission. After obtaining all the authorizations and approvals, the elaboration of the documents for the launch at auction of the realization of the feasibility study follows.

- After obtaining the approvals and authorizations, the financing planning must follow, which will include the financing of the feasibility study, from internal or governmental sources.
- Carrying out the feasibility study, on the basis of which the configuration of the canal, the number of locks, bridges, arrangements and connections, the lands that will be returned, etc, will be established. After completing this study, the costs of carrying out all works, collateral investments (roads, ports, port equipment, etc.) must be estimated. The plan of financing and the construction costs become the most important document, which will be constituted in a "National Strategic Plan", for the construction of the canal.
- Based on the financial estimate of the project, the documents for the tenders for the construction of the canal and all its components will be elaborated. Depending on the amounts allocated annually and the budget construction, construction tenders will be launched. The main problem at present is related to the fact that in Romania there are no more companies with experience in the field of hydromechanics, that the old economic units that built the previous canals, have been abolished or have restricted activity. Therefore, the tenders that will be organized for the completion of the "Bucharest-Danube" canal, will help us to understand which are the economic units with the potential to build this canal. The steps to be taken by the "Administration of Navigable Canals", which is the competent state authority in this field, are the following: concluding financing agreements with the EU, from the State Budget and the budgets of the counties through which the canal passes. The construction of the canal will require efforts both from the central authorities, but also from the county and local ones.

6. Conclusions

This channel will lead to the relaunch of scientific research in Romania. In order to carry out the project, collaborations between Administration of Navigable Canals, research institutes and universities will be necessary, for the projection, elaboration of the financial plan, of the environmental impact and of other aspects and situations that will appear. The need for construction materials will mean a demand that will generate an offer and that the economic units will have to make. This will mean the relaunch of the economy horizontally, in the fields of production of: cement, metal structures, electrical cables, stone, sand, gravel, bitumen, photovoltaic cells, paint, machinery and equipment for hydraulic constructions, river barges, trucks and wagons for transport, and so on. It will generate a large number of jobs, for projection, construction and after completion, for monitoring and maintenance. Given the current efficiency of the machines, manual work will be reduced in almost all areas. The future must be anticipated in this area as well, in time and with great care.

7. References

- Andone A., 2021. The Danube-Bucharest Canal, Ceausescu's pride, is back today. The government
 updates the feasibility study with European money, Economica.net, pages 1-2, [online] Available at:
 https://www.economica.net/canalul-bucuresti-dunare-reactualizare-studiu-de-fezabilitate-cu-banieuropeni 197459.html.
- Bularda M., Vişinescu I., 2014. Damaged dams on the Danube, current and perspective issues, S.C.D.A. Symposium, Braila, pp. 5, 6, 9-11.
- Câju O., 2021. C. Drulă, answer to the interpellation of Senator Cionoiu: The entrance area from the Danube on the Borcea Arm km 100, towards the port of Călăraşi at km 90, was permanently a problem for navigation", Commercial Society "Total Media" Ltd., article, published in "Arena Media", 14.06.2021 [online] Available at: https://arenamedia.ro/index.php/arena-news/politica-mp/diverse-politica-mp/c-drula-raspuns-la-interpelarea-senatorului-cionoiu-zona-de-intrare-de-la-the-dune-on-the-arm-of-borcea-km-100-towards-the-port-calarasi-at-km-90-was-permanently-a-problem-for-navigation.
- Toma A., 2015. Authorities blame Bulgarians for transport problems on the Danube. "Bursa" Journal 29.10.2015, page 1.
- European Commission, 2010. European Union Strategy for the Danube Region/ Action Plan. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, Brussels, pp. 44-50.

- European Court of Auditors, 2015. Special Report no. 1/2015, *Inland waterway transport in Europe:* since 2001, no significant improvements have been observed in terms of modal weight and shipping conditions, Luxembourg, (http://eca.europa.eu).
- European Court of Auditors, 2018. *Towards a successful transport sector in the EU: the challenges to be addressed*, Luxembourg, pp. 14-15, 38.
- Institute of Auto, Naval and Air Transport Designs (IANATD), (2003), "50 years of design for transport infrastructure", chap. IV "Hydrotechnical and port works", Bucharest, pages 316-317. www.iptana.ro.
- Lower Danube River Administration, 2020. Activity Report for 2019, Galați, pages 6-7.
- Lower Danube River Administration, 2021. Files with electronic navigation maps, Galaţi. https://www.afdj.ro/ro/harta-el-ro.
- Ministry of Foreign Affairs, 1948. Convention on the "Regime of Navigation on the Danube", published in the "Official Gazette", no. 253 / 30.10.1948, Bucharest, pages 1-2.
- http://legislatie.just.ro/Public/DetaliiDocumentAfis/23611
- Ministry of Transport and Infrastructure, 2012. Order no. 1668/15.11.2012, on "Organizing the intervention against ice on the Danube, on the Danube-Black Sea Canal, on the Poarta Albă-Midia Năvodari Canal and in the ports on them", published in the Official Gazette no. 814/5.12.2012, Bucharest, pages 1-6.
- Ministry of Transport, 2013. Regulation of Navigation on the Danube in the Romanian sector, Bucharest, pp. 14, 18, 49-50.
- National Company "Administration of Navigable Canals" S.A., 2021. *General technical characteristics*, Constanța, pages 1-2. https://www.acn.ro/index.php/ro/poduri-ecluze.
- National Institute of Hydrology and Water Management, 2021. *Hydrological diagnosis and forecast for the Danube at the entrance to the country and on the Romanian sector*, 1.10.2021, Bucharest, pg. 1-2. http://www.inhga.ro/diagnoza_si_prognoza_dunare.

Snake Island (Black Sea): Sharing Strategic and Economic Benefits

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Abstract

In 2004, Romania applied to the International Court of Justice (ICJ) to solve the issue of delimiting the continental shelf and the exclusive economic zones of Romania and Ukraine in the Black Sea. In 2009 it obtained the drawing of an equidistant line between the relevant adjacent coasts of Romania and Ukraine, and a median line between the opposite coasts of the two states. The result of this international process has brought Romania several advantages - strategic and economic. While debating the topic of this paper, the authors wrote an Introduction, they explained the Research Methodology, and continued by covering the way in which the Romanian-Ukrainian dispute played out at the ICJ (2004-2009): motivations, resolution, and various kinds of consequences. They continue with Strategic and Economic Implications and conclude by writing the Conclusions of the paper.

Key words: Snake Island, International Court of Justice, hydrocarbon exploitation

J.E.L. classification: O10, Q57

1. Introduction

In terms of its geographical location, Snake Island - which has the shape of a cross, having a length of 662 meters, a width of 560 meters and a total area of 17 hectares - is located 40 km from the city of Sulina (Romania) and 120 km from Odessa (Ukraine). This is the main island of a five-island archipelago in the Black Sea (RNL, 2020). In terms of its physical presence, the island lies in some places 41 meters above the sea level, its cliffs being steep with few coastal terraces and only the northern shore has an open bay where one can easily enter. The vegetation is poor, and so is the fauna (Paiusan – Nuica, 2009); in the absence of drinking water, even men could hardly live here.

Rightly considered a "huge dry rock", the island itself is not economically important at this time; however, it is very important from a strategic point of view. Its strategic position is highlighted by the fact that it is located on the two important sea routes: to the south of Ukraine and to the Danube ports (Figure no. 1).

Snake Island came into Romania's possession in 1878, but after seventy years (in 1948), the head of the Government from Bucharest signed an agreement with the Soviet Union to cede to the Union of Soviet Socialist Republics (USSR) the island which, thus, came into the latter's possession. Immediately after the occupation, the Soviets began building a military base for maritime and air control, as well as radars which monitored the Balkans. After the disintegration of the USSR (1991), Snake Island and its military base came into Ukraine's possession, a state that used to be a part of the USSR.



Source: Processing by the authors based on images posted at: http://www.roconsulboston.com/Pages/InfoPages/Government/SerpentsIsland.html

About some historical, diplomatic aspects, abuses, etc., related to the issue of Snake Island, over time several works have been written (Cucu and Vläsceanu, 1991; Seişanu, 1928; Mehedinţi, 1893; Pădurean, 2004; Mogoṣanu, 1991; Necula, 1994). Even if Romania appears to be in a disadvantaged / unfair position, it did not subsequently claim the territory of the island (Mazilu, 2000; Aurescu, 2009; Aurescu et al., 2009), requesting instead a correct delimitation of the continental shelf in the maritime space: "Romania has given up Snake Island since 1997, after signing the Basic Treaty with Ukraine. However, the real stake in the dispute with Ukraine is a 12,000 square kilometers area of the Black Sea located around the island" (Chiruta, 2008).

In fact, in the year 1997, Romania and Ukraine signed the Treaty on good-neighborly relations and cooperation and the related Agreement, which contains provisions on the obligation of the parties to enter into negotiations with a view to concluding a Treaty on the state border regime and an Agreement for the delimitation of the continental shelf and the exclusive economic zones of the two states in the Black Sea (Aurescu, 2009). Moreover, the related Agreement contains some principles applicable to the delimitation of maritime spaces and an arbitration clause establishing the possibility for either party to refer unilaterally to the International Court of Justice (ICJ) for the resolution of the respective delimitation.

It was also stipulated that two cumulative conditions must be met for this: (i) the negotiations (on the delimitation) to have taken place over a period of more than two years; (ii) the Treaty on the State Border Regime to have entered into force or to show that it has not entered into force through the fault of the other party.

Against this background followed the signing of the Treaty on the Romanian-Ukrainian state border regime, cooperation and mutual assistance in border issues (2003), but bilateral negotiations (1998-2004) on the Agreement on the delimitation of the continental shelf and the exclusive economic areas of Romania and Ukraine in the Black Sea failed.

In discussing the topic of this paper, the authors will continue to focus on how the dispute between the two states played out at the International Court of Justice (2004-2009), the motivations, resolution and various kinds of consequences.

2. Research methodology

The treatment of the theme of this micro-study, designed by us on the topic "Snake Island (Black Sea): Sharing strategic and economic benefits" is based on the investigation of the specialized literature, highlighting certain elements specific to the descriptive method.

At the same time, in order to give full credibility to the aspects presented by us in the paper, we have resorted to comprehensive research, based on the decisions of the international courts (ICJ) and the reports of prestigious institutions which contain relevant and valuable data for us.

To a lesser extent, we have also used certain articles published in the periodical press (of information and analysis), specialized in the economics or international relations fields.

3. Maritime Delimitation in the Black Sea Case (ICJ: Romania v. Ukraine)

As we have shown in the Introduction, the case launched between Romania and Ukraine pursues mainly strategic objectives (access to territorial waters), but also economic objectives, related to the possibility of exploring / exploiting hydrocarbons.

In order to solve the issue of delimiting the continental shelf and the exclusive economic zones of Romania and Ukraine in the Black Sea (the disputed area being of about 12,200 km²), on September 16, 2004 the request to initiate the applicable procedures having as object the delimitation of the maritime spaces of the two parts - continental shelf and exclusive economic zones - from the northwestern part of the Black Sea was sent to the International Court of Justice (ICJ) (International Court of Justice, 2004).

Both states wanted ICJ to draw a line of delimitation, defined by geographical coordinates, according to the rules of international law; respectively, drawing an equidistant line between the relevant adjacent coasts of Romania and Ukraine, and a median line between the opposite coasts of the two states, without taking into account the tiny maritime formation named Snake Island, which was just a rock (United Nations Convention on the Law of the Sea, 1982), not entitled to a continental shelf or an exclusive economic zone. Equally important, this rock has never been notified by Ukraine as a reference point to the UN. "In drawing the provisional equidistant-median line in the case of Romania, the most advanced points on its coast must be used: Sulina Dam and Sacalin Peninsula (points already notified by Romania to the UN, as reference points" (MAE / Ministry of Foreign Affairs, 2009).

Figure no. 2 shows the routes of the maritime border lines claimed by Romania and Ukraine and other relevant elements in favor of Romania after the adoption of the ICJ Decision no. 2009/9 of 3 February 2009.

Figure no. 2. Relevant maps: (a) The maritime boundary lines claimed by Romania and Ukraine; (b) The delimitation area as identified by the Court; (c) The course of the maritime boundary



Source: International Court of Justice, February 3, 2009, General List - No. 132/2009, The case concerning maritime delimitation in the Black Sea (Romania v. Ukraine)

Even if Ukraine tried to change the natural features of Snake Island, bringing artificial demonstrations (pseudo-arguments) that there are permanent inhabitants, economic objectives, etc., these were not taken into account by the ICJ. If it had been proven that the island was inhabited, international law would have given it the right to a 20 km continental shelf (RNL, 2020).

In reality, only border or research / monitorization activities take place (Figure no. 3).

Figure no. 3. An overview of Snake Island (a) and a detailed view, in which a member of the military can be noticed (b)



Source: Processing by the authors based on images posted at:

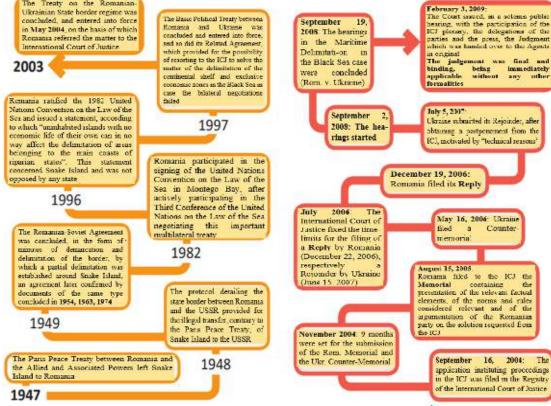
https://location4film.com.ua/en/locations/islands/68/

https://infotoday.ro/stiri-politice/international/ucraina-a-instalat-pe-insula-serpilor-un-sistem-demonitorizare-a-tintelor-navale-1205/

A project aimed at creating a free economic zone on Snake Island, meant only to change its status (the "Achilles" Project), proved to be not economically viable, even if a bank branch ("Aval"), a hotel (which did not have a water sewerage installation) and a museum point were put into operation (Paiusan – Nuica, 2009).

Schematically, the legal framework prior to the dispute and the procedural stages of the trial before the Court are set out in Figure no. 4.

Figure no. 4. The pre-dispute legal framework (a) and the procedural steps of the case before the ICJ (b) The Treaty on the Romanian-Ukrainian State border regime was concluded, and entered into force The Basic Political Treaty between September 19



Source: Processing by the authors based on: the Ministry of Foreign Affairs (2020)

After going through all the procedural stages of the process before the International Court of Justice, by Decision No. 2009/9 of February 3, 2009 (General List - No. 132/2009), 79.34% of the disputed area was granted to Romania, i.e., 9,700 km², with an average depth of over 80 m, respectively 20.26% to Ukraine, i.e., 2,300 km², with an average depth of 35 m (International Court of Justice, 2009).

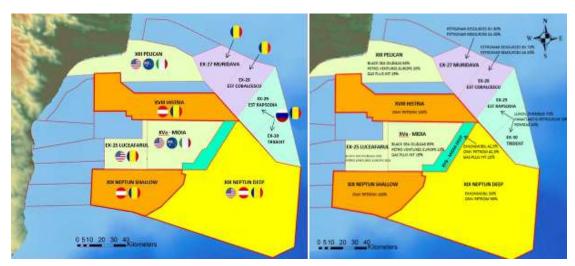
4. Strategic and economic implications

The resolution of the conflict in question through the method we referred to earlier has several implications. The oil and gas resources around the island have led to an increase in interest in the outcome of this dispute, transforming it from an exclusively strategic to a strategic-economic one. (Paiusan–Nuica, 2009).

In fact, The Black Sea Basin is an area of utmost importance for Romania's strategic position, representing a trans-continental transport route Europe - Asia / Europe - Middle East, at the same time being identified oil and gas deposits at an appreciable level. (Ispas, 2018).

In regard to the continental shelf of the Black Sea under Romania's jurisdiction, on certain perimeters leased by the Government, companies specialized in the exploration / exploitation of hydrocarbon reserves have been operating here for a long time (Figure no. 5).

Figure no. 5. Leased perimeters from the Romanian continental shelf where companies specialized in the exploration / exploitation of hydrocarbon reserves operate



Source: Processing by the authors based on images posted at: https://romania.europalibera.org/a/cine-sunt-jucatorii-care-foreaza-petrol-gaz-marea-neagra/29899262.html/,https://cursdeguvernare.ro/gaze-marea-neagra-guvernul-vrea-sa-introduca-criteriul-sigurantei-nationale-ca-sa-opreasca-vanzarea-participatiei-exxon-unor-concesionari-indezirabili.html

About the size of the deposits related to the area disputed with Ukraine, won by Romania at the ICJ (9,700 km², with an average depth of over 80 m), several figures are presented by various sources, which actually do not diverge much from each other.

However, until the year 2009, exact investigations into the disputed area were also not carried out by neither Romania nor Ukraine. The National Agency for Mineral Resources had some preliminary estimates for the entire disputed area (about 12,000 square kilometers) which indicated the existence of a total of 100 billion cubic meters of natural gas and about 10 million tons of oil. But it was estimated that the recovery rate of these deposits did not exceed 25-30% in good condition. (Ribana, 2009). According to the same source, these data were based on extrapolations from previous research - the Muridava and Cobălcescu probes. That is why exploration activities are required, which should bring reliable information about the resources that can be exploited commercially, involving costly

drilling at over 2500 meters depth. Either way, the results may appear in min. ten years, and it takes about a year for the bidding of the perimeters and the designation of the winners.

Bogdan Aurescu, the Romanian lawyer with a decisive role in winning the case described by us, comes with certain information about the respective deposits, obtained via the method of "seismic profiles", not that of deep drilling, showing that at the time of the ICJ ruling, the estimate for this entire disputed area (9600 approx. 84 billion cubic meters of gas (Aurescu, 2012).

In summary, corroborating the sources consulted, beyond the invaluable strategic advantages, from an economic point of view there are real chances that on the entire area gained at The Hague, hydrocarbon reserves are much higher than anticipated during the procedural stages of the process before the ICJ or shortly thereafter. The claim that "This amount of oil would cover Romania's consumption for a period of 2 years, and the gas could replace imports from the Russian Federation for a period of 20 years" (Săgeată and Săgeată, 1999) can very well be outdated at present.

However, the actual benefits can be assessed as such only if the costs of the exploration / commercial exploitation of the hydrocarbon deposits are taken into account. Furthermore, the calculations should also involve the degree of recovery of these deposits, which must first be explored, which, in optimal conditions, reaches a maximum level of 25-30%.

5. Conclusions

The concerns of the Romanian state from the perspective of international law regarding the major corrections that had to be made to the line of demarcation of the surface of the continental shelf and the exclusive economic zone in the Black Sea made it possible for it to not incur significant losses, related to 80% of that perimeter. The sensitive element on which solid evidence was produced was the status of Snake Island. The drawing of an equidistant line between the relevant adjacent coasts of Romania and Ukraine, and of a median line between the opposite coasts of the two states was made without taking into account the tiny maritime formation Snake Island. Romania has demonstrated that Snake Island is a simple rock, therefore not being entitled to a continental shelf or an exclusive economic zone. Also important is the fact that this rock has never been notified by Ukraine as a reference point at the UN, so in drawing the provisional equidistant-median line in the case of Romania, the most advanced points on its coast were taken into account: Sulina Dam and Sacalin Peninsula.

After going through all the procedural stages of the process before the International Court of Justice, by Decision No. 2009/9 of February 3, 2009 (General List - No. 132/2009), 79.34% of the disputed area was given to Romania, i.e., 9,700 km² with an average depth of over 80 m, respectively 20.26% to Ukraine, i.e., 2,300 km² with an average depth of 35 m.

Romania's sovereign rights have grown considerably in relation to the perimeter shown, the strategic and economic advantages being worthy of consideration. Beyond the invaluable strategic advantages, from an economic point of view, it is necessary to take into account the possible quantities of hydrocarbons in the area; at the time the respective ruling was issued, the estimated total for the disputed area was of about 70 billion cubic meters of gas and 15 million tons of oil.

6. References

- Aurescu, B., 2009. Avanscena și culisele Procesului de la Haga. Memoriile unui tânăr diplomat [The forestage and backstage of the Hague Trial. Memoirs of a young diplomat], Bucharest: Monitorul Oficial [Official Monitor].
- Aurescu, B., 2012. Bogatiile din subsolul Marii Negre sunt mult mai mari decat estimarile initiale [The riches in the basement of the Black Sea are much higher than the initial estimates], *Turnul Sfatului [Council Tower]*, Sibiu, 16 December, [online]. Available at: https://www.turnulsfatului.ro/2012/12/16/bogdan-aurescu-avocatul-care-a-adus-romaniei-and-quot-insula-serpilor-and-quot-bogatiile-din-subsolul-marii-negre-sunt-mult-mai-mari-decat-estimarile-initiale-and-quot-18341 [Accessed on April 21, 2021].
- Aurescu, B., Dinescu, C., Dumitru, L., 2009. Delimitarea maritimă dintre România şi Ucraina la Curtea de la Haga: documentele scrise şi pledoariile României în cauza România c. Ucraina privind delimitarea spațiilor maritime în Marea Neagră, soluționată de Curtea Internațională de Justiție la 3 februarie 2009 [The maritime delimitation between Romania and Ukraine at the Court of The Hague:

- the written documents and the pleadings of Romania in the case Romania v. Ukraine on the delimitation of maritime spaces in the Black Sea, settled by the International Court of Justice on February 3, 2009], Bucharest: Editura Academiei Române [Romanian Academy Publishing House].
- Chiruta, R., 2008. Petrolul din Marea Neagra, miza reala a Insulei Serpilor [Black Sea oil, the real stake of Snake Island], *Romania libera [Free Romania]*, 19 June, [online]. Available at: https://romanialibera.ro/special/documentare/-petrolul-din-marea-neagra--miza-reala-a-insulei-serpilor--127600 [Accessed on April 21, 2021].
- United Nations Convention on the Law of the Sea, 1982. [online]. Available at: http://legislatie.just.ro/Public/DetaliiDocumentAfis/26155 [Accessed on April 23, 2021].
- Cucu, V., Vlăsceanu, Gh., 1991. *Insula Şerpilor [Snake Island]*, Bucharest: Casa de Editură și Presă Viața Românească [Romanian Life Publishing House and Press].
- International Court of Justice, 2004. [online]. Available at: http://www.icj-cij.org/docket/files/132/1697.pdf [Accessed on April 23, 2021].
- International Court of Justice, 3 February 2009, General List No. 132/2009. Case concerning maritime delimitation in the Black Sea (Romania v. Ukraine), [online]. Available at: https://www.icj-cij.org/public/files/case-related/132/132-20090203-JUD-01-00-EN.pdf [Accessed on April 25, 2021].
- Ispas, A.L., 2018. Black Sea, a chance for the European Union's energy security, *Intelligence Magazine*, 31 May, [online]. Available at: https://intelligence.sri.ro/marea-neagra-o-sansa-pentru-securitatea-energetica-uniunii-europene/ [Accessed on April 26, 2021].
- Romanian Naval League / RNL, 2020. Insula Şerpilor [Snake Island], [online]. Available at: http://lnrmangalia.ro/?p=476 [Accessed on April 17, 2021].
- MAE / Ministry of Foreign Affairs, 2009. Prezentarea cazului Delimitarea Maritimă în Marea Neagră (România c. Ucraina) [Presentation of the case of the Maritime Delimitation in the Black Sea (Romania v. Ukraine)] [online]. Available at: http://www.mae.ro/node/24347 [Accessed on April 25, 2021].
- MAE / Ministry of Foreign Affairs, 2020. 11 ani de la procesul României la Haga, Bucuresti [11 years since Romania's trial in The Hague], Bucharest, [online]. Available at: https://www.mae.ro/sites/default/files/file/anul_2020/pdf_2020/2020.02.03_brosura_web_proces_hag a.pdf [Accessed on April 25, 2021].
- Mazilu, D., 2000. Insula Şepilor: statut juridic, evoluţii istorice, implicaţii în delimitarea spaţiilor maritime [Snake Island: legal status, historical evolutions, implications in the delimitation of maritime spaces], *Today*, Series 4, no. 2284, 28-29 October, Bucharest.
- Mehedinţi, S., 1893. Insula Şerpilor. O scrisoare pe care la 134 d. Chr Arian, guvernatorul Bythiniei, o adresează împăratului Adrian [Snake Island. A letter which in 134 AD Arian, the governor of Bythynia, addressed to Emperor Hadrian], BSRRG, t. XV, 1894, Bucharest.
- Mogoşanu, A.P., 1991. Insula Şerpilor [Snake Island], Revista de Istorie militară [Journal of Military History], no. 2 (8), Printed by Bucharest Polygraphic plant, 1991.
- Necula, C., 1994. Aşa a fost răpită Insula Şerpilor [This is how the Snake Island was kidnapped], Our Sea, Constanţa, Year VII, Number 12, July – September.
- Paiusan-Nuica, C., 2009. Insula Şerpilor un conflict încheiat? [Snake Island an ended conflict?], [online]. Available at: http://www.historia.ro/exclusiv_web/general/articol/insula-serpilor-un-conflict-incheiat [Accessed on April 19, 2021].
- Pădurean, D., 2004. Insula Şerpilor şi implicațiile statutului său juridic asupra intereselor geostrategice ale României în Marea Neagră [The Snake Island and the implications of its legal status on Romania's geostrategic interests at the Black Sea], Constanța: Muntenia Publishing House.
- Ribana, V., 2009. Agenția Naționala de Resurse Minerale primul avantaj real al admiterii în UE: La Insula Şerpilor, am câștigat exploatarea gazelor [National Agency of Mineral Resources the first real advantage of EU admission: Snake Island, we won the exploitation of gas], *Bursa*, 4 February, [online]. Available at: https://www.bursa.ro/primul-avantaj-real-al-admiterii-in-ue-la-insula-serpilor-amcastigat-exploatarea-gazelor-6074348 [Accessed on April 28, 2021].

European Danube Convention, (MFA, 1948, pg.1-2). The problem is that a river ship or a convoy, when engaged in the riverbed with a difficult passage, it must sail in the middle of the channel, where the main current and the greatest depth, and in the case of meetings with other ships in these conditions, must adopt a series of measures imposed by the Danube Navigation Regulation, (MT-RND, 2013, pg.14, 18, 49-50). Hence another big problem, that of dredging the waterway on the Danube, in the area of responsibility of Romania. Dredging is also a problem for Serbia and Bulgaria, in the sectors they manage. From the data published by the Romanian river administrations, it results that they fulfilled their tasks regarding the dredging in the critical areas, (LRDA, 2019, pg.6-7). But what ship-owners and seafarers say is far from the situations presented in official reports. Over time, there have been situations and conflicts, related to the fact that the Bulgarian authorities have not fulfilled their tasks in the areas of responsibility, which has created major problems for ships (Toma, 2015, pg.1). All these situations have repercussions on the transport and operation costs, lead to very long delays in the delivery of goods, negatively influence the transport activity on the Danube. Therefore, the construction of a canal, between Călărași and Drobeta Turnu Severin, could solve many of the current problems of navigation on the Danube.

2. Theoretical background. Study on the geographical area regarding the construction of the "South Canal"

There are a number of concerns regarding traffic on the Danube, the elimination of difficult situations and problems caused by the river, but also the lack of organization of the competent authorities. Considering the fact that for a very long time, none of these presented situations are solved, I carried out a series of theoretical studies and documentary visits, in order to understand if a canal can be built between Călărași and Drobeta Turnu Severin (South Canal). În Călărași, an industrial port was designed and started, in a basin that is connected to the "Borcea" river arm (part of Danube), by a 4.8 km navigable canal (IANATD, 2003, pp. 316-317). The problem is that the entrance on this canal is clogged and there is a risk that this canal will be closed by the alluvium brought by the "Borcea" river arm. This situation is known at the level of the leadership of the Ministry of Transport and Infrastructure. Following a parliamentary interpellation, the Minister of Transport replied: "it was found that the phenomenon of natural clogging of this secondary arm of the Danube quickly led to deterioration of navigation conditions, the need for dredging being much increased compared to the initial situation", (Câju, 2021, pg.1). What does this mean? That additional costs are needed to maintain a canal, on which navigation is no longer carried out, because the "Siderca" Steel Plant, for which it was built, has closed. Thus, a generous project, with great prospects, became unusable. Figure 1 shows the canal and the industrial port. There was an idea to build another canal from this "Siderca" canal, which would be connected to the Bucharest-Danube canal, at north of the city of Oltenita. The Bucharest-Danube Canal has not been completed and there is currently no completion project. The project of the South Canal can be designed and realized starting from this canal, from the basin from the southwest of the city of Călărași or even from the exit point to the Borcea arm, as shown in figure 2. In this figure is presented the first segment between Călărași and Chiselet, 33 km long.

Figure no. 1. Călărași canal and industrial port



Source: google.maps

Figure no. 2. Calarasi-Chiselet segment



Source: author's study, google.maps

Table no. 1 shows the channel segments and their distances.

Table no. 1. South canal segments

CHANNEL SEGMENT	LENGTH	CHANNEL SEGMENT	LENGTH
Călărași – Chiselet	33 km	Pietroșani – Zimnicea South	24 km
Chiselet – Spanţov	10 km	Zimnicea South – Suhaia	13 km
Spanţov – Olteniţa	13 km	Suhaia – Ciuperceni	25 km
Connection Olteniţa-Argeş	2,5 km	Ciuperceni – Gura Oltului	11 km
Olteniţa – Greaca	23 km	Gura Oltului – Corabia North	11 km
Greaca – Puieni	12 km	Corabia Nord – Dăbuleni	31 km
Puieni – Gostinu	11 km	Dăbuleni – Jiu	24 km
Gostinu – Giurgiu North-East	12 km	Jiu – Negoi	35 km
Segment Mocănașu Island - Plant Canal -	10,5 km	Negoi – Gemeni	38 km
Giurgiu South-West			
South-West Giurgiu – Vedea	15 km	Gemeni – Recea	23 km
Vedea – Pietroșani	14 km	Recea – Hinova	26 km
_	Total	_	417 km

Source: author's study, google.maps.

In total, the canal will have approx. 417 km, with an approximate configuration as in figure 3. If we compare with the distance between Călărași and Drobeta Turnu Severin, measured on the Danube, which is 561 km, there is a difference of 144 km. This difference can be appreciated as one that, under normal navigation conditions, a river tug with a speed of 10 km/h, upstream, travels in approx. 14-16 hours. So the use of the canal, in terms of travel time, will not lead to a substantial reduction, especially since it will depend on the number of locks through which ships and convoys will pass. But the benefits of this channel will be particularly important. The problem of locks and connections with the main rivers, which flows into the Danube, between Călărași and Negoi, in Dolj County, is a very important one, which will raise a series of challenges for designers and builders. The canal will intersect with the following rivers: Mostiștea, Argeș, Vedea, Călmăţui, Olt and Jiu. The intersection with the small rivers is not a special problem, but the biggest challenges will be at the crossings of the rivers Argeș, Olt and Jiu.

Figure 3. South Channel configuration



Source: author's study, google.maps.

Also, substantial arrangements will be needed in the ports of Calarasi, Oltenita and Giurgiu. The canal will pass at a certain distance from the localities near the Danube, then from the western part of the Romanian plain and in the southern part of the "Getic" plateau, from Mehedinți county. When passing by the ports of Zimnicea, Turnu Măgurele, Corabia and Bechet, due to the configuration of these ports, it is not possible to make the direct connection with the Danube in these ports. This will be possible only on the nearby rivers, which will make them arranged on the portion from the intersection with the canal, until the discharge into the Danube. In the case of the 4 localities, it will be necessary to arrange some ports on the canal, in order to connect the roads and the railway, which are close to these localities-ports.

3. Research methodology

For the elaboration of this work, I studied several works in this field, checked and studied the navigation maps called "Danube Road" (LDRA, 2021, maps, km 297-1045), but also the terrestrial maps of the area in the south of the country. I traveled along the Danube, from Călăraşi, through Olteniţa, Giurgiu, Zimnicea, Turnu Măgurele, Corabia, Calafat, to Dorbeta Turnu Severin and I noticed the characteristics of the area near the river, the intersections with localities, ports, rivers and adjacent areas. In the works I studied and found few concrete solutions to solve the issues related to the Danube road, navigation conditions, Danube quotas in ports and waterways, dredging and problems related to water freezing, but also constraints that arise each season. I systematized the information, centralized it and introduced it in this study. The literature makes no reference to such a project.

The methodology used consisted of the systematic, oriented and coherent study, in accordance with the principles used in a scientific investigation in the field of economic development strategies, of making large-scale investments, with a special impact on the entire national economy. I used the method of "transfer of concepts", which consists in taking from scientific papers and legislation, some ideas, concepts and methods important for this type of study. Added my own studies and ideas to find the best solutions for carrying out such a project.

4. Findings

The transfer of river transport from the Danube, on the South Channel, is the first strategic point of the project. From a technical point of view, the realization of the channel means the following:

- The construction of the canal itself, of the locks, of the monitoring stations, of the road and railway bridges over the canal, the modernization and arrangement of the main ports, their endowment with operating installations and the realization of the logistic spaces.
- Connecting the current irrigation systems with the canal to ensure the water needed in agriculture, given that many irrigation systems have been built and most of them are now derelict. Realization of dam systems, for the protection of the areas adjacent to the rivers that intersect the canal.
- Construction of a system of photovoltaic panels on the banks of the canal, to provide electricity and a power supply system, electric river vessels, according to the system used for electric trolleybuses.
 - Creation of a "green line", consisting of trees planted on the edges of the canal.
- 1. The projection and construction of the canal itself, locks and traffic monitoring and control stations. Considering the previous experiences regarding the construction of the Danube-Black Sea canal, the "Poarta Albă-Midia Năvodari" canal, the "Călărași-Siderca" canal and the "Bucharest-Danube" canal (unfinished), which represent large-scale and very expensive works, from the point of view of the implementation strategy, the following steps are required:
- **A).** Study and understanding of the location of the South Canal. These must be preceded by field geodetic measurements along the entire length. Only on the basis of measurements, it will be possible to choose the exact routes, to establish the areas where the locks will be located, the areas of connection with rivers and ports, where the canal will pass. It can be appreciated that such a canal can be built in any area of the plain in the south of the country, but I think it is best for this canal to be built near the Danube, in the area where the river was flooded, closer to the river. The reasons why I think this area is the best are the following:
- *Danube meadow*. This is an area recovered from the flooded areas of the river. In many such areas there were lands arranged for rice paddies, and now there are agricultural lands. Between Călărași and Negoi, the canal is not too far from the Danube.
- Ecological impact. I think the negative effect is small, because the ponds and swamps have been drained for a long time, then protective dams have been made over a very long distance, especially where the ground level was close to the water surface and was periodically flooded. A problem will be given by the passage through the forested areas, but I consider that on the edge of this canal, later, it will be possible to plant a very large number of trees, which will compensate for

any deforested parts of the forest. Due to the fact that there will be drainage channels for "overflow" and bringing water into the canal, with each opening of the locks, fish populations and other aquatic animals will not be affected. An environmental impact study is needed, but solutions will be found to all the problems that will be discovered.

- *The final area*. A problem will be on the segments between Gemeni-Recea and Recea-Hinova, where the relief forms change and the area of the sub-Carpathian hills appears. In this area, there will probably be some route changes, to avoid areas with hills.
- *The cost of land*. Where they have been used for restitution, it is much lower than in normal plain areas, but near localities, land prices will be higher.
- B). The technical aspects of the channel. The largest work in Romania, the Danube Canal -Black Sea, has the following technical characteristics (ANC, 2021, pg.1-2): length = 64.4 km; navigable channel width = 90 m; channel depth = 7 m; maximum weighing of ships = 5.5 m; height at bridges = 16.5 m. The shape of the channel is trapezoidal. On this channel can sail in parallel, in the opposite direction, convoys with a length between 275-285 m, with a width of approx. 34.2 m, with a large tonnage of approx. 27,000 tdw. Following all the areas between Călărași and Negoi, the distance between the canal and the Danube could be between 300 m and 3 km maximum, depending on the populated areas next to which it will pass. This minimum distance of approx. 300 m, compared to the Danube shore, is a safety one, in the area where the construction works would not affect the area immediately adjacent to the shore. These distances, between the canal and the Danube, will be chosen according to the geodetic situation in each area. Ideally, this canal should cross as close as possible to the Danube, so as not to need more road bridges, in the areas of the localities, which have cultivated agricultural areas, between them and the river. The remaining area between the canal and the Danube can be used for replanting with trees, so as to ensure a green area along the entire length of the canal. Depending on this distance, the width of the navigable channel will also be chosen, depending on the size of the ships that will sail on this channel. The maximum width of 90 m of the channel, with the maximum width at ground level of approx. 110-120 m, plus protection areas of approx. 10 m on each side, would lead to a width of approx. 130-140 m. In addition, there will be connection areas, ports and locks, which will occupy a certain space. In order to adopt the optimal solution of the technical characteristics of the canal, simulations regarding the transport of goods will be necessary, mainly, the dimensions of the ships and convoys, which will sail on the canal, after the completion of the construction.
- **2.** Making bridges over the canal. Assessing the situation of the intersections of the canal with the roads and railways, a number of 33 road bridges, 3 railway bridges and 4 mixed bridges, road and railway will be needed. These are presented in table 2, where: E = European road, NR = national road, CR = county road, RLI = road of local interest. RF = road in the field.

Table no. 2. Road and railway bridges over the canal

		ruitway ortages over the canal			
No	TYPE OF	LOCATIONS AND AREAS			
	CONSTRUCTION				
1.	Road bridges	1.Călărași West-NR 3. 2.Bogata-RF. 3.Olteniţa-NR 4.			
		4.Gostinu-CR 507. 5.Comasca-RF. 6.Malu-RF.			
		7.Pietroşani-RF. 8.Zimnicea-NR 51. 9.The Lake Suhaia-RF.			
		10.Poiana-RLI 34. 11.Turnu Măgurele-NR 52. 12.Islaz East-NR 54. 13.Islaz North-			
		CR 642. 14.Islaz West-NR 54. 15.Corabia East-CR 543. 16.Corabia North-RLI 124.			
		17.Corabia West-NR 54. 18.Orlea East-NR 54 A. 19.Bechet-NR 55. 20.Negoi-NR			
		55 A. 21.Rastu Nou-CR 561 D. 22.Rastu Nou-CR 561 E. 23.Moţăţei West-NR 56 (E			
		79). 24.Cetate North-CR 552. 25.Dârvari West-CR 562. 26.Cearângu-CR 563.			
		27.Recea-NR 56 A. 28.Nicolae Bălcescu-CR 564. 29.Hotărani-CR 606. 30.Rogova			
		South-CR 562 A. 31.Rogova West-NR 56 A. 32.Hinova South-NR 56 A. 33.Hinova			
		Port-NR 56 B.			
2.	Railway bridges	1. Olteniţa. 2. Zimnicea. 3. Turnu Măgurele.			
3.	Mixed bridges:	1. Giurgiu East. 2. Giurgiu Port. 3. Giurgiu West. 4. Moţăţei-Station.			
	road and railway				
		·			

Source: author's study.

- 3. Arrangement of ports and connections with large rivers. A particularly important aspect is the arrangement of the main ports (Călărași, Oltenița, Giurgiu), the secondary ones (Zimnicea, Turnu Măgurele, Corabia) and the connections with the big rivers (Argeș, Olt and Jiu), with the small rivers and canals of irrigation and drainage. Following the configuration of the mouths of the main rivers, the areas of their discharge into the Danube can be arranged, allowing the entrances on the South Canal. Basically, the entrances and exits on the canal would be in Călărași, Oltenița, Giurgiu, Olt, Jiu and Hinova. The other rivers (Vedea, Călmățui) and the irrigation canals have small dimensions and flows, which would require dredging and special arrangements, which would make them navigable from the intersection with the canal to the Danube. The completion of the Bucharest Danube canal would also lead to the arrangement of the Oltenita port, which would be integrated in the South Canal project. Considering the current situation of the river ports, most of them abandoned, it is necessary the modernization and arrangement of the ports, their endowment with operating installations, the realization of the logistic spaces, their real integration on the multimodal transport circuits.
- **4.** Connecting the current irrigation systems with the canal. Given the fact that throughout the year, the water level in the canal will remain almost constant, it can provide the necessary water in agriculture, which currently, in small quantities, is obtained from the Danube. Considering the fact that many irrigation systems, among those that have been built, and currently many of them are in ruins, the irrigation program can be relaunched throughout the "Romanian Plain". The second strategic role of the South Canal is to obtain a strategic reserve of drinking water, in a constant amount.
- **5. Photovoltaic panel system**. Extensive areas of photovoltaic panels can be installed on the banks of the canal, which can provide the electricity needed for the operation of all monitoring, control, lighting and lock installations. Considering the construction projects of some electric river ships, from these panels, stations can be arranged for the supply of electricity to the river ships. The remaining electricity can be transferred to the national energy system. It is also possible to build a power supply system for electric river vessels, according to the system used for electric trolleybuses.
- **6. Dam systems**. Before the points of intersection with the canal, it will be necessary to make some embankment systems, for the protection of the areas adjacent to the rivers and of the entrance areas on the canal, but also the waiting ports of the ships.
- 7. "Green line". On the edge of the canal, in the adjacent space, a green line can be made, formed by planted trees. It would also have a role in consolidating the areas, in order to reduce soil erosion near the canal.
- **8. Fish farms**. On the canal, fish farms can be arranged, for the protection of the Danube species, but also for the consumption of the population and for sport fishing.
- 9. Transfer of freight from land to canal. The transfer of freight transport, from roads, to the canal is the third strategic reason, which justifies its realization. Freight transport, in large quantities, will be oriented towards the transfer from inland roads and railways, to river vessels, which will sail on this canal. An integrated information system on freight transport on the canal can be used by manufacturers, carriers and beneficiaries. The transfer by road will lead to substantial savings and the reduction of pollution generated by heavy road transport vehicles. The connection of the capital Bucharest with Constanța to the east, on canals and river and to the west, towards Drobeta Turnu Severin, will lead to the decrease of the costs per ton of transported goods. With the help of this channel, the main freight flows, from the port of Constanța, to the interior of the country, will be oriented as in figure 4, which will have major implications on the development of multimodal transport. As well as the reverse flows, they will come from inside the country and will use the southern channel, on both East-West directions. The blue arrows indicate the directions on the water, and with red, the ones on land, on the roads and railways.

Figure no. 4. Freight flows from the port of Constanta

Source: author's study, google.maps

10. Bucharest-Danube Canal. It is not completed, but must be considered, as a first step, for the start of the big project. This canal was designed to have a length = 73 km, a width = 80 m, the minimum water depth = 4.5 m, the level difference of 53 m (10 m above sea level in Olteniţa and 63 m in Bucharest). The plan includes four locks and three ports: two in Bucharest, the first near 1 Decembrie commune on Argeş and the second in Glina, on the Dâmboviţa river, and the third in Olteniţa. From this it was made approx. 70%, but in 31 years since the cessation of construction, large parts of the works were damaged and a number of components was stolen. In 2008, an attempt was made to resume its construction, but the project remained unfinished. The advantages of building this canal can be summarized as follows: reducing the cost of freight transport, on East-Center-West flows and setting up a large container terminal in Bucharest; reducing road traffic on the routes between Constanţa, Bucharest, Craiova, Drobeta Turnu Severin and Timişoara; construction of micro hydropower plants at hydro technical nodes; water use for irrigation of over 150,000 ha of arable land; elimination of the flood danger for 11 localities and approx. 30,000 ha of agricultural land.

5. Sources of financing and costs

The European Union has developed several strategies for the sustainable development of river and inland waterway transport, and the Danube occupies a central place among them (EC, 2010, pp. 44-50). Legislation exists, as do funds, which can be obtained through various local, regional and transnational funding programs. But, as assessed in the documents prepared by the European Court of Auditors, (ECA, 2018, pp. 14-15, 38), "it was found that EU strategies for inland waterway transport do not have a solid and comprehensive analytical basis, and the cost of eliminating traffic bottlenecks in Europe (around ϵ 16 billion) far exceeded the funding available from the EU budget for inland waterway infrastructure. Therefore, additional funding from national and/or private sources is needed to address this shortfall". And Romania is on one of the last places, in terms of investments in the field of river transport. From the point of view of the specialized literature, many works and reports have been published, regarding the river transports, starting with the legal, technical, environmental and economic aspects.

Such a "Southern Canal" project is large-scale and can be defined in simple terms as a true "Country Project". Considering the experience of building the "Danube-Black Sea", "Poarta Albă-Midia Năvodari" and "Călărași-Siderca" canals, certain parallels can be made and even certain information can be used. In 2012, Romania submitted a project to the "European Strategy for the Danube Region", for the resumption of works on the "Bucharest-Danube" Canal, with a financing estimate of approx. 800 million euros. A joint statement of the foreign ministers of the countries from the Danube region followed (MFA, 2013, page 1) and since then, nothing has been done until this year. On 23.02.2021, the tender for the launch of a new feasibility study for the completion of this channel was launched. The feasibility study will be carried out over 11 months. From the latest estimates, the cost of completion would reach approx. 1.44 billion euros without VAT (Andone, 2021, pg.1), and the canal will be ready in approx. 5 years. The completion of the "Bucharest-Danube" Canal would have a series of advantages related to financing, design-evaluation, restitution of related lands, construction, endowment and especially, the experience of those who

will be involved in this project. I consider that it is a first stage, very important, in order to be able to move on to the "South Canal" project. Following the costs for the construction of the "Danube-Black Sea" Canal, they were estimated at approx. 10,000 billion lei 1984. This is a lot. But the construction of the canal was done by the Army, 40 km, the Communist Youth Union (pupils and students), 10 km, and the remaining 16.4 km, by civilian workers. The design was made by approx. 1,000 specialists, and currently, 50,000 people worked on the canal. The construction lasted 8 years. The very high costs were primarily due to the very large number of people. Even if the military in term, the pupils and students were not paid in full salaries, still, the value of their work was transferred to the institutions to which they belonged. Comparing and analyzing the situation then, with the possibilities of the current economy of Romania, it can be appreciated that a series of changes have appeared, which are directly constituted in advantages, as in table 3.

Table no. 3. Advantages of southern canal construction

No	CURRENT	ADVANTAGES
	SITUATION OF	
	THE ECONOMY	
1.	Computer aided	- Design is much easier, simulations and tests can be done.
	design.	- Will work with a small number of specialists.
2.	Use of modern	- Digging machines have high speeds and working capacities.
	equipment.	- Increased the transport capacity of the excavated soil, by using high speed and
		capacity conveyor belts.
		- The working perimeters are established with the help of satellites, through the
		GPS system and Google Maps.
3.	The problem of	- It will be used for: dams, strengthening the banks of rivers that intersect the canal
	excavated land.	and other adjacent areas.
4.	Project financing.	- European Union funds.
		- The state budget.
		- The budgets of the County and Local Councils from the 6 counties (Călărași,
		Giurgiu, Teleorman, Olt, Dolj and Mehedinţi).
5.	Creating new jobs.	- In research, at specialized institutes and partner universities.
		- To the companies that will win the tenders and perform the works.
		- In the administration and maintenance of the new canal.
6.	Providing the	- Water for irrigation and consumption.
	necessary drinking	- Preservation of a large amount of water, as a strategic reserve of the state.
	water.	
7.	Constant water level.	- Constant navigation throughout the year.
8.	Container transport	- From the roads and the railway, on the canal, considering that there is a highway
	transfer.	only between Feteşti and Bucharest, and between Bucharest, Alexandria, Craiova,
		Turnu Severin, there are national roads, which are not modernized.
9.	Other activities.	- Fish farming, sports and leisure.

Source: author's study

Carrying out a series of documentations regarding the prices of some excavation works, of the hydro technical works, of the construction of the public roads and of the bridges, we obtained an amount of approx. 25 billion euros, without VAT, with an additional reserve of approx. 3 billion euros. This amount is necessary for the construction of canals, locks, ports, bridges, paved and paved roads, port facilities, monitoring and control centers, solar panels, tree plantations, fish farms, etc. The estimated duration is as follows: 1 year for carrying out legal proceedings, 1 year for launching and carrying out the feasibility study, 2 years for designing the canal and all related elements, and then expropriating the land and carrying out the works. For approx. 100 km, an estimated working time of approx. 4 years, because the area between Călărași and Negoi is on soft ground, easy to dig. Finally, a term of approx. 22-25 years, it is reasonable to achieve it.

Funding must be done in the following stages:

- Preparation and elaboration of documents, by the National Company "Administration of Navigable Canals", which must make all the initial legal steps of the project, informing the Ministry of Transport and Infrastructure, ministries of finance, research, environment and foreign, etc., followed by informing the European Union and Danube Commission. After obtaining all the authorizations and approvals, the elaboration of the documents for the launch at auction of the realization of the feasibility study follows.

- After obtaining the approvals and authorizations, the financing planning must follow, which will include the financing of the feasibility study, from internal or governmental sources.
- Carrying out the feasibility study, on the basis of which the configuration of the canal, the number of locks, bridges, arrangements and connections, the lands that will be returned, etc, will be established. After completing this study, the costs of carrying out all works, collateral investments (roads, ports, port equipment, etc.) must be estimated. The plan of financing and the construction costs become the most important document, which will be constituted in a "National Strategic Plan", for the construction of the canal.
- Based on the financial estimate of the project, the documents for the tenders for the construction of the canal and all its components will be elaborated. Depending on the amounts allocated annually and the budget construction, construction tenders will be launched. The main problem at present is related to the fact that in Romania there are no more companies with experience in the field of hydromechanics, that the old economic units that built the previous canals, have been abolished or have restricted activity. Therefore, the tenders that will be organized for the completion of the "Bucharest-Danube" canal, will help us to understand which are the economic units with the potential to build this canal. The steps to be taken by the "Administration of Navigable Canals", which is the competent state authority in this field, are the following: concluding financing agreements with the EU, from the State Budget and the budgets of the counties through which the canal passes. The construction of the canal will require efforts both from the central authorities, but also from the county and local ones.

6. Conclusions

This channel will lead to the relaunch of scientific research in Romania. In order to carry out the project, collaborations between Administration of Navigable Canals, research institutes and universities will be necessary, for the projection, elaboration of the financial plan, of the environmental impact and of other aspects and situations that will appear. The need for construction materials will mean a demand that will generate an offer and that the economic units will have to make. This will mean the relaunch of the economy horizontally, in the fields of production of: cement, metal structures, electrical cables, stone, sand, gravel, bitumen, photovoltaic cells, paint, machinery and equipment for hydraulic constructions, river barges, trucks and wagons for transport, and so on. It will generate a large number of jobs, for projection, construction and after completion, for monitoring and maintenance. Given the current efficiency of the machines, manual work will be reduced in almost all areas. The future must be anticipated in this area as well, in time and with great care.

7. References

- Andone A., 2021. The Danube-Bucharest Canal, Ceausescu's pride, is back today. The government
 updates the feasibility study with European money, Economica.net, pages 1-2, [online] Available at:
 https://www.economica.net/canalul-bucuresti-dunare-reactualizare-studiu-de-fezabilitate-cu-banieuropeni 197459.html.
- Bularda M., Vişinescu I., 2014. *Damaged dams on the Danube, current and perspective issues*, S.C.D.A. Symposium, Braila, pp. 5, 6, 9-11.
- Câju O., 2021. C. Drulă, answer to the interpellation of Senator Cionoiu: The entrance area from the Danube on the Borcea Arm km 100, towards the port of Călăraşi at km 90, was permanently a problem for navigation", Commercial Society "Total Media" Ltd., article, published in "Arena Media", 14.06.2021 [online] Available at: https://arenamedia.ro/index.php/arena-news/politica-mp/diverse-politica-mp/c-drula-raspuns-la-interpelarea-senatorului-cionoiu-zona-de-intrare-de-la-the-dune-on-the-arm-of-borcea-km-100-towards-the-port-calarasi-at-km-90-was-permanently-a-problem-for-navigation.
- Toma A., 2015. Authorities blame Bulgarians for transport problems on the Danube. "Bursa" Journal 29.10.2015, page 1.
- European Commission, 2010. European Union Strategy for the Danube Region/ Action Plan. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, Brussels, pp. 44-50.

- European Court of Auditors, 2015. Special Report no. 1/2015, *Inland waterway transport in Europe:* since 2001, no significant improvements have been observed in terms of modal weight and shipping conditions, Luxembourg, (http://eca.europa.eu).
- European Court of Auditors, 2018. *Towards a successful transport sector in the EU: the challenges to be addressed*, Luxembourg, pp. 14-15, 38.
- Institute of Auto, Naval and Air Transport Designs (IANATD), (2003), "50 years of design for transport infrastructure", chap. IV "Hydrotechnical and port works", Bucharest, pages 316-317. www.iptana.ro.
- Lower Danube River Administration, 2020. Activity Report for 2019, Galati, pages 6-7.
- Lower Danube River Administration, 2021. Files with electronic navigation maps, Galați. https://www.afdj.ro/ro/harta-el-ro.
- Ministry of Foreign Affairs, 1948. Convention on the "Regime of Navigation on the Danube", published in the "Official Gazette", no. 253 / 30.10.1948, Bucharest, pages 1-2.
- http://legislatie.just.ro/Public/DetaliiDocumentAfis/23611
- Ministry of Transport and Infrastructure, 2012. Order no. 1668/15.11.2012, on "Organizing the intervention against ice on the Danube, on the Danube-Black Sea Canal, on the Poarta Albă-Midia Năvodari Canal and in the ports on them", published in the Official Gazette no. 814/5.12.2012, Bucharest, pages 1-6.
- Ministry of Transport, 2013. Regulation of Navigation on the Danube in the Romanian sector, Bucharest, pp. 14, 18, 49-50.
- National Company "Administration of Navigable Canals" S.A., 2021. *General technical characteristics*, Constanța, pages 1-2. https://www.acn.ro/index.php/ro/poduri-ecluze.
- National Institute of Hydrology and Water Management, 2021. *Hydrological diagnosis and forecast for the Danube at the entrance to the country and on the Romanian sector*, 1.10.2021, Bucharest, pg. 1-2. http://www.inhga.ro/diagnoza_si_prognoza_dunare.

Financial Communication Inside Companies

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Abstract

Financial communication is a critical instrument that enables a company to manage its external interactions by utilizing accounting and financial data. This is critical because it enables management to construct a linked external environment. In terms of financial communication, it entails establishing certain objectives and how to use resources, developing strategies, making choices, and initiating activities.

Financial communication, from newspapers to social media, plays an important role in disseminating information about financial markets to a wide range of people. Financial reporting is experiencing tremendous change as a result of new digital processing and delivery systems, while the need for increasingly diversified information grows. The purpose of this essay is to study and compare the manner in which communication is conducted with various professional organizations in the economic sphere.

Key words: financial communication, instrument, information

J.E.L. classification: A11, F64, Q56

1. Introduction

Financial communication is a careful balance between providing excellent information to investors and communicating sensitive information to competition, especially when it comes to the company's industrial strategy choices. Financial communication refers to the development of trust in order to increase the company's efficiency, while also contributing to the generation of long-term value.

Human capital, structural capital and client capital are the three components of intangible capital. Companies can increase the usefulness of traditional accounting information by disseminating information about this issue. Some companies create external reporting systems that include narrative information, as well as indicator tables dedicated to the three intangible components of capital. These companies consider it essential to provide this information.

2. Theoretical background

Communication is the most important measure in preventing demands from participants in various activities. The statement, written by Charles E. Osgood in the book A Vocabulary for Talking about Communication (1987), is the most thorough description in my opinion stating that a system impacts a recipient by numerous signals that can be conveyed across the connecting channel. Given this notion, we may acknowledge that in communication science, information is what is conveyed in one or more of the various languages (Niculae, T. et al., 2006).

According to Rogers and Agarwala-Rogers, communication's function is to be a "harmonizer" of the organization, an orchestrator of its pieces (1976). Financial communication is a process that involves the exchange of information related to financial issues. This process is accomplished by using different sources and methods. Information provided to the public is usually related to the objectives and operations of an entity.

The importance of the existence of a comprehensive and accurate financial information system is highlighted by the fact that it serves as a final destination for various actors in economic life. This type of communication must also be integrated with other types of business communication, such as commercial, internal and corporate, but must be emphasized as the most significant form of communication for an entity, serving as a basis for institutional communication. (Avram & Avram, 2014). It is important to note that this mode of communication is very new, appearing between 1980 and 1990 (during the period of market globalization and economic privatization), when shareholders grew rapidly (Cammack & Cammack, J., 2012).

Prior to the financial communication, the financial information that indicates a previous statement of the company and at the same time shows the potential for forecasting in the future must be discussed. Financial communication is associated in particular with listed corporations and represents the distribution of public information between them and the general public. As a result, we deal with two types of financial communication: the financial communication of the GMS (General Meeting of Shareholders) and the financial communication by market segments (Adorisio, 2015).

3. Research methodology

The research method is analytical in nature, focusing primarily on the research of the literature on financial communication and information management and consists of methods and techniques of selection and processing of data available in the research field, to allow for documented opinions and conclusions.

4. Findings

4.1. Communication from an economic perspective

Financial communication is a vital tool that allows an entity to manage its external relations through the information provided by accounting and financial data. This is very important because it allows management to create an interconnected external environment. The function of financial communication is very important for a company to attract potential investors. It is also used to increase its notoriety and credibility, which are two important factors in the eyes of potential investors.

Market participants, owners, investors, and creditors require clear knowledge about every occurrence that may have an impact on company and the value of an investment. As a result, it is critical to offer relevant and reliable information to both capital markets and regulators. Before mergers and acquisitions, frequent stakeholder analyses and analyses of the political climate are also required.

The financial communication process begins within the organization. The continuous exchange of internal information provides reliable and accurate statistics on organizational performance, while informing employees about past results and future plans. Thus, the root and the decisive factor for the efficiency of financial communication is the quality of internal communication. Approaching the exchange of information within the organization improves internal performance and promotes the company's image among external observers.

In terms of financial communication, it entails establishing certain objectives and how to use resources, developing strategies, making choices, and initiating activities. Factors such as the existence of a variety of purposes, different interests, the ambiguity of situations, and the unanticipated environmental reactions influence plans and transform decisions. Managers must use the coordination function to connect and harmonize the time and space of activities, wishes, and realities. In this instance, the management process must have the cohesiveness, continuity, and dynamism that allow for the attainment of certain goals. As a result, we may conclude that communication is a fundamental component of the coordinating function.

Due to the entity's interaction with the environment, managers are required to track the relationships between data:

- external shipped and purchased through the actions of supply, sales, advertising and marketing, etc.
- internal circulating in the entity through formal channels and occasional communication.

Departmental collaboration and data exchange should be standardized and integrated into day-to-day operations. This is especially important when discussing intangible assets.

For example, if a company does not share data between its human and financial resources departments, it may not include information about training initiatives or seniority in its annual report. In addition, a company that does not combine its internal data is less likely to engage its employees in commercial activities.

Employees who do not take into account the successes, failures, strengths and weaknesses of their company are less motivated and loyal to their boss. Many studies have found that a sense of involvement increases employee motivation. As a result, communication mechanisms must be implemented at all levels of the organization. The data must be transmitted voluntarily by the operational crew, rather than being sought exclusively by management. The higher the intensity of internal interactions, the more comprehensive the market information provided.

The results of the facts regarding the general performance are observed in the profit and loss account. Also, data on personal liquidity or attracting external sources are observed in currency flows.

Economic entities talk financially with their universe through economic reviews. Figure no. 1 *Grouping the data provided by the economic reports* shows how economic reporting provides customers with segmented facts with the most data specifically associated with:

the economic performances obtained;

the economic scenario (position) of the entity;

financial and economic risks, etc.

the economic adaptability of the entity

Figure no. 1. Grouping the data provided by the economic reports

Source: International Accounting Standards Board (2010). Conceptual Framework for Financial Reporting

In general, financial communication is a reflection of the company's culture insofar as it goes beyond simply obligatory objective facts, emphasizing certain themes over others. By doing so, the organization pursues defined goals that can only be seen in the long term and might change over time (Guimard, 1997). The annual report is one of the most effective tools in this financial communication plan due to the huge number of potential consumers. As a result, some concerns, such as environmental or social data, could be seen in its content. Initially, thematic information is information that the company publishes freely. However, the importance of the issue for the company's operations may require a separate report. This is especially true for environmental data.

4.2. The role of financial analysts in the financial communication chain

With the advent of institutional investors, financial analysts began to have a considerable effect on market information. Interpretations and analyzes of data released by corporations influence the decisions of investors, especially professionals, which account for most of the value in capital markets.

The analyst community is divided into two groups: purchasing analysts and sales analysts. Sales analysts work for investment banks, while purchasing analysts work for portfolio management firms. Sales analysts are becoming more widespread and anticipating great attention from Investor Relations executives.

The opinions offered by sales analysts could have a significant impact on decisions made by individual shareholders, especially institutional investors. Because meeting the information requirements of analysts is in the interest of the entire organization.

Purchasing analysts have a less crucial role because their judgments have less influence on market reactions. They are also employed by an institution. The evaluations only affect the judgments of this institution.

Sales analysts interact with traders and portfolio managers to provide analysis results and their buying or selling suggestions in response to market events (publishing results, news about the business being pursued, unfavorable market weather, and so on). Analysts and portfolio managers have long-term goals, and their recommendations change less often.

The trust between the company and the sales analysts is essential for excellent forecasts and the opening of the company on the market. Analysts sometimes compare their projections to the company's forecasts before publishing them. From a normative point of view, this method is not totally acceptable because the law requires equitable access to information. However, it helps reduce stock market price volatility caused by analysts' misjudgments. This is especially true for small businesses. Analysts appreciate any useful information, such as a conference number or a date. They want to be updated by email on any significant progress because speed of data access is critical in their business. on the other hand, they are willing to invest a significant amount of time in in-depth analysis. It is designed to provide unbiased and quantifiable information.

5. Conclusions

Communication at the level of financial elements is constantly redefining itself. The current authoritative climate is portrayed by financial, social, educational changes that expect associations to adjust to stay ambitious, observing new hierarchical recipes and vital choices intended to expand their abilities and openings.

Financial communication on intangible assets is an extremely complicated issue at the intersection of finance, communication and psychology. Good communication in this issue involves knowing the financial indicators, understanding how the stock market works, appreciating the importance of material wealth and, finally, mastering communication tactics. The message communicated to the financial market must not only be correctly expressed and articulated, but must also have substance of interest to the financial community. Economic entities want to engage in activities with the external environment in which they operate, and at the same time with the internal environment, and these relationships generate a chain of desired objectives. Fulfilling these desires requires the development of relevant, objective, accurate and beneficial actions that must reach the right place at the right time.

6. References

- Adorisio, M., 2015. A Narrative Lens for Financial Communication: Taking the "Linguistic Turn",
 Studies in Communication Sciences, vol. 15, no. 1, pp. 77-82.
 https://doi.org/10.1016/j.scoms.2015.03.010
- Avram, A., Avram, C.D., Avram, M., 2017. Comunicare financiara-forme, principii, tehnici [Financial communication-forms, principles, techniques] Craiova: Universitaria Publishing House
- Avram, C.D., 2017. Some Considerations on The Role of Financial Communication Within Corporate Governance, "Ovidius" University of Constanta, Faculty of Economic Sciences, 17(1), pp. 398-402.
- Cammack, J., 2012. Communicating Financial Management with Non-Finance People Practical Guides for Organizational and Financial Resilience Series, Practical Action Publishing.
- Labelle, R., Schatt, A., 2003. Structure de propriété et communication financière des entreprises françaises. Identification et maîtrise des risques : enjeux pour l'audit, la comptabilité et le contrôle de gestion, May 2003, France. pp.CD-Rom. ffhalshs-00582792
- Niculae, T., Gherghiță, D., Gherghiță, I., 2006. Comunicarea Organizațională Şi Managementul Situațiilor De Criză. [Organizational Communication and Crisis Management]. Bucharest: Publishing House of the Ministry of Administration and Interior.
- OMFP no. 1802/2014 for the approval of the Accounting Regulations on individual annual financial statements and consolidated annual financial statements. Bucharest: MO.
- OMFP no. 1938/2016 regarding the modification and completion of some accounting regulations. Bucharest: MO.
- Osgood, C.E., 1987. A vocabulary for Talking about Communication, Penguin Books

Media Representation of Coronavirus in Romanian Online Press. National, European, and International Themes

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Abstract

Our research aims to discover how Romanian online press describes the coronavirus pandemic in terms of National, European, and International themes by examining online articles through a content analysis of three online newspapers. This initiative contributes to the study of media representation in a situation of global importance and effect. The study shows the media representation at the pandemic start, three days before Romania lockdown. The analysis reveals a strong representation in headlines and images in the National stream. We found that medicine was the main topic represented in Romanian online press, in both headlines and images, followed by themes including politics, internal affairs and socio-cultural subjects. Neutral images had the biggest ratio in the themes, comprising sketch of the virus, images with drugs, blood tests and people wearing masks

Key words: media representation, online news, coronavirus representation, European themes, National themes.

J.E.L. classification: Z1

1. Introduction

Mass media and social media are great amplifiers of current topics, which can create a wave of both information or disinformation, can create panic, or can generate antagonist messages. Visual literacy and critical thinking are the key when decoding a large amount of data published in a short period of time.

Coronavirus subject is a mainstream preoccupation in the social context, not only locally, but at European and global level, as well. The information represented in media can influence people's daily lives activities, plans and recreational activities. We've created an online media representation analysis of how Coronavirus news are communicated in Romanian online newspapers, studying the news headlines and images and how the two are connected. We comprise in our paper concepts as sign, symbol, and representation (Borţun, 2001; Chiciudean & Halic, 2003, 2012; Hall, 2003, 2005) when assessing the images found in the online articles.

We follow in our research if the images and the headlines can be categorized under national, European, or global themes. We also inspect which of the categories has a greater presence, from medicine, politics, economics, socio-cultural, religion and what is the connection between the categories and themes. We expect that the results will show a greater mention on the national themes, rather than the global and European aspect. We presume that some domains as medicine and religion to be better represented on the national theme, as others as politics and economics on the European and Global theme.

2. The context of the current research

The first COVID-19 case worldwide was discovered in China in December 19th (Elflein, 2021). The current state of corona status as in March 31st, 2021 includes over 128.8 million cases worldwide, 2.8 million deaths worldwide and 103 million recoveries. As per Statista.com, the most impacted countries worldwide were United States, India, and Brazil (Elflein, 2021).

Going in further details, out of the 128.8 million cases worldwide, 41.5 million cases were in Europe. The first confirmed case in Europe was discovered in January 2020 in France. Our current numbers, as in March 31st, 2021, Russia (4,4mil), United Kingdom (4.2 mil), France (4.2 mil), Italy (3.3 mil) and Spain (3.2 mil) are occupying the highest ranks in number of cases, whilst Guernsey (821 cases), Feroe Islands (661 cases) and Vatican City (21 cases) are ranking the lowest. The pick of the virus spread was in the fall of 2020 (Stewart, 2021).

Romania recognized its first case in February 26th, 2020, the source of infections were people who returned from traveling abroad to infected countries, such as Italy, or being primary contacts for them. By end of March, the cases increased to be 200 cases confirmed per day. In the timeframe in which the data was gathered for our research in March 2020, Romania had around 150-200 total cases, more specifically, 95 cases were registered on March 13th, 123 cases were registered on March 14th, 139 cases were registered on March 15th, with an obvious high evolution to follow in the succeeded period (https://www.worldometers.info/coronavirus/country/romania/). The pick of the infections was registered in the fall of 2020. Most impacted cities were Bucharest, Suceava, Brasov, Arges, Iasi and Prahova, together representing close to half of the infected cases recognized nationally as December 2020. Romania ranks the 12th spot of Coronavirus Cases 0.98 mil cases (Stewart, 2021), 0.87 recovered people and 0.02 deaths as in April 5th, 2021 (https://www.worldometers.info/coronavirus/country/romania/). Romania's population, as per 2020 statistics, has 19.24 million people (O'Neill, 2021), which represents 9.88 female population and 9.35 male population (O'Neill, 2021). Total percentual cases in report with the population is 5%, recovery cases of 4.5% and 0.12% deaths. Bucharest as in March 2021 almost 150,000 cases (Sava, 2021).

3. Literature review

Since the pandemic start, at the end of 2019, online media helped amplify the news and deliver constant news regarding at interest topics as updates on cases, national government and internal affairs decision and worldwide news. This is the main reason we consider that the online press is playing a very important role in the main communication on the matter.

Lasswell's theory (1948) about the role of mass media is a starting point for our study. Mass media plays three important roles for the society: (1) the surveillance of the environment, (2) the correlation of the different components of the society in responding to the environment and (3) the transmission of societal heritage from generation to generation. The surveillance function is based on different/conflictual messages, transmitted by media journals (Gever and Coleman, 2017). Also, media is an important factor that contributes to the building of mental maps (Suchacek, 2014).

The importance of media surveillance function resides in the dynamism of the crises communication, as the trust in public authorities decreases in the same time with the evolution of the crisis, therefore the online press has one of the main roles in this situation (Moreno, Fuentes and Navarro, 2020). Chadha (2020) considers that this happens mostly because every Government is trying to protect its economy, social space, and political institutions in the crisis.

The messages can be altered by misinformation in any crucial moment, mostly during the pandemic. Misinformation may lead to the increase of racism, fear and could built an unconstructive behaviour of the population (Hopman, Allegranzi and Mehtar, 2020). Barua et al. (2020) discuss that general misinformation belief, conspiracy belief and religious misinformation belief are the main stimulus and the credibility evaluations represents the resilience strategy.

Due to the special context of communication, the media has a main role in the shaping of public opinion, on topics with such divergent points of view, in a period when all institutions, such as Government, religious institutions, press, financial institution are crucial in dissemination of

transparent information and be in support for the masses. In this case we need to know how media reflect the main themes, central topics discussed and their interlock.

In a study realized in Romania, in 2014, most of the press television debate subjects about national and European themes (Bîră & Chiciudean, 2015). Additionally, de Vreese (2001) mentions that media coverage on the European parliament elections differs between the European Union member states, the media attention is higher in case of national elections than the European Parliament elections. Most of the times, in European countries the national identity is the main identity that people empathise with. In general, the European themes appear only rarely in media (Suchacek, 2014). In another study about media representation in terms of national and European themes, we found that in Czech Republic and Slovakia, most of the campaign was dominated by National politics and domestic issues (Kovar and Kovar, 2012).

Identity refers to many aspects like social, economic, cultural, national, and political aspects (Jenkins, 2000). Usually, the community's members identify themselves with some characteristics that depend on the membership to the group (Chiciudean & Halic, 2012). Apart from the actions of the national institutions and political movements, the European identity usually depends on the information that mass media spread (Bruter, 2003).

To sum up, we have discussed about media representation and the role of its surveillance function to conflictual media messages, the importance of the public institutions when communicating in a crisis type of social situation and how the national versus European identity aspect was approached in different studies.

4. Research methodology

Our research goal is to discover the themes and topics of the Coronavirus media representation in Romanian online newspaper during a global pandemic.

Our objectives include the followings:

- O1: The evaluation of the theme representation in mass media about Coronavirus in Romanian online articles National, European, and Global themes;
- O2: The assessment of the most mentioned topic in the articles' headlines (Politics, Medicine, Economy etc.);
- Q3: The assessment of the most mentioned topic in the articles' images (Politics, Medicine, Economy etc.);
- O4: The connection between the headline of an article and the images represented there.
- O5: The evaluation of the relation between topics and themes in the articles about Coronavirus.

To show how the media represented the new coronavirus pandemic, we've created a content analysis of three online newspapers in Romania, containing information from the three days before the Romanian lockdown started, in March 2020, days March 13th, March 14th and March 15th. The considered online newspapers are Digi 24, Antena 3 and Evenimentul zilei. We analysed 569 articles in the 3 days mentioned.

The newspapers selected were apparat of the top five most accessed online newspapers as per the Romanian Audience and Internet Traffic Study (https://www.brat.ro/sati). Also, they presented on the website a special Coronavirus section or tag which gathered all articles comprising this subject. To gather the information and analyse the data, we used the SPSS Program- Statistical Package for the Social Sciences. We've included 40 variables both scale and nominal values. We codified all the possible answers and added the code descriptions. The news identification were code, newspaper name, day of the article, name of the article and weblink.

We considered three components of the research: article components, topics of discussion and themes. We had two categories of data, related to the headline of the article, and related to the images in the article. We've divided the articles by topics of discussion, in 10 categories: medicine (medical effects, affected population, statistics and deaths), politics (political conflicts, decisions, changes), economy (jobs, economy, fiscal politics, banks), agriculture (agricultural policy, food reduction and crisis), socio-cultural issues (school system, humanitarian actions), religion, internal affairs (Ministry of Interior, police, law enforcement, fines, schedules of different entities), sports, mobility (public transportation, customs, airline companies, country transitions) and Other topics.

The three main themes we considered when analysing the articles are National themes, European themes, and International themes. The national included solely local topics and issues, the European we considered countries which are part of the Europe Continent. For the international theme we considered non-Romanian and non-European countries, with a worldwide distribution. We also have the combined categories National and European, National, and International, European and International, all themes.

We've tested 30 articles in order to update and confirm the data base, time in which we included the mobility domain, when we spotted the recurrence of the subject. To be mentioned that for consistency considerations we defined our own category streams, at times the newspaper would have a certain article in a different category than us, due to different definitions.

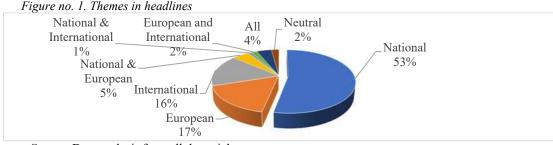
We refer in the article to the Coronavirus concept as all naming including Coronavirus, Covid, Covid19 and SARS-COV 2, having the same meaning in our research.

5. Findings

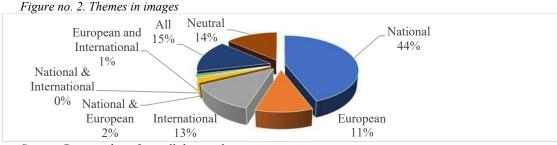
We will present further the quantitative results we retrieved from the data. We've corelated the three dimensions mentioned above, article components, topics of discussion and themes, how they are represented and interlinked with each other.

5.1. The evaluation of the theme representation in mass media about Coronavirus in Romanian online articles - National, European, and Global themes

The first objective referred to concluding how the themes identified where represented in the headlines and the images of the articles. As per expected, a stronger representation is on the National stream, both categories having the largest percentage on that. The headlines have a bigger representation with 55% of the total articles, whereas the images have a 44% representation on the National There. The European theme is the secondly most mentioned in the headlines and the third in images. Headlines mentioned rank the European theme as the secondly most frequent with 17%, at a short distance with the International theme with 16%.



Source: Data analysis from all the articles



Source: Data analysis from all the articles

Images distribution per themes has different results on second and third places. We observe the "All themes" category ranks second with 15% and the "Neutral" on the third place with 14%. Images have too a short difference between the results of the International and European themes, International has 13% presence, whereas the European a 11% presence.

One explanation would be that images are used and reused for different types of article contents, that is why we can observe a greater number of neutral images as we do headlines. The headlines are meant to be very specific, as to describe better the content of the article, while the images only support the main idea. We can observe images with the coronavirus included on different themes, either if we talk about a local or an international story.

Figure no. 3. Examples of Neutral Images



Sources: https://www.digi24.ro/stiri/actualitate/duminica-au-fost-confirmate-16-cazuri-noi-de-coronavirus-in-romania-bilantul-total-a-ajuns-la-139-1275867 and https://www.antena3.ro/coronavirus/95-romani-infectati-coronavirus-bebelus-bacau-femeie-dubai-562693.html

Another aspect that we observed was the most common references at international level were at USA, followed by China and at European level, first was Italy, second was Spain and the third was UK.

As a conclusion, we observe that the National theme has the biggest representation within both Images and Headlines streams, with over 40% of the articles. The second places is slightly different because of the increased number of not so explicit images categories where All themes, the headlines being most represented on the European stream. The third place includes International topics for Headlines and Neutral topics for Images.

The assessment of the most mentioned topic in the article's headlines (Politics, Medicine, Economy etc.)

As described in the Methodology section, we segmented the topics approached in the articles' titles and images into 10 main areas of interest, as: medicine, politics, economy, agriculture, socio-cultural issues, religion, internal affairs, sport, mobility, and Other topics. We had a total of 785 mentions in headlines on the selected topics and the Other domains, whereas a lower number of 644 of topics represented in images. The main reason for the increased difference is that the headline is more versatile and complex and gathered usually more than one topic. Only one topic is mentioned in 376 articles, 170 articles gather two of the topics and 23 articles mentioned 3 or more topics in the headline.

As expected, the Medicine ranks first place in the headline domains, as we face a pandemic medical issue and the sickness, recovery and death status of people were a priority subject. If we were to consider a more current time frame, as the Coronavirus pandemic became a top news subject, we estimate that the number of medical mentions would be even more increased. The medicine topic was spread upon all three themes, discussing global news as what China and Eastern countries are handling the crisis, as well as USA and European countries. Topics about the increasing in cases in Romania was a constant subject under this topic. Predictions about how the future will look like, as well as myths and hints of what to do and not to do to stay healthy, discussions about treatments and vaccines.

The secondly, the most mentioned subject in the headlines would be internal affairs, including news about law enforcement preparation, national orders of store schedules, internal decision to face the pandemic issue, the return of isolated Diaspora Romanians, Emergency state request by the parties.

The third most present item in the headlines is Politics, with 119 mentions, including cases of in office persons getting sick with Coronavirus, how the work of politicians was moved to online communication via video-conferencing, politics acts and decision, parties disputes regarding emergency battle plan for national safety and international politics.

The following topics ranked after 4th place were socio-cultural, economy, mobility and transportation, sports, religion, and agriculture, in that order.

Other topics mentioned in the headlines included food, scandals, public figures, media, travel, education related news and myths Covid19 related.

Table no. 1. Topics mentioned in the headlines of the articles

	Medicine	Internal affairs	Other topics	Politics	Socio- cultural	Economy	Mobility	Sport	Religion	Agriculture	Total
Headline	222	138	126	119	67	45	37	20	12	1	787

Source: Data analysis from all the articles

5.2. The assessment of the most mentioned topic in the article's images (Politics, Medicine, Economy etc.)

One of the articles analysed has no images, because it represents an editorial. Out of all, 490 have one topic of discussion, 71 of them have two topic of discussion and only 7 have 3 topics included.

The biggest representation, similar as in the case of the headlines, due to similar reasons, is the topic related to medicine (208), including images of abstracts of how the virus looks, syringes and test tubes, coronavirus tests, lab photos, medicine, medics in the hospital, paramedics in hazmat moving people to the hospital, streets getting sanitized, photos with the places where people get quarantined and people wearing masks. It is shown a strong connection between the headlines about medicine with the images that have the same topic, of 0.619 Pearson correlation, correlation significant statistic. As noted before, the pandemics represents a medical worldwide issue, fact for which both headlines and images go in this direction.

Table no. 2. Topics distribution in the images of the articles

	Medicine	Politics	Other topics	Socio- cultural	Internal affairs	Mobility	Есопошу	Sport	Religion	Agriculture	Total
Image	208	134	91	62	59	40	26	22	10	1	653

Source: Data analysis from all the articles

The second more present topic in the images found is the Politics domain (134). Almost all images are representing a local or international political image personality, other pictures include photos of conference rooms or voting papers. From the international politicians we can spot Donald Trump, Justin Trudeau, Boris Johnson, and Angela Merkel. The local politicians mentioned are Klaus Iohannis, Romania's president, Ludovic Orban, prime-minister, Dacian Cioloş, Member of the European Parliament since 2019.

Figure no. 4. Klaus Iohannis, Romanian president



Source: https://www.digi24.ro/stiri/actualitate/romania-intra-in-stare-de-urgenta-de-la-inceputul-saptamanii-viitoare-1275543

Figure no. 5. Donald Trump, USA president



Source: https://www.antena3.ro/coronavirus/donald-trump-stare-de-urgenta-statele-unite-ale-americii-coronavirus-562666.html

The third image category is socio-cultural, in 62 articles, including viral videos including public figures, entertainment location closed, as restaurants, malls, amusement parks, social actions, as the image of the Italians singing from their balconies to support each other. Starting 4th place, the next topics include, in order, the following: internal affairs, mobility and transportation, economy, sports, religion and agriculture.

Other domains include public figures pictures, media, travel, and food photos.

Regarding the images categories we discovered, screenshots from the politicians' Facebook or Twitter pages, which are now considered new sources of information for mass media and they are included in the articles, We, then, observe that different type of media blend together in order to offer information to the public, social media is now integrated in mass communication methods.

This connection between social media and mass media happens the other way around as well, as you can share the interested article via your personal social media accounts of the viewers, some publications giving this possibility.

5.3. The connection between the headline of an article and the images represented

We will discuss further the connections between the headlines of the articles and the images presented in the articles' corpus, based on the topics approached in each. We will approach the connection study below based on the most mentioned topics in the images stream.

As mentioned above, regarding the most common category of articles, Medicine, including medical issues, cases, deaths, medical effects of Covid19, there is a significant relation between the titles and the images represented there, founding a Pearson correlation of 0.619. In the research we noted 222 headline articles with Medicine topic and 208 with images in the same domain. Antena 3 had the most representation on the topic with 100 articles and 93 images, following EVZ and Digi 24. The topics and images related included daily status of the cases of infected people and deaths due to the virus, together with paramedics transporting people, hospitals, medics etc. Other category would be information about how the virus affects the physical state of a person or the population, myths and fake symptoms, we can see photos with people with masks and how lungs are affected.

The second most mentioned topic is Politics, including public institutions, political conflicts, parties, political decisions and changes, political games, we found a strong significant connection of 0.690 Pearson correlation. In this case, the higher number is represented by the images with 134, whereas the number of titles is 119. The biggest representation of politics is found in Digi 24 on both categories with 48 mentions in title and 63 images, followed by EVZ and then Antena 3. There are mentioned here news about the state of health of politicians or their families together with their images, how politics join the digital media communication trend, Parliament updates, press statement of political people. The explanation of the differences between images and titles would be that the image portraits the subject of the article text, which is differently represented in the title. The image can be of a politician and the text presented his point of view, whereas the title might say the actual subject.

For example, in the article below the title describes an internal decision of Great Britain, whereas the image portraits its prime minister, you can spot the connection if reading the article. The title is London is preparing for war-like measures. The elderly will have to spend four months in solitary confinement. (Digi24, March 15th, FL0148).

Figure no. 6. Article to show image vs headlines inconsistencies



Source: https://www.digi24.ro/stiri/externe/londra-pregateste-masuri-ca-in-vreme-de-razboi-persoanele-in-varsta-vor-trebui-sa-stea-patru-luni-in-izolare-1275637

The third category with most mentions is Internal affairs, we discovered a strong significant connection between articles title and images of 0.514 Pearson Correlation. We can note 138 titles and 59 images, with the biggest representation on Digi 24 with 51 mentions in headline and EVZ with 29 images. This category includes information about emergency state local and International and Internal affairs ministry decisions. The images include either the photo of the person who stated the press release or an image related to a very specific theme.

The socio-cultural category has a medium title versus image connection of 0.597 Pearson correlation. The number of mentions is very close, 62 for images and 67 for headlines, only 41 including both. This topic includes time-passing tips and tricks for lockdown activities, shopping malls and store schedules and amendments, amusement parks and pass-time locations news, jokes and pranks during pandemic, non-medical tips & myths that would prevent people from getting sick.

The fifth category with the most presence in images is mobility. The link between the headline remarks and the images mentioned is with a strong presence of 0.605 Pearson, statistically significant, meaning that the images used in the cases were relevant to the titles. The mobility category included mentions about terrestrial goods transportation and cargo movement during the lockdown, internal urban transportation topics, aerial and railway passenger transportation for work or vacation, as well as country transits and boarder regulations to country entries or exists, all National, European and International.

The following topic is economy, which 0.684 Pearson correlation between headlines and images, statistically valid, including topics as currency modification, credit payment postponement for unemployed or financially challenged people, unemployment and furlough and national economy pandemic impact.

Religion, sport, and agriculture are the least present in images. Even so, we noticed the strongest connections between headlines and images for these three categories, meaning the images selected were best suited for the topic presented in the headline, having the strongest connection on

agriculture, of 1,00 Pearson, due to the fact only one article mentioned this subject, following sports with 0.902 Pearson and then religion with 0.818.

To sum up, the most connected title to image topics were agriculture, sports, and religion, whilst the least ones were Internal affairs, followed by socio-cultural topic. One explanation we may advance would be that the first ones include very specific issues discussed with a limited range of possibilities, while the least are including various sphere of topics, that might use images from different categories. For the internal affairs, we can observe great number of photos from the medical and political range being included, as for the socio-cultural, we can see that multiple photos are from the mobility and the medical range. Overall, all categories have a medium to strong connection in between headlines and images, which show consistency from a text and visual representation perspective.

5.4. The evaluation of the relation between topics and themes in the articles about Coronavirus

We observed a significant correlation between images' themes and headlines' themes, which was a positive one, with 0,428 Pearson coefficient. This can translate to the fact that, most of the times, the theme of the headline was also the theme of the image. We believe that things happened in this way because most of the pictures emphasize the headline and try to draw the audience through the images impact. Excepted from this rule were neutral images, most of the time they represent a graphic draw about SARS-CoV-2, about blood test and about doctors.

National context hosted most of the topics discussed, including medicine, politics, economy, agriculture, socio-cultural problems, religion, and internal issues. We consider that this happened because people are interested in problems which directly affect their lives, health, interests, and their well-being. Politics has the best representation in National context, with 72,3%, followed by Internal affairs with 71% and religion with 50%. The agriculture was present only in National context.

Sports and mobility were discussed especially in European contexts. First topic discussed in European context was sports with 65%, mobility was the second with 24,3% and 21.2% from the European news was about socio-cultural topics. Topics related to sports comprised news about sport competitions, which were cancelled or postponed, like UEFA European championship. The mobility topic was represented through subjects like the difficulties of traveling for holidays, city breaks, business traveling, about postponed events (European music festival, concerts, galas etc.). Mobility also included goods exports and imports flows, which have been affected. Another important subject about mobility was the debate concerning the Brexit and the Romanians that returned to the country because of the governmental decisions of United Kingdom and because of the lack of jobs caused by pandemic context.

The International stream included topics as economy (22.2%), medicine (18,2%) and politics (17,6%). The news referred to the impact of Coronavirus on the global economy, global medical strategies and vaccines, and also political decisions made in China, Russia and in the United States of America.

Table no. 3. The connection between themes and topics (procentual)

Topic Theme	Medicine	Politics	Economy	Agriculture	Socio- cultural	Religion	Internal	Sports	Mobility	Others
National	49,1%	72,3%	46,7%	100%	42,4%	50%	71%	15%	24,3%	51,6%
European	14,5%	5%	15,6%	0%	21,2%	16,7%	12,3%	65%	32,4%	15,9%
International	18,2%	17,6%	22,2%	0%	19,7%	16,7%	7,2%	15%	8,1%	19%

Source: Data analysis from all the articles

6. Conclusions

Media plays an important role in how people understand different subjects, governmental strategies, decisions about restrictions and plays a very important role in communicating the preventions measures in spreading the disease.

We discovered a strong theme representation in headlines and images on the National stream. Also, we observed that most of the articles had neutral images like coronavirus drawings, different from the topics of the themes.

Regarding the most mentioned topic in the article's headlines, the medicine topic was the main domain represented in Romanian online press. This was a natural consequence of the social context, the priority subject for the pandemical period. The second topic was internal affairs and the third was politics with references to politic acts and decisions in pandemic context. In images, the most represented theme was medicine. The second most represented theme in images was politics. On the third place were internal and socio-cultural themes representation of images. To sum up, the main topic based on number of mentions in articles was medicine, the second one was politics and the third was internal affairs.

In conclusion the National theme was the main theme represented in Romanian online press. On the second place, in terms of headlines was the European theme and in terms of images was International theme.

Some limitations worth mentioning are the repetitiveness of some articles across the three newspapers or reposed in different days, also the possible omission of the articles which were coronavirus related, but the newspapers didn't tag them under this category. As we mentioned in the methodology section, we followed the articles based on the Sections of Coronavirus or the tags applied to the articles within this category. Another limitation would be the short period of time, though it compensates with the increased number of articles included. The results may have suffered changes if a broader period had been analysed and a bigger number of newspapers had been included for better precision of the results.

As future research, our purpose is to reapply the analysis on the current social situation to discover how the media representation evolve within a year. We suggest the same online journals, from the period March 13th, 14th and 15th 2021. Consequently, we would compare the results from this study with the results from the new one, to discover the changes in media representation in the Romanian online press.

7. References

- Barua, Z., Barua, S., Aktar, S., Kabir, N., Li, M., 2020. Effects of misinformation on COVID-19 individual responses and recommendations for resilience of disastrous consequences of misinformation. *Progress in Disaster Science*, 8, 100-119.
- Bîră M., Chiciudean I., 2015. The Europe we voted for: National and European topics of the 2014 elections for the European Parliament. Bucharest: Comunicare.ro.
- Borțun, D., 2001. Semiotică: limbaj și comunicare. Bucharest: SNSPA.
- Bruter, M., 2003. Winning hearts and minds for Europe. The impact of news and symbols on civic and cultural European identity. *Comparative Political Studies*, 36 (10), 1148-1179.
- Chadha, M., 2020. With facts without fear: Why responsible journalism in powerful in crises. *Business Standard* [online] Available at https://www.business-standard.com/article/current-affairs/with-facts-without-fear-why-responsible-journalism-is-powerful-in-crisis-120050400065 1.html> [Accesed 10 May 2021].
- Chiciudean, I., and Halic, B., 2003. Imagologie. Imagologie istoricã. Bucharest: Comunicare.ro.
- Chiciudean, I., and Halic, B., 2012. *Imagologie. Imagologie istoricã*. Bucharest: Comunicare.ro.
- Elflein, J., 2021. Coronavirus (COVID-19) disease pandemic- Statistics & Facts. *State of Health*. [online] < https://www.statista.com/topics/5994/the-coronavirus-disease-covid-19-outbreak/ > [Accessed 11 May 2021].
- Elflein, J., 2021. Total number of U.S. coronavirus (COVID-19) cases and deaths. *State of Health*. [online] https://www.statista.com/statistics/1101932/coronavirus-covid19-cases-and-deaths-number-us-americans/ [Accessed 11 May 2021].

- Gever, C. V., Coleman, E., 2017. Newspaper Coverage of the Herdsmen–Farmers Conflict in Central Tiv Land, Benue State, Nigeria. *Media, War Conflict War*, 19 (1).
- Hall, S., 2003. Representation: Cultural representations and signifying practices. London: Sage Publications.
- Hall, S., 2005. Representation & the Media. Northhampton, MA: Media Education Foundation.
- Hopman, J., Allegranzi, B., Mehtar, S., 2020. Managing COVID-19 in low-and middle-income countries. *Jama*, 323 (16), pp. 1549-1550.
- Jenkins, R., 2000. *Identitatea socială*. Bucharest: Univers.
- Kovar, J., Kovar, K., 2012. National or European? EP Election Campaign Themes in the News Media. *European Electoral* Studies.7 (1), pp 30-41.
- Lasswell H., 1948. The structure and function of communication in society. New York: Harper.
- Moreno, A., Fuentes, L. C., Navarro, C., 2020. Spain: Exploring the effect of information-seeking behaviour and message reception in public's evaluation. *El profesional de la informacion*. 29(4).
- O'Neill, A., 2021. Population of Romania from 1844 to 2020. Historical Data. [online]
- https://www.statista.com/statistics/1017533/total-population-romania-1844-2020/ [Accessed 12 May 2021].
- Stewart, C., 2021. Number of coronavirus (COVID-19) cases in Europe 2021, by country. State of Health. [online] https://www.statista.com/statistics/1104837/coronavirus-cases-europe-by-country/ [Accessed 12 May 2021].
- Sava, J. A., 2021. Coronavirus (COVID-19) in Romania statistics & Facts. [online] < https://www.statista.com/topics/6240/coronavirus-covid-19-in-romania/#dossierSummary_chapter1 [Accessed 11 May 2021].
- Sucháček, J., 2014. European themes within national TV news reporting in the Czech Republic. In Proceedings of the 2nd International Conference on European Integration (pp. 644-650).
- Vreese, C.D., 2001. Election coverage. New directions for public broadcasting. The Netherlands and beyond. *European Journal of Communications*, 155-180.
- www.antena3.ro
- www.brat.ro/sati
- www.digi24.ro
- www.evz.ro
- www.statista.com
- www.worldmeter.info

Analysis of Meat Consumption in the Context of Income Changes

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Abstract

The well-being of the population can be characterized by the economic indicator annual consumption of meat per capita, meat being the food that provides the body through metabolism, nutrients and energy necessary for daily activities. One of the main components in the daily diet of Romanians is home-cooked meat, Romania positioning itself on the main places for consumption at EU level. Starting from this idea, through this paper it will be analyzed the way in which changes in meat consumption were generated as incomes in Romania changed, over a period of 10 years, respectively 2010-2020. The direction and intensity of interdependence between the two selected variables will be calculated using the Pearson correlation coefficient, through the Data Analysis program.

Key words: meat consumption, meat consumption - income correlation, meat market

J.E.L. classification: D1, D16, E01

1.Introduction

The meat sector is one of the most important sectors of the food industry in Romania, with a high impact on ensuring Romania's food security. The traditions of animal breeding at national level decreased, the market being deficient, Romania being currently dependent on imports, considering the high consumption. The consumption of animal protein is much higher than that of vegetable protein, given the richer content of amino acids essential for the health of the human body. Meat consumption supports the regeneration, maintenance and growth of tissues, contributes to the improvement of vital functions in the body and the formation of antibodies, in order to defend against diseases. There is a growing trend in domestic meat consumption in recent years, the reasons being on the one hand the increase in household income and on the other hand, the reduction of the VAT rate on food and services starting with mid-2015. The purpose of this paper is to identify the level of interdependence between population income and meat consumption, using data provided by the National Institute of Statistics over the past 10 years. The data will be analyzed through the Data Analysis program - the function of determining the Pearson correlation coefficient.

2. Literature review

According to the Organization for European Economic Co-operation (OEEC), the evolution of meat consumption is considered one of the indicators for living standards and consumer prices. Also, the acceleration of meat demand is largely associated with increased income.

Meat proteins have an optimal content of essential amino acids, which places them in the category of class I proteins. Thus, the inhabitants of economically developed areas cover the nutritional needs of the body especially by consuming food of animal origin, being characterized by a high level of average annual meat consumption (Gerbens-Leenes, Nonhebel and Krol, 2010).

According to Gerbens-Leenes, Nonhebel, & Krol (2010) food consumption patterns are defined as the "repeated arrangements of consumption, characterized by types and quantities of food items and their combination in dishes and meals"; additionally, income plus preferences, culture, and availability affect these patterns. Prosperous countries tend to consume more food items sourced from animals such as milk, cheese, and meat (Gerbens-Leenes, Nonhebel, & Krol, 2010).

3. Research methodology

The present paper uses comparative methods, the data provided by the National Institute of Statistics will be analyzed, related to the average total monthly income per household and the average monthly quantity of fresh meat bought by a household per person. Based on these data generated for the last 10 years, the Pearson correlation coefficient will be determined.

The aim of this study is to identify the interdependence relationship between the average total monthly income per household and the average monthly quantity of fresh meat bought by a household per person and to answer the question: Is there a direct link between the two variables? What is the direction of the relationship between the variables? To determine the answer, Data Analysis will be used based on the elements mentioned above.

4. Findings

4.1. Analysis of data on the average total monthly income per household and the average monthly quantity of fresh meat bought by a household per person

The data provided by the National Institute of Statistics are centralized in Table 1, represent the analyzed data. Thus, the first variable is the average total monthly income per household expressed in RON, and the variable and the average monthly quantity of fresh meat bought by a household per person is expressed in kilograms. The analysis period is of the last 10 years, respectively 2010-2020.

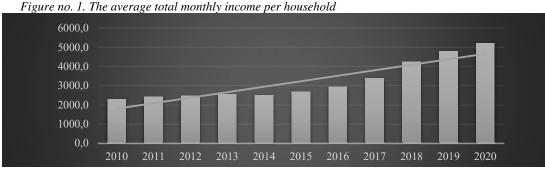
Table no. 1. The average total monthly income per household and the average monthly quantity of fresh

meat bought by a household per person, period 2010-2020

Year	The average total monthly income per household (RON)	The average monthly quantity of fresh meat bought by a household per person (kg)
2010	2304,3	2,207
2011	2417,3	2,106
2012	2475,0	2,151
2013	2559,1	2,232
2014	2500,7	2,227
2015	2686,8	2,34
2016	2944,6	2,446
2017	3391,7	2,579
2018	4251,3	2,736
2019	4789,8	2,72
2020	5216,4	2,905

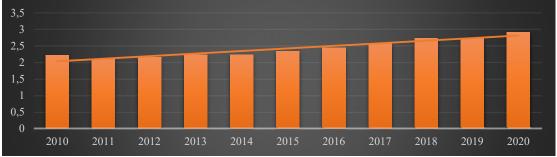
Source: National Institute of Statistics

As can be seen in the table above, incomes increased by 126.37% in the analyzed period, starting from RON 2304.3 in 2010 and reaching 5216.4 RON in 2020. The evolution of revenues is upward, in the same measure also changed the amount of meat consumed, the increase being a percentage of 31.62%. The results can also be seen in the graphs below.



Source: data taken from National Institute of Statistics and processed

Figure no. 2. The average monthly quantity of Fresh meat bought by a household per person (kg)



Source: data taken from National Institute of Statistics and processed

4.2. Pearson's correlation coefficients determination between the average total monthly income per household and the average monthly quantity of fresh meat bought by a household per person

The Pearson correlation coefficient (Rxy) reveals the level of connection, association between two variables, and is calculated by the ratio of the sum of the products of the deviations to the product of the standard deviations where the coefficient sign indicates the direction. After obtaining the value of the coefficient, the sign will show us the direction of the connection between the two variables, respectively if they are directly or indirectly proportional, and the intensity will be established by approaching 1. The values of the coefficient can be between -1 and 1, thus explaining: -1 means a perfect negative correlation, 0 means a zero correlation, and 1 means a perfect positive correlation.

The formula for the Pearson coefficient is:

$$r_{xy} = \frac{\text{cov}(x, y)}{s_x s_y} = \frac{s_{xy}}{s_x \cdot s_y} = \frac{\sum_{i=1}^{n} (x_i - \overline{x})(y_i - \overline{y})}{\sqrt{\left[\sum_{i=1}^{n} (x_i - \overline{x})^2\right] \left[\sum_{i=1}^{n} (y_i - \overline{y})^2\right]}}$$

where:

rxv - Pearson correlation coefficient

xi - individual values of the variable

 \bar{x} — the average of individual values of x

yi - individual values of the variable y

 \overline{y} — the average of the individual values of y

Source: Own processing

Following the use of the Data Analyis program, the value of the Pearson correlation coefficient emerged in the table below:

Table no. 2. Coefficient of correlation between the average total monthly income per household and the

average monthly quantity of fresh meat bought by a household per person

	The average total monthly income per household	The average monthly quantity of fresh meat bought by a household per person
The average total monthly income per household	1	nousenolu per person
The average monthly quantity of fresh meat bought by a household per person	0,960312	1

Source: Own processing using Data Analysis program

It can be observed the close and direct proportional relationship between the average total monthly income per household and the average monthly quantity of fresh meat bought by a household per person, the coefficient having a value of 0.960312. This suggests that as household incomes have increased over the past 10 years, the impact has also been felt on meat consumption, which in turn has increased.

5. Conclusions

The meat industry is an important sector of the Romanian economy, given the high values of consumption manifested in the country. Viewed from another perspective, the upward trend for domestic meat consumption demonstrates the need to develop the potential of this important component of agriculture in Romania. A proper development of the food industry, correlated with the optimal use of the agricultural resources available to Romania can reduce the dependence of the domestic market on imports and ensure the food security of the nation. The potential is high, given the large agricultural area, the availability of the population to raise animals, as well as human resources in rural areas.

According to the analysis, it turned out that income is an element with a major influence on meat consumption. Incomes increased by 126.37% in the analyzed period, starting from 2304.3 RON in 2010 and reaching 5216.4 RON in 2020. The evolution of incomes is upward, in the same measure also changed the amount of meat consumed, the increase being a percentage of 31.62%.

6. References

- Andreyeva T, Long MW, Brownell KD., 2010. The impact of food prices on consumption: a systematic review of research on the price elasticity of demand for food. *Am J Public Health*, 100, p.216-222.
- Ajzen, I., 2015. Consumer attitudes and behavior: The theory of planned behavior applied to fo od consumption decisions. *Rivista di Economi Agraria*, 70 (2), p.121-138.
- Conner, M. & Armitage, C.J., 2006. Social psychological models of food choice. Guildford: She pherd & M. Raats.
- DRANSFIELD, E. 2001. Consumer issues and acceptance of meat. *Proceedings of the 14th International Congress of Meat Science and Technology*, 14, p.72-79
- Food and Agriculture Organization of the United Nations, FAO, 2021. *Meat Market Review*, [online]. Available at: https://www.fao.org/3/cb6127en/cb6127en.pdf [Accesed 20 November 2021].

Analysis of Fruit Consumption in the Context of Income Change

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Abstract

Expressed in terms of income, the living standard of the population makes its mark on the current consumption needs of the household. In recent years, there has been a trend towards a balanced lifestyle, and priorities and lifestyles are changing. Through this paper, the consumption of fruits correlated with the income level will be analyzed, in order to create an image on the consumption habits, the fruits being considered a resource in the diet of the future. In order to have a clear image, the data provided by the National Institute of Statistics from the last ten years will be analyzed, including the year 2021 (first and second quarters). The Pearson correlation coefficient will be determined through the Data Analysis program.

Key words: fruit consumption, fruit comsuption-income correlation, fruit market

J.E.L. classification: D1, D16, E01

1. Introduction

According to the World Health Organization, Romania is one of the countries that is poor in fruit consumption, below the European average. Low consumption of fruits and vegetables is closely linked to poor health, the UN agency estimated that 3.9 million deaths worldwide have related to the inadequate consumption of fruits and vegetables in 2017. The paper will identify how the consumption of fruits is influenced by changes in household income, income being the defining element of living standards.

2. Literature review

According to the literature, epidemiological evidence for the health benefits of a diet rich in fruit and vegetables is substantial, a large body of epidemiological evidence suggests that a high fruit and vegetable intake helps to promote health and to prevent chronic disease. (He FJ, Nowson CA, MacGregor GA: Fruit and vegetable consumption and stroke: meta-analysis of cohort studies. Lancet. 2006). In fact, it has been mentioned that low socioeconomic position (SEP) is associated with low or less frequent intake of fruits and vegetables, and especially for family income.

3. Research methodology

This paper will use comparative methods through the Pearson correlation. With the help of data provided by the National Institute of Statistics for the period 2010-2021 (including in the year 2021 only the first and second quarters) on the average total monthly income per household and the average monthly fruits / person purchased by a household will be establish the interdependence between the two indicators. The main objective of this paper is to identify the relationship between the above variables and to answer the question: Can a relationship be established between the average total monthly income per household and the average monthly fruits / person purchased by a household? To identify the answer, it is necessary to calculate the indicators using the Data Analysis software in the Microsoft Office package.

4. Findings

4.1. Analysis of data on the average total monthly income per household and the average monthly quantities of fruit per person purchased by a household

The data necessary to analyze the influence of the two variables are centralized in Table 1 and were taken from the databases of the National Institute of Statistics. Household income is expressed in RON, the indicator being the monthly average and the unit of measurement for the average monthly amount of fruit per person is in kilograms. The reference period is 2010-2021, with the mention that in 2021 only the 1st and 2nd quarters were included. The evolution of incomes in that period was from 2304.28 RON in 2010, to 5532.34 RON in 2021.

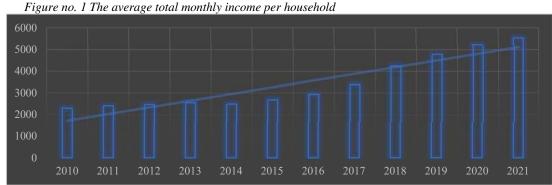
Table no. 1 The total monthly average income per household and The average monthly quantities

of fruit per person bought by a household

Year	Average total monthly income per household	Average monthly quantities of fruit per person bought by a household
2010	2304,28	2,632
2011	2417,26	2,476
2012	2475,04	2,442
2013	2559,05	2,462
2014	2500,72	2,75
2015	2686,77	2,786
2016	2944,6	2,89
2017	3391,67	3,036
2018	4251,26	3,163
2019	4789,83	3,217
2020	5216,38	3,483
2021 (first and second quarters)	5532,24	3,694

Source: National Institute of Statistics

As can be seen in the table above, incomes increased by 140,08 % in the analyzed period, starting from RON 2304.3 in 2010 and reaching 5532,25 RON in 2021. The evolution of revenues is upward, in the same measure also changed the amount of fruits consumed, the increase being a percentage of 40,34 %. The results can also be seen in the graphs below.



Source: data taken from National Institute of Statistics and processed

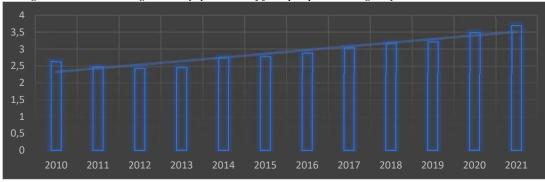


Figure no. 2 The average monthly quantities of fruit per person bought by a household

Source: data taken from National Institute of Statistics and processed

4.2. Identifying the Pearson Coefficient between Average total monthly income per household and Average monthly quantities of fruit per person bought by a household

The Pearson correlation coefficient (Rxy) reveals the level of connection, association between two variables, and is calculated by the ratio of the sum of the products of the deviations to the product of the standard deviations where the coefficient sign indicates the direction. After obtaining the value of the coefficient, the sign will show us the direction of the connection between the two variables, respectively if they are directly or indirectly proportional, and the intensity will be established by approaching 1. The values of the coefficient can be between -1 and 1, thus explaining: -1 means a perfect negative correlation, 0 means a zero correlation, and 1 means a perfect positive correlation.

The formula for the Pearson coefficient is:

$$r_{xy} = \frac{\text{cov}(x, y)}{s_x s_y} = \frac{s_{xy}}{s_x \cdot s_y} = \frac{\sum_{i=1}^{n} (x_i - \overline{x})(y_i - \overline{y})}{\sqrt{\left[\sum_{i=1}^{n} (x_i - \overline{x})^2 \right] \left[\sum_{i=1}^{n} (y_i - \overline{y})^2 \right]}}$$

where:

rxy - Pearson correlation coefficient

xi - individual values of the variable

 \bar{x} — the average of individual values of x

yi — individual values of the variable y

 \bar{y} — the average of the individual values of y

Source: Own processing

Following the use of the Data Analyis program, the value of the Pearson correlation

coefficient emerged in the table below:

Table no. 2. Coefficient of correlation between the average total monthly income per household and the average monthly quantities of fruit per person bought by a household

	Γhe average total monthly income per household	The average monthly quantities of fruit per person bought by a household
The average total monthly		
income per household	1	
The average monthly quantities		
of fruit per person bought by a		
household	0,952799	1

Source: Own processing using Data Analysis

It can be observed the close and direct proportional relationship between the average total monthly income per household and the average monthly quantities of fruit per person bought by a household, the coefficient having a value of 0.952799. This suggests that as household incomes have increased, the impact has also been felt on fruit consumption, which in turn has increased.

5. Conclusions

Fruits play an important role in terms of nutritional needs, and our priorities and lifestyle have changed. In the last century, physical activity was much more intense and part of the common lifestyle, work meant a lot of physical effort, the body needing a greater amount of protein, carbohydrates and fats, so fruit consumption was much lower.

According to the analysis performed, as the incomes increased, the amount of fruit consumed also increased, between the two there being a positive interdependence relationship, directly proportional. One of the explanations could be given by the felt need for energizing foods, with low caloric content, taking into account that most of the time the effort is made from the chair, from the office, nowadays.

Thus, the importance of fruits in the diet has changed in recent years, fruit consumption being in close correlation with the increase in income, becoming a resource in the diet of the future.

6. References

- Andreyeva T, Long MW, Brownell KD., 2010. The impact of food prices on consumption: a systematic review of research on the price elasticity of demand for food. *Am J Public Health*, 100, p.216-222.
- Ajzen, I., 2015. Consumer attitudes and behavior: The theory of planned behavior applied to fo od consumption decisions. *Rivista di Economi Agraria*, 70 (2), p.121-138.
- Conner, M. & Armitage, C.J., 2006. Social psychological models of food choice. Guildford: She pherd & M. Raats.
- He FJ, Nowson CA, MacGregor GA, 2006. Fruit and vegetable consumption and stroke: meta-analysis of cohort studies. *Lancet*, 367, p. 320-326.
- Xie B, Gilliland FD, Li YF, Rockett HRH, 2003. Effects of ethnicity, family income, and education on dietary intake among adolescents. *PrevMed*, 36, p.30-40.

The Effects of African Swine Fever Virus On Romanian Agriculture

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Abstract

Starting with July 31, 2017 - the first outbreaks of African swine fever virus or A.S.F.V in domestic pigs were reported in households in Satu Mare County was initially introduced with pork products purchased from Ukraineand introduced illegally in the country. In 2018, the swine fever virus Africans entered Romania withwild boars in the border area with Ukraine, initially in the households of Satu Mare County and laterin Tulcea county, the Ceatalchioi area spreading with a fairly high speed, affecting the whole country. The disease has rapidly evolved in domestic pigs, mainly due to the uncontrolled movements of animals, meat, and pork products from the outbreak areas to the unaffected areas. In parallel, there have been cases of African swine fever virus in wild pigs. Due to the specific situation of Romania, with many pigs raised in households, with pigs raised in open systems; animals being free, the epidemic spreadvery quickly, with a significant impact on herds of pigs due to mortality and disease eradication measures, which require preventive euthanasia of the entire contaminated herd. This paper is planning to analyze the outcome of African swine fever virus onto Romania's economy and propose measures to stop the spread of the virus. One of the main objective is to provide the snapshot of Romanian economical situation regarding livestock, to highlight the importance of local farms and therefore its major impact on economy.

Key words: swine fever, pork, livestock, African swine

J.E.L. classification: Q12, Q13, Q14, H84

1. Introduction

A.S.F.V. (short for African swine fever virus) is a highly contagious disease with a lethal end produced by a virus very resistant to environmental conditions and in food (in frozen meat, it can last up to 3 years), affecting all categories of pigs, both domestic and wild. These biological features and the very high resistance have made the production of aneffective vaccine impossible to achieve so far. However, several laboratories are now working to create a vaccine that is estimated to be released in 2023. The severity is of this virus is mostly due to its impact on international and national commerce with pork meat and other related products; furthermore, this also has a significant impact on a microeconomic level, by its spread to small family farms that are raising pigs for consumption. (Danzetta M., et al., 2020)

Regarding the spread of this virus at this time, there are not enough studies on its spread through feed, water, insects, and rodents. One of the main proven vectors, excluding the classical ways of contamination, is the human factor. by non-compliance with biosecurity conditions (contact with healthy pigs at the same time as contact with other pigs or products or equipment that have come into contact with contaminated lots, transport of pigs to different locations without documents and without sanitary-veterinary checks (E.C., 2021a)

2. Theoretical background

African swine fever (A.S.F.), which is enzootic in many African countries, has entered the Italian island of Sardinia since 1978, but due to the geographical peculiarities of the area, the disease has not spread to the mainland. Since 2007, it has been evolving in the eastern Caucasus states, probably from Africa to Georgia, from where it spread to Russia, Ukraine, and Belarus. It has evolved in the past on the European continent, inSpain, Portugal, France, the Netherlands, and Italy. Since January 2014, the E.U. Member States has reportedseveral thousand cases of wild boar and several dozen outbreaks: Lithuania, Latvia, Poland, and Estonia (E.F.S.A.,2021). 2020 was the year that European Food Safety Authority started to raise awareness over this disease.

The study conducted by Mačiulskis et al. (2020) states that after the first infection detected with wild boars, 86% percent of the territory in Lithuania was affected, and the diseases remained endemic within the wild boarpopulation. However, the eradication of the diseases is somewhat tricky since of the long lifespan of Ornithodoros ticks and also the possibility to spread towards domestic pigs; furthermore, the infection of wildboars is another issue, as Gauderault N. et al. (2020) argues. The virus is transmitted by both indirect and directcontact between animals, via infected swine and its products. (Danzetta M., et al., 2020)

3. Research methodology

This paper is using data extraction analysis and interpretation. The considered period is 2018 until October 2021, in regard to all the information gathered. The research is also based on work field experience, courtesy of one of the authors. The data comparison observes the peaks and lows of the swine fever virus in Romania and its repercussions on the economy. The data will be combined with proposed measures in order to slow or to possibly clear the swine fever virus from Romanian territory.

4. Findings

In Romania, the effects of African swine fever virus have been felt since 2018, when the virus first entered a commercial pigfarm in Tulcea County, requiring the euthanasia of 35,000 pigs.

As a result, in the period 2018-2021, the Romanian authorities had to implement a series of measures recommended by the European Commission to combat African swine fever virus The main recommended measures were toestablish a legislative framework focusing on the sizing of pig farms under strict biosecurity rules on households and the control of pig movement. (M.A.D.R., 2018)

In the absence of implementing the recommended measures and due to poor management of the disease, uncontrolled movement of pigs and meat products in households, and deficient biosecurity conditions in households, the disease has spread to almost the entire country. As a result, Romania registered between July 31, 2017 - September 24, 2021, a total of 5,238 outbreaks in domestic pigs and approx. 5,874 cases in wild boars and approx. 1,263,981 domestic pigs, respectively 29.8% of the average population in the last five years. Out of the total of 5,238 outbreaks recorded between July 31, 2017 - September 24, 2021, in domestic pigs, approximately 122 outbreaks were recorded in commercial farms and type A farms, where most pigs were killed (approx. 1,105,147 pig heads in total, of which we estimate that approximately 81,000 breeding sowsrepresent 60% of the breeding capacity of commercial farms), as it is shown in table 1 below.

Table no. 1 Situation of existing and dead/euthanized herds since 2018 until now

Total	Total dea	Total dead pigs H		holds of th	e population	Commercial farms		
number of pigs	Number 3=(5+8)	% col 3/2	Total dead	of which		of which		
(heads)		0	pigs (heads)	dead (heads)	dead + killed + preemptivel y slaughtered (heads)	Killed pigs + dead (heads)	Cremate d corpses (heads)	Buried corps (heads)
4.240.16	1.263.98 1	29.8%	158.83 4	0	158.834	1.105.14 7	0	1.105.14 7

Source: (combined data from A.N.S.V.S.A./D.S.U./D.S..V/City Council, E.C 2021b, 2021 and author's own calculation)

During this period, professional pig farms affected by the A.S.F.V. pandemic were forced to euthanize and bury(or incinerate) the entire herd of pigs, or if in an area 10 km around an A.S.F.V outbreak is a pig farm according to U.S. regulations. Applied in Romania, all deliveries are blocked for at least 60 days. These situations have led to a decrease in the number of pigs, economic losses of commercial farms, and a deficit of pork produced in Romania.

According to the centralized data for this whole period, at a national level, in the administrative-territorial area, there were outbreaks of African swine fever in 1,883 localities for domestic pigs and specific cases in 696 hunting funds for wild pigs within the administrative-territorial area of 41 counties of 5,238 outbreaks of A.S.F. to be observed in figure 1 below. At the level of the European Union, Romania is one of the countries mostaffected by the African swine fever virus.

Figure no.1 The evolution of African swine fever in Romania 2018-2021 (until September) 1400 1200 1170 1096 1094111 1089 1000 961 Number of outbreaks 800 763 600 511 455 408430 421 200

Source: (A.N.S.V.S.A. 2021, E.C. 2021b and author's own calculation)

The epidemic is severe; if no measures are taken to stop the disease, it can lead to the disappearance of theentire herd of pigs on the territory of a country.

The economic outcome

According to the E.C. (European Council) Regulation no. 349/2005 (E.C., 2005) establishing the rules on Community financing ofemergency interventions and the control of certain animal diseases referred to in Council Decision 90/424 / E.E.C. (E.E.C., 1990) and GD 1214, 07.10.2009 (H.G., 2009) updated with GD 484 / 05.07.2018 (H.G.,2018) on the methodology for establishing and payment of compensation due to owners of animals slaughtered, killedor otherwise affected in order to rapidly eliminate outbreaks of communicable animal diseases; specific compensation is granted for the entire herd of pigs considered contaminated. The respective compensations shall be granted for both professional and non-professional holdings or for which compensations have been granted in accordance with certain conditions:

- Pigs should be registered in the National Animal Identification and Registration System.
- Following the epidemiological investigation carried out by the veterinary inspectors; it is found that all thebiosecurity conditions imposed by the legislation in force for each type of holding have been met.

So far, 15,200 professional and non-professional farms have been compensated. The total value of the compensations paid on May 31, 2021, was 512,540,690 lei (approx. 102,508,138 Euro).

For a professional farm, these compensations cover only the market value of the pig herd at the date of the declaration of the outbreak, which was euthanized, excluding the pigs which died during that period. Expenses related to euthanasia, cleaning, disinfection, staffing, utilities, etc., during the sanitary vacuum period until repopulation is borne by the farmer. A specific situation for Romania that is very difficult to adapt to E.U. legislation (due to the many non-commercial or subsistence farms in the country) and which results in significant economic losses is the following: If an outbreak of A.S.F.V. is detected, quarantine is established within a radius of 10 km around the outbreak, the movement of pigs in that area will be prohibited; if there is a commercial farm in that area, deliveries will be prohibited for 30-40 days, after which they will be allowed only by directing them to a slaughterhouse that has the possibility of heat processing. The restrictions are going to be lifted after no more than 60 days, proving that the laboratory results are negative for the African swine fever virus. The checks will be done overall swineherds in the whole restricted area.

5. Results and discussions

A significant number of pig farming companies that have been affected either by direct contamination with the African swine fever virus and euthanasia of the entire herd of pigs or by quarantines blocking the activity haveentered into a financial deadlock. At present, a large part of the farms directly affected by the African swine fever virus haveremained in conservation, and they no longer have the financial support to reopen production. Moreover, some of the farms indirectly affected were forced to close their activities later.

In conclusion, according to the data from this period 2018 - 2021, we see a decrease in the total number ofpigs produced in Romania, the trend remaining downward, as is shown in table 2 and figure 2. A considerable number of outbreaks, especially on professional farms or registered in August – September 2021

Table no. 2 Total number of pigs, sows, and piglets (thousand heads)

SPECIFICATION Existing pig herds at 30.06.2021 Different +/between

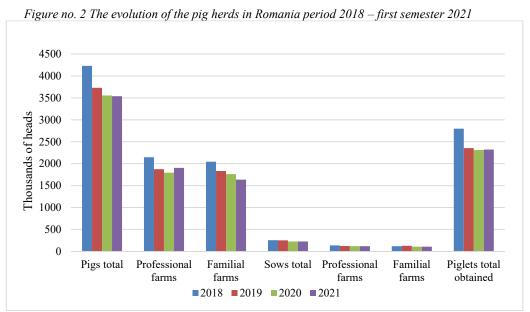
2018	2019	2020	2021	2019	2020

PIGS TOTAL - from which:	4.228	3.730	3.555	3.538	-192	-17
Pig breeders, from which:	4.228	3.730	3.555	3.538	-192	-17
Professional farms	2.184	1.847	1.794	1.903	56	109
Familial farms	2.044	1.883	1.761	1.635	-248	-126
SOWS TOTAL - from which:	255	251	225	226	-25	1
Pig breeders, from which:	255	251	225	226	-25	1
Professional farms	136	123	118	119	-4	1
Familial farms	119	128	107	107	-21	0
PIGLETS TOTAL OBTAINED	2.797	2.355	2.311	2.323	-32	12

Source: (A.N.S.V.S.A.,2021 and E.C. 2021b)

This particular situation affects the farm from an economic point of view, practically blocking the pig outputs and consequently the financial inputs; some of the issues that arise are:

- Additional feed costs due to impossibility of deliveries
- Impossibility to comply with contractual commitments
- Impossibility to comply with welfare conditions
- Overcrowding of the farm due to limited space
- Euthanizing animals due to lack of space
- Selling animals at a lower price due to excess weight



Source: (M.A.D.R. operational information and Carcass classification commission 2021 and author's own calculation)

Analyzing the existing data, we find a decrease in the last four years of pig herds in Romania, and this phenomenon is caused mainly by the impact of African Swine Fever in the pig breeding sector and the difficulty of reopening some farms affected by this epidemic. Starting with 2020, due to the decrease in the number of pigs in the country, deliveries of live pigs directly on the market have increased significantly following a return to normal in 2021, which in the evolution of swine fever over European pigs almost doubled compared to 2018 and 2019. At the same time, deliveries of live pigs to slaughterhouses fell sharply in 2020, with a return in the first quarter of 2021, the pork deficit was supplemented by imports. The segment that remained constant is the one represented by the family consumption of pork from one's own household, as can be seen in figure 3 below.

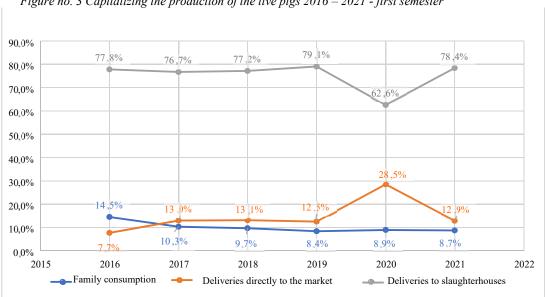


Figure no. 3 Capitalizing the production of the live pigs 2016 – 2021 - first semester

Source: (operating information M.A.D.R., 2021 and author's own calculation)

Starting with 2019 and until the first half of 2020, the live selling price of pigs was the highest in the last six years. Due to the significant impact of A.S.F.V. on pig production in several Asian countries, especially China, which is losing more than 50% of its pig population, the demand for pork in this country has been very high; practically, the demand would be 80% of the total pork production in the E.U.

China's demand will be partially covered by imports; the impact has led to a significant increase in prices due blimited supply of pork, constant market demand, coverage of the meat shortage in this country from the E.U., U.S.A., Brazil, etc. Germany being one of the leading exporters of in 2019, pork exported 1,020,000 tons of meat, of which 601,000 tons of meat to China; due to these volumes, the price of pork was set on the stock exchange of this country.

All this demand for pork from 2019 was also found in Romania, the offer being reduced due to the evolution of African swine fever virus determined the increase of prices by 45% compared to the average.

Since 2020, E.U. pork production has declined slightly due to the spread of the African swine fever virus to other countries, such as Poland and present-day Germany. China and several Asian countries have blocked imports from Germany, other E.U. exporters have managed to fill the gap by increasing their exports. Given the impact of the Covid-19 pandemic and the limitations imposed, prices that rose in 2019 began to fall towards the 5-year average as a result of declining food services. Since the middle of the year, its prices have stabilized with a slight upward trend due to the return of food services and rising world demand; but due to the decrease in E.U. export volumes to China, the price decreased to an average of 5 years as Figure no.4 shows.

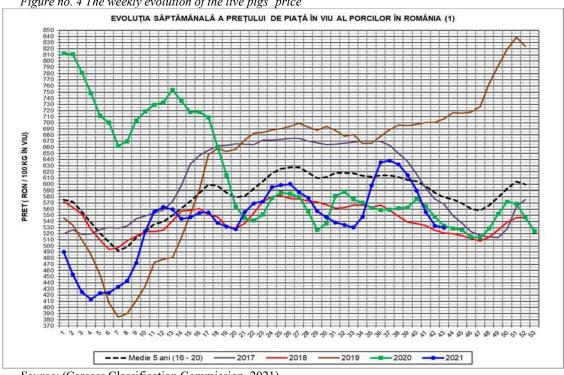
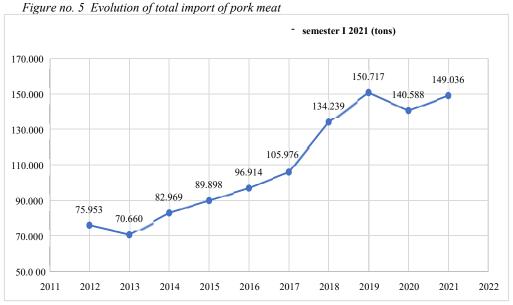


Figure no. 4 The weekly evolution of the live pigs' price

Source: (Carcass Classification Commission, 2021)

Regarding pork imports, they increased every year, registering an increase of about 110 thousand tons per year, compared to 2016, the year before the African Swine Virus., accentuating the imbalance of the trade balance by about 220 million euros/year, shown in figure no.5 below.



Source: (M.A.D.R. operative data 2021, and author's own calculation)

6. Conclusions

Considering the presented above, we notice a drastic decrease in the pig herds on the Romanian territory, the meat deficit on the market was supplemented by imports from intra-community trade, producing an imbalance of the financial balance.

The duration in which a commercial pig farm will produce the first salable product from the moment of insemination of the sows can be at least nine months for 30 kg piglets and one year for slaughter pigs (110 kg). The calculated financial loss of a farm of 6,000 sows from the moment the outbreak is declared until the delivery of the first piglets is approximately 2,000,000 euros.

Many commercial farms that were directly or indirectly affected by the S.A.F. virus remained permanently closed.

Although substantial investments for the implementation of increased biosecurity measures were made by most commercial farms both from their own resources and through financing with P.N.D.R. (National program for rural development) funds through sub- measure 5.1; due to insufficient studies on the mode of transmission, the virus has managed to enter farms verified and listed as meeting all biosecurity conditions. Epidemiological investigations carried out by the authorities after the outbreak was declared did not find any gaps where the virus would have managed to enter the farm, at least through the means known so far.

In order to control this epidemic, the involvement of the authorities through concrete measures such as:

- Publication of the A.N.S.V.S.A. (National Sanitary Veterinary and Food Safety Authority) Order for the approval of the Veterinary Sanitary Norm regarding the biosecurity conditions in pig farms according to the requests of the European Commission E.U.V.E.T. (European Veterinary Emergency Team)
- Carrying out a national program for informing and educating the population about the causes, evolution, and individual and community losses in case of African swine fever virus, prevention measures, consequences, and sanctions for breeders who violate the legal provisions (M.A.D.R., 2018)
- Issuance of an A.N.S.V.S.A. (Romanian national sanitary- veterinary association) Order on how to verify compliance with biosecurity conditions and how to control the movement of pigs on farms
- Streamlining the passive wildlife surveillance program to ensure that the African swine fever virus is detected at an early stage. In the absence of the correct implementation of this program, the detection of the disease delays and, consequently, the implementation of control measures, increasing the risk of subsequent spread to domestic pigs, especially in non-professional holdings, which happened in 2018.
- Application of the biosecurity requirements provided by the National Committee for Special Emergency Situations in the national plan to eradicate African swine fever virus in wild pigs in Romania. Outbreaks of African swine fever virus generated in households by the transmission of African swine fever virus from wild boars produce severe effects for commercial farms that are restricted in the movement of livestock for long periods of time and record significant financial losses, impossible to recover
- The application of effective, proportionate, and dissuasive sanctions, in particular for deviations from the rules on the identification/registration of pigs and the rules on the movement of pigs. Creation of "green" and/or "green areas" corridors so that commercial holdings can operate and avoid bankruptcy and the application of measures to stimulate peasant / non-commercial households to temporarily give up pig production.

7. References

- Carcass Classification Commission, 2021. <u>Comisia de clasificare a carcaselor [Carcass Classification Comission]</u>.[online] Available at: < www.ccceurop.ro > [Accessed 22, November 2021]
- European Council, 2021a. *African swine fever, European Council*. [online] Available at:https://ec.europa.eu/food/animals/animal-diseases/diseases-and-control-measures/african-swine-fever_ro [Accessed 25, November 2021]

- European Council, 2005. E.C. 349/2005 [online] Available at : < https://eur-lex.europa.eu/legal-content/RO/TXT/PDF/?uri=CELEX:02005R0349-20080822&from=GA>
- European Council, 1990. COUNCIL DECISION of 26 June 1990 on expenditure in the veterinary field (90/424/EEC) [online] Available at: < https://eur-lex.europa.eu/legal-content/GA/TXT/?uri=celex:31990D0424> [Accessed 25, November 2021]
- European Council, 2021b. Production by country, European Council [online] Available at : <
 <p>https://ec.europa.eu/info/food-farming-fisheries/farming/facts-and-figures/markets/production/production-country en> [Accessed 25, November 2021]
- European Food Safety Authority, 2021. *African swine fever* [online] Available at: https://www.efsa.europa.eu/en/topics/topic/african-swine-fever [Accessed 25, November 2021]
- Gaudreault Natasha N., Madden Daniel W., Wilson William C., Trujillo Jessie D., Richt Juergen A., 2020. African Swine Fever Virus: An Emerging D.N.A. Arbovirus, *Frontiers in Veterinary Science*, Volume 7, 2020 pp.215, DOI=10.3389/fvets.2020.00215 ISSN=2297-1769 [online] Available at: https://www.frontiersin.org/article/10.3389/fvets.2020.00215 >[Accessed 15, November 2021]
- Maria Luisa Danzetta, Maria Luisa Marenzoni, Simona Iannetti, Paolo Tizzani, Paolo Calistri and Francesco Feliziani, 2020. African Swine Fever: Lessons to Learn From Past Eradication Experiences. Systematic Review, Frontiers in Veterinary Science, 09 June 2020 https://doi.org/10.3389/fvets.2020.00296 [online] Available at: https://www.frontiersin.org/articles/10.3389/fvets.2020.00296/full [Accessed 25, November 2021]
- Ministry of Agriculture and Rural Development M.A.D.R., 2018. Measures against African swine fever virus, [online] Available at: https://www.madr.ro/docs/agricultura/PPA-procedura.pdf [Accessed 25, November 2021]
- Ministry of Agriculture and Rural Development M.A.D.R, 2021. Swine [online] Available at: https://www.madr.ro/cresterea-animalelor/porcine.html [Accessed 11, November 2021]
- Mačiulskis, Petras, Marius Masiulis, Gediminas Pridotkas, Jūratė Buitkuvienė, Vaclovas Jurgelevičius, Ingrida Jacevičienė, Rūta Zagrabskaitė, Laura Zani, and Simona Pilevičienė. 2020. "The African Swine Fever Epidemic in Wild Boar (Sus scrofa) in Lithuania (2014–2018)" Veterinary Sciences 7, no. 1: 15. https://doi.org/10.3390/vetsci7010015
- National Sanitary Veterinary and Food Safety Authority A.N.S.V.S.A., 2021. Actualizarea situației privind evoluția Pestei Porcine Africane [Actualization regarding African swine fever virus evolution] [online] Available at: < http://www.ansvsa.ro/blog/actualizarea-situatiei-privind-evolutia-pestei-porcine-africane-105/> [Acessed 22, November 2021]
- Romanian Government, 2009. HOTĂRÂRE nr. 1.214 din 7 octombrie 2009 [Government Decision no. 1,214 from 7 October 2009] [online] Available at:
 http://legislatie.just.ro/Public/DetaliiDocument/112910 [Accessed 21, November 2021]
- Romanian Government, 2018. HOTĂRÂRE nr.484 din 5 iulie 2018. [Government Decision no. 484, from 5 July 2018] [online] Available at: http://www.cdep.ro/pls/legis/legis_pck.htp_act?ida=151957> [Accessed 20, November 2021]

English and Modern Business in Nowadays Romania Case Study- An ESP Course for Business Students

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Abstract

The essay addresses the fast-evolving needs of companies and institutions for solid analytical skills and insights to optimally capitalize on the trends towards global market integration. The study also presents the main parts of a course in business communication in English with in-depth analytical insights of deep knowledge of the challenges in the international business environment, with a focus on the European environment.

Key words: English language, intercultural communication skills, business

J.E.L. classification: Z39

1. Introduction

"Language is a factor of power - remarks the journalist Andreas Ross of the Frankfurter Allgemeine Zeitung. In the EU context - he writes - linguistic power means, for example, superiority in debates: an advantage over an interlocutor who speaks in a foreign language, he can express himself more plastically, more casually, so more convincingly and - last but not least - he gets less tired. The status of a language in an organization as important as the EU has a decisive influence on its prestige "including business. The language industry is, after the North Sea oil extraction, the most important source of income for Great Britain. And the British music and film industry also benefits from the preponderance of English.

2. Theoretical background

The standard slogan that the multitude of languages is part of Europe's cultural richness is widely repeated. The coexistence of languages is easy to see, for example, in the European institutions. But "poverty" is perpetuated in the daily lives of Europeans. The reality is that more and more Europeans are learning English, while the desire to learn other European languages is declining. A few years ago, the EU launched a commercial depicting a chameleon hopping merrily from one tree to another. As he was jumping from branch to branch, the animal was whispering lively greetings in various tongues. The purpose of the advertisement was clear: to encourage Europeans to learn languages.

The idea was for every European to know at some point a minimum of 2 foreign languages. This is at least stipulated in the language action plan which the EU undertook to implement between 2004 and 2006. To this end, a language promotion program, called Lingua, has been set up, requiring Member States to introduce at least one subject matter in the curricula of the primary courses. Despite these efforts, there is no increased inclination of Europeans to learn languages.

The acceptance of a natural language as a unique tool of communication therefore appears as an objective necessity of social life. This implies the deliberate acceptance of a single language that works in the field of communication. For purely conjunctural reasons, which appeared in the process of economic, social and technical-scientific evolution of society, the language accepted as a language of globalization was English. The reasons that led to the imposition of the English language are numerous. Among them would be: the rapid development of computer technology as well as of the banking field that was made especially in the USA, a space where English is spoken.

This led those who wanted access to American scientific information and research to study the language. At the same time, business partners were forced to accept negotiations in English. An illustrative example can be Romania, where English has been and is being used as a tool to accelerate synchronization with the world economy. Access to information technology could not be achieved in an effective manner, except through direct access to information sources. The increasing use of English in our country was determined, after 1989, by a series of economic aspects resulting from the liberalization of economic exchanges. In the last years, in the sphere of production and trade, we have witnessed and are witnessing the implantation of some "multinationals" or foreign companies in the Romanian geographical space. The publicity they get in the recruitment process shows the unreserved use of English. Thus, very often, job offers are made in a foreign language, most of which are in English. An illustrative example, but also having a certain random character, is the situation of macro-announcements with job offers.

On the other hand, the market for business language training services has diversified and evolved tremendously in recent years. Of these, the applied courses have an interesting evolution, which, in addition to the knowledge of a foreign language, also develops the necessary skills in a dynamic business environment.

English is essential in modern business and we can think of three things about it.

First of all, it is the multinational companies, present in many countries, that need a uniform communication system. Most of the time, international communication is done in English. This does not mean that other languages are not used in international communication and business relations.

Secondly, there are the Romanian companies. Whether they are thinking about regional development or preparing to face increased competition with European Union countries, they will have to develop their communication skills in a language of international circulation.

Thirdly, the access of each employee or potential employee to various information and labor markets will be made using one of the languages of circulation in the European Union - English, French or German.

3. Research methodology

How does this need manifest itself in the market? Most clients for Business Language courses are multinational companies, but also large Romanian companies that want to train their staff. Research and experience in this field have shown that, in fact, companies need more than just Business Language Courses. They need to develop business communication skills in a foreign language, they need to do "business" using the foreign language as a tool in a multicultural environment. In addition, every customer in an industry needs not only foreign language business, but also specialized communication programs. That is why it is necessary to transform courses into a communication tool to help companies communicate.

What is this market and how prepared is it for such services?

The market is ready for such programs. There is a culture of Business Language training, especially in multinational companies. High demand is now geared towards programs that integrate language acquisition courses with those that develop essential business communication skills. It is a natural tendency. The Romanian business market is facing major changes, and these programs are being developed in partnership with international companies, which have been applying them for years in other European Union countries.

What are the areas where students need training? First of all, it is necessary to acquire knowledge of a foreign language. But learning a foreign language generally doesn't help you in business. Going further, each industry has a specific vocabulary, each position in an organization has certain needs. It is necessary for each participant in Business Language training programs to obtain exactly the knowledge he needs. The ultimate goal is for them to perform as quickly and as well as possible in the organization they belong to. But once this knowledge has been accumulated, the native barrier to communication appears. Therefore, integrated communication solutions in a foreign language for business have emerged - specific requests from companies to expand programs with applications for oral communication, written communication (internal, but also with customers) and to develop presentation skills in desired language.

In order to achieve this goal, three essential factors are taken into account: the teaching method, textbooks and, last but not least, trainers (teachers in this case). It is a method based on interactivity. Manuals applied for business communication should respect both international rigors and the realities of the Romanian market. But the most important asset in this system are the trainers. They represent the link through which this knowledge is transferred in the most efficient way to students.

Such courses will be successful on the Romanian market because the needs of the market show that this is the natural development in meeting the accession to the European market. The European Union supports such programs to ensure cohesion within the Member States.

4. Findings

The business communication course must be a course that allows a lively penetration in real situations of daily life and to use a lively conversational style, emphasizing the dynamism of business communication. Its purpose is to capture the attention of business people who want to improve their English language skills, both for business communication and for everyday life.

This course should not only present the concepts focusing on essential communication skills and realistic and practical tasks, but also present to students the reasons for effective communication through examples from existing companies and real business situations.

The course would be structured in seven large parts that present, in principle, all sections of business communication. From the basics of business communication, which is a unit designed to help students understand business communication and its intercultural importance, to special topics such as the format and presentation of business documents, the course should provide the opportunity to learn everything what needs to be known about modern information and technology and about the oral reports and presentations needed in the professional activity. The course offers students the opportunity to learn from the successes and failures of other people.

- Each unit begins with an instructive Communication Foreground featuring a communication specialist who applies the topic of the unit to real business situations.
- Projects called "Communication Realities" complete each unit and are related to the foreground situations. Each unit has an individual challenge (to give students the opportunity to put into practice the principles they have just learned) and a team challenge (to provide them with experience in the collective approaches so present in today's business)
- Real world communication topics

The boundaries of business communication are widening, so we will examine many of the current issues and provide students with the material they need to successfully deal with topics such as:

- Ethics: Ethical issues discussed include, for example:
 - o How much should the positive side be emphasized in business messages?
 - Where is the line between convincing and manipulating through advertising letters?
- Cultural diversity provides clear communication skills to be able to talk to older workers, women, members of different socio-economic groups, and others.
- Communication technology communication skills in high technology because e-mails, electronic meetings and videoconferencing change the way we communicate.
- Legislation legal implications of written and oral communication. Students must understand the pitfalls of writing a letter of recommendation and the legality of the questions asked in an interview.
- Looking for a job mastering new communication skills to be competitive with today's interviews and how to prepare an electronic Curriculum Vitae and use the Internet to find a vacancy.
- Real world insights
- Improving skills practical indicators and benchmarks for increasing self-confidence that will help improve oral and writing skills.
- Focus on ethics a presentation of how to identify, areas of ethical vulnerability.

- Intercultural communication how to communicate successfully both globally and in the cultural diversity of the home.
- How to keep up with technology advice on using technology applications to improve business communication.
- Real business cases Letters, memoranda and emails from real companies. Examples should include:
 - o Calculation of supply materials: Internal balance sheet letter to Microsoft
 - Awareness of the blow: Letter to Genetech asking for funding for the educational campaign.

5. Conclusions

Successful companies know that they must always reinvent themselves to meet customer needs. This means that they need to listen to those who use their products on a daily basis and include their valuable recommendations in product development and review.

The business communication course will also include a unit of basic grammar and usage. Usage is how words are used by a group of people - in this case, business people who use English. Thus, students will find that it will be easier to integrate into this community, if they know the accepted standards of the basic notions of grammar.

6. References

- Berger C., 1979. Beyond initial interactions, In H. Giles & J. Daly (Eds.), Personality and interpersonal communication, Oxford: Blackwell.
- Doise, W., 1986. Levels of explanation in social psychology, Cambridge: Cambridge UP,.
- Gadamer, H.-G., 1989. Truth and Method (J. Weinsheimer & D. G. Marschal trans.). New-York, Crossroad.
- Gee, J.P., 1996. Social Linguistics and Literacies, London: Taylor and Francis.
- Griffin, E., 2004. A First Look at Communication Theory, New York: McGraw-Hill.
- James, P., 1996. Learning to reflect: a story of empowerment. Teaching and Teacher Education 12, 81-97.
- Johnson, R.R., 1999. The Unfortunate Human Factor: A Selective History of Human Factors for Technical Communicators. *Technical Communication Quarterly* 3 (2).
- Kramsch, C., 1998. Foreign Language for a Global Age. ADFL Bulletin, 25, no.1.
- Long, M., Crookes, G., 1992. Three approaches to syllabus design. TESOL Quarterly, 26.1.

Digitalization – The Key to Smart City Development

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Abstract

By addressing the theme of smart city, we have set out to illustrate some of the challenges that can arise in the intelligent development of cities, in order to adapt the public services provided to the needs of a number of constantly evolving inhabitants and to their increased demands.

The aim of the work is to present, through a comparative analysis, Romania's situation with other European countries, concerning the composite index of the digital economy and society, as well as the direct link between the evolution of urban income and activities using digital technology.

The challenges of transition processes, for smart city development, stem from the need to identify the optimal mechanisms to be used by city administrations so that the decision-making level supports scientific and practical methods of analyzing existing situations and communities' future needs, and the digitalization of all areas of activity is a key element supporting the strategic goals of a smart city.

Key words: development, smart city, challenges, digitalization

J.E.L. classification: H790

1. Introduction

Global economic developments have always been accompanied by a complex process of urbanization, with cities acting as drivers of progress, providing the most favorable ground for technological innovation and educational, cultural and social achievements. But it is not always the environmental and social benefits of this development, because we are currently witnessing major problems that cities face, such as population congestion, pollution, congestion, resource use, lack of adequate physical and social infrastructure, the need for sustainable economic growth, as well as strict environmental requirements.

We need to take into account the current societal developments, characterized by the rapid growth of urban settlements, which are an irreversible and constantly changing phenomenon. The population is increasingly migrating to cities for economic and social reasons, and this leads to increased demand for housing, networks and means of transport, social services, and the expansion of education (especially the school system in small and medium-sized towns, as well as universities in large cities), health, culture and leisure facilities.

According to official data, the share of the urban population in the world has increased from 29,61% in 1950 to 55,29% in 2018, with an estimated 68,43% in 2050, followed by the evolution of the urban population in Romania (U.N., Department Economic and Social Affairs, 2018).

Figure no. 1 AnnualPercentage of Population at M id-YearResiding in Urban Areas, 1950-2050 2030 2050 1950 2000 2018 WORLD 60 43% 29 61% 46.68% 55 29% 68 43% 51.71% 71.06% 74.45% 77 A7% 83.67% EUROPE Northern Europ Western Europe 46179 66.43% 71.52% 75.44% Southern Europe

53.00%

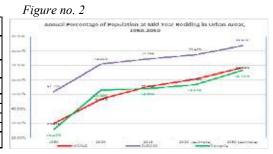
54.00%

56.63%

25.63%

Eastern Europ

Romania



Source: United Nations/population Division + own representation of the data in the table and graph in Excel

66.67%

In 1950, the share of the urban population in Romania (25,63%) was below the world average (29,61%) and half of the European average (51,71%), but within almost 70 years it had accelerated, with the inhabitants of Romanian cities doubling their share, compared to the 44% growth in european countries, which is in line with global urban development, which is growing by more than 86%. A sharp trend toward global urbanization has put pressure on administrations to identify how best to solve the difficult situations facing large urban agglomerations today and to meet the needs of society by ensuring sustainable development (Nam and Pardo, 2011). Tackling the smart development of cities is therefore not only an opportunity today to make them more attractive to new inhabitants, but is an imperative necessity to address the major current problems of pollution, mobility and obsolete technological infrastructure. elements that can make economic activities less attractive and thus lead to social problems.

The motivation for this study is because in academia, but also in the economic environment, there are several studies that seek to provide an overall understanding of the smart transitions of cities and their development process, but most studies address issues with a focus on technology, in terms of technical facilities, without giving due weight to the human factor and the interaction of administrations with the population. In the context of economic analyzes, the reference to the national economic result indicator (GDP) is also predominant, but in order to better understand the transition processes specific to smart cities, we propose to look at smart city phenomena by combining indicators relating to the use of ICT, with an economic result specific to the urban environment, characterized by average income in urban settings.

The aim of this research was to highlight the quantitative development of average urban income in close connection with the evolution of the urban population share and its qualitative evolution in close relation to that category of population using modern technology, both in personal activities, as well as in professional activities.

This analysis can be useful for administrations across all categories of cities, since this section of the population is mainly the category of providers of income to the budgets of cities, compared with the population with limited digital skills and training, which is mainly part of the category of beneficiaries of social assistance, so the consumers of resources from budgets.

2. Literature review

The future of the regions relies on exploiting the opportunities of innovative technologies to develop optimally. Interest has been expressed since the 1990s, initially addressing the area of "competitive regions" and "Smart Communities", and the main drivers of regional competitiveness have been presented.

For example, the success of Silicon Valley is attributed to the creation of a decentralized industrial "network system", where production is organized by specialized firms which compete intensively with each other, but also formal and informal collaboration with each other, as well as with certain local institutions such as universities. In the Silicon Valley, intense social, technical and productive relations have fostered the development of entrepreneurship, experimentation and collective learning by interconnecting public, private and academic organizations. It has thus been

proven that both technological and social infrastructure are critical to the success of local firms' own activities and, consequently, to the social development of the region (Saxenian, 1994, quoted in Paquet et al, 2001).

Improving the socio-economic situation and the development of regions depends on the use of an innovative environment resulting from the interaction between the various participants in the active life of municipalities, i.e. administration, businesses, universities and residents. Thus, the success of a locality in order to become a smart community depends largely on its effectiveness in collecting, processing and using knowledge and technology, in order to fulfill its administrative role and to provide public services in an efficient way (Paquet et al, 2001). With the transition to the new digital era, the expectations and demands of taxpayers have become increasingly greater toward city leaders and how they manage the interests of local communities. Therefore, as Eger said (2001), cities all over the world are now struggling to reinvent themselves for a new period, where society is no longer based solely on the industrial economy, but on the development of data infrastructure, the updating of real-time information and their efficient use, they are recognized as a valuable resource (Eger, 2001).

In the Digital City Kyoto paper, Ishida addressed the concept of "digital cities", relying on collaboration and interaction between people in regional communities who share knowledge, experiences and experiences with each other, depending on common interests. Thus, through the platforms set up, urban information is integrated into the digital city and a public internet space is created for the inhabitants of cities or their visitors (Ishida, 2002).

Moving to the next stage, in 2007 the smart city was defined as "a well-performing and visionary city in terms of economy, citizens, governance, mobility, environment and housing. Based on the smart mix of endowments and activities of citizens who are determined, independent and aware" (Giffinger et al, 2007).

Most definitions have highlighted common characteristics, building on the remarkable advances in communications and information technology (ICT) and the use of these technologies, not only in the private economic environment where competition is fierce, but also in the field of public administration and services, so as to develop (so far as is possible). and intensive) urban areas.

A Smart City is intended to be "an urban environment heavily supported by information and communication systems (ICT), which is capable of providing advanced and innovative services to its citizens in order to improve the overall quality of their lives" (Piro et al, 2014).

In the academic world, there are several studies that seek to provide an overall understanding of cities' smart transitions and their development process.

So in the "Smart cities: Strategic Sustanaible Development for an urban World" a group of researchers (Colldahl et al, 2013) addressed the issue from the perspective of sustainable strategic development, carrying out qualitative research, through structured interviews with practitioners of cities where actions and investments were made to implement specific elements of Smart City and concluded that the performance of a smart city can be defined in the light of six main features: Smart economy (competitiveness), based on innovation, productivity and labor market flexibility; intelligent people (social/human capital) characterized by a desire to learn throughout life, public involvement/participation, creativity and flexibility; Smart governance (participation) based on participation in decision-making and transparent governance; Smart mobility (transport and information-ICT technology) characterized by local accessibility, a developed information and communication technology infrastructure, sustainable, innovative and secure transport systems; a smart environment (natural resources) characterized by attractive natural conditions, environmental protection and sustainable resource management; Smart life (quality of life) characterized by social cohesion, housing quality, health conditions, cultural facilities and tourist attractions (Giffinger, 2007, Berger, 2017).

In many work on the analysis and development of the *Smart City* concept, the focus has been on the technology side, investments and performance facilities, but the socio-human aspects, i.e. the users of these technologies (city administrations as public service providers) and the inhabitants of these cities (as taxpayers and recipients of public services) should not be overlooked either. Why? Because "human performance today depends not only on the provision of a city with hard infrastructure (physical capital), but also increasingly on the availability and quality of knowledge

of communication and of social infrastructure (human and social capital). Human and social capital is crucial for urban competitiveness", (Caragliu and Nijkamp, 2011).

A more extensive study was presented in the "Category planning for the Development of Smart cities" (Angelidou, 2015), analyzing fifteen development strategies of cities around the world, which are at a more advanced stage in implementing specific Smart City goals.

After 2000, large it companies began adopting *Smart City* terminology (e.g. Siemens, Cisco, IBM) to drive the integration of complex it systems into urban infrastructure and services. IBM proposes reinventing and reconfiguring public services by applying new cloud technologies, *AI* (artificial intelligence), and by automating the range of repetitive tasks to create more flexible systems to optimize and streamline all administrative processes (IBM).

In this respect, a new global company of Romanian origin software, UiPath, has developed and implemented, since 2017, a platform for automation of robotic processes (RPA or RPAAI) for repetitive activities. For example, Copenhagen, in order to cope with the pressure generated by population growth of around 20% over the last decade and with the aim of providing high-quality public services to the population, has automated the vast majority of administrative procedures, saving thousands of individual hours of work (Bratu, 2020).

3. Research methodology

The question behind this research is whether: Is the evolution of revenues in urban areas significantly influenced by digital technology-based activities?

The hypothesis we make and verify is: Digitalisation is the key factor in the intelligent development of cities, that is, today, most economic and social processes in urban areas are based on the use of information technology, aiming to eliminate the ways in which information is collected, processed, transmitted and physically archived.

In this paper, by consulting the various sources (literature, case studies, official reports and rankings by consultancy firms, official city hall platforms), we have sought to present the need and timeliness of the study on Smart City, creating the conceptual framework and marking the stages of development in addressing the specific challenges of smart cities over the last three decades (1990-2020). We also sought to highlight the basic features of a smart city, and from these features, what challenges can be faced by cities in Romania.

The research methods addressed were:

- A first method of research used shall be based on the application of linear regression in excel $(y = x \ \alpha + \varepsilon)$, which aims to present a direct link between: the evolution of urban income with certain factors, which are based on the use of information technology, and the factor which illustrates the evolution of the share of the urban population in the country's total population.
- The second method of research used was to present the rankings and carry out the comparative analysis of *The composite index of the Digital Economy and Society for Romania* compared to the other member states of the European Union (EU-DESI, 2020).

To illustrate the evolution of the share of the urban population, worldwide, European and Romania have been selected for the years 1950 and 2000, with the aim of synthesizing the picture over the half-century period, with the latest updated data available being those of 2018.

The estimated data on urban population growth in the years 2030 and 2050 have been selected to illustrate the evolution of urbanization for the next generation.

By consulting *primary data sources* (databases: Eurostat, United Nations-Department Economic and Social Affairs, INSSE, Official website of Romanian cities) and *secondary data sources* (specialist works, case studies, rankings by consultancy firms, press articles), we have presented a table and a graphic on the state of play of a basic element of *integrating innovative technologies into the development strategies of cities*.

The data used to present the link between the variables, analyzed using the statistical method of linear regression on a unified basis, were available for the period 2011-2020 on the Eurostat website, illustrating the evolution of Romania's post-accession to the EU.

4. Findings

4.1. Data analysis by applying linear regression

Table no.1

Year	Mean income by degree of urbanisation =Y	Individuals - frequency of internet use =	Use of computers and the internet by	Annual Percentage of Population at Mid-Year Residing in Urban	Gross domestic expenditure
		X_{I}	employees= X ₂	Areas by Country = X_3	on R&D = X_4
2011	3,187.00	37.00	28	54	0.50
2012	3,174.00	43.00	26	54	0.49
2013	2,936.00	45.00	28	53.9	0.39
2014	3,224.00	48.00	29	53.9	0.38
2015	3,295.00	52.00	30	53.9	0.49
2016	3,659.00	56.00	28	53.9	0.48
2017	4,105.00	61.00	32	53.9	0.50
2018	5,301.00	68.00	34	54	0.50
2019	6,196.00	72.00	31	54.1	0.48
2020	6,507.00	76.00	35	54.20	0.48

Source: Eurostat, United Nations/population Division/ + own representation in Excel table

4.1.1. Analysis of the correlation between variables Y (Mean income by degree of urbanisation) and X_1 (Individuals - frequency of internet use)

We make the following assumptions:

 H_0 : the regression slope of the time series has no statistical significance and there is no direct link between the evolution of the variable X_1 - Individuals - frequency of internet use and variable changes Y- Mean income by degree of urbanisation.

 H_1 : the regression slope of the time series has statistical significance and there is a direct link between the evolution of the variable X_1 - Individuals - frequency of internet use and variable changes Y- Mean income by degree of urbanisation.

Analysis of the data resulting from simple regression for the variable gives the following results:

Correlation coefficient (Multiple R) = 0.93490; The confidence interval has no different signs (Lower=65.9814, Upper=125.1304), therefore, the coefficient of variable X_1 cannot take the value of 0, both values being positive; Calculated Student Test value for 5% and 8 degrees of freedom error (df=n-1=8) is t-Student_{calculat/0,05/8} = 7.4507 > 2.3060 = t-Student_{teoretic}; the calculated value of the Fisher coefficient is $F_{calculat}$ =55.5138 > 5.3176 = $F_{teoretic}$ 0,05/1/8df; Sig (Significance F) = 7.25926E-05 < 0,05;

In conclusion, the H_1 hypothesis is accepted: the regression slope has statistical significance, that is, we can guarantee with a 87,40% probability that the model of the time series has statistical significance, so there is a strong and direct link between the evolution of the variable X_1 -Individuals - frequency of internet use and variable changes Y- Mean income by degree of urbanisation.

4.1.2. Analysis of the correlation between variables Y (Mean income by degree of urbanisation) and X_2 (Use of computers and the internet by employees)

We make the following assumptions:

 H_0 : the regression slope of the time series has no statistical significance and there is no direct link between the evolution of the variable X_2 - Use of computers and the internet by employees and variable changes Y- Mean income by degree of urbanisation.

 H_1 : the regression slope of the time series has statistical significance and there is a direct link between the evolution of the variable X_2 - Use of computers and the internet by employees and variable changes Y- Mean income by degree of urbanisation.

Analysis of the data resulting from simple regression for the variable gives the following results: *Correlation coefficient* (Multiple R) = 0.8169; *The confidence interval has no different signs* (Lower=161.5366, Upper=599.5474), therefore, the coefficient of variable X₂ cannot take the

value of 0, both values being positive; Calculated Student Test value for 5% and 8 degrees of freedom error (df=n-1=8) is t-Student_{calculat/0,05/8} = 4.0068 > 2.3060 = t-Student_{teoretic}; the calculated value of the *Fisher coefficient* is F_{calculat}=16.0552 > 5.3176 = F_{teoretic 0,05/1/8df}; *Sig* (Significance F) = 0.00391196 < 0.05;

In conclusion, the H_1 hypothesis is accepted: the regression slope has statistical significance, that is, we can guarantee with a 66,74% probability that the model of the time series has statistical significance, so there is a strong and direct link between the evolution of the variable X_2 - Use of computers and the internet by employees and variable changes Y- Mean income by degree of urbanisation.

4.1.3. Analysis of the correlation between variables Y (Mean income by degree of urbanisation) and X_3 (Annual Percentage of Population at Mid-Year Residing in Urban Areas by Country)

We make the following assumptions:

 H_0 : the regression slope of the time series has no statistical significance and there is no direct link between the evolution of the variable X_3 - Annual Percentage of Population at Mid-Year Residing in Urban Areas by Country 2011-2020 and variable changes Y- Mean income by degree of urbanisation.

 H_1 : the regression slope of the time series has statistical significance and there is a direct link between the evolution of the variable X_3 - Annual Percentage of Population at Mid-Year Residing in Urban Areas by Country 2011-2020 and variable changes Y- Mean income by degree of urbanisation.

Analysis of the data resulting from simple regression for the variable gives the following results: Correlation coefficient (Multiple R) = 0.8252; The confidence interval has no different signs (Lower=4746.5662, Upper=16728.0170), therefore, the coefficient of variable X_3 cannot take the value of 0, both values being positive; Calculated Student Test value for 5% and 8 degrees of freedom error (df=n-1=8) is t-Student_{calculat/0,05/8} = 4.1330 > 2.3060 = t-Student_{teoretic}; the calculated value of the Fisher coefficient is $F_{calculat} = 17.0824 > 5.3176 = F_{teoretic 0,05/1/8df}$; Sig (Significance F) = 0.00328443 < 0.05;

In conclusion, the H_1 hypothesis is accepted: the regression slope has statistical significance, that is, we can guarantee with a 68,10% probability that the model of the time series has statistical significance, so there is a strong and direct link between the evolution of the variable X_3 - Annual Percentage of Population at Mid-Year Residing in Urban Areas by Country 2011-2020 and variable changes Y- Mean income by degree of urbanisation.

4.1.4. Analysis of the correlation between variables Y (Mean income by degree of urbanisation) and X4 (Gross domestic expenditure on R&D)

We make the following assumptions:

 H_0 : the regression slope of the time series has no statistical significance and there is no direct link between the evolution of the variable X_4 - Gross domestic expenditure on R&D and variable changes Y- Mean income by degree of urbanisation.

 H_1 : the regression slope of the time series has statistical significance and there is a direct link between the evolution of the variable X_4 - Gross domestic expenditure on R&D and variable changes Y- Mean income by degree of urbanisation.

Analysis of the data resulting from simple regression for the variable gives the following results: Correlation coefficient (Multiple R) = 0.1180; The confidence interval has no different signs (Lower=-12580.191, Upper=33065.0463), therefore, the coefficient of variable X_4 can take the value of 0, lower value being negative and upper value being positive; Calculated Student Test value for 5% and 8 degrees of freedom error (df=n-1=8) is t-Student_{calculat/0,05/8} = 1.0348 < 2.3060 = t-Student_{teoretic}; the calculated value of the Fisher coefficient is $F_{calculat}$ =1.0710 < 5.31765= $F_{teoretic}$ 0.05/1/8df; Sig (Significance F) = 0.33098388 > 0,05.

In conclusion, the H_0 assumption is accepted: the regression slope has no statistical significance, i.e. we cannot guarantee that the model of the time series has statistical significance, so there is a very poor link between the evolution of the variable X_4 - Gross domestic expenditure on R&D and variable changes Y- Mean income by degree of urbanisation.

From the analysis of the four independent variables presented above, the assumption has been confirmed, with the result that economic and social processes conducted in urban settings are based to a very large extent on the use of information and communication technology (given the strong links between variable developments X_1 , X_2 ξi X_3 and variable changes Y) however, unfortunately, no real effort has been made in the development and implementation of these technologies, which is the result of adverse development of the parameter X_4 - Gross domestic expenditure on R & D, in relation to the change in the parameter Y- Mean income by degree of urbanisation.

4.2. Comparative analysis of data on the composite index of the digital economy and society

Smart and sustainable urban development issues were addressed and updated in June 2015 at the meeting of ministers responsible for territorial cohesion and urban issues of the EU Member States, when the "Campaign eSkills for jobs 2015-2016" was launched, a particular initiative to raise awareness of the problems related to the digital skills gap between the different countries and regions of the European Union.

The proposed measures have sought to mobilize EU States, academia and the information and Communication Technology (ICT) industry to identify viable solutions to reduce the digital divide between Member States by 2020, By stimulating investment in education and creating new jobs, with a view to boosting growth in Europe and smart city development.

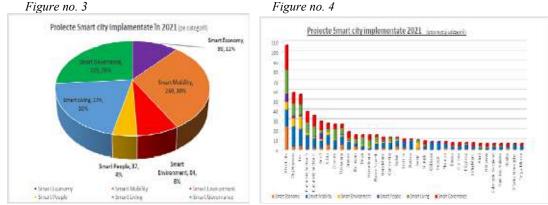
Against this background, the Riga Declaration proposed that Europe should realize its potential in the field of digital technologies, following ten key principles: "make as much investment as possible in digital technologies and skills; create new jobs for unemployed young people by developing their digital skills; adopt the Digital skills for the 21st century policy as a priority and its rapid implementation; support the work of the Grand Coalition for Digital jobs in implementing national coalitions; promote the concept of European e-leadership; stimulate technology take-up and digital entrepreneurship; commitments for lifelong education and training; european leadership in global standards; developing the expertise of ICT professionals and maturing ICT professions across the EU; commitments to collaborate, share experiences and integrate efforts (AssociationIT, 2015).

In Romania, some of the first smart development projects were carried out in large cities, resulting from a combination of demographic concentration, diversified economic production and services, accessibility to large and important markets (such as the European one), attractive universities, what has supported their continuous development and encouraged economic growth, and therefore also greater possibilities for allocating the resources needed to start specific *smart city* projects. The situation has evolved and in the vast majority of large and medium-sized cities the number of Smart City strategies has increased from 330 projects started in 45 cities in 2019 to 594 projects started in 87 cities in 2020, that is, 860 projects started in 124 cities in 2021, with the top 35 cities ranked as follows: Alba-Iulia (106 projects), Cluj-Napoca (58 projects), Iasi (56 projects), Bucharest-sector 3 (39 projects), Bucharest-sector 4 (35 projects), Arad (29 projects), Sibiu (27 projects), Oradea and Timisoara (26 projects each), Brasov (18 projects), etc. (Vegacomp, 2021).

For smart city development, we need to focus on the use of innovative technologies, which calls for support for R&D, but reality shows that Romania is at the forefront of the effort made to support R&D in the EU. Less than 1% of GDP (0,48%) was spent on this (Eurostat, 2018 şi INSSE, 2019).

At the top of the European rankings, achieved in 2019, are the Nordic countries and those with a developed economy, with the highest share of over 3% of GDP, used to support R&D, for example: Sweden-3,39%, Austria-3,19%, and Germany-3,17%. Denmark-2,96%, Belgium-2,89% and Finland-2,79% are close to this threshold.

However, the end of the ranking groups eight countries that allocated less than 1% of GDP to R&D expenditure, with Lithuania-0,99%, Bulgaria-0,84%, Slovakia-0,83%, Ireland-0,78%, Latvia-0,64%, Cyprus-0,63%, Malta-0,61% and far away Romania-0,48% (of which 0,28% for the private sector and 0,20% for the public sector) (Dicu, 2020).



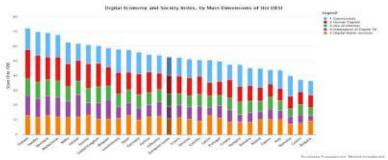
Source: Vegacomp, June 2021+ own representation of the graph in Excel

Raising the quality of public/urban services is based on a very important tool: Digitalization, i.e. the tool of the future that provides efficiency and predictability, and is one of the development pillars of any intelligent Community. It is therefore important to present a comparative picture of the situation in Romania, in the European context, in the light of a relevant indicator.

The Digital Economy and Society Index - DESI is the composite index summarizing the relevant indicators on digital performance in the European Union, reflecting the evolution of member states in five main areas: connectivity, internet use, integration of digital technologies, human capital (digital skills) and digital public services (DESI, Digital Scoreboard Data & Indicators, 2020).

Data on *The Composite Index of the Digital Economy and Society* – DESI since 2020 it ranks Romania as the 26 in the 28 Member States of the European Union.

Figure no. 5



Source: DESI by components-Digital Scoreboard - Data & Indicators

Looking at each component, the situation of our country is as follows:

1 – connectivity: Romania is in a very good position - 11 (out of the 28 EU countries), with a score of 14,05 point, compared to the average European score of 12,51 point.

Unfortunately, the good news stops here, because for the next four indicators Romania is at the end of the ranking, like:

- **2 human capital**: Romania ranks only 27 (out of the 28 EU component countries), with very low level of basic digital skills and basic software skills (with 8,29 point), well below the European average level (12,3 point).
- 3 internet use: Romania has a very modest score (5,38 point), which puts it at the end of the European ranking, which has an average of 8,70 point (28 of the 28 EU Member States). In Romania the Internet is used mainly for social media communication and less for economic operations or financial transactions, possibly because of very low trust in digital technology and transaction security.
- **4 integration of digital technology**: with a score of 4,99 point (well below the european average, which is 8,27 point) Romania is in an unfavorable position (27) and sustained efforts are needed to integrate digital technology into the economic environment;

5 – digital public services: although Romania ranks 8 – for citizens who have used eGovernment services (with over 80% of internet users, compared to the EU average of 67%), digital public services only scored 7,26, Smaller than the European average (10.80 point), which puts Romania in the last position (28).

The public service has mainly been used by the public to submit forms, and the interaction with public authorities has only been confined to this.

Very low scores for the provision of pre-filled digital forms and fully online services place Romania at the bottom, this shows that there is a large gap in the quality of the digital services offered and their ability to be used by the population. This is due to the lack of interoperability of it systems and public administration databases, which is an older problem that has not been solved so far.

By summarizing the analysis of the 5 components of the Digital Economy and Society Index (DESI), we can say that this is an area where our country needs to accelerate the pace of digital transformation, because it is an essential component that underpins the development and implementation of smart city strategies.

The digitalization of all areas of activity is the solution to achieve policy objectives in other areas (economic, mobility, social, educational, health, health, etc.). An additional argument, which supports the need to step up actions for the digitalization of activities (by developing physical information and communication technology infrastructure and by appropriately specializing human resources in this area), It follows from the fact that the appropriate framework needs to be created for the effective implementation of the Directives of EU Regulation No 910 of 2014 on electronic identification and secure services for electronic transactions in the internal marke.

5. Conclusions

By creating a well-functioning administrative system, by means of process digitalization, efficient tools are available to city decision makers and public service users, which can be used in various areas of interest such as urban planning and urban development, urban planning regulations, land registers, utilities, extension of projects or maintenance, taxes and fees. Of course, to reap the benefits of innovative technologies, appropriate funding is needed, and depending on the strategies of cities and the scale of the projects, these financial needs may be very high.

Every step must therefore be taken very carefully, raising awareness and defining problems (such as population congestion, pollution, congestion, resource use, lack of adequate physical and social infrastructure, the need for sustainable economic growth and increasing energy and environmental requirements, etc.), the setting of strategic objectives and standards associated with these objectives, and each city will set its specific objectives and actions to achieve the corresponding standards (according to the result indicators associated with these standards), within real time limits.

A great opportunity to provide quality and affordable public services for citizens is represented by the national Investment Program "Anghel Saligny", which is to be carried out between 2021 and 2028, by allocating lei 50 billion to development programs. This program can achieve investment objectives which are necessary to equip territorial administrative units with technical and publishing facilities and access to communication channels, thereby contributing to the objective of convergence with the economies of the more advanced countries of the European Union (Project of the Government Emergency Ordinance for the approval of the National Investment Program "Anghel Saligny", 2021).

The use of new EU financing instruments such AS ITI (Integrated territorial investments) is also likely to be the best instrument used to tap the growth potential of smart cities (Cristea and Ionescu-Heroiu, 2017), but to prioritize investment needs within a realistic operational budget, it must be the basis for decisions taken by urban stakeholders. Economic solutions to meet the current challenges are within the reach of decision makers by taking advantage of all funding opportunities, both internal and external, but only on the basis of viable projects.

6. References

- Angelidou M. I. (2015), Strategic Planning for the Development of Smart Cities. Aristotle University of Thessaloniki, [online]. Available at: https://ikee.lib.auth.gr/record/268771/files/GRI-2015-14562.pdf, (Accessed: 14 August 2021).
- AssociationIT, *Riga Declaration on Digital skills* (2015), [online]. Available at: http://asociatiait.ro/declaratia-de-la-riga-privind-competentele-digitale/, (Accessed: 14 August 2021).
- Berger, R. (2017). THINK ACT. Smart city, smart strategy. pg.5. [online]. Available at: https://www.rolandberger.com/en/Insights/Publications/The-rise-of-the-smart-city.html, (Accessed: 19 August 2021).
- Bratu V., (2020), *UiPath, automation and competitive advantage of Romania. About the essential ingredients of digital administration*. [online]. Available at: https://romaniansmartcity.ro/uipath-solutii-smart-city-pentru-o-administratie-digitala/, (Accessed: 11 August 2021).
- Caragliu, A., Del Bo, C. and Nijkamp, P. (2011): Smart Cities in Europe, Journal of Urban Technology. [online]. Available at: https://www.tandfonline.com/doi/abs/10.1080/10630732.2011.601117, (Accessed: 19 August 2021).
- The Leipzig Charter for Sustainable European Cities (approved at the informal meeting of European Ministers responsible for Urban Development and territorial Cohesion in Leipzig, 2007), e-Orase Europene Durabile RUR. [online]. Available at: https://www.rur.ro, (Accessed: 27 August 2021).
- Colldahl, C., Frey, S., Kelemen, J.E. (2013): Smart Cities: Strategic Sustainable Development for an Urban World. Blekinge Institute of Technology Karlskrona, Sweden. [online]. Available at: https://www.diva-portal.org/smash/get/diva2:832150/FULLTEXT01.pdf, (Accessed: 14 August 2021).
- Cristea, M., Ionescu-Heroiu, M. (2017). Turning Romania's big cities into engines of economic growth. [online]. Available at: https://blogs.worldbank.org/ro/europeandcentralasia/turning-romania-s-secondary-cities-engines-growth, (Accessed: 30 August 2021).
- DESI Digital Scoreboard Data & Indicators (digital-agenda-data.eu) (2020), [online]. Available at: https://digital-agenda-data.eu/datasets/desi, (Accessed: 24 August 2021).
- DESI by components-Digital Scoreboard Data & Indicators (2020), [online]. Available at: https://digital-agenda-data.eu/charts/desi-components#chart, (Accessed: 24 August 2021).
- Romania in the Digital Economy and Society Index, [online]. Available at: https://digital-strategy.ec.europa.eu/en/policies/desi-romania(Accessed: 24 August 2021).
- Dicu, M. (2020). Eurostat, Romania, Malta and Cyprus allocate the least to research and development. [online]. Available at: https://www.agerpres.ro/economic-intern/2020/11/27/eurostat-romania-malta-si-cipru-aloca-cel-mai-putin-pentru-cercetare-si-dezvoltare--617538 28 August 2021, (Accessed: 31 August 2021).
- Digi24, (2020). Romania is the last country in the EU in research and development. [online]. Available at: https://www.digi24.ro/stiri/actualitate/romania-este-ultima-tara-din-ue-la-capitolul-eercetare-si-dezvoltare-1408268 și Eurostat. Aviable at: https://ec.europa.eu/eurostat/data/database, (Accessed: 14 August 2021).
- Eger,M. J. (2001): Smart Communities, Universities and Globallzation: Educating the Workforce for Tomorrow's Economy, [online]. Available at: https://journals.iupui.edu/index.php/muj/article/view/20219/19825, (Accessed: 21 August 2021).
- Eurostat/Gross domestic expenditure on R&D (GERD) [t2020_20], [online]. Available at: https://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=t2020_20&lang=en, (Accessed: 14 August 2021).
- Eurostat/General and region statistics/Degree of urbanisation/Living conditions and welfare/Mean and median income by degree of urbanisation (ilc_di17), [online]. Available at: https://ec.europa.eu/eurostat/data/database. (Accessed: 14 August 2021).
- Giffinger, R., Fertner, C., Kramar, H., Kalasek, R., Pichler-Milanović, N., Meijers, E. (2007): Smart cities, Ranking of European medium-sized cities, Centre of Regional Science (SRF), Vienna University of Technology, October 2007, [online]. Available at: https://www.researchgate.net/publication/261367640_Smart_cities Ranking_of_European_medium-sized_cities, (Accessed: 20 August 2021).
- IBM: Smarter Cities New cognitive approaches to long-standing challenges. [online]. Available at: https://www.ibm.com/smarterplanet/us/en/smarter_cities/solutions/ (Accessed: 23 August 2021).
- INSSE, (2020). Press release No 304 of 16.11.2020 on R&D activity in 2019. [online]. Available at: https://insse.ro/cms/sites/default/files/com_presa/com_pdf/activ_cd19r.pdf, (Accessed: 31 August 2021).

- Ishida, T., (2002): Digital City Kyoto. [online]. Available at: https://www.researchgate.net/publication/220424524_Digital_City_Kyoto/link/593a1e364585153206 37a6ca/download, (Accessed: 21 August 2021).
- Nam, T., Pardo, T.A. (2011): Conceptualizing Smart City with Dimensions of Technology, People, and Institutions. [online]. Available at: https://www.researchgate.net/publication/221585167 Conceptualizing smart city with dimensions of technology people and institutions. (Accessed: 16 August 2021).
- Nam, T., Pardo, T.A. (2011): Smart city as urban innovation: Focusing on management, policy, and context. [online]. Available at: https://www.researchgate.net/publication/221547712 Smart city as urban innovation Focusing on management policy and context. (Accessed: 18 August 2021).
- Emergency Government Ordinance for the approval of the National Investment Program "Anghel Saligny"-PROJECT. [online]. Available at: http://e-consultare.gov.ro/w/ordonanta-de-urgenta-a-guvernului-pentru-aprobarea-programului-national-de-investitii-anghel-saligny/, (Accessed: 31 August 2021).
- Paquet, G., Coe A. and Roy, G., University of Ottawa (2001): E-Governance and Smart Communities:
 a Social Learning Challenge, [online]. Available at:
 https://www.researchgate.net/publication/249737308 E Governance and Smart Communities A Social Learning Challenge, (Accessed: 21 August 2021).
- Piro, G., Cianci, I., Grieco, L.A., Boggia, G., Camarda, P. (2014): Information centric services in Smart Cities. [online]. Available at: https://www.sciencedirect.com/science/article/abs/pii/S0164121213002586, (Accessed: 19 August 2021).
- Saxenian, A. UC Berkeley School of Information (1994): Regional Advantage: Culture and Competition in Silicon Valley and Route 128, Harvard University Press, Cambridge (cited in Paquet,G. et all-2001, E-Governance and Smart Communities: A Social Learning Challenge, p. 5), [online]. Available at: https://www.researchgate.net/publication/249737308_E-Governance and Smart Communities A Social Learning Challenge, (Accessed: 21 August 2021).
- UiPath. [online]. Available at: https://ro.wikipedia.org/wiki/UiPath, (Accessed: 24 August 2021).
- United Nations, Department of Economic and Social Affairs, Population Division (2018). World Urbanization Prospects/File 21: Annual Percentage of Population at Mid-Year Residing in Urban Areas by Region, Subregion, Country and Area, 1950-2050, [online]. Available at: https://population.un.org/wup/Download/, (Accessed: 16 August 2021).
- Vegacomp (2021), Radiografia Smart City în România-Ediția a V-a, Iunie 2021, [online]. Available at: https://vegacomp.ro/wpr/wp-content/uploads/2021/06/radiografie-smart-city-romania-2021 final.pdf, (Accessed: 24 August 2021).

A Proposal for a Bankruptcy Risk Detection Model – Adaptation of the Taffler Model

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Abstract

The purpose of this work is to adapt an established model on bankruptcy risk into 2021 requirements.

This paper presents a comparative analysis between Taffler model and a proposed model for bankruptcy detection and thus prevention.

The adapted model proposed by this paper is able to detect more insolvencies, this fact being tested by the predictability analysis.

This model claims to be a step forward in detection and prevention of insolvencies based on risk detection models.

Key words: Taffler insolvency model, insolvency, net assets, risk model.

J.E.L. classification: G40

1. Introduction

Bankruptcy risk models summarize in economic terms the essential categories of relevant indicators regarding the continuity of a business, the recoverability of the amounts invested by creditors and the development of the operating activity in optimal conditions. The general consideration from which to develop a bankruptcy risk model is given by the representativeness of economic indicators depending on the field of activity of the analyzed entity. In order to establish a bankruptcy risk model adapted to the current needs of the economic sector, we propose that in the early phase of this subchapter we make a brief presentation of the bankruptcy risk models enshrined in the literature on which we focused our research. ours, namely Altman, the Conan-Holder model, the Taffler model and the Robertson model, the establishment of a bankruptcy risk model being done by updating these last two models.

2. Theoretical background

The best known bankruptcy risk model belongs to the researcher Altman (1968) who synthesizes a credit-scoring bankruptcy risk model. Based on this model, Professor Altman was able to detect the risk of bankruptcy in the case of 75% of the entities that declared bankruptcy, having the capacity to determine the imminent bankruptcy two years before its occurrence. Being replicated and rethought by researchers J. Conan and M. Holder in 1978 and by many researchers to this day, the model has been successful in determining the bankruptcy of an entity. In developing a bankruptcy risk model in Romania, however, we must take into account the structure and field of activity of the entities that make up our sample. Thus, taking into account the majority share of entities operating in the field of industry on the Bucharest Stock Exchange, it is easy to understand the increased interest that investors may have in this field. We will also turn our attention to this field (industry sector), aiming to determine a bankruptcy risk model starting from an already established model that has proven its applicability in the field of industry, at the time of elaboration. The study is made by rethinking Taffler model.

In our study we used entities listed on B.V.B. from spot market which had an audit opinion other than "opinion without concerns", our study is currently focusing on 21 entities.

3. Research methodology

The Taffler model is a bankruptcy risk model determined by British researcher R.J. Taffler and V. Agarwall in 1983. The model is represented by a complex linear function to which a series of weighting coefficients are applied. The addressability of the study is the domain of the UK industry, in a market that did not know considerable export values and was facing resounding bankruptcies at that time. The Taffler model is based on the Z score technique for developing performance score analysis. With the help of this type of analysis, the performances of an enterprise are evaluated by reporting it to the other companies in the same sector of activity, generalizing the results on the entire branch of the economy. Score performance analysis groups all Z-score results in percentage terms and thus measures a relative performance on a scale from 0 to 100 units. The Taffler model is based on the following formula:

$$Z = c0 + c1X1 + c2X2 + c3X3 + c4X4$$

Where:

 X_1 – it is the rate of return on current assets and is calculated as the ratio of gross income to current assets. The percentage of representativeness in the model is considered by the researcher at 53%:

 X_2 – is the ratio of current assets to current liabilities, translated as the general liquidity ratio. The percentage of representativeness in the model is in this case 13%;

 X_3 – is the ratio between current debt and total assets and represents the current financial dependency rate, with a model representativeness of 18%;

 X_4 - represents the calculated time interval in which the company can finance its operating activity based on its own assets without collecting the invoices issued. The calculation method of this index is given by the interval without credit = (fast assets - current liabilities) / daily operating expenses with the denominator represented by sales - depreciation / 365. The percentage of representativeness is in this case set at 16%.

And

c0, c1, c2, c3, c4 represent weighting coefficients of the indicators that are calculated by a regression analysis procedure to determine the percentage of significance of that type of model in the indicator. The values of these indicators represent practically the contribution of the indicators to the representativeness of the model, taking into account the general structure of the resources available to an entity in the field of industry. Determining the ideal structure of a balance sheet, Taffler established these coefficients of representativeness that correct the weight of the X indicators in the model. The turning point between an entity that is at risk of bankruptcy and one that can continue to operate in future financial years is 2. Thus, entities with a score above 2 have a favorable financial situation, while companies with a score lower than 2 will record a financial failure in the near future.

Summarized, the model is presented in the following form:

$$Z_{scor}$$
 Taffler = 3.20 + 12.18*X1 + 2.50*X2 - 10.68*X3 + 0.029*X4

The applicability of the Taffler model materialized according to Table no. 1:

Table no. 1. Applicability of Taffler model on the sample – 21 entities - 2020

Sector	Taffler
Industry	1,41
Industry	2,07
Industry	2,74
Industry	3,60
Industry	3,76
Industry	3,88
Industry	4,24
Industry	4,30
Industry	4,40
Industry	4,65
Industry	4,74
Industry	4,75
Industry	4,94
Industry	5,17
Industry	5,18
Industry	5,35
Industry	5,76
Industry	5,88
Industry	6,18
Industry	6,36
Industry	6,63

Source: own processing

Under this model, a single entity presents an imminent risk of bankruptcy in the following financial years. Applying the inflection criterion of this model (2), an entity that enjoys an unqualified opinion in 2020 but has an associated risk of fraud will go bankrupt in the coming years, thus exiting the Stock Exchange.

Since the main purpose of Z-score models, implicitly or explicitly, is to predict future events, the only valid test of their performance is to measure their ability to predict ex ante. This verification is not always possible, and when it is, ex ante risk models may be erroneous. This may be due to a significant number of companies failing financially and for which a forecast of financial performance is not possible, the name of this type of impossibility to determine the risk of bankruptcy in the literature being grade I errors.

However, more often than not, the percentage of firms classified as likely to cause potential failures and which do not fail (classified as type II errors) from a financial point of view question the operation and usefulness of the model in question. In addition, statistical evidence is needed for such models to work better than simple alternative strategies (eg previous year's losses). Testing only the models based on how well the bankrupt companies are classified is not the same as the true ex ante prediction tests, limitations of the study always existing in these types of analysis. Financial risk models, although statistically transpose the main problems that may arise in an entity based on financial indicators, are limited to ideal situations and may not include in their analysis the change of economic, political, social factors, demographic or cultural.

The limitations in this area are obvious and testing the functionality of the model can be done only by applying (in the future of the company) the same ideal situations. For example, if during three financial years, the entity projected to go bankrupt does not enter, but enters others on which there were no indications of insolvency, it does not necessarily mean that the applicability of the model is low, but all endogenous or exogenous factors of the companies must be analyzed. concerned.

No one could prevent the Covid-19 pandemic and no one was prepared for such a major economic downturn in such a short time. If the application of this model had taken place in 2017, certainly its relevance in 2020 would not have been the same. Therefore, a viable but not perfect bankruptcy risk model can be established.

4. A proposal for a bankruptcy risk detection model - adaptation of the Taffler model

The Taffler model deals with assets and liabilities for a maximum period of one year, and the explanation is simple. The legislation dealing with insolvency and bankruptcy has undergone many changes over the period, with countless updates, retransactions and reinterpretations in European bankruptcy law. Since 2000, the European Commission has been discussing the approach of insolvency and bankruptcy law taking into account the criterion of granting a second chance to the debtor in default and thus prioritizing this principle over the principle of debt recovery by creditors. In the legislative past, the notion of insolvency did not exist at such an elaborate level as that dealt with by current legislation, so trading partners with outstanding debts to a company were favored in obtaining the amounts of money owed as soon as possible, and the declaration of insolvency by a debtor, it translated into a much faster liquidation procedure, so that the interest was no longer to save a debtor who was unable to pay, but to liquidate him as soon as possible. The creditors in this case were more interested in current assets (which could quickly turn into liquidity), in the short-term repayment of short-term debts (for the most accurate calculation of the company's assets), long-term loans being very difficult to grant in period of the 1980s, and often their impact on the balance sheet either did not exist or was negligible.

By understanding this principle, we can also understand how to develop the Taffler model. However, the legislation on insolvency and bankruptcy has changed from one extreme to another. At present, the share of long-term loans far exceeds that of consumer loans, and the latter are becoming negligible compared to the situation a few decades ago. The adaptation of the Taffler model took into account the application of a reasoning that deals mainly with debt and asset weights in 2020. The analysis of the main groups of indicators showed a majority share, on the one hand, of fixed assets to the detriment of current assets (63% compared to current assets). 37%) and a majority share of long-term loans to the detriment of short-term loans (with a share of between 80% and 90% of these types of loans).

Thus, it is necessary for our analysis to focus on treating balance sheet groups with higher shares in the annual financial statements, in order to estimate as accurately as possible the risk of bankruptcy. The weighting coefficients calculated by Taffler are indicators of the relevance of the balance sheet groups. Basically, economic theory sets certain limits on the share of current assets, the share of debt in capital, resources, equity and balance sheet debt. Determining, based on economic theory, an ideal balance sheet model for an industry entity, Taffler calculated these indicators, also called weighting coefficients. The Taffler model is based on the two-by-two classification of the risk of bankruptcy. This classification criterion takes into account an analysis on 3 consecutive financial years in which the evolutions of the indicators that are part of this Z-score function were observed. Based on developments in current assets, current debt, debt repayment and debt recovery, the model included a grading in two risk units of companies, so that those below the threshold of 2 presenting a risk of imminent bankruptcy, and those over 2, no.

The model we propose focuses on dealing in particular with long-term debt, total assets and fixed assets. Thus, respecting the same procedure for classifying the risk of bankruptcy, we concluded that the index of 2 is no longer representative in determining the risk of bankruptcy, the share of long-term debts and fixed assets being much higher in the case of the 21 entities observed than at the time of the study. Taking into account these observations, we came to the conclusion that the rating of 4 in 4 risk units becomes much more representative in establishing the insolvency criteria, our model being based on the application of this type of rating. The determination of this value took into account the value of total assets, total liabilities, fixed assets and long-term debt, the evolution of these balance sheet groups, the evolution of the number of insolvent companies in the market, the reasons for declaring insolvency by debtors already analyzed, the number of insolvencies. impact (detailed in Chapter I), the evolution of the number of companies registered at the National Office for Trade Register, the audit reports, as well as the application of a predictability test, to which we will return.

Although the model was developed 37 years ago, economic theory in terms of economic and financial analysis has not undergone substantial changes in terms of setting significance thresholds and relevance thresholds. Thus, our calculations for determining new weighting coefficients did not show significant differences, these being of the order of tens of hundredths. As a result, the model

we propose is based on the application of the same weighting coefficients, the difference appearing on the variables, as follows:

$$Z = c0 + c1X1 + c2X2 + c3X3 + c4X4$$

Where:

 X_1 – it is the rate of return on total assets and is calculated as the ratio of gross income to total assets. The percentage of representativeness in the model is considered 53%;

 X_2 – is the ratio of fixed assets to long-term debt. The percentage of representativeness in the model is in this case 13%;

 X_3 – is the ratio between total debt and total assets, with a model representation of 18%;

 X_4 – represents the calculated time interval in which the company can finance its operating activity based on its own assets without collecting the invoices issued. The calculation method of this index is given by the interval without credit = (fast assets - current liabilities) / daily operating expenses with the denominator represented by sales - PBT - depreciation / 365. The percentage of representativeness is in this case set at 16%.

The research results led to the following conclusions, according to Table no. 2:

Table no. 2. The applicability of the proposed model on the sample – 21 entities- 2020

Sector	Taffler	Proposed model
<u>Industry</u>	2,07	3,46
Industry	1,41	3,58
<u>Industry</u>	2,74	3,72
Industry	3,60	4,23
Industry	4,24	4,41
Industry	4,30	4,45
Industry	3,88	4,48
Industry	4,40	4,51
Industry	5,17	4,66
Industry	4,94	4,66
Industry	4,74	4,70
Industry	4,65	4,71
Industry	5,35	4,77
Industry	3,76	4,88
Industry	5,18	4,89
Industry	5,76	4,93
Industry	5,88	5,13
Industry	6,18	5,15
Industry	6,36	5,61
Industry	4,75	10,73
Industry	6,63	10,81

Source: own processing

Applying the proposed model to the same sampled category shows, following the 4-by-4 grading detailed above, that the relevance of the model is higher if long-term liabilities to short-term liabilities and total assets to short-term assets are taken into account. The proposed model shows an imminent bankruptcy in the case of 3 companies in the field of industry, compared to only one in the case of the Taffler model. However, the comparability of these two models shows the obvious limitations of such a prediction of a financial nature due to the impossibility of determining in an acceptable manner the evolution of the consumer market and society over a given period of time.

5. Findings

In order to develop a bankruptcy risk model updated to current consumer market requirements based on an existing and viable model at the time of its development, it is necessary to analyze the predictability of the model. To perform the predictability test, we built a sample of 20 economic entities that declared insolvency in 2020. The test was performed using the financial information of the entities in 2018, with two financial years preceding the state of insolvency, according to Taffler analysis. The sample of 20 economic entities was formed taking into account the preliminary analysis of entities with an associated risk of fraud in the industry, considering that 20 insolvent economic entities may be able to ensure the representativeness of the model, taking into account the number of previously analyzed entities (21 entities).

Thus, the predictability analysis of the proposed model built on the Taffler model is presented in Table number 3.

Table no. 3. Predictability analysis on Taffler model vs proposed model

	3. Predictability analysis on Taffler mo	Proposed
Entity	3.2+12.18*(EBITDA/current assets)+2.5*current assets/current debts+10.68*current debts/total assets+0,029*no days	3.2+12.18*(EBIDTA/total assets)+2.5*current assets/current debts+10.68*total debts/total assets+0,029*no days
x1	2.65	3.60
x2	1.63	2.87
х3	5.32	8.22
x4	5.10	3.84
x5	3.68	5.47
x6	4.57	2.36
x7	5.32	7.47
x8	1.59	8.34
x9	2.69	12.73
x10	1.21	2.83
x11	6.73	15.72
x12	2.61	4.60
x13	6.20	7.40
x14	1.26	2.99
x15	3.27	3.97
x16	6.37	5.20
x17	4.56	6.36
x18	8.25	5.42
x19	7.36	6.15
x20	4.82	6.66

Source: own processing

The application of the two bankruptcy risk models shows a higher applicability of the proposed model, by adjusting the risk model to the current structure of the balance sheet of companies in the field of industry, from 4 companies with Taffler model to 7 companies in the proposed model.

6. Conclusions

The update of the Taffler bankruptcy risk model proves to have a greater resonance in the detection of companies that are going to declare insolvency, to the detriment of the original model. In the case of applying the Taffler model, from the sample formed, 4 companies were identified on

which insolvency was expected during two consecutive financial years. On the other hand, the proposed model for detecting the risk of bankruptcy found the insolvency of 7 companies in the field of industry. Although bankruptcy risk models may not have a very high degree of accuracy, they can be a relevant tool for detecting this risk. The limitation in the application of these types of models results primarily from their predictive, estimative construction, which cannot take into account the unpredictable events of markets and consumption habits.

7. References

- Taffler, R., 1983. The assessment of company solvency and performance using a statistical model, *Accounting and Business Research*, 13(52), pp.295 308
- Taffler, R., 1984. Empirical models for the monitoring of UK corporations, *Journal of Banking and finance*, 8(2), pp.199 227
- Taffler, R., 2007. Twenty-five years of the Taffler z-score model: Does it really have predictive ability?, *Accounting and Business Research*, 37(4), pp.285 300
- Taffler, R., 2008. Comparing the performance of market-based and accounting-based bankruptcy prediction models, *Journal of Banking and finance*, 32(8), pp.1541 1551

Particularities of the Insolvency Legislative Evolution. Winners, Opportunists and Losers in the Covid-19 Pandemic

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Abstract

The purpose of this paper is to analyse the legislative changes due to pandemic, together with a brief analysis of winners, losers and opportunists due to this legislative changes and Covid-19 impact on economic sector.

This paper presents a legislative approach to the concept of insolvency from 2014 until now, explaining how legislative evolution can be updated for governmental institutions profit.

Insolvency law was an evolution in the regulation of insolvency prevention and insolvency proceedings, but the retrospective analysis of the law and the cases faced by insolvency practitioners are significant in terms of the correctness of this act and the ambiguities regarding the recovery of creditors' claims.

Understanding the legislative changes together with the analysis of the main categories of actors participating in the insolvency procedure is intended to be a contribution in the analysis of future legislative texts.

Key words: legislative evolution, insolvency, Covid-19 pandemic

J.E.L. classification: G40

1. Introduction

The insolvency procedure is currently regulated by Law no. 85/2014 on insolvency prevention and insolvency proceedings. As an adaptation of the legislation at European level, the Law is an interpretation of the European Parliament's Insolvency Regulation, which seeks to harmonize the legislation on insolvency prevention and the adoption of the second chance principle for the debtor in difficulty. In order to fully understand this stage of reorganization, it is important to review the main legislative issues governing this procedure.

Thus, the Insolvency Law no. 85/2014 is the legislative framework that regulates insolvency, reorganization and bankruptcy proceedings. The Romanian legislative framework applicable from 2014 is an adaptation of the legislative text with the same number from 2006 and a transposition of the applicable legislative framework at the level of the European Union (by Regulation (EC) no. 1346/2000, updated on 12.12.2012). The pandemic effects modified a series of provisions of Law no. 85/2014 with the help of Law no. 113/2020, in the sense of eliminating the amount due to the state budget from the total credit amount, eliminating the possibility of forced execution of amounts due to creditors, assigning tax debts, increasing the time period for settling payment claims, and how to register the amounts due to the state budget and which have been challenged (Law 113/2020, art. 14, paragraph (2), letter (a)).

Law no. 113/2020 promulgated in the sense of providing additional support to the insolvent debtor was criticized not only by the debtors, but by all participants in the insolvency proceedings, in this case creditors, syndic judges, judicial liquidators and credit institutions. The present paper aims to outline the issues raised by these legislative changes, in the sense of the economic losses they cause to the participants in the insolvency procedure and the privilege brought to the state institutions.

2. Theoretical background

When the insolvency proceedings are opened, the debtor's property is often no longer attractive to creditors, which is exempt from assets by the debtor, considering that he is the first to find out about the insolvency of the company. This is not a new practice, the sarcastic poems of the English poet Charls Churchill stating the following:

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"Bankruptcy; full of ease and health,
And wallowing in wealth". ("Faliment; plin de uşurinţă şi sănătate,/Zăbovind în bogăţie").
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There is a real damage to the detriment of the creditor, Law no. 85/2014 establishes a series of measures, called *the annulment of fraudulent acts* concluded by the debtor to the detriment of commercial and financial creditors. Thus, a creditor may request the revocation of a document that may be concluded by the debtor in order to induce or increase an existing state of insolvency. The indictment must specify the damage caused, the debtor's attempted fraud, the enforceability, liquidity and certainty of a claim held by the creditor. The purpose of this type of appeal is to replenish the debtor's assets to a value as close as possible to that at which he normally carried out his activity, thus restoring the division of the damage caused to the creditors' meeting.

With strict reference to the field of insolvency, which we want to deepen in the case of this paper, the Covid-19 pandemic has caused a series of legislative changes that "announce" a possible future increase in the number of small or impact insolvencies, which lead towards a chain effect estimate and a significant economic decline at the microeconomic level. Legislative changes resulting from the Covid-19 pandemic favor on the one hand the insolvent debtor and on the other hand the state, which can transfer its amounts to be recovered from the state budget to another participant in the insolvency proceedings willing to transfer them, the immediate effect being that of manipulating the creditors 'mass and modifying the creditors' picture, a way increasingly encountered by insolvency practitioners. This divides the participants in the insolvency proceedings into three categories, namely winners, opportunists and losers.

3. Research methodology

When the imminent state of insolvency is established, the debtor is advantaged by the time factor (being the first to find an imminent future inability to pay current debts), which means that he can take a series of measures convenient to him to reduces the adverse financial impact that an insolvency proceeding may impose. In this case, the debtor may be tempted to enter into a series of economic transactions which may on the one hand benefit a number of preferential creditors (through their direct dialogue and the establishment of mutual benefits), on the other hand being in a position to which can deliberately withdraw a series of strategic assets (in this case strategic referring either to the increased value or to their uniqueness).

However, current legislation provides for a period of time, called a "suspicious period", in which certain types of transactions fall under the auspices of verification by the competent bodies (in this case the judicial administrator and the syndic judge), a legal mechanism to annul fraudulent acts concluded by a debtor on whom a state of insolvency is planning. Given that not all significant transactions carried out by the debtor during the suspect period (the last three reporting periods of the debtor) are subject to thorough checks, there is a possibility of questioning the significant transactions of the debtor to the detriment of creditors. The types of transactions and economic acts that fall under the aegis of verifications are:

- Free transfers;
- Economic operations in which the debtor's performance (sale of goods or services) exceeds the financial value received (goods sold below the cost of production, services without taking into account the materials necessary to complete the work, etc.);
- Commercial acts concluded with the obvious purpose of stealing high value goods from creditors:
- Establishing a real guarantee for an unsecured claim in the last 120 days before the opening of the insolvency procedure;

- Transactions between the debtor and his associates with a share in the share capital of at least 20%, if they are to the detriment of creditors.

Economic practice has shown that these types of transactions are not the only ones that can be perceived as suspicious transactions because, being stated in the text of the law, these types of unfair and sometimes illegal practices will be avoided by the debtor and illicit acts to the detriment of creditors will be carried out through other mechanisms, other than those stated above. Thus, insolvency practice has shown that even onerous contracts may have an explicit interest in reducing the debtor's assets during the suspect period.

Thus, in this case, there are two cases in which the debtor's assets may be affected in these types of transactions. The first case would be the sale to a third party of a movable or immovable property of significant value before the declaration of insolvency proceedings and the use of monetary resources acquired by the debtor in a current unprofitable activity, to explain the future disappearance of capital. This practice brings together the constituent elements of a money laundering activity, which cannot always be proven or the money recovered. Another specific case in respect of sales for consideration is the act of trade in which the debtor transfers to a creditor a movable or immovable property of high value on commercial credit, and will recover the amount of money from the creditor before entering insolvency.

As the receivable is not recovered within the term established by the Fiscal Code of 360 days, it is provisioned and upon entering insolvency the debtor establishes by mutual agreement with the creditor the compensation of the recoverable amount from the sale of the property with the amounts payable to the latter in either the non-presentation at the credit table of the creditor with which the compensation was made, or the presentation with a much lower recoverable value, making at the same time the specification that the debtor evaluates the good at a price much distorted compared to reality. This usually happens between debtors and creditors who have a turnover below the threshold of 1 million euros, with low trade activity and between whom there are friendly relations. The purpose of this type of 'artifice' is clear, that of favoring a creditor over other creditors, before the insolvency proceedings actually take place.

The proposals of insolvency practitioners regarding the ferend law also call into question the prevalence of the debtor to the detriment of creditors through what is called "preferential treatment of the debtor", a concept applied in granting a second chance to the debtor, but which excludes the interests and damages to creditors with blocked amounts, in particular to those whose unrecovered amounts bring them into the same pre-insolvency situation as in the case of the debtor. Thus, the legislative treatment of suspicious transactions committed by the debtor during the suspicious period obliges the creditor to prove the debtor's obvious intention to act to his / their detriment, evidence that is not always easy to establish.

Even if there is a relative presumption of fraud around the debtor, which he is obliged to dismantle, in the case of a third-party natural or legal person there is no suspicion of fraud, even if the fraudulent economic transaction was carried out on one of the above models, aspect that represents a real problem in the application of the principle of continuity of creditors' activity. Also in connection with this aspect, insolvency practitioners request in future legislative changes the obligation of the judicial administrator (or liquidator) to carry out additional checks on these types of suspicious transactions, currently this procedure is a faculty provided by law, and not a mandatory procedure.

Law 85/2014 on insolvency proceedings was undoubtedly an evolution in the regulation of insolvency prevention and insolvency proceedings, but a retroactive analysis of the text of the law and the cases faced by insolvency practitioners showed shortcomings. significant in terms of the correctness of the wording of this act and ambiguities regarding the recoverability of creditors' claims. This is due to the fact that, unlike Law no. 85/2006, the current legislation is aimed at the debtor and not at the recovery of trade receivables, this aspect affecting the safety of the economic circuit, the efficiency of economic operators and the investment attractiveness on the Romanian markets (Godîncă-Herlea, 2018). Legislation on economic insolvency committed around the debtor leads to the diversion of the purpose for which the insolvency proceedings were originally imagined, thus becoming a way to protect the debtor and not a way to maximize the recoverability and recovery of assets held by him. (Luduşan, 2015). The legislative approach to the rules currently applicable is criticized by both creditors and insolvency practitioners, the reasons being the lack of real

reorganization plans of the insolvency procedure, the failure of insolvency prevention procedures (so-called pre-insolvency proceedings). insolvency), lack of adequate mechanisms to discipline participants in insolvency proceedings (especially the privileged debtor), very long time to resolve insolvency cases which implicitly attracts very high costs from creditors who have debtor, not bearing penalty interest and subject to devaluation (by applying trade rates, inflation, etc.) (Tabacu, 2014).

According to the legislative analyzes carried out by insolvency practitioners, the current rules applicable in the field of insolvency do not develop real recovery plans, but represent successive delays in the moment of bankruptcy of the debtor (at least for businesses where the minimum chance of bankruptcy is obvious. recovery), and the absence of levers through which external financing can be accessed for creditors who find themselves at the date of insolvency of the debtor with amounts blocked in his account are aspects that materialize in the development of a general conduct of creditors fraudsters, cases specific fraud factors mentioned above (from the study of retroactive and prospective analyzes of insolvency practitioners and their own experience in the field of financial audit and accounting) being an asset that supports the theory stated above.

All of these "risks" to creditors to the detriment of debtors translate into economic practice by significantly reducing their interest in supporting a viable reorganization plan and providing a second chance for a debtor who probably has no intentions. obscure. The "point-by-point" legislative analysis of insolvency specialists materialized a series of proposals for the Ferenda law because, unfortunately, after 4 years from the elaboration of the current legislation, it is necessary to improve and update these regulations. Among the proposals of the Ferenda law are the correction of grammatical errors (eg "until proven otherwise" to the detriment of "contrary evidence", "encumbering their tasks" instead of "encumbering their tasks", phrases such as "companies"). on limited liability companies "in" joint stock companies and limited liability companies ", etc.), amending, merging or breaking down articles of law (for example art. 3, paragraph (1) and art. 38, para. (2) in order not to exclude the liberal professions from the scope of insolvency law, proposals such as foreclosures performed simultaneously for all categories of creditors for each type of insolvency separately - ad-hoc mandate or concordat-preventive, change the phrase "Judicial administrator" in "judicial liquidator" in case of liquidation, simplification of valuation and liquidation procedures, possibility to change the position of creditors in the table of claims according to preferences to them - on the basis of a tender - this aspect is not only imposed by the normative text, but can also be modified according to the preferences of creditors regarding the type and rank of their claims, etc.), full transparency and the possibility of participation of all actors insolvency to absolutely all meetings, valuations, revaluations, decisions or proposals that are made or take place with respect to the debtor's assets and result in the impairment of creditors and creditors who find themselves with blocked amounts.

Insolvency practitioners' proposed laws will be a way to establish equity between creditors and debtor, transparency and fairness imposed by both parties (and not just promoting the debtor's interests) can reduce and why not eliminate fraud committed to the detriment of interests creditors and the state. In the opinion of insolvency practitioners, a change in the current legislative text is imperative due to the fact that Romania occupies the lowest degree of recovery of creditors' claims (in insolvency proceedings) in the European Union.

4. Winners, losers and opportunists in the pandemic period

The role of amending and constantly updating legislative rules is to cover the legislative clichés that governed previous laws, the constancy of legal rules in line with the evolution of consumer society and business, the treatment of specific cases not previously notified, and fairness and fairness on all parts of a trade act. At least from a theoretical point of view, the legislative rules aim at equality and fairness in order to avoid situations such as speculation, injustice, fraud, deception or other illicit elements that may cause financial or image damage to one or more parties involved in acts of trade (Băhnăreanu, 2020). However, there is not always a happy ending in the procedures applied according to the law, evasions and preferential interpretations of legislative rules (which sometimes encourage this practice through ambiguity in expression) still exist. Analyzing the annual reports made by the European Commission regarding the degree of recovery of creditors' claims at the end

of insolvency proceedings, it is found that Romania occupies in each reporting year (2015-2019) codified places in terms of debt recovery, and the perspective the future does not have good expectations for the creditors of insolvency proceedings. This aspect leads to the idea of breaking the actors of insolvency proceedings into winners, opportunists and losers.

The European Commission's reports clearly qualify the debtors of insolvency proceedings as the big winners in the event of liquidation, given the alleged or proven fraud, the possibility of fraudulent acts by debtors, the ability to verify the suspicious period by the bailiff (which in almost no case does not verify the suspicious period without the express request of creditors through the credit council), the financial situation of the debtor at the time of declaration of insolvency and difficult procedures for recovery of debts by bidding the debtor's assets, even in the liquidation phase.

The category of opportunists may include preferential creditors who benefit from the entry of a debtor into insolvency either through unfair (and even illegal) agreements with the debtor in the preinsolvency phase, or through the priority they have at the creditors' table. The subject of prioritizing the credit table is also a discussed topic, as the situations in which this priority can be obtained by assigning receivables (governmental or private) or by overriding other categories (such as unsecured creditors) are known. Remaining in the scope of classification of opportunists, although it is not often mentioned in insolvency practices, the state through the representative bodies is a category that can be imposed without difficulty as privileged, being the decision-making body of the applicable rules. The opportunism of government institutions lies in their ability to assign their receivables to a third party, active or not at the creditors' table, the primary interest of the state being to recover the amounts owed by debtors, rather than taking part in a insolvency proceedings which may extend for a period of up to 5 years and for which the exact purpose is not known.

The declared losers of an insolvency procedure are mainly represented by the creditors who fail to recover their debts, the impact on them being manifested not infrequently by the subsequent declaration of the impossibility of payment by them, due to the long-term blocking of some amounts of money that constituted their current economic circuit, and participation in an insolvency procedure as a component part entails other costs, not deductible from a fiscal point of view. Another category of losers is employees of the company who, although they were aware of the insolvency of the company they worked for, may not be able to find a similar job in the field, especially if the entity for which they were reporting is located in a disadvantaged area or was the only one in the nearby geographical area that provides activities specific to the profile of employees (mention here the case of insolvency Oltchim Râmnicu-Vâlcea, closure of Jiu Valley, Roșia Montană, disadvantaged and poor area of Moldova, etc.).

5. Findings

The Romanian economy registered one of the largest decreases in the entire EU bloc (12.3% according to Eurostat), being behind the states that rely strictly on tourism as an impact on gross domestic product (Spain, Greece, Croatia, France, Italy, etc.). The European Union's response is considered by the same analyst to be the strongest and most impactful since the establishment of the European Union, focusing on two strategic axes: combating the Covid-19 pandemic and limiting the economic effects generated by this movement. The most important instrument developed by the European Union was the NGEU Program, which refers to the allocation of considerable monetary resources for the states affected by the pandemic, the program taking place between 2021 and 2027, where it can be deduced that the opinion of European Commission analysts is the return in the medium and long term at the economic level after the pandemic.

If 2020 has had a direct impact on the Ho.Re.Ca and transport sectors, it is estimated that 2021 will have an unfavorable impact on related sectors such as automotive, manufacturing, aviation, tourism, dairy, meat, bakery, agriculture and growth. animals, thus generating a chain effect.

Agriculture, trade, industry and energy are the sectors of activity that recorded the most impactful insolvencies in 2020.

The number of insolvencies in these sectors of activity as a whole is lower than in previous years, with a number of insolvencies 42% higher compared to 2019. This is mainly due to the closure of courts, the statistics of the National Office of the Trade Register showing a number of impact companies (with assets of over one million euros representing pillars of the economy of a city,

county, region and generates approximately 70% of the cumulative turnover at national level) who resorted to insolvency proceedings, decreasing from 139 in 2019 to 80 in 2020.

6. Conclusions

The health crisis and the measures that followed were an additional blow to insolvent debtors, without taking into account those whose business was closed by the pandemic. The effects of the pandemic on the number of insolvencies from a statistical point of view are not yet felt, and this is due to the fact that the courts have not operated for a period of 3 calendar months. A simple calculation of extrapolation of the number of insolvencies in 2020 (of which only 9 operational months) results in an approximate number of 8,699 insolvent companies (the calculation being based on dividing the number of insolvencies reported in 2020 to 9 operational months, multiplying later with 12 months of a year - 6,524 / 9 = 725, 725 * 12 = 8,699). This simple calculation does not take into account the human factor, here we are referring to the panic generated by the pandemic and the need to protect our own assets, which would probably have further amplified the number of reported insolvencies. The support measures offered to borrowers during the pandemic represent a "mouth of oxygen" in the current crisis, but an entire "oxygen cylinder" is needed to save vulnerable entities (Borges, 2020).

7. References

- Băhnăreanu, C., 2020. The economic impact of Covid-19 pandemic at the beginning of 2020, Carol I National Defence University Publishing House, (2), pp.102-112
- Borges, I.J, 2020. Insolvency and restructuring changes around the world during Covid-19, Com. L. World, HeinOnline, pp.10-24
- Godîncă-Herlea, V., 2018. Legea nr. 85/2014, un drum către maturitate [Law no. 85/2014, a road to maturity], *Insolvency Magazine*, (3), pp.20-24
- Luduşan, F., 2015. Distribution of the amounts in the insolvency procedure and order in the payment of receivables, *Law Annals Titu Maiorescu*, HeinOnline, pp.100-109
- Tabacu, A., 2018. Salvarea debitorului persoană juridică, supus executării silite: insolvența, [Rescue of the debtor, legal person, subject to enforcement: insolvency], *Romanian Journal of Enforcement*, (4), pp. 80-90

An Analysis of the Main Forms of Legal Organization Used in Running Small Businesses in Romania

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Abstract

The flexibility of small business lies in their ability to seize the opportunities offered by the market and to adapt quickly to changes in demand. Small business, because of their relatively limited size and productive potential, cannot develop a wide range of products or services, being obliged to concentrate their activity on the production of homogeneous goods or services, within a restricted regulation.

In the case of a small business, the character, skills, expertise, attitudes, and behaviour of the entrepreneur exert a decisive influence on the activity of the enterprise.

This paper is focussed on analysing the evolution of active number of small businesses in Romania. In this direction we will present statistic research regarding the main forms of legal organization used in running small businesses, registered in the latest years in Romania.

Key words: Sole Proprietorship, Family Business, Authorized Natural Person, Debutante Limited Liability Company

J.E.L. classification: L20, M20

1. Introduction

In order to legally run a small business, one or more natural persons can organize their activity for this purpose, by opting for one of the legal forms provided by law:

- Sole Proprietorship
- Family Business
- Authorized Natural Person
- Debutante Limited Liability Company

Each of the legal forms of organization presented above offers advantages and disadvantages in terms of mode of operation, taxes due or the conditions for their establishment.

2. Theoretical background

In this section we will provide general information regarding the main forms of legal organization used in running small businesses in Romania namely the Sole Proprietorship, Family Business, Authorized Natural Person and Debutante Limited Liability Company. We will make an literature review among the main characteristics of each one of these types of firms, present the most important advantages and disadvantages of them and also we will point out same accounting issues regarding the functioning of these forms of economic organizations.

2.1. Sole Proprietorship

Characteristics of Sole Proprietorship

The Sole Proprietorship, according to Government Emergency Ordinance 44/2008 (on economic activities carried out by Authorized Natural Persons, Sole Proprietorships and Family Businesses) is a type of economic enterprise, without legal personality, organized by a natural person entrepreneur.

Any Sole Proprietorship must have a professional headquarters on the Romanian territory. The registration of a Sole Proprietorship is done at the Trade Register, this being one of the main requirements for its legal operation.

Advantages of sole proprietorship

The Sole Proprietorship can have as the object of its activity up to 10 classes of activities provided by the NACE code (compared to 5, in the case of Authorized Natural Person), but proof of professional training is required for each of the NACE code chosen.

The Sole Proprietorship can hire up to 8 employees, third parties, with an individual employment contract concluded and registered under the law (compared to 3 in the case of Authorized Natural Person).

The entrepreneur of the Sole Proprietorship can cumulate the quality of also being an employee to a third person. The owner of a Sole Proprietorship is insured in the public system of pensions and other social insurance rights and has the right to be insured in the system of social health insurance and unemployment insurance, under the conditions provided by law.

Setting up a Sole Proprietorship entails lower costs than setting up a Limited Liability Company and the registration of a Sole Proprietorship does not take more than 3 days. In case of death of the owner, the activity of a Sole Proprietorship may be continued by the heirs.

The Sole Proprietorship accounting is simple and entails the establishment of two registers to be archived for 10 years, namely:

- The Cash Receipts and Payments Journal it serves to chronologically record all the amounts of money collected and paid, both in cash and through bank accounts.
- The Inventory Ledger it serves to keep a record of inventoried assets and liabilities. They shall be completed at the beginning of the activity, at least once a year and at the end of the activity.

Disadvantages of sole proprietorship

The natural person who owns the Sole Proprietorship is responsible for the obligations undertaken in the operation of the respective economic enterprise, with the assets from the patrimony of the enterprise. If these are not sufficient to satisfy the claims, the other assets of the natural person can also be pursued.

A Sole Proprietorship cannot choose any name. The firm of an owner of a Sole Proprietorship consists of his full name or the name and initial of his/her first name, to which the phrase "Sole Proprietorship" is added (ex. Popescu Ion Sole Proprietorship).

2.2. Family Business

Characteristics of the Family Business

Family Business .consists of 2 or more members of a family. According to Government Emergency Ordinance 44/2008, which regulates the Family Business, by family we mean the husband, wife, their children who have reached the age of 16 on the date of authorization of the Family Business, relatives and kin up to and including the fourth degree;

Family Business is created by an establishment agreement, concluded by its members. The establishment agreement will stipulate:

- the (sur)name and first name of its members, the representative of the Family Business;
- the date of drawing up the establishment agreement;
- the participation of each member in the enterprise, the conditions of their participation, the percentages in which they will share the net income of the enterprise, the relationships between the members of the Family Business;
- the conditions for the withdrawal of its members, under the nullity sanction of the Family Business.

The representative appointed in the establishment agreement will manage the interests of the Family Business on the basis of a special power of attorney, which will be signed by all the members of the enterprise.

The representative of the Family Business can purchase assets for the activity of the firm without the approval of the other members. However, if the value of the asset exceeds 50% of the value of the assets and of the liquidity of the enterprise, the consent of the other members of the Family Business is required. The purchased assets are in the co-ownership of the members according to their participation quotas.

For the purpose of carrying out the activity for which it has been authorized, the Family Business, through its representative, can collaborate with other natural or legal persons, with other Sole Proprietorships, Family Businesses, Authorized Natural Persons. Family Business cannot hire third parties with an employment contract.

The members of the Family Business are jointly liable for the debts incurred by the representative in the operation of the enterprise, with the patrimony of the enterprise.

The members of a Family Business can also cumulate the status of employee of a third party who works in the same field or in another field of economic activity than the one in which they organized their Family Business.

The members of a Family Business are insured in the public system of pensions and other social insurance rights and have the right to be insured in the system of social health insurance and unemployment insurance, under the conditions provided by law.

2.3. Authorized Natural Person

Characteristics of Authorized Natural Person

An Authorized Natural Person can carry out any form of economic activity permitted by law, using mainly its own workforce and the professional skills of the representative.

The legal framework for the operation of the Authorized Natural Person is the Government Emergency Ordinance no. 44/2008 on economic activities carried out by Authorized Natural Persons, Sole Proprietorships and Family Businesses, with subsequent amendments.

The firm of an Authorized Natural Person owner consists of his/her name written in full or his name and the initial of his first name, to which the phrase Authorized Natural Person is added - ex. Popescu Ion Authorized Natural Person.

An Authorized Natural Person. can have as the object of its activity at most 5 classes of activities provided by the NACE code. This type of organization can employ a maximum of 3 people in order to carry out its economic activity. The Authorized Natural Person is liable for its obligations with its patrimony and, in addition to this, with its entire patrimony.

The Authorized Natural Person ceases its activity and is dissolved from the trade register in the following cases:

- the will of the owner of the Authorized Natural Person, a procedure that requires the submission of a request for deregistration at the National Trade Register Office and the notification of the National Agency for Fiscal Administration;
- the death of the owner, a situation which requires the start of the deregistration by the heirs and the takeover by the latter, as a result of the probate process, of all rights and obligations deriving from the activity of the P.F.A.

Accounting issues of the Authorized Natural Person

The mandatory ledgers of the Authorized Natural Person are:

- The Cash Receipts and Payments Journal
- The Inventory Ledger

The Authorized Natural Person doesn't have the obligation to register the ledgers above mentioned with the National Agency for Fiscal Administration and if they are completed in electronic format, they will be printed annually or at the request of the control bodies.

The Authorized Natural Person is an enterprise which does not pay the Value-added Tax as long as the annual turnover, declared or reached does not exceed 300,000 lei; above this value, the Authorized Natural Person will register with the National Agency for Fiscal Administration; as a payer of value-added tax .

An authorized natural person owes the following taxes to the state budget:

- Income tax (10%) established on a real system basis (10% of the net income calculated as the difference between gross income and deductible expenses) or under a fixed income quota/income norms (10% of the published income quota for the activity for which there is authorization);
- Social Insurance Contribution/CAS (25%) if the Authorized Natural Person obtains during a year a net income higher than 12 minimum gross salaries per economy (ceiling 2018 22,800 lei; ceiling 2019 24,960 lei);
- Health Insurance Contribution/CASS (10%) if the Authorized Natural Person obtains during a year a net income higher than 12 minimum gross salaries per economy (ceiling 2018 22,800 lei, ceiling 2019 24,960 lei).

Advantages and disadvantages of Authorized Natural Person

Among the main advantages of the Authorized Natural Person we can mention:

- simplified, therefore cheaper, book-keeping;
- simple method to dissolve the firm from the Trade Register.
- can use the Authorized Natural Person's revenues for personal purposes without justification. Exceptions are the revenues from the bank account.

Among the main disadvantages of the Authorized Natural Person we can mention:

- the Authorized Natural Person is held accountable by the state institutions and third parties with its entire property:
 - The Authorized Natural Person has a limited number of employees 3;
 - The Authorized Natural Person has a limited number of economic activities carried out 5;

2.4. Debutante Limited Liability Company

Purpose and benefits

Debutante Limited Liability Company is a type of business organization created as a result of Emergency Ordinance no. 6 of February 2, 2011. The purpose of this form of organization was to provide facilities for newly established micro-enterprises, run by start-up entrepreneurs, who were carrying out an economic activity for the first time, through a Limited Liability Company.

Among the initial benefits of a Debutante Limited Liability Company we can mention:

- the exemption from the payment of fees for registering the company in the Trade Register;
- receiving guidance, training and support from the authorities in the field of entrepreneurship within the area in which the company has its registered office;
 - the exemption from paying the social security contributions owned by the employers;
- the possibility of granting a Non-Reimbursable Financial Allocation of up to 10,000 euros, etc.

The current situation regarding Debutante Limited Liability Company in Romania

Currently, most of the benefits of a Debutante Limited Liability Company have been eliminated or have become irrelevant, given that:

- most of the registration fees in the Trade Register were eliminated by Law no. 1/2017;
- the exemption from paying social security contributions can no longer be granted, as it is now the employee who pays these contributions (and not the employer);
- the non-reimbursable financial allocation is no longer granted, being replaced by the Start-Up Nation program. (Through the Start-Up Nation program, micro- and small enterprises can obtain a non-reimbursable financing of 200,000 lei with a company established after 30.01.2017 carrying out activities in the following areas: production, creative industries, services.)

Basically, although there is still a possibility of setting up a Debutante Limited Liability Company it no longer has real benefits, whereas the restrictions are still valid:

- a limited number of NACE codes (maximum 5),
- the obligation to change the legal form into LLC, after a period of three years, which implies certain costs.

3. Research methodology

In this paper we will provide a statistic analysis of the evolution of the Sole Proprietorship, Family Business, Authorized Natural Person and Debutante Limited Liability Company in Romania in the latest 5 years. The main source for this analysis is The National Trade Register of Romania.

Through this paper, we will present statistics regarding the number of registered Sole Proprietorships, Family Businesses, Authorized Natural Person's and Debutante Limited Liability Company's at country level, and on two regions of economic development, namely the South-East and the Central areas. Also we will study the structure of this type of companies taking into account the gender and groups of age of the holders/members of the analysed companies.

4. Findings

In our research we collected data from the National Trade Register of Romania from December 2017 until November 2021, regarding the registered Sole Proprietorships, Family Businesses, Authorized Natural Persons and Debutante Limited Liability Company's in Romania.

Table no. 1 Registered companies in Romania between dec. 2017 - nov. 2021

	FORM OF LEGAL ORGANIZATION							
Year	Family Business	Sole Proprietorship	Authorized Natural Person	Debutante Limited Liability Company	TOTAL			
NOV. 2021	3,247	11,803	27,377	48,633	91,060			
DEC. 2020	813	7,899	22,554	48,290	79,556			
DEC. 2019	4,347	9,278	25,423	47,705	86,753			
DEC. 2018	4,924	11,474	24,495	46,479	87,372			
DEC. 2017	1,532	12,597	23,888	44,175	82,192			

Source: Own processing from the statistics provided by the National Trade Register of Romania, (https://www.onrc.ro/index.php/ro/statistici)

As we can see from table no. 1 and figure no. 1 in the latest 5 years the most popular type of legal form of organization among small businesses is the Debutante Limited Liability Company. Between 53% and 60% of small businesses running in Romania are Debutante Limited Liability Company. The Family Business is the less preferred type of legal organization, registering percentages between 1% and 5,6% of small business. The second option for small businesses is The Authorized Natural Person, registering like 30% among the preferences of entrepreneurs.

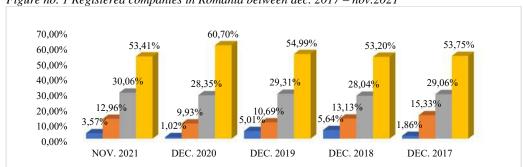


Figure no. 1 Registered companies in Romania between dec. 2017 - nov.2021

Source: Own processing from the statistics provided by the National Trade Register of Romania, (https://www.onrc.ro/index.php/ro/statistici)

■ Family Business ■ Sole Proprietorship ■ Authorized Natural Person ■ Debutante Limited Liability Company

Table no. 2 Registered companies in Romania in the South-East Economic Development Region between dec. 2017 – nov. 2021

	FORM OF LEGAL ORGANIZATION								
Year	Family Business	Sole Proprietorship	Authorized Natural Person	Debutante Limited Liability Company	TOTAL				
NOV. 2021	299	1,040	2,687	4,670	8,696				
DEC. 2020	53	830	2,422	4,650	7,955				
DEC. 2019	263	992	2,528	4,611	8,394				
DEC. 2018	196	1,351	2,973	4,494	9,014				
DEC. 2017	76	1,437	2,686	4,309	8,508				

Source: Own processing from the statistics provided by the National Trade Register of Romania, (https://www.onrc.ro/index.php/ro/statistici)

In the South- East Region of Romania the situation is similar to the numbers recorded in the whole country between 2017 and 2021. So we can affirm that cities like Constanța, Tulcea, Galați, Brăila, Vrancea and Buzău has a small business environment based on two types of legal form of organization, namely the Authorized Natural Persons and Debutante Limited Liability Company.

Figure no. 2 Registered companies in Romania in the South-East Economic Development Region between dec. 2017 – nov. 2021



Source: Own processing from the statistics provided by the National Trade Register of Romania, (https://www.onrc.ro/index.php/ro/statistici)

Table no. 3 Registered companies in Romania in the Central Economic Development Region between dec. 2017 – nov. 2021

	FORM OF LEGAL ORGANIZATION							
Year	Family Sole Business Proprietorship		Authorized Natural Person	Debutante Limited Liability Company	TOTAL			
NOV. 2021	21	17	3,733	8,097	11,868			
DEC. 2020	11	221	3,570	8,026	11,828			
DEC. 2019	15	185	3,464	7,928	11,592			
DEC. 2018	28	132	3,069	7,769	10,998			
DEC. 2017	18	142	2,596	7,463	10,219			

Source: Own processing from the statistics provided by the National Trade Register of Romania, (https://www.onrc.ro/index.php/ro/statistici)

In the Central Economic Development Region of Romania the young and new entrepreneurs prefer in a overwhelming proportion the Debutante Limited Liability Company in order to run their businesses. In Bucharest and Ilfov county the small businesses are in proportion of 70% - Debutante Limited Liability Company. The centre of the Country registered between 2017 and 2021 only 93 active Family Businesses.

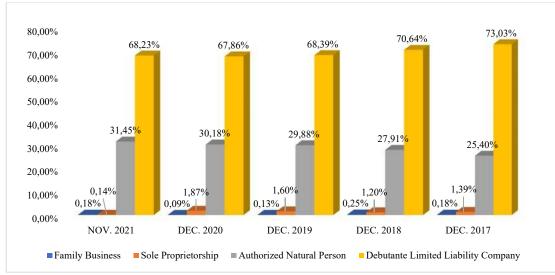


Figure no. 3 Registered companies in Romania in the Central Economic Development Region between dec. 2017 – nov. 2021

Source: Own processing from the statistics provided by the National Trade Register of Romania, (https://www.onrc.ro/index.php/ro/statistici)

Regarding the age of the holders/ members of the studied legal form of organizations, we can see that small business are run especially by entrepreneurs aged between 39 and 49 years old. Also, we can remark that small businesses are rather run by persons over 50 years old than by young people aged under 29.

Table no. 4 - Active Sole Proprietorship/Authorized Natural Person/Family Business by holders /members

age between dec. 2017 - nov. 2021 (no.)

Year	No. of active Sole Proprietors hip/Authori zed Natural Person/Fam ily Business	No. of holders /members of active Sole Proprietorshi ps/Authorize d Natural Persons/Fami ly Business	Holders / members up to the age of 29 yrs.	Holders / members with the age between 30-39 yrs.	Holders / member s with the age between 40-49 yrs.	Holders / member s with the age between 50-59 yrs.	Holder s/ membe rs with the age over 60 yrs.
Nov-21	416,810	454,832	10.71%	24.02%	28.17%	20.46%	16.64%
Dec-20	393,586	429,464	10.31%	24.50%	28.56%	20.21%	16.42%
Dec-19	378,742	414,678	10.81%	25.09%	28.57%	19.70%	15.83%
Dec-18	392,548	425,770	11.83%	25.70%	28.66%	18.81%	15.00%
Dec-17	388,128	418,830	12.64%	26.20%	29.24%	17.78%	14.14%

Source: Own processing from the statistics provided by the National Trade Register of Romania, (https://www.onrc.ro/index.php/ro/statistici)

Table no. 5 Gender distribution of holders /members of active Sole Proprietorship/Authorized Natural

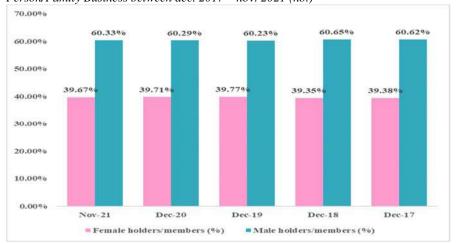
Person/Family Business between dec. 2017 – nov. 2021 (no.)

Year	No. of active Sole Proprietorships/ Authorized Natural Persons/Family Business	No. of holders /members of active Sole Proprietorships/ Authorized Natural Persons/Family Business	Female holders/members (no.)	Male holders/members (no.)
Nov-21	416,810	454,832	180,440	274,392
Dec-20	393,586	429,464	170,554	258,910
Dec-19	378,742	414,678	164,929	249,749
Dec-18	392,548	425,770	167,555	258,215
Dec-17	388,128	418,830	164,924	253,906

Source: Own processing from the statistics provided by the National Trade Register of Romania, (https://www.onrc.ro/index.php/ro/statistici)

Table no.4 and Figure no. 5 show us the proportion of the small businesses run by female and male. So, we can remark among the analysed period that 60% of small business are manged by males and 40% by females. The percentages are very encouraging for the development of the business sector run by females.

Figure no. 4 - Gender distribution of holders /members of active Sole Proprietorship/Authorized Natural Person/Family Business between dec. 2017 – nov. 2021 (no.)



Source: Own processing from the statistics provided by the National Trade Register of Romania, (https://www.onrc.ro/index.php/ro/statistici

5. Conclusions

The choice of the best legal form of organization must take into account, first of all, the type of activity carried out and the income generated: if independent activities are rather occasional and creative (being related to intellectual property), usually copyright contracts are concluded.

In order to legally run a small business, one or more natural persons can organize their activity for this purpose, by opting for one of the legal forms provided by law: Sole Proprietorship, Family Business, Authorized Natural Person, Debutante Limited Liability Company.

The legal framework for the operation of Sole Proprietorship, Family Business and Authorized Natural Person is the Government Emergency Ordinance no. 44/2008 on economic activities carried out by Authorized Natural Persons, Sole Proprietorships and Family Businesses, with subsequent amendments. Debutante Limited Liability Company is a type of business organization created as a result of Emergency Ordinance no. 6 of February 2, 2011.

The registration as a Authorized Natural Person and Debutante Limited Liability Company remains one of the most common forms of organization for running a small business.

Between 53% and 60% of small businesses running in Romania are Debutante Limited Liability Company, and 30% are Authorized Natural Persons. Most of the small businesses are run by entrepreneurs aged between 39 and 49 years old, in proportion of 60% males and 40% females.

6. References

- Law no. 31/1990 Companies Law, republished, with subsequent amendments and completions
- Law no. 133 of July 20, 1999 on the stimulation of private entrepreneurs to set up and develop small and medium-sized enterprises
- www.aippimm.ro
- www. europa.eu.int
- www.infiintari-firma.ro
- www.onrc.ro
- https://termene.ro/articole/totul-despre-intreprinderea-individuala

Trading Companies in Romania

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Abstract

The company is seen as a collaboration between two or more people, who agree to share certain assets in order to carry out a certain activity together and share the benefits arising from this collaboration.

To carry out economic activities, natural persons and legal persons can come together and set up companies, in compliance with the provisions of Law 31/1990 - Law on the establishment of trading companies and the reorganization of state economic units as Autonomous Administrations and national companies.

Key word: General Partnerships, Limited Partnerships, Partnerships Limited by Shares, Joint-Stock Companies, Limited Liability Companies

J.E.L classification: M13

1. Introduction

The purpose of this article is to analyse the situation of the setting up of commercial companies in Romania in the last years. We will investigate the statistical data provided by the National Trade Register of Commerce to establish the influence of the latest events regarding the establishment of trading companies in our country.

We will focus on the situation in the South-East Economic Development Area formed by the cities: Constanta, Tulcea, Braila, Galati, Buzau and Vrancea. We will provide a statistic evolution of trade companies registered in this area of economic development, in comparation with the whole country.

2. Conceptual delimitations

Trading companies are Romanian legal persons/entities with headquarters in Romania, grouped into two categories:

I. Partnerships (unincorporated companies):

- a. General Partnerships (in Ro- Societatea în Nume Colectiv S.N.C.);
- b. Limited Partnerships (in Ro Societatea în Comandită Simplă S.C.S.).

II. Corporations (incorporated companies):

- a. Partnerships Limited By Shares (in Ro Societatea în Comandită pe Acțiuni S.C.A.);
- b. Joint-Stock Companies (in Ro Societatea pe Acțiuni S.A.);
- c. Limited Liability Companies (in Ro- Societatea cu Răspundere Limitată -S.R.L.).

Within the limit of the subsribed

share capital

Minimum	Partnerships		Corporations			
establishment criteria	The General Partnership	The Limited Partnership	Partnership limited by Shares	Joint Stock Company	Limited Liability Company	
No. of founders	Min. 2	Min. 2	Min. 2	Min. 2	Min. 1- Max. 50	
Share Capital	-	-	Minimum 25.000 euros, but		Min. 200 lei	

Unlimited joint liability for

active partners and within the

limit of the contribution to the

share capital for silent/dormant

partners

no less than 90.000

Table. no. 1. Minimum criteria for setting up companies in Romania

Unlimited joint

liabilty

Source: Own processing

The liability of the

founders to the

obligations of the

patrimonial

company

2.1 The General Partnership

The General Partnership is a form of business organization that arises from the association of at least two natural or legal persons. Historically, it represents the first form of trading company. This type of company is suitable for conducting small businesses, in which the business partners/associates know each other well (relatives, friends). The business partners are unlimitedly and jointly liable for the company's social obligations. The share capital knows no restrictions and is formed as a result of the contribution of the business partners (money and / or goods in kind); it can be any asset with an economic value that is of interest for the activity of the company.

In the essential matters concerning the activity of the company, the decisions within the company are taken by the business partners according to the principle of the majority of the votes cast. The name of such a company must include at least the name of one of the business partners and the words S.N.C. The General Partnership is managed by one or more admins. They may be appointed from among the business partners or may be natural or legal persons from outside the company. In general, the admin may perform all those managerial acts in the interest of the company. In the case of the existence of several admins, the limits within which they may act shall be set for each of them.

2.2 The Limited Partnership

The Limited Partnership is a partnership with at least 2 business partners, in which the minimum share capital limit is not imposed. Within the Limited Partnership there are two categories of business partners: active partners and limited partners. The limited partners do not manage the company and are liable only within the limit of their contribution to the share capital. On the other hand the active partners run the company and they are unlimitedly and jointly liable for the company's obligations.

The management of the Limited Partnership will be entrusted to the business partners who represent the absolute majority of the share capital, respectively to one or more active partners. The name of a Limited Partnership must include at least the name of one of the active partners followed by the words "Limited Partnership".

2.3. Partnership Limited by Shares

The Partnership Limited by Shares comprises also the two categories of business partners mentioned above: active partners and limited partners, each with different responsibilities: the active partners manage the company, and the limited partners participate mainly with capital, receiving shares in exchange for the payments made to the company's assets.

The company's capital amounting to 25,000 Euro but no less than 90,000 lei is divided into shares, and the social obligations are guaranteed with the company's property and the unlimited and joint liability of the active partners.

This type of company is similar both to the limited partnership, both having two categories of partners (active partners and limited partners) and to the joint-stock company, given that the capital is divided into small units called shares.

The name of this type of company must include at least the name of one of the active partners followed by the words "Partnership Limited by Shares".

2.4. The Limited Liability Company

The Limited Liability Company (L.L.C.) is the company whose obligations are guaranteed with its social assets, and the limited partners are liable only within the limits of the subscribed share capital, therefore the creditors cannot pursue the personal property of the business partners in order to cover the company' debts. L.L.C. is the only form of trading company which can have a single owner, and a person can be a sole partner in a single L.L.C..

2.4.1 General characteristics of the Limited Liability Company

- is a legal entity established according to Law no. 31/1990;
- the name of the owners is business partners/associates;
- the minimum number of business partners who may establish an L.L.C. is 1 and the maximum number of business partners is 50 people;
- the minimum share capital required to establish an L.L.C. is 200 lei, and the maximum is
 unlimited; the share capital is divided into shares with a nominal value which cannot be less than
 10 lei and each business partner has a number of shares in proportion to his contribution to the
 share capital;
- L.L.C.'s highest governing body is the General Assembly of Associates;
- the LLC is administered by one or more admins, natural or legal persons;
- the appointment of an auditor within an L.L.C. is mandatory if this form of association consists of at least 15 associates;
- the trade name of a Limited Liability Company consists of a name indicating the object of activity and will be accompanied by the fully written words "Limited Liability Company" or "L.LC.".

2.4.2 The General Assembly of Associates of the L.L.C. Main Characteristics

The General Assembly of Associates is a deliberation and decision-making body of the company. The admins are obliged to convene the General Assembly of the Associates, at least once a year or as many times as necessary. A business partner or a number of business partners/associates, who gather at least a quarter of the share capital may request the convening of the General Assembly. The summons must be made at least 10 days before the day set for the meeting, specifying the agenda. The meeting will be convened at the company's headquarters.

The Assembly shall act by a majority of the votes cast. An L.L.C. may be run by one or more admins. When there are several admins, they form a Board of Admins. The business partners who hold the absolute majority of the share capital can appoint the admins, establishing their powers, the duration of their mandate and, possibly, their remuneration.

2.4.3 The L.L.C.'s Board of Directors. Main Characteristics

The administrator of an L.L.C. can be both a natural person and a legal person. The admins of the company are obliged to submit their signatures to the Trade Register Office, within 15 days from the date of the registration of the company, if they were appointed by the articles of association, whereas those elected during the operation of the company, within 15 days from their appointment. Among the responsibilities of the administrators we can mention:

- > fulfilling the tasks provided in the articles of association;
- > fulfilling the decisions of the General Assemblies;
- drawing up and keeping the records required by law in the case of the Limited Liability Company;
- > payment of dividends to the business partners.

2.4.4 The L.L.C.'s Audit Committee. Main Characteristics

The appointment of auditors in the case of the LLC is mandatory if the number of business partners is greater than 15. The auditors are appointed by the General Assembly of Associates. In the absence of auditors, control is exercised by the business partners who are not administrators. The

auditors oversee the way in which the company's activities are managed within the company. The auditors verify the correctness and legality of the financial statements drawn up within the company.

2.5 The Joint-Stock Company. Conceptual delimitations

The Joint-Stock Company is the company whose share capital is divided into shares and the social obligations are guaranteed with its social assets. The shareholders are liable only within the limit of their contribution.

2.5.1 General characteristics of the Joint-Stock Company (J.S.C.).

- is a legal entity established according to Law no. 31/1990;
- the name of owners: shareholders;
- the maximum number of shareholders required to set up a J.S.C. is unlimited, and the minimum number is 2 shareholders;
- the minimum share capital required to establish a J.S.C. is the equivalent in lei of 25,000 Euro, but no less than 90,000 lei;
- J.S.C.'s highest governing body is the General Assembly of Shareholders;
- the company may be managed by one or more administrators (shareholders or not, natural or legal persons). If more than one administrator is appointed, they will form a Board of Directors;
- the supervision of the company's management is the responsibility of the Audit Committee;

2.5.2 The General Assembly of Shareholders. Main Characteristics

The General Assembly of Shareholders is the highest governing body of the Joint-Stock Company. The General Assembly of Shareholders convenes at the company's headquarters. The meeting will be convened by the admins as many times as necessary, in accordance with the provisions from the articles of association. Each paid share entitles to one vote within the assembly. The decisions of the General Assembly will be submitted within 15 days to the Trade Register Office, to be mentioned in the register and published in the Official Gazette. General Assemblies are ordinary and extraordinary. The difference between ordinary and extraordinary General Assemblies lies in the different competencies granted to each one by law.

Ordinary General Assemblies deal with issues relating to the normal operation of the company, such as:

- the appointment of the administrators and the auditors, establishing their tasks and due remuneration
- the establishment of their revenue and expenditure budget, the approval of the financial statements, such as the balance sheet, the profit and loss account, etc.
 - The exclusive competences of the extraordinary General Assembly include tasks such as:
- changing the legal form of organization of the company;
- the merger with other companies, the division of the company, the anticipated dissolution of the company;
- any major change to the articles of association.

2.5.3 J.S.C's Board of Director/Admins

Joint-Stock companies can be managed both by a natural person administrator and by a legal person administrator. When there are several administrators, a Board of Directors is formed.

The administrators are obliged to submit their signatures to the Trade Register Office, within 15 days from the date of the registration of the company, if they were appointed within the articles of association, whereas those elected during the operation of the company, within 15 days from their appointment.

The admins will be able to use assets from the company's patrimony in various legal acts (sales, purchases, rents), for as long as the value does not exceed half of the book value of the company's assets. Above this threshold they need the approval of the Extraordinary General Assembly of Shareholders.

2.5.4 J.S.C.'s Audit Committee

The auditors control the way in which economic activities are managed within the company. An auditor of a Joint-Stock Company can be appointed both from inside and from outside the company.

The Joint-Stock Company will have 3 auditors and 3 substitutes. The number of auditors must be odd. The auditors are elected by the General Assembly of Shareholders for a period of 3 years and may be re-elected. The auditors must personally exercise their mandate (they cannot delegate someone else on their behalf).

Relatives of the administrators (up to the fourth degree) and persons who, during their term in office, have control responsibilities within the Ministry of Public Finance.

3. Research methodology

In this paper we will provide a statistic analysis of the evolution of the General Partnerships, Limited Partnerships, Partnerships Limited by Shares, Joint-Stock Companies, Limited Liability Companies in the latest 5 years. The main source for this analysis is The National Trade Register of Romania.

Our analysis is based on presenting statistics regarding the number of registered General Partnerships, Limited Partnerships, Partnerships Limited by Shares, Joint-Stock Companies, Limited Liability Companies at country level, and on two regions of economic development, namely the South-East and the Central areas. Also we will study the structure of this type of companies taking into account the gender and groups of age of the holders/members of the analysed companies.

4. Findings

Through this paper we have conducted a statistic analysis of the process of registering Joint Stock Companies, Partnerships Limited by Shares, Limited Partnerships, General Partnerships, Limited Liability Companies in Romania between 2017 and 2021. If we take a look at table no.2 and figure no. 1 we will remark that 99.9% from total legal forms of organization analysed are Limited Liability Companies.

The other four types of legal forms of organization registered in Romania between 2017 and 2021 cumulate only 0.1%. In this period, Romania registered only 470 Joint Stock Companies. The absolute number of Limited Liability Companies registered in the last five years was maintained over 94.000, the only exception was 2020, the year when the pandemic started and many business sector have suffered losses. We can observe a decrease of total trading companies established between 2020 and 2021 with around 18%.

Table no. 2 Registered companies in Romania between dec. 2017 – nov. 2021

Year	Joint Stock Company	Partnerships Limited by Shares	Limited Partnerships	General Partnerships	Limited Liability Company	TOTAL
NOV. 2021	94	0	6	1	96,421	96,522
DEC. 2020	69	0	3	0	78,419	78,491
DEC. 2019	76	0	2	1	94,869	94,948
DEC. 2018	99	0	3	0	94,244	94,346
DEC. 2017	132	1	6	6	98,405	98,550

Source: Own processing from the statistics provided by the National Trade Register of Romania, (https://www.onrc.ro/index.php/ro/statistici)



Figure no. 1 Registered companies in Romania between dec. 2017 - nov.2021

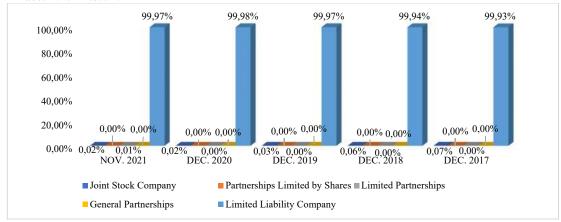
Source: Own processing from the statistics provided by the National Trade Register of Romania, (https://www.onrc.ro/index.php/ro/statistici)

Table no. 3 Registered companies in Romania in the South-East Economic Development Region between dec. 2017 – nov. 2021

Year	Joint Stock Company	Partnerships Limited by Shares	Limited Partnerships	General Partnerships	Limited Liability Company	TOTAL
NOV. 2021	2	0	1	0	9,845	9,848
DEC. 2020	2	0	0	0	8,135	8,137
DEC. 2019	3	0	0	0	10,277	10,280
DEC. 2018	6	0	0	0	10,037	10,043
DEC. 2017	7	0	0	0	10,146	10,153

Source: Own processing from the statistics provided by the National Trade Register of Romania, (https://www.onrc.ro/index.php/ro/statistici)

Figure no. 2 Registered companies in Romania in the South-East Economic Development Region between dec. 2017 – nov. 2021



Source: Own processing from the statistics provided by the National Trade Register of Romania, (https://www.onrc.ro/index.php/ro/statistici

Table no. 3 and figure no. 2 allow us to see the numbers registered by the South-East Economic Development Region. We can remark that over 97,93 % of total trading companies registered in the last years, are Limited Liability Companies. Even though 2020 was the year when the pandemic started, over 8000 of Limited Liability Companies were established in the South-East Region, this means almost 10% of total LLC's established in the whole country.

The South-East Area registered before the pandemic, around 10.000 LLC's companies per year. In 2020 this number decreased by 2000, this means that the average number of LLC's decreased with 20%. Despite the current economic climate, in 2021 we can see that in the analysed area the situation has recovered, because almost 10.000 firms were established and almost 10% of the total trade companies established in Romania activate in the South-East Economic Development Region.

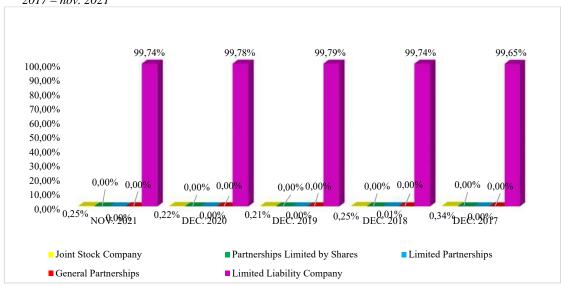
Table no. 4 Registered companies in Romania in the Central Economic Development Region between dec. 2017 – nov. 2021

Year	Joint Stock Company	Partnerships Limited by Shares	Limited Partnerships	General Partnerships	Limited Liability Company	TOTAL
NOV. 2021	63	0	1	1	24,853	24,918
DEC. 2020	45	0	1	0	20,752	20,798
DEC. 2019	44	0	0	0	20,556	20,600
DEC. 2018	59	0	3	0	23,911	23,973
DEC. 2017	86	0	1	1	25,236	25,324

Source: Own processing from the statistics provided by the National Trade Register of Romania, (https://www.onrc.ro/index.php/ro/statistici)

The Central Economic Development Region comprises the capital of Romania, Bucharest and Ilfov county. The data that we collected from the National Trade Register show us an interesting situation: in 2020, Bucharest and Ilfov county registered more companies than the year before the pandemic started. Around 25% of total trade companies established in 2021, were registered in this Economic Development Region.

Figure no. 3 Registered companies in Romania in the Central Economic Development Region between dec. 2017 – nov. 2021



Source: Own processing from the statistics provided by the National Trade Register of Romania, (https://www.onrc.ro/index.php/ro/statistici)

5. Conclusions

When two or more people agree to share certain goods in order to carry out an economic activity and share the risks and benefits arising from this agreement, we can name this collaboration with two words: trading company. In Romania, according to law 31/1990 operate the following trading companies: General Partnerships, Limited Partnerships, Partnerships Limited By Shares, Joint-Stock Companies, Limited Liability Companies.

Each one of these companies has specific characteristics regarding the number of founders, the minimum share capital at the establishment of the company, the liability of the founders regarding the patrimony of the company. The main bodies responsible for the good functioning of the trading companies are The General Assembly, The Board of Directors and the Audit Committee.

2020 was the beginning of the pandemic with a negative impact on the business sector. From the research conducted, we can observe a decrease of total trading companies established between 2020 and 2021 with around 18%. Meanwhile in Bucharest the situation was stable regarding the number of new trade companies established. In 2021. around 35% of total trade companies established in Romania activate in the South-East Economic Development Region and in the Central Economic Development Region.

We think that the numbers registered in 2021, shows us that the business sector doesn't want to give up and faces all the difficulties arising from the current economic and sanitary situation.

6. References

- Law no. 31/1990 Companies Law, republished, with subsequent amendments and completions
- Law no. 133 of July 20, 1999 on the stimulation of private entrepreneurs to set up and develop small and medium-sized enterprises
- www.aippimm.ro
- www. europa.eu.int
- www.infiintari-firma.ro
- www.onrc.ro

Extending the Scope of the EU ETS by Including Road Transport and Shipping

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Abstract

This paper is organized as follows: the abstract gives an overview of the paper and its main conclusions. Section 1 provides the introduction and the background on the European Union Emission Trading Scheme as part of the climate change policy design. At the same same time, it presents the latest proposed revision of ETS phase IV by including transport and buildings. Section 2 summarizes the literature review. Section 3 accommodate briefly comments on the expected results following the inclusion of the road transport in the EU ETS based on the evaluation of the climate change policy at EU and national level. It also includes a short presentation of the data used for the analysis and my contribution to the literature. Section 4 concludes.

Key words: emissions trading, climate change policy design and evaluation, non ETS

J.E.L. classification: K32, Q54

1. Introduction

In december 2019 at the European Council meeting, the EU heads of state and government, without Poland, set a target for climate neutrality by 2050, namely zero net greenhouse gas emissions at EU level by 2050. Net refers to the fact that GHG emissions from forests and the LULUCF sector are taken into account; this sector may be responsible either for emitting GHG emissions (e.g. due to deforestation) or for the absorption of CO2 from the atmosphere (eg through afforestation or reuse of agricultural land as pasture).

In achieving the target on climate neutrality by 2050, the European Green Deal must be implemented. In other words, the GHG emissions must be reduced by 55% netⁱⁱⁱ by 2030 which means that ETS emissions must go down by 61% compared to the level from 2005 reference year. The rest of the reduction must be delivered by the non ETS sectors.

For the implementation of the European Green Deal, the European Climate Law was adopted in the first half of 2021, which make the EU's climate neutrality target legally binding,

At the same time, European Commission in 2021 proposed the "Fit for 55" legislative package.

The proposal is to update the 2030 Climate Energy Framework by reviewing legislation ⁱⁱⁱ and adopting measures related to: the emissions reduction efforts in the non-ETS sectors by updating Member State emissions reduction targets; the revision and strengthening of the EU ETS by extending its scope to road transport and buildings; the management of the GHG emissions from Land Use, Forestry and Agriculture (LULUCF); renewable energy; energy efficiency; CO2 emissions standards for new cars and vans; energy taxation; alternative fuels infrastructure; sustainable fuels for aviation through the ReFuelEU initiative; sustainable fuels for a green maritime European space through the FuelEU Maritime initiative.

For these measures there is a new Social Climate Fund with a financial envelope of 72,2 billion euros to address the social impact. Moreover, the European Commission has proposed an EU forestry strategy.

UE commitments 2020 RO commitments 2020 Overall 20% GHG reduction compared to 1990 Non-ETS **ETS** To contribute alongside MS National target – allow to increase Reduction by Reduction to the fullfilment of EU target emissions from 21% by 10% for ETS non-ETS by 19% reference year reference Reduction 21% 2005 reference year year reference year 2005 2005 2005 EU EXCEEDING the 20% target in 2019 GHG emissions 65,2% GHG emission reduction in 2020 vs.1990 already down by 28,43% vs. 1990 Over the target Over the target by 24,9% with 5%

Figure no. 1. The GHG emission reductions: targets and achievment – EU and national level

Source: Author`s interpretation regarding climate change data from https://www.eea.europa.eu/data-and-maps/data/data-viewers/eea-greenhouse-gas-projections-data-viewer)

The Commision's proposal for the revision of the phase IV of the EU ETS also reffers to extending ETS scope by including the GHG emissions from road transport and buildings from 2025. The cap for the new system will be applied from 2026. Starting 2025 the new trading scheme will be implemented distinctly from the current EU ETS and under its scope will be fuel suppliers. They must buy from the carbon market all the necessary allowances in order to comply with the EU ETS provisions. The suppliers will be responsible for monitoring and reporting the quantity of fuels they place on the market and for surrendering emission allowances each calendar year depending on the carbon intensity of the fuels.

The Social Climate Fund will be based on the revenues from the new EU ETS. 25% of the total amount to be collected from corresponding auctioned allowances for the GHG emissions from buildings and transport must be allocated to the energy efficiency of buildings, green generation cars and can also be the support for the households when pay the energy bills with increased costs due to petrol or heating fuel.

At the same time, the new ETS will be applied for CO2 emissions from large ships with more than 5000 gross tons.

50% of the GHG emission shall be considered under the scope of ETS (for a ship going from an EU port to another non EU port or viceversa) and 100% emission shall be considered under the scope of ETS (for a ship going from an EU port to another EU port).

Regarding the aviation, the current total number of aviation allowances will be maintain and be reduced annually by 4.2%; phase-out free allocation and move to full auctioning by 2027; align with the global Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA).

According to ICAO, 2021 the CORSIA has been adopted as complementary to the broader package of measures to help ICAO achieve its aspirational goal of carbon-neutral growth from 2020 onwards.

CORSIA acts like an market based mechanism which offset the CO2 emissions generated by aviation and that cannot be reduced otherwise; neither through the use of technological and operational improvements nor sustainable aviation fuels.

(https://www.icao.int/environmental-protection/CORSIA/Pages/CORSIA-FAQs.aspx accessed in 16.11.2021)

Table no. 1. History of the EU ETS sectors and gases covered

	PHASE III	PHASE IV
Period	2013-2020	2021 – 2030& Green Deal / Fit 4 55
Sectors covered	Same as Phase II + carbon capture and storage installations, production of petrochemicals, ammonia, nonferrous and ferrous metals, gypsum, aluminum, nitric, adipic, and glyoxylic acid	Same as phase III To be applied for CO2 emissions from large ships with more than 5000 gross tons. Buildings + Transport: the system will run separately from the EU ETS and is supposed to start in 2025, with a cap on emissions set from 2026. This new upstream system will regulate fuel suppliers. 25% of the total amount to be collected from corresponding auctioned allowances for the GHG emissions from buildings and transport must be allocated to the energy efficiency of buildings, green generation cars and can also be the support for the households when pay the energy bills with increased costs due to petrol or heating fuel.

Source: Author's interpretation regarding EU climate change policy –information from https://ec.europa.eu/clima/eu-action/

2. Literature review

The EU ETS is seen (Hintermayer, 2020) as a quantity based instrument which puts a cap on the allowances by reducing each year their volum.

At the same time (Baudry, Anouk and Quemin, 2021, and references therein) considers that the EU ETS is a cap and trade system where EU issue every year greenhouse gas emissions allowance (EUA) using free allocation (based on benchmarks) and auctioning; their total number represents the cap on emissions. On 30 April of each year considered t, the operators have the obligation to remit the equivalent number of EUAs equal to verified ETS emissions in the year t-1. One EUA represents one metric tone of carbon dioxide equivalent.

The EU ETS stared in 2005 and it is on the final stage of the phase III of the trading period between 2013-2020 (Carlén, Dahlqvist, Mandell, Marklund, 2019 and references therein) while it has been evaluated and several reforms has been adopted by amending the Directive 2003/87/CE.

The Green Deal implies increasing the EU greenhouse gas emission reduction target from 40% to 55% net by 2030; this means tightening the targets for EU ETS and non ETS sectors. (Osorio, Tietjen, Pahle, Pietzcker, 2021 and references therein).

According to European Commission (Speeding up European climate action towards a green, fair and prosperous future, 2021) emissions from sectors not included in the ETS, such as transport, non-ETS industry, buildings, agriculture and waste, are covered by the EU effort sharing legislation. It sets national emissions targets for 2020 for all Member States, expressed as percentage changes in emissions from non ETS from 2020 compared to 2005 levels. Similarly, the non ETS legislation sets national emissions targets for 2030.

According to the European Environment Agency, EU's progress is a direct result of the implementation of EU and national policies and measures in the field of climate change. Emissions have decreased in almost all sectors. Exception is the emissions from transport which have not fallen as foreseen, despite climate policies and efforts in the field.

European Commission (November 2021) states that the emissions from transport sector (the second largest source in the EU after the energy sector) reached their 2005 level in 2019. They are expected to rebound after the pandemic and are not likely to fall without additional measures.

3. Research methodology and contribution to the literature

I begin by scrutinizing the existing legislation on the EU ETS, including Green Deal related documents and the new legislative proposals of the European Commission known as Fit 4 55 Package.

At the same time I assess the targets under the climate policy and their fulfilment at EU level, as well as at national level. Data considered for further analysis and aggregate data were taken from the European Environment Agency (accessed on November 2021, at https://www.eea.europa.eu/data-and-maps/data/data-viewers/eea-greenhouse-gas-projections-data-viewer) and European Energy Exchange /EEX selected as pillar of the allowances prices.

Specifically, I utilized the data to scrutinzed how Romania stands regarding its targets for greenhouse gas emissions by 2020 while considering its commitments and obligations as EU Member State.

At the same time, for the period 2013-2020, I analyzed the evolution of the GHG emissions generated by the economy and the non ETS sector and the fullfilment of the targets, both at EU level and national level.

Finally, I compare the results obtain by our country to those of the EU.

My contribution to the literature is the brief summary of the Fit 4 55 package considering extending the EU ETS to transport emission and the descriptive analysis of the results of the non ETS by 2020 at EU and national level. Considering the results from by 2020 in terms of GHG total aggregate emissions, the non ETS emissions vs. targets, the forecast at national and EU level, for transport GHG emissions by 2030, I also presented the main challanges and future perspective for our country considering the future EU ETS arhitecture which includes the transport under its scope.

Based on the current research on the functioning of the non ETS sector, at national and EU level, this overview may be helpful to guide efficient implementation in the transport sector, namely in our country in the next trading period under the ETS.

4. Findings. Climate and energy policy design and evaluation considering the implementation and its results at EU and national level

In 1994, Romania ratified the UNFCCC by Law no. 24/1994 and is included in Annex I of the Convention. This is the general approach for all developed countries and those with economies in transition, which had a large contribution to greenhouse gas emissions in 1990. Romania was the first country included in Annex I of the UNFCCC which ratified by Law no. 3/2001 the Kyoto Protocol, thus committing itself to "a reduction of 8% in the period 2008 – 2012, compared to the base year (1989)". The measure was meant to harmonize the national policy with the European Union measures which adopted the same 8% GHG reduction.

Romania was one of the 174 UN and EU Member States that signed the Paris Agreement ^{iv} at the ceremony on 22nd of April, 2016 in New York. The agreement was ratified by Romania by Law no. 57/2017 and entered into force on 23 of April, 2017.

In 2019, as a result of the EU's existing climate and energy legislation and its implementation, the EU's greenhouse gas emissions went down by 25,89 % compared to 1990.

GHG emissions in the EU27+UK were estimated to be reduced by more 28,43 % in 2020 compared to 199 emissions level and thus EU will exceed its 20% reduction target. Similar to the EU path, in 2020 Romania reached a high GHG emission reduction by 65,2 % compared to the level of emissions in 1990. This figures are shown in tabel 2.

Table no. 2. GHG reduction 1990 - 2020 in EU 27+UK and Romania

GHG emissions	1990	2020	Reduction since
(t CO2 equivalent)			1990
EU 27+UK	5 647 955 000	4 042 058 000	28,43%
Romania	247 994 000	116 258 000	65,2%

Source:

https://www.eea.europa.eu/data-and-maps/data/data-viewers/eea-greenhouse-gas-projections-data-viewer

The total EU's GHG emissions were down by almost 15% than 2005 while Romania over exceeded its target by 24,9% in 2020 compared to the 2005 level for the non ETS sector.

In the non ETS sector, the overall emissions at EU level, in 2020 by, while Romania over exceeded its target by 24,9%. The GHG emissions reduction at EU and national level in the non ETS sector is shown in Table 3.

According to the current legislation in place, for the non ETS sector Romania should have increased the emissions by 19% but in fact, the GHG emissions were cut down by 5,9% in 2020 compared to 2005 level.

Table no. 3. GHG reduction 2005 – 2020 in EU 27+UK and Romania in the non ETS sector

GHG emissions (tCO2 equivalent)	2005	2020	GHG reduction target vs. 2005	Change sin 2005	ıce
EU 27+UK	2 882 848 000	2 449 396 000	-10%	-15%	, O
Romania	79 399 000	74 710 000	+19%	-5,9	9%

Source:

https://www.eea.europa.eu/data-and-maps/data/data-viewers/eea-greenhouse-gas-projections-data-viewer accesed in 24.11.2021

It should be noticed that the data for 2019 and 2020 are projections of GHG emissions developed by the Environmental Protection Agency based on the official reporting by Member States.

Regarding the shape of the GHG emissions from transport sector, by 2030 in Romania the trend will be opposite to one at EU level. While the Romanian GHG emissions profile shows a large increase, at EU level there will be a significant GHG reduction by 2030 compared to 1990. This is presented in the figures 2a and figure 2b, the dotted lines reflect the future trend of GHG emissions.

For the future trading period 2025-2030 under ETS, taking into account the data available on the European Environment Agency, the "budget" needed for the GHG transport emissions is estimated arround:

- ➤ 116 374 000 tonne CO2 equivalent for Romania;
- ➤ 4 224 513 000 tonne CO2 equivalent for UE.

Considering the above figures, the allocation method based on auctioning and the average price for an allowance at 61,26 EUR^v there will be an additional costs of 258 EUR billion in EU and 7,129 EUR billion in Romania, for the transport entities to be under ETS during 2025-2030.

At the same time, according to the impact study made by the European Commision, inclusion of the transport sector under EU ETS will trigger an increase of 13 euro cent per litre of fuels.

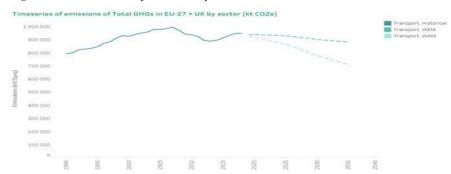


Figure no. 2a. The trend of GHG transport emissions in EU 27+UK

Source:

https://www.eea.europa.eu/data-and-maps/data/data-viewers/eea-greenhouse-gas-projections-data-viewer

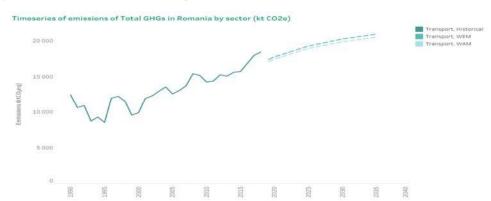


Figure no. 2b. The trend of GHG transport emissions in Romania

Source:

https://www.eea.europa.eu/data-and-maps/data/data-viewers/eea-greenhouse-gas-projections-data-viewer

While the entities to be under ETS will have to bear additional financial pressure for buying the necessary allowances from the market to cover their GHG emissions, the equivalent amount will go to the national Government and Social Climate Fund to be spent on climate measures.

Considering the dynamic of EUA prices and its correspondent volatility, the equivalent amount, at least 5,34 billion EUR in Romania will go to the Government as revenues from auctioning to be spent on climate measures. 25% out of 7,129 EUR billion (the amount of 1,78 EUR billion) will go to the Social Climate Fund where it is to be invested in energy efficiency of buildings, new cars and can also be used to directly help households who are struggling with higher petrol or heating fuel costs.

It should be noted that, under the current trading period, from the total amount of 2,7 EUR billion from the auctioning of EUAs from the phase III, 139 EUR million was used by the Romanian authorities as derogation for the transport sector, namely to the subway infrastructure in Bucharest.

5. Conclusions

EU will exceed its 20% reduction target by 2020 compared to 1990. Romania has done its part and supported the EU effort with a major GHG emissions reduction by 65,2% for the same period. In this respect our country contributed to single objective at EU level which must be reached together by all its MS for the ETS sector reduction by

In the non-ETS sector the EU reduction target by 10% compared to 2005 was exceeded with 5% at EU level while Romania overreached its +19% target with 5,9%.

The data for 2019 and 2020 are projections of GHG emissions developed by the Environmental Protection Agency based on the official reporting by Member States.

While the GHG emissions from the road transport increased by 2020, despite climate policies and efforts in the field, the European Commission proposal from the Fit 4 55 package foresees the extensions of the current ETS to road and maritime emissions and and heating fuels through a carbon price.

Since for the period september 2016 – november 2019 the prices had already risen rapidly as a result of the carbon market reform, deeper decarbonization will trigger additional increasing in the carbon prices which can likely be explained by the tightening of the overall EU emission targets for 2030 from - 40 to -55%. On the one hand this, considering the highest level of EUA price ever reached in the III phase, in the 2025-2030 period there will be a financial effort for the fuel suppliers who will have to buy allowances from the market for at least 258 EUR billion in EU and 7,129 EUR billion in Romania.

On the other hand, the equivalent amounts will become the main financing resource for national, EU and international climate measures including in the transport sector.

Regarding the dynamic of the GHG emissions from transport sector, by 2030 in Romania the trend will be opposite to one at EU level. While the Romanian GHG emissions profile shows a large increase, at EU level there will be a significant GHG reduction by 2030 compared to 1990.

6. References

- Baudry M., Faure A., Quemin S., 2021. Emissions trading with transaction costs. *Journal of Environmental Economics and Management* 108 (2021) 102468
- Carlen B., Dahlqvist A., Mandell S., Marklund S., 2019. EU ETS emissions under the cancellation mechanism - Effects of national measures. *Energy Policy* 129 (2019) 816–825
- Hintermayer M., 2020. A carbon price floor in the reformed EU ETS: Design matters! Energy Policy 147 (2020) 111905
- Osorio S., Tietjen O., Pahle m., Pietzcker R., Edenhofer O., 2021. Reviewing the Market Stability Reserve in light of more ambitious EU ETS emission targets. *Energy Policy* 158 (2021) 112530
- Pietzcker R., Osorio S., Rodrigues R., 2021. Tightening EU ETS targets in line with the European Green Deal: Impacts on the decarbonization of the EU power sector. *Applied Energy* 293 (2021) 116914
- EEA, 2020a. *EEA Greenhouse Gas Data Viewer*. European Environment Agency. https://www.eea.europa.eu/data-and-maps/data/data-viewers/greenhouse-gases-viewer.
- accessed 1.13.20.
- EEA, 2020b. EU Emissions Trading System (ETS) Data Viewer. European Environment Agency. https://www.eea.europa.eu/data-and-maps/dashboards/emissions-trading-viewer -1. accessed 15.11.2021
- European Commission, 2019. COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT. THE EUROPEAN COUNCIL, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS. The European Green Deal COM/2019/640 final. https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1588580774040&uri=CELEX:52019DC0640. accessed 10.11.2021
- European Commission, 2020. REPORT FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT AND THE COUNCIL. Report on the functioning of the European carbon market COM(2020)
 740 final. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52020DC0740 . accessed 10.11.2021
- European Commission, 2021. *Green Deal*, Fit 4 55 package. https://ec.europa.eu/clima/eu-action/european-green-deal/delivering-european-green-deal en . accessed 15.11.2021
- European Commission, 2021. Proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL amending Regulations (EU) 2018/841 as regards the scope, simplifying the compliance rules, setting out the targets of the Member States for 2030 and committing to the collective achievement of climate neutrality by 2035 in the land use, forestry and agriculture sector, and (EU) 2018/1999 as regards improvement in monitoring, reporting, tracking of progress and review. COM/2021/554 final https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52021PC0554 accessed 24.11.2021
- European Commission, 2021. *EU Climate Action Progress Report* https://ec.europa.eu/clima/system/files/2021-11/policy_strategies_progress_com_2021_960_en.pdf . accessed 24.11.2021

- European Council, 2014. European Council Conclusions, European Council, 23 and 24 October 2014, EUCO 169/14 CO EUR 13 CONCL 5.
 https://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/ec/145397.pdf
 accessed
 - https://www.consilium.europa.eu/uedocs/cms data/docs/pressdata/en/ec/14539/.pdf acc 17.11.2021
- European Council, 2020. European Council Conclusions, 10-11 December 2020, EUCO 22/20 CO EUR
 17 CONCL 8. https://www.consilium.europa.eu/media/47296/1011-12-20-euco-conclusions-en.pdf .
 accessed 17.11.2021
- European Parliament, Council of the European Union, 2009. Decision No 406/2009/EC of the European Parliament and of the Council of 23 April 2009 on the effort of Member States to reduce their greenhouse gas emissions to meet the Community's greenhouse gas emission reduction commitments up to 2020. off. J. Eur. Union 140, 5.6.2009, p. 136–148.
 https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A32009D0406.accessed 24.11.2021
- European Parliament, Council of the European Union, 2021. Regulation (EU) 2021/1119 of the European Parliament and of the Council of 30 June 2021 establishing the framework for achieving climate neutrality and amending Regulations (EC) No 401/2009 and (EU) 2018/1999 ('European Climate Law'). off. J. Eur. Union 243, 9.7.2021, p. 1. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32021R1119. accessed 12.11.2021
- European Parliament, Council of the European Union, 2018. Regulation (EU) 2018/842 of the European Parliament and of the Council of 30 May 2018 on binding annual greenhouse gas emission reductions by Member States from 2021 to 2030 contributing to climate action to meet commitments under the Paris Agreement and amending Regulation (EU) No 525/2013 (Text with EEA relevance). off. J. Eur. Union 156, 19.6.2018, p. 26–42. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32018R0842 . accessed 24.11.2021
- United Nation Convention on Climate Change, 2017. unfccc.int. 2017. The Paris Agreement main page. [online].
- https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement accessed 10.11.2021
- https://www.icao.int/environmental-protection/CORSIA/Pages/CORSIA-FAQs.aspxaccessed 16.11.2021

Optimizing the Value Chain of Recycling Biodegradable and Compostable Packaging for Sustainable Development and the Circular Economy

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Abstract

Due to the imperative requirement to either reduce or taking into account the complete elimination of plastic packaging, packaging that is either biodegradable or that qualifies as compostable packaging gained popularity in recent years, and is now perceived by consumers as the solution forsignificant reduction of the negative impact on the environment, respectively of the pollutionwith plastic. This article thus addresses the issue, providing an overview of this situation, of the end-of-life environmental problem of biodegradable and compostable packaging. At the same time, it highlights important aspects regarding the solutions meant to answer the identified problems in order to optimize the value chain of the recycling of these packaging and the implementation of innovative approaches, in view of the sustainable development and the circular economy.

Key words: biodegradable and compostable packaging, life cycle, composting, circular economy **J.E.L. classification:** O44, Q01, Q53, Q56, R11

1. Introduction

There is no question that it is easy to observe the destructive effects of plastic pollution, it can be by acknowledging the images showcasing plastic waste in the oceans (including entire so-called "plastic islands"), the increasing and visible presence of packaging on beaches, as well as the harm brought to both animals and the entire biodiversity.

Recycling became an entire industry and within with, currently there are a number of issues such as the limitation of international markets, the identification of markets or the value of the resale for materials that are sorted which is at the lower end of the scale. Thus, we observe and witness in the present a reconceptualization of packaging and especially of plastic.

Also, worldwide, including in Romania, government strategies are being developed aiming to significantly decrease the amount of plastics used and even the disposable products are being signaled for a decrease in quantity. In response to this situation, environmental activists and consumers are urging government agencies and companies to take action to change the course of action. In the face of these pressures focused on the decreasing level of plastic packaging to the extent of considering eliminating it completely (especially disposable or packaging designed and aimed for a short-lifespan), packaging being either compostable or qualified as biodegradable started to gain attention and spiked its popularity levels recently. Clear example could be a survey taken upon the consumers from the United States that is showcasing how consumers are actually expecting to find more and more packaging that is compostable (Feber et al., 2020), whilst in the meantime a range of 77%-92% of the consumers that live in Europe perceive packaging that is qualified as biodegradable and the types that are entering under compostable packaging classification as being better suited and

less harmful towards the environment when compared to any other different types of packaging (CITEO, 2018; Green Alliance, 2020; INCPEN and WRAP, 2019). Thinking how to handle the pressure and solve the problem either focusing on reduction or to a more extreme level completely eliminate packaging made out of plastic (especially those that are disposable or deisgned to be used as short-life packaging) both biodegradable and compostable packaging started to spike the levels of popularity more recently.

2. Theoretical background on ircular economy and sustainable development - a global priority

It has been realized worldwide that the natural resources that society needs and that are limited, have been exceeded, while creating an ecological imbalance on a global scale, throughirational development. Reality shows that by supporting the three levers simultaneously - socially, economically and environmentally, sustainable development and a common global future can be achieved. In 2015, a historic paper - the 2030 Agenda for Sustainable Development - was followed at the UN General Assembly in New York. This document aims, through its 17 objectives, a better future, not only for us, but also for future generations. Structured on the three levers, the 2030 Agenda was also adopted by Romania. The national strategy for sustainable development represents the contextualization of the Agenda to the national specificity and, implicitly, Romania's transition to a sustainable society. The notion of circular economy represents a new, emerging perspective on sustainable development. The roots of this perspective lie in the biosphere, where anything can become a resource for the next level of the food chain, in order to eliminate waste.

Aiming to minimize mid to long term consequences, a series of measures have been taken at international level, Paris Agreement being one of them, which addresses the negative impact of human activity on the environment. In response, the concept of circular economy was born, which aims to increase resource efficiency and reduce waste. The biodegradable and compostable packaging sector has a high potential and the necessary levers that can act on the road to a circular economy.

The circular economy is meant to ensure the use of resources throughout the life cycle of products or services in the conditions of concomitant reduction of environmental influences and improving the satisfaction of consumers and users.

Various strategies, mechanisms and tools can be adopted for the development of a circular economy. They are integrated in all stages of the production process and are based, among other things, on the 3Rs: reduction at the source, reusing and recycling.

Simultaneously with the circular economy, economic models are also adapting when it comes to GDP, or level of employment, as well as values of investments and entry into new markets (Rizos et al, 2017). Thus, a study led and organized by the European Commission is highlighting that a 1% reduction in resource consumption by streamlining the use of materials could generate a range of 12 to 23 bil. euros in the sector of economic activity, which would result in the emergence of 100,000 to 200,000 euros. new jobs in Europe. (Montaigne Institute, 2016).

3. Research methodology

This paper is based on both qualitative and quantitative elements of research. Regarding the qualitative side of our scientific approach, base on theoretical concepts and documentary study, the article analyzes the phenomenon of biodegradable and compostable packaging highlighting important aspects of their recycling in the context of sustainable economic development and the circular economy. Using data provided by the National Agency for Environmental Protection and Eurostat, quantitative aspects regarding the recycling and composting capacities as well as the management of waste materials were highlighted.

4. End-of-life management of biodegradable and compostable packaging

Increased supply of packaging that is qualified as biodegradable or even compostable packaging, in the same manner of how the multitude of brand-names and logos, is causing misunderstanding and can become misleading for citizens preventing them from making the right sorting gesture.

Consequently, packaging being either biodegradable or compostable might be encountered on the three city collection routes:

- in the recyclable basket: the citizen out of instinct throws any type of packaging inside the basket that symbolizes recyclable, not taking into account any type of indication or guidance for any biodegradable or compostable quality of the respective packaging.
- in the bins allocated for organic rubbish (in the specific areas where the local administration enables the specific collection for those): here there is a specific sign (mark) on the packaging that symbolizes the either biodegradable or compostable nature of the packaging (in can sometimes be even another word that includes before the "organic" addition in front of the name); the citizen relies on this statement and throws the packaging in the organic bin.
- in rubbish: the packaging is labeled biodegradable or compostable; citizens are made to believe that it will decompose and disappear, even if it is thrown away. The citizen is annoyed and not sure where the packaging is going. If in doubt, he can throw it in the trash. The misconception that biodegradable and compostable ones can decompose quickly without harming the environment contributes substantially to the maintenance of abandonment of packaging in nature.

The fact that packaging either biodegradable or compostable packaging exists in three collection ways confirms that these packaging will be shipped to sorting centers, facilities handling composting or focused on anaerobic digestion, landfills and even incinerators. In reality, not all the packaging (be it biodegradable or compostable) is by default compatible to these specific treatment methods.

And so, the matter of the compatibility with treatment-channels should be analyzed soon given that none of the policies regarding waste-management does not clearly define by which method should be paired with which method of end-of-life to bring the best results.

This paper will look into both types of packaging: biodegradable and compostable, highlighting some important issues regarding their recycling. These will be accompanied by recommendations aimed at addressing the issues that were signaled aiming to further optimize the value obtained via recyclability from both point of views of sustainable development and the movement towards an economic system that is circular.

- **a.** Consumers can easily be misled when it comes to biodegradable and compostable plastic packaging: apparently their belief is that they prevent the harmful impact of packaging on the environment, whilst representing an alternative to disposable plastic, which influences the consumer led genuinely choices as well as the actions being taken in the sorting process. The space of use for attributes such as biodegradable and compostable is limited, but this framework is not very efficient:
- the statement 'biodegradable' or 'compostable', which appears on a packaging, is a statement that is linked with the environment and there is no process to be either verified or certified by a party not involved (assessed as 3rd party) with the only exception being the packaging that comes already with it's own international certification and documentation, this makes it easy to question the way in which a packaging's biodegradability or compostability is being assess or identified in this way by the manufacturer:
- Despite there being certifications demonstrating the suitability of a product for composting, those are being handled and ran voluntarily and actually being undertaken in subspecific and controlled laboratories (in terms of air conditioning conditions) other than the one already know in the industry;
- To make a distinction between packaging that is made out of plastic when compared to the one that is compostable can be challenging, which is not enabling a clear and simple decision for the consumer at the moment of purchase nor does it enable simplification for the sorting process.

Recommendation 1: Aiming to enable a more simplistic and to that extent better framework for environmental statements, and in the same time secure an easier way of classifying (understanding) the conditions that should be encountered in a controlled environment (laboratory) to provide the composting certification as well as the conditions from the uncontrolled environment (anaerobic composting and digestion industry) and how the conditions might differ in here.

At European level, including in Romania, the standard that regulates the requirements when it comes to the compostable nature for packaging is EN 13432/2002 – it includes the "requirements for packaging that can be used for composting and biodegradation" as well as the type of test programs and the criteria used in the evaluation in order to grant the final blessing to the packaging. This one

can be recovered either via biodegration or via composting but it must comply with the criteria established by the standard quo so that they are suitable for composting at industrial levels:

- biodegradation status: a minimul of 90% of the substance making reference to must be able to disintegrate in a shorter spam than 6 months;
- composition: there are certain levels that establish the maximum amount of volatile solids as well as fluorine and heavy metals in the composition;
- disintegration: the intial material (considered original) must be able to disintegrate under specific composting conditions;

Compostable packaging is identified by the application of labels that are certified based on Internationl Standards for Quality and to this respect the authority that represents the certification body shall ensure that the standard is complied with at all times through continuous audits or recertification audits.

- **b.** In a relatively short period of time, a significant increase in the amount of compostable packaging in circulation is expected, including in the field of anaerobic composting:
- it is necessary to implement a strategy for the recovery of municipal organic waste with the aim of managing 100% of the organic waste resulting from the residential sector, as well as from industries, enterprises and institutions;
- the ban on disposable plastic, be it under the form of products or directly that of packaging, linked mostly to the food industry, and the highlight and promotion of innovation regarding compostable solutions.

Recommendation 2: Implement a method to keep under control and quantify the progress on both the volume that is currently being secured as well as controlling the end-of-life channels, by intergrating compostable packaging under a new specific category in the pool of research conducted at regional level.

- **c.** Regarding the 3R hierarchy, it is the duty of the government to clarify and simplify the management method that should be undertaken and adopted when handling organic waste, mostly it is about recycling (either via composting and anaerobic digestion). For compostable packaging, the situation is not defined:
- Consequently, there is compostable packaging waste in the three collection routes: the recyclable waste basket, the organic waste bin and the waste bin, and in consequence also in the 3Treatment channels with their specific respective problems:
 - Recycling: risk of contamination for any other materials that are recyclable;
 - Composting or anaerobic digestion:
 - Disposal: are not suitable for decomposition.

Recommendation 3: The authorities must be clearly routing for the implementation of recycling from the perspective of an economy that tries to be circular, enabling thus the fiber packaging to be recycled and in consequence become new products.

Recommendation 4: The application of the 3R hierarchy in the management of end-of-life compostable packaging could be supported by publications on the subject, along with a list of materials, standardized packaging and the existence of field control measures.

- **d.** In a practical manner, the circuit followed by a packaing that is compostable with the industrial-sector of anaerobic composting and digestion is directly linked with way in which unwanted materials are being handled:
- the management of packaging or even sorting materials should not be carried out by the same industrial sector of anaerobic composting and digestion having the final goal to produce high-quality compost or digestate that will be returning to the soil (due to mixture possibility);
- plastic packaging (being it compostable or not) is at risk of being mixed with any other unwanted materials and then accidentaly send for disposal altogether.

Recommendation 5: Following the model of some organization that defined by specific applications which type of compostable packaging could be considered as preferred and in turn make clarifications with respect to the type of management that should be considered as a priority in handling them.

Recommendation 6: Biodegradable and compostable packaging ought be covered by the extended responsibility of the manufacturer and be subject to price eco-modulation measures related to their impact on their end-of-life management.

Recommendation 7: In order for packaging in circulation to be reusable, recyclable or containing recycled material, it is necessary to ensure an easy-to-apply legal framework.

- **e.** The purpose of anaerobic composting / digestion is to bring organic matter back into its production cycle:
 - if not composted, compostable packaging is not harmful, but does not add value;
- despite plastic packaging being removed significantly upstream and / or downstream of the anaerobic composting / digestion process, small fragments could still be caught in the compost or digest. The impact brought to the environment by the residual microplastics representing a source of contamination for the soil, represents a top-concern for the specialists.

Recommendation 8: The impact of compostable packaging on the quality of the material used in soil structuring and also the impact of residual microplastics must be carefully documented.

f. We cannot say that any innovation brings progress. Companies can successfully use eco-design for an overview of the factors that influence the design, supply and final treatment processes of packaging, without compromising the protection and preservation of the product. For this purpose, life cycle analysis can be used for better environmental choices.

Key factors in green design enable the:

- fulfilment of certain needs that are to some extent specific to each product aiming to either protect in focusing on avoiding the loss of the product or to preserve it with applicability towards both reducing and avoiding the waste of food;
- creation of the conception of end-of-life thinking focused on designing and planning depending on the avalabile system or even channels where is the packaging most likely to find the end-of-life and what is the context there;
- reduction of the impact upon the environment as well as a smart way of putting to use resources: thinking of it in the same manner as one would in an economy that is circular and relies on ecodesign to facilitate and guide the life-cycle of the packaging taking into account from the very beginning the full impact upon the environment brought by each profile of each product mostly reffering to the life-cycle analysis, and reffering in the same time also to the reduction upon the consumption of resources focusing on maintain them in the system and enabling their continuous circulation;
- transparency and traceability upon the placement and moment of life of the packaging starting from the moment of its purchase and looking at what is the choice of materials / suppliers / providerd and following it towards the end of its life

Recommendation 9: Opening and ensuring easy-access to eco-design for packaging companies. As a wrap-up, it is of great importance to take into account that the evolution in terms of both research and innovation in biodegradable and compostable materials is significantly stronger today compared with the past and it develops at an exponential rate. What is more, those were the subject of more than 1400 scientific publications year-on-year for the past 10 years (Gontard et al, 2018). And what is even stronger in acknowledging the importance of the subject – both the research and the innovation are coming from across the world signaling the increased importance upon the matter.

5. Findings

Concerning the regulatory framework looking at the level of recovery and the recyclability percentage of packaging being either biodegradable or compostable in Romania we can appreciate as follows:

The European Union's waste policy is based on the concept known as the waste hierarchy, this creates a level of classification of the options for managing waste looking at the impact upon the environment (sorted best-to-worst) taking into account measures linekd with: level of prevention, ability to reuse, suitable for recyclability, ability to recover energy or dispose of it via incineration or types of storage. Based on the presented hierarchy it is easier to prioritize in an efficient manner the maximization of waste prevention, enable the minimization of the level of waste (in volume), increase the level of reusable waste, enable recycling, energy recovery and, last but not least, enable the disposal by either incineration or storage. This alignment and order is not meant to serve as a rule that is followed to the dot, but rather it aims to guide the process and fasten the transition to a society

that is focused on both recycling and reusage thus minimizing the need to focus on waste management linked with the process for incineration and storage.

By being a member of the European Union, Romania is also mandated to comply with the requirements of its legislation and has developed national strategic waste management documents that include two main components, namely:

-National Waste Management Strategy – legal-framework that is stating and setting the country's objectives linked with the processes for handling waste management;

-The National Waste Management Plan – with is clarifying and stating the plan bringing to life the strategy and it includes both direction as well as clear steps to pave the path towards accomplishing the objectives as well as the methods to be followed in following the strategy and the respective owners of each step with their responsibilities.

The National Waste Management Strategy (nationally called "SNGD") and the National Waste Management Plan (nationally called "PNGD") are owned, developed and followed through by the Ministry of Environment and Sustainable Development, linked with it's responsibilities, this being set by the national adoption and to certain extent adaptation of European legislation in the sector of waste management and this is linked with the provisions Government Emergency Ordinance no. 78/2000 regarding the waste regime, with the subsequent completions and modifications.

In recent years, the management of waste materials has received special attention from the government, and especially in the management of organic materials. Indeed, the collective awareness of the population about the end of the life of packaging and the increasing pressure on companies to demonstrate greater social responsibility have led the government to create a framework for the legal regulation of recovery activity and recycling of organic materials.

Although this process of recycling biodegradable and compostable packaging is currently highly developed in many European countries, it is still in its infancy in our country, as there is no organized network at the level of territorial administrative units dedicated to the recovery of organic waste. In order to integrate into an economy of circular organic matter, compostable biodegradable products must no longer end up in landfills or incineration.

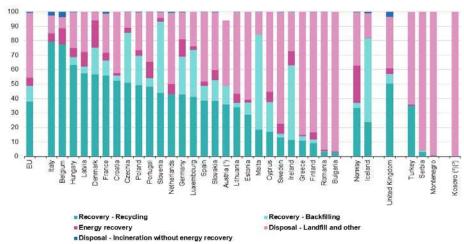


Figure no. 1 Waste treatment by type of recovery and disposal, 2018 (% of total)

Source: Eurostat

In the European Union, the big majority of waste was treated in recovery operations (54.6%) splitted as follows: highest percentage towards recycling (37.9% of the entire amount of waste treated), another 10.7% going to landfill and significantly less towards energy recovery (6.0%). The rest of it, still above 45% was to the biggest extent landfilled (38.4%) or to a much smaller extent vs in the past, barely reaching 1% towards those that got incinerated without energy recovery, and the difference representing the part that was disposed of accounting for 6.3%. The figure above showcases the discrepancies in between EU Member States in their adoption, usage and preference of the various treatment methods. Examples might be in the sense of countries with very high

recycling rates (Italy and Belgium), or those that prefer waste disposal such as Greece, Bulgaria, Romania, Finland and even Sweden.

In countries such as Belgium, the Netherlands, Denmark, Sweden, Germany, Austria and Finland, waste disposal is almost non-existent. In these countries, incineration plays an important role alongside recycling. Germany and Austria are also the main EU countries where recycling is practiced.

As a consequence, a waste management program - the compost component - needs to be urgently developed in Romania. A first step was taken through—the entry into force on February 20, 2021 of Law no. 181/2020 on the management of compostable non-hazardous waste. Thus, starting with January 1, 2021, the authorities respective with their power of influences — either local public adminiration or in some cases the subdivisions of municipalities with their respective counteparts in inter-community development associations, are obliged to put in place and secure the infrastructure to collect separately—the waste that qualifies as biodegradable and to also extend this manner of collection in separate ways moving it from the micro level (door to door) to the large urban areas, which should be coming to complement the "pay for what you throw away" scheme and encourage individual composting in rural households (MO, 2020). So far, the collection of the fraction of organic waste in Romania has not been implemented.

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Figure no. 2. Map of compost depots in Romania

Source: National Agency for Environmental Protection

According to the data of the National Agency for Environmental Protection, Romanian has composting capacities of organic waste totaling not less than 1,433,533 tons / year. Of these, only 8.7% are functional installations. The rest is divided into unfinished installations (under construction) (36.4%) and (worst) installations that do not work for various reasons (54.9%) (Figure no. 2).

At large, the widespread promotion of waste prevention and product reuse is encouraged. Recycling (including composting) and, as far as possible, the use of waste in energy production are also encouraged. Waste disposal, even if one of the cheapest solutions, is considered the most harmful choice.

6. Conclusions

In order to optimize the value chain of the recycling of packaging that is either biodegradable or compostable, aiming to achieve a development that is also sustainable and to pave the way towards an economy that is circular whilst also taking into consideration objectively the problem brought to the environment when the packaging reaching its end of life, it must be borne in mind that:

Unlike biodegradable plastics, whose degradation time is highly variable, that of compostable plastics should correspond to that of green waste and even waste related with food in general. The lack of ability in controlling the use of statements linked with the environment that are based on self-reported data and the discrepancy between both laborator (controlled) and field (uncontrolled) conditions for the composting certifications showcase that the control is still don in an ineffective manner.

Both the accelerated rhythm to which usage of organic material is adopted as well as the level of recovery services and the development of the industrial composting and biomethane sector, planned for the coming years, will end with a big increase of quantities of organic materials recovered and treated. Thus, we should also note a greater presence of packing that is compostable in 3 collection options that are being handled locally (baskets made of recyclable materials, dedicated bins for the waste that is organic and the regular garbage bin). Currently the guidelines provided by the competent authorities regarding industrial composting or the sector of anaerobic digesting is not clear on recommending or imposing a specific approach.

Despite there being worries about the ability to handle and act upon the quality of the compost that returns to the soil, more specifically regarding the attempt to minimize the level of micro-plastic, this is still happening leading to micro-plasting being a source of soil continuation that cannot be ignored.

To attain innovation in the packaging world, the industry turns towards eco-design as a tool that enables analysis looking at a variety of criteria linked with the environment as well as socio-economic criteria. Such an approach that focuses on the prevention also benefits on chosing the level of compromise as well as the significance of certain actions that may vary. To this extent, the role of eco-design is to fullfill the role of a protector and enable preservation of products in order to avoid either food-loss or any other type of waste that is linked with a sizeble environmental impact. In the same time, this also makes it possible to think from the very beginning (considered as the design stage) about the level and classification of recyclability or if possible the compostability of the packaging by taking into account and thinking of the already existing channels and strategies whilst also taking into account the current moment when the existing packaging is ending its life. Thinking in terms of life-cycle enables a helicopter view upon the options and amount of possibilities aiming to reduce impact upon the environment, and in the mentime it also enables a control usage of the resources with the sole purpose of maintaining the cycle and design a circular system in turn avoiding the extraction of incremental raw materials. To conclude with, green design makes it possible to ensure responsible supply, striving for transparency and traceability.

7. References

- Feber, D., Granskog, A., Lingqvist, O. and Nordigården, D., 2020. Sustainability in packaging: in the minds of US consumers. [Online] Available at: https://www.mckinsey.com/industries/ paper-forest-products-andpackaging / our-insights / sustainability-in-packaging-inside-theminds-of-usconsumers [Accessed on November 2021]
- Gontard, N., Guillard, V., Gaucel, Fornaciari, C., Angellier-Coussy, H., Buche, P. 2018. The Next Generation of Sustainable Food Packaging to Preserve Our Environment in a Circular Economy Context, Frontiers in Nutrition.
- Rizos, V., Tuokko, K., Behrens, A., 2017. *Circular Economy: A Review of Definitions, Processes and Impact*, Center for European Policy Studies, Policy Paper no. 2017/8.
- Green Alliance, 2020. *Plastic promises: What the food sector really does about packaging*. [Online] Available at: < https://www.green-alliance.org.uk/resources/Plastic_promises.pdf.>[Accessed on December 2021]
- CITEO g estionplastique-fra.pdf., 2018. Responsible packaging What is the perception of the French? What are the golden rules for eco-design? [Online] Available at: https://bo.citeo.com/sites/default/files/2019-06/CITEO_ETUDE%20SHOPPER_2018_final.pdf [Accessed on November 2021]
- EDDEC Institute, 2021. *Circular Economy* Online] Available at: [Accessed on December 2021]

- INCPEN and WRAP, 2019. *UK Survey on Citizens' Attitudes and Behaviors on Food Waste, Packaging and Plastic Packaging*. [Online] Available at :< https://wrap.org.uk/resources/report/citizens-attitudes-behaviours-relating-food-waste-packaging-and-plastic-packaging {Accessed on December 2021]
- Institut Montaigne, 2016. *The circular economy: reconciling growth and the environment*. Institut Montaigne, France, ISSN 1771-6756.
- Official Gazette, Part I, no. 762 / 20.08.2020. Law no. 181/2020 on the management of compostable non-hazardous waste.

Investment and the Importance of Investment in the European Economy-Comparative Analysis

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Abstract

The activity of making an investment has a central role in economic life. In a broader sense, the investment involves on the one hand a long-term investment that is presumed to have favourable effects, an allocation of resources, saved capital, in profitable activities, in the hope of their recovery at the expense of future income, on the other part also implies the modification of the patrimony generated by the realization of some corporal, intangible and even financial immobilizations, also presumptions and a complex economic process, generator of other processes. Thus, this article presented the importance of investments in a country's economy and how the realization of an investment can be influenced by different factors through an analysis of graphs that represent investments as a percentage of GDP.

Key words: investments, GDP, capital market

J.E.L. clasification: E22, P45

1. Introduction

The first part of this article is composed of a theoretical approach to the notion of investment. It also addressed issues such as the investment process and sources of financing to make an investment.

In the economic life, the investment activity occupies a central place, both in the sphere of production of goods and services, and in the sphere of consumption. This is due to the processes of training and multiplying the effects that any investment project generates, regardless of the sector of activity in which it is implemented.

The realization of an investment price, in the sphere of the production of goods and services, has as effect the increase and diversification of the offer and, implicitly, if this is validated by the market, the increase of the incomes of the economic agents. At the same time, the increase in employment will be influenced directly or through the training effect. On the other hand, the increase of the number of employees and / or of their salary earnings leads, in the last instance, to the increase of the demand for goods and services.

In the second part of the project, an analysis was made of graphs in which investments were represented as a percentage of GDP in Romania, Hungary, Bulgaria and Poland. This analysis was performed over a period of ten years, namely, 2010-2020.

GDP is the main indicator of the national economy and is defined as the value of all goods and services produced in the economy minus the value of those goods or services used in their creation. It can be calculated using different methods: the production method, the expenditure method and the revenue method.

2. Literature review

The term investment or in other words the process of investing over time has been assigned a multitude of definitions. One of these definitions, presents investments as the acquisition of an asset to produce a capital gain at the time of its sale or to obtain a constant income, or a combination of them. Investments also involve the allocation of funds or capital to an enterprise, with the aim of making a profit. Although the definitions are multiple, the meaning is the same, namely, the

allocation of cash or capital at present to obtain a gain in the future, whether it is a constant income over time, or a capital gain obtained at the time of resale of the asset.

The investment activity has a complex content. This involves, on the one hand, a series of activities that involve effort consisting in formulating investment options, arguing and substantiating them within a project, in terms of economic efficiency, project selection and investment decision making, ensuring the financing budget of each project, creating the technical-economic conditions for achieving the investment objectives. On the other hand, the activity of investing cannot be detached from its effects consisting in fixed assets put into operation, the support of some jobs, increase of production and of gross domestic product or other implications in departmental or territorial plan. (Lazar, 2002)

As explained by Burja Camelia in the book The Economic Efficiency of Investment, in economics in a broad sense by investment is meant a present expense made to obtain a future profit. In a narrow sense, investments mean expenses for new fixed funds, or for the development and improvement of existing ones". (Burja, 2005)

The notion of capital investments represents "the totality of the expenses through which new fixed, productive and non-productive capitals are created or acquired, the existing ones are developed, modernized and reused." (Romanu, 1993)

There is a double link between investment and economic growth, on the one hand economic growth is influenced by the volume of investment, and on the other hand the quality of investment influences economic growth, this can be reflected in the economic efficiency of investment.

"Investments are a very sensitive area of human activity. The orientation of funds towards certain objectives is done according to needs, but also to the existing global trends, the state of the economy, the desires of consumers, even fashion, reasons why investments must always be treated with the utmost care by entrepreneurs. Investments directly or indirectly affect economic growth." (Romanu, 2000)

Thus we can say that investments according to the destination of allocated funds can be divided into two categories:

- Capital investments, these involve the purchase of goods, for example a factory or various equipment to produce goods that will be sold later;
- Financial investments involve the purchase of securities, such as securities, works of art, or the creation of bank deposits, etc.. (Florea, 1995)

Investments at the level of economic activities play an important role, both in the sphere of production of goods and services, and in the sphere of consumption, this being the factor that simultaneously influences demand and supply.

In investment, the demand for a company's products and its profitability are two motivating factors for them. To meet the increased market demand, new investments are needed to increase production. For an enterprise in the sphere of production of goods and services, its offer to be increased and diversified, an investment project must be made and, implicitly, if it is validated by the market, the increase of the incomes of the economic agents. The increase in employment will also be directly influenced by the training effect. Thus, the increase in the number of employees and / or their earnings ultimately lead to an increase in demand for goods and services.

The main attributes of investment are the following:

- Time: The expense is made now, and the reward comes after a period; thus, there is a time lag between the time the investment is made and the time the profit is made;
- Risk: This attribute represents the sacrifice made at the time the investment is made. And its profit and size are uncertain. In other words, if the expenses have a reasonable degree of certainty, the effects presuppose only hopes;
- The concrete material content of the investment effort: Investments represent a flow of values that have as a starting point a structure of resources diverse in nature and volume (financial funds, part of revenues and savings, human resources, etc.);
- Efficiency: An investment is accepted and triggered only when the effects, the absolute total amount of future revenues, are higher than the initial expenses.

Foreign direct investment (FDI) occurs when a company, a multinational company, or a person from one country makes an investment in the assets of another country or holds shares in its companies. It generally takes the form of acquiring holdings in an existing undertaking in the foreign country or setting up a subsidiary to expand the operation of an existing undertaking in that country.

There are 4 types of foreign direct investment, these types are differentiated according to the contribution of the flow of foreign equity participations in foreign direct investment enterprises:

- Greenfield: this type of investment involves the establishment of enterprises by or together with foreign investors (investments starting from scratch);
- Mergers and acquisitions: this mean that foreign investors take over all or part of the businesses from residents;
- Business development: this type of investment also involves increasing the capital holdings of foreign investors in enterprises in the country of residence;
- Restructuring of companies: and lastly, this type of investment requires foreign investors to finance, through capital contributions, loss-making enterprises, in order to make them profitable.

Direct Investment impact on the economy is beneficial, as it develops new capacities, favouring the employment and consumption. Differently, the acquisitions may have some adverse effects, among consequences, being possible the withdrawal of some activities and jobs respectively. By the impact produced, the Foreign Direct Investment signifies a real potential for the economic development, the increase of the competitiveness and the performances of the host country companies. (Popa, 2020)

Indirect investments, also called "foreign portfolio investments", occur when companies, financial institutions or individuals buy shares in companies on a foreign stock exchange. These investments are not made with the intention of acquiring controlling interests in the issuing company. Thus, this type of investment is of a short-term nature and is made to take advantage of favourable exchange rate fluctuations or to obtain short-term profits for interest rate differences. These investments provide investors with the opportunity to diversify their portfolios and better manage the associated risks.

Foreign portfolio investment can also help strengthen domestic capital markets by improving liquidity and contributing to improving their functioning. This will ensure an optimal allocation of capital and resources in the national economy. In emerging economies, portfolio investment abroad can be a positive factor that contributes significantly to its development, creating significant wealth.

According to the constitution, the investments are divided into:

Net investments - are made up of amounts of money coming from the net national product and aim to increase fixed capital and stocks of raw materials and materials;

Gross investments - in the net investment is added the amortization which has as main purpose the replacement of the used fixed capital, showing the absolute increase of the fixed capital.

The autonomy of the management of investment resources is characteristic in the market economy, the investment fund is constituted by the economic agent, it resorts to bank loans, etc., looking, at the same time, for the respective amounts to be used judiciously, as efficiently as possible.

The sources from which the investments can be financed are the own funds of the enterprises, the issuance of shares, long-term or medium-term bank loans, allocations from the state budget, sponsorships, and from outside, they can be bank loans, direct capital investments. (Iloiu, 2002)

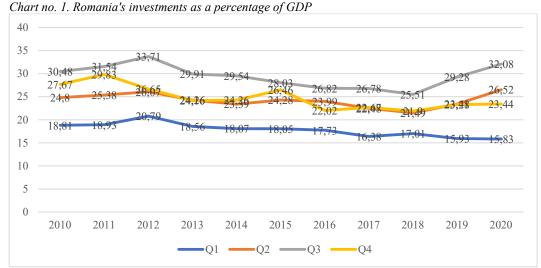
The main source of financing the enterprises is the self-financing that realizes the financing of the investments in the conditions of the autonomy of the economic agents. The state can intervene at the level of this activity, but only when the activity of the unit is of national interest or has majority state capital.

The funds that intervene in the self-financing process depend on the self-financing capacity and are the amounts from the amortization of fixed assets, provisions, amounts from the net profit.

External sources of financing intervene in the implementation of internal resources if they do not rise to the level required by the investment financing plan adopted. (Burja, 2005)

3. Research methodology

In the following, an analysis will be made of four graphs in which are represented the investments as a percentage of GDP made in Romania, Bulgaria, Hungary and Poland in the period 2010-2020.



Source: https://www.theglobaleconomy.com/rankings/investment percent of gdp/

Chart 1 shows the investments made in the Romanian economy as a percentage of GDP. Investment is a component of GDP, which is a macroeconomic indicator that reflects the sum of the market value of all goods and services for final consumption, produced in all branches of the economy within a country within a year.

The chart can distinguish three lines, namely the blue one represents the investments as a percentage of GDP in the first quarter of each analysed year, the orange line represents the investments in the second quarter, the yellow line represents the investments in the third quarter and the colour one grey represents investments as a percentage of GDP in the last quarter of each year.

We can see that the highest percentage is in the third quarter for the entire period analysed, namely 2010-2020.

Also, the highest percentage of investments as a percentage of GDP recorded in the period 2010-2020 was in the third quarter of 2012 with a value of 33.71%. And the lowest percentage of investments was registered in the first quarter of 2020 with a value of 15.83%.

As can be seen in the graph for the entire period analysed from 2010 to 2020, the lowest percentage of investments was recorded in the first quarter of each year. And the highest values were recorded in the third quarter of each year analysed.

From 2010 to 2012, investments as a percentage of GDP had an increasing trend in the first three quarters, so the percentages increased from 18.81% to 20.79% in the first quarter, from 24.8% to 26, 07% in the second quarter and from 30.48% to 33.71% in the third quarter. And in the fourth quarter the percentage increased in 2011 compared to 2010 from 27.67% to 29.83%, and in 2012 it decreased compared to 2011 from 29.83% to 26.65%.

The evolution of the first quarter of the period between 2012 and 2020 shows a predominantly decreasing trend, registering a share of 20.79 in 2012 and reaching a share of 15.83 in 2020. Exception to the mentioned trend is the share registered in 2018 in the amount of 17.01% compared to 2017 in which a percentage of 16.38 was registered, this representing the only growth trend in the period 2012-2020.

In the second quarter, the evolution in the period 2012-2014 showed a decreasing evolution registering a value of 26.07% in 2012, and a value of 23.39% in 2014. In 2015 compared to 2014 the percentage of investments increases by at 23.39 at a rate of 24.28. This increase is followed by a decreasing trend until 2018 reaching a value of 21.49%. Also, in 2020 compared to 2018, the share increased to 26.52 percent.

The third quarter shows a decreasing trend in the period 2012-2018, thus registering a value of 33.71% in 2012 and 25.51% in 2018. From 2018 to 2020, the trend becomes an increasing one, thus the percentage registered in 2020 reaches a value of 32.08%.

Regarding the fourth quarter, in 2012-2020 it registered both growth trends and decreasing investment trends as a percentage of GDP. The decreasing trend is present in the period 2012-2014, starting from a percentage of 26.65 in 2012 and reaching a percentage of 24.26 in 2014. The year 2015 shows an increase of the percentage compared to the previous year by 2.2 percent. In the period 2015-2018, it continues with a decrease in the percentage of investments from 26.46% in 2015 to 21.9% in 2018. The trend is changing in recent years, thus analysed from 21.9 percent registered in 2018 to reach a percentage of 23.44 in 2020.

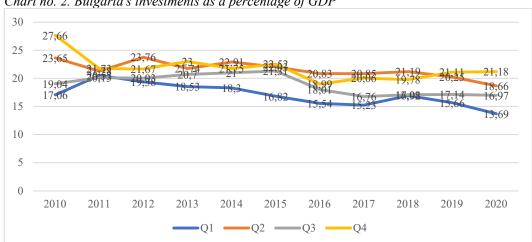


Chart no. 2. Bulgaria's investments as a percentage of GDP

Source: https://www.theglobaleconomy.com/rankings/investment_percent_of_gdp/

Chart 2 represents the investments made in the Bulgarian economy, for the period 2010-2020.

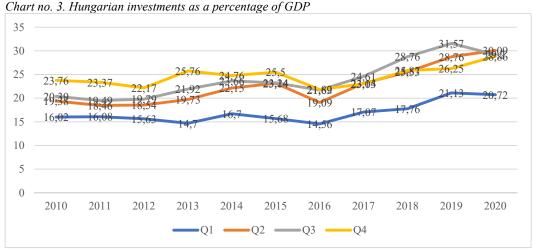
As can be seen in the graph, the highest value of investments as a percentage of GDP was recorded in the fourth quarter of 2012, these having a value of 27.66 percent of GDP. On the other hand, the lowest value recorded in the analysed period was in the first quarter of 2020 with a value of 13.69% of GDP.

The evolution of the first quarter from 2010 to 2011 was an upward one, thus reaching a value of 20.53% in 2011 from 17.06 percent in 2010. From 2011 the trend has become a downward one thus reaching a value of 13.69 percent in 2020, except for a small increase in value in 2018, this being 16.92%.

The second quarter of the analysed period showed an evolution like that of the first quarter. As can be seen in Chart 2, the evolution of investments as a percentage of GDP for the period 2010-2020 was a decreasing one with small increases in three moments, namely in 2012 when the value reached 23.76%, with an increase of 0,11 percent compared to 2010 with a value of 23.65%. The second increase was in 2014 with a value of 22.91%, 1.17 percent higher than the previous year. And the third increase was registered in 2018 with a value of 21.19 percent, 0.34% higher than in 2017.

Regarding the trend of the third quarter, we can see from the chart that from 2010 to 2012 investments had an upward trajectory, reaching a value of 20.03 percent from 19.04% recorded in 2010. 2012 to 2015, the trend of investments made in the Bulgarian economy remained at about the same values of 20, 21 percent. The trend was decreasing in the next period from 2015 to 2020, so in 2020 the registered value was 16.97%, 4.34 percent less than in 2015.

The fourth quarter recorded the highest values compared to the other quarters, but the trend for the period 2010-2020 of the quarter was generally decreasing. From 2010 to 2015, the value of investments as a percentage of GDP in the fourth quarter decreased to 22.52%, by 5.14 percent less than in 2010 when the value was 27.66. And from 2015 to 2020, the value of investments decreased by 1.34% reaching the value of 21.18 percent.



Source: https://www.theglobaleconomy.com/rankings/investment_percent_of_gdp/

Chart 3 shows the investments as a percentage of GDP in Hungary over a period of ten years, namely 2010-2020.

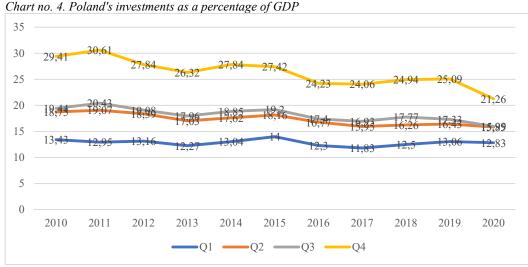
At the level of the Hungarian economy, the investment trend as a percentage of GDP in the period 2010-2020 was an ascending one.

As can be seen in the chart in the first quarter, the evolution of investments can be said to have been constant because the percentage of investments made remained at similar values from 2010 to 2016, these values between 14 and 16% of GDP. From 2016 to 2020, the percentage of investments increased to 20.72%, 6.16% more than in 2016.

An evolution like that of the first semester can be observed in the second semester, so during 2010-2013 the values of investments were between 18 and 19 percent of GDP. From 2013 to 2020 the trend was an increasing one, so in 2020 the value of investments as a percentage of GDP was 30.09%. An exception to the upward trend took place in 2016, thus registering a decrease with a GDP value of 19.09%.

In the third quarter of 2010 the value of investments as a percentage of GDP was 20.39%, the trend of the value of investments in the next two years was a decreasing one, so in 2012 the registered value was 19.79%. Until 2014, the evolution of investments was increasing, thus reaching a percentage of 23.66 of GDP. This growth continued in the following years less in 2016 when the value of investments as a percentage of GDP suffered a small decrease to 21.69%. The maximum point registered in the evolution of investments made in the third quarter was in 2019 reaching the value of 31.57% of GDP.

The fourth quarter of the analysed chart shows an upward evolution almost for the entire analysed period except for two moments. The first moment when the trend decreased was registered in 2012 with a value of 22.17, with 1.79% less than in 2010 when the value was 23.76. And the second moment of fall was recorded in 2016 reaching a value of 21.82% of GDP. The maximum value of investments as a percentage of GDP registered in the fourth quarter was in 2020 with 28.86%.



Source: https://www.theglobaleconomy.com/rankings/investment_percent_of_gdp/

Chart 4 shows the investments made in the Polish economy as a percentage of GDP.

The first quarter, as can be seen in the graph, shows a constant evolution, the value of investments as a percentage of GDP for the entire analysed period registers values between 11.83% and 14%. The highest value of 14% was registered in 2015, and the lowest value of 11.83% in 2017.

The second quarter registered values between 15.85% and 19.07%, at the same time being the lowest and highest value found in the analysed period. From 2010 to 2013, the value of investments as a percentage of GDP decreased by 1.72 percent, thus registering a value of 17.03%. By 2015, the percentage of investments made in the Polish economy increased to 18.16%. By 2020, the percentage of investments has decreased to 15.85%.

The value of investments in the third quarter of 2010 was 19.44% of GDP. Until 2013, the trend was downward, reaching 17.96 percent. In the next two years the trend was upward, and the percentage of investments made in Poland increased to 19.2%. From 2015 to 2020, investments suffered a decrease, so in 2020 the value of investments as a percentage of GDP was 15.99%.

Regarding the fourth quarter, the evolution of investments was both increasing and decreasing. A small increase took place from 2010 to 2011, going from 29.41% to 30.61%. Until 2013, the trend was decreasing, and the value of investments this year was 26.32%. From 2013 to 2015 the percentage of investments increased from 26.32% to 27.42%. It followed a decrease in the following years, reaching a value of 21.26% in 2020.

4. Findings

Investments play an important role in a country's economy, it also helps in both the social and economic development of the country. As analysed in the graphs above, investments can be influenced by several aspects, and for an investment to take place, investors must perform a series of steps called the investment process.

The graphs show that in all countries the percentage of investments can increase and decrease from one year to another, including from one quarter to another.

5. Conclusions

In the market economy marked by the competitive system, it is necessary for the actions of economic agents to be based on the coordinates of a high economic efficiency, the essential condition for ensuring their competitiveness.

We can say that investments play an important role in any economy, because it contributes to the economic and social development of the country. It also influences the demand and supply in the production sphere. On the one hand, the investments contribute to the increase of the supply of goods

and services by increasing the productive capacity of the economic agents, and on the other hand it generates additional demand to the economic agents supplying the components of the investment objective. workforce.

A very important element in the process of investing is the source of financing the investment, to achieve a functional balance, investors do not use in the process of finalizing investments only their own sources, which are often insufficient, but make a combination of them with additional financing sources. in other words, external sources of financing.

Investment is a component of GDP, which is a macroeconomic indicator that reflects the sum of the market value of all goods and services for final consumption, produced in all branches of the economy within a country within a year.

An analysis was made of four charts in which are represented the investments as a percentage of GDP made in Romania, Bulgaria, Hungary and Poland in the period 2010-2020.

In Romania, the highest percentage of investments as a percentage of GDP registered in the period 2010-2020 was in the third quarter of 2012 with a value of 33.71%. And the lowest percentage of investments was registered in the first quarter of 2020 with a value of 15.83%.

In terms of investment in Bulgaria, the highest value as a percentage of GDP was recorded in the fourth quarter of 2012, with a value of 27.66 percent of GDP. On the other hand, the lowest value recorded in the analysed period was in the first quarter of 2020 with a value of 13.69% of GDP.

At the level of the Hungarian economy, the investment trend as a percentage of GDP in the period 2010-2020 was an ascending one. The highest value recorded was in the third quarter of 2019 with 31.57%, and the lowest value was in the first quarter of 2016 with a percentage of 14.56.

And the last country analysed was Poland, which recorded the highest value of investments as a percentage of GDP in the fourth quarter of 2011 with 30.61%, and the lowest value was 11.83% in the first quarter of 2017.

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7. References

- Lazar M.C, 2002. Economia, Eficienta si finantarea investitiilor [Economy, Efficiency and investment financing]. Bucharest: Economica Publishing House
- Burja C., 2005. Eficiența economică a investițiilor [Economic efficiency of investments]. Cluj-Napoca: Risoprint Publishing House
- Romanu I., Vasilescu I., 1993. Eficiența economică a investițiilor și a capitalului fix [Economic efficiency of investments and fixed capital]. Bucharest: Didactic and Pedagogical Publishing House
- Romanu I., Vasilescu I., Cicea C., 2000. *Investiții [Investment]*. Bucharest: Economica Publishing House
- Staicu F., Pârvu D., Stoian M., Dumitru M., Vasilescu I., 1995. *Eficiența economică a investițiilor* [Economic efficiency of investments]. Bucharest: Didactic and Pedagogical Publishing House
- Iloiu M., 2002, *Eficienta economica a investitiilor [Economic efficiency of investments]*. Petrosani: Focus Publishing House
- Florina Popa, 2020. Some aspects regarding the impact of foreign direct investment in economic development. *Studies and Scientific Researches. Economics Edition*, No 31.
- TradeVille, [online] Available at: https://tradeville.ro/tradepedia/investitii [Accessed 11 October 2021].
- Administrare.info, 2019, [online] Available at: https://administrare.info/economie/5315-rolul-investitiilor-in-economia-nationala [Accessed 25 October 2021].
- Concepte Team, 2018, Conceptecom, [online] Available at: https://conspecte.com/bazele-activitatii-investitiile.html [Accessed 11 October 2021].
- Acces2markets, Comisia Europeana, [online] Available at: https://trade.ec.europa.eu/access-to-markets/ro/content/tipuri-de-investitii> [Accessed 26 October 2021].
- Horobet A., Popovici O., 2017. Investitiile straine directe: evolutia si importanta lor in Romania [Foreign direct investments: their evolution and importance in Romania], [online] Available at: https://fic.ro/Documents/view/Studiu-Investitiile-straine-directe-evolutia-si-importanta-lor-in-Romania > [Accessed 2 Nov 2021].

Satisfying the Needs of Consumers - Tourists in Terms of the Quality of Services Provided

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Abstract

The scientific research of the tourist phenomenon in terms of the quality of services provided integrates a wide thematic area of investigation of conceptual notions related to this topic, and highlighting the determinants, trends and manifestations of quality are based on contemporary realities of tourism consumption.

The aim of the study is to determine the role of quality on the mission of the tourism enterprise in relation to the consumer-tourist, as well as to formulate proposals that would contribute to improving the performance of tourism enterprises, with the implementation of quality management.

The objectives of the research are to elucidate with scientific rigor the complexity of the problems related to the quality of the tourist service in relation to the consumers-tourists involved in tourist consumption, as well as the reporting, analysis and characterization of the typology of deficiencies.

Key words: quality, consumer-tourist, tourist products and services, tourist enterprise **J.E.L. classification:** M1, L15

1. Introduction

The quality of tourism products and services on the tourism market must represent one of the main focuses of the quality management. Quality expresses the satisfaction of consumers-tourists towards the value of using the tourist products and services.

As shown in most specialized works, quality has now become a strategic element of business management, as it determines to the highest degree the competitiveness of tourism products and services domestically and internationally. At the same time, quality is also a main factor in regulating the market through the consumer-tourist, because he has the right to choose what best suits his needs and expectations.

Considering these aspects, it can be said that currently the issue of quality is essential for tourism companies operating in an international business environment, marked by the phenomena such as regionalization or globalization.

Through a correct quality management, it is possible to increase the satisfaction of the tourist-consumers of the tourist enterprises and implicitly to its development, thus ensuring the premises for the expansion of the sales market and the diversification of the tourist products and services provided by these enterprises.

2. Theoretical background

Recent studies conducted on the market of international tourist services report that consumertourist behavior is constantly evolving and changing. Thus, the main mission of service providers in the tourism industry is to adapt to these changes in order to be in trend.

A tour operator or a retail travel agency that aspires to quality management, must have as a priority the satisfaction of the needs and desires of its customers. In this respect, the tourism enterprise must be aware that long-term survival is possible only by adapting the tourism products and services to the needs of consumer-tourists. Quality is what the customer wants, not what the travel company decides what is best for them. Thus, the identification and satisfaction of customer requirements must be the starting point of all activities in the tourism enterprise. Quality must be related to the requirements of consumers-tourists, requirements determined by their needs, desires and expectations.

All these considerations determined the authors to carry out a scientific research in the field of quality management of the tourist services, it being a determining factor in the tourist service.

As arguments that are required for the research of this topic are:

- studying the theoretical and methodological foundations regarding the quality of the tourist services and products;
- elucidating the deficiencies related to the definition of the quality of the tourism products and services:
 - determining the role that quality has on increasing the performance of the tourism enterprise;
 - arguing the role that quality has on the perception of the tourist product by the consumer-tourist.

The aim of the research is to determine the role of quality on the mission of the tourism enterprise in relation to the consumer-tourist, as well as to formulate proposals that would contribute to improving the performance of tourism enterprises, with the implementation of quality management. The theoretical-methodological support of the investigated topic will be provided by the works of scientists, who have conducted research in this field.

3. Research methodology

In the process of writing the article, the authors used 4 research methods, as follows:

The scientific research of the tourist phenomenon through the prism of the quality of the services provided integrates a wide thematic area of investigation of the conceptual notions on this aspect, related to the highlighting of the determinants, evolution trends and forms of quality manifestation. From this perspective, it appears necessary to approach with scientific rigor the complexity of the deficiencies that the quality sums up in relation to the protection of the consumers that are involved in the tourist consumption.

The fundamental research allowed the elucidation of the current tendencies regarding the quality provision of the tourist services, reflecting at the same time the issue that is attested in the researched field. The fundamental research included investigations in the form of theoretical studies that led to the formulation of scientifically argued conclusions.

Applied research that had the task of providing data for directing the practical activity, in order to increase the methodical work. The result of the applied research had as a consequence the formulation of some conclusions regarding the quality assurance in the tourist service.

The research for development aimed at using those procedures and devices that can directly influence the practical activity in the field of consumer protection regarding the quality of the tourist service. Thanks to the use of that method, it was possible to demonstrate in practice the need to ensure the quality of service in the activity of the tourism enterprises.

4. Findings

The consumer-tourist is the main reason for the existence of a tourism enterprise, and customer loyalty is the only measure of organizational success.

Certainly, consumers-tourists will not jeopardize their own interest in the act of buying out of loyalty to a tourism company whose tourism products and services do not properly perform their

functions for which they were designed and will purchase the tourism product or service from a competitor of it.

In the current conditions, the mission of the tourism enterprises is to become the preferred provider of consumer-tourists by "fixing" in the consciousness of customers, that they are the best in the tourism market.

High-performance tourism enterprises go beyond the satisfaction of their customers, emphasizing the need to satisfy them and offering them more than what is established in the contract for the provision of tourism/travel services. These companies are also now talking about gaining consumer tourists and deep loyalty to them. The intelligence of this situation can be clearly understood when one considers the situation in which a travel company offered more than the customer expected (for example, an extra glass of wine at the charter race catering, a manager on sales that exceeds the default behavior to be politer and kinder and provide more detailed information).

A customer-oriented tourism company must make considerable efforts to anticipate the future expectations of its consumers, and by working with them in long-term relationships, they will support customers in determining the needs of the requested tourist destination. Tourism companies, at the same time, must consider the expectations of consumers-tourists, in order to obtain a clear vision of the customer experience in terms of their rest.

We believe that the objective of the tourism enterprises should consist in ensuring the quality from the moment of designing the tourism product. Thus, the authors identified a series of questions, which can be addressed to consumers-tourists, in order to design the tourist product in conditions of a maximum quality:

- 1. What are your favorite tourist destinations?
- 2. What services should be included in the package of tourist services?
- 3. What would be the price available for them to pay?
- 4. What are the main concerns of the consumer-tourists?
- 5. What are the expectations of the consumers-tourists on quality?
- 6. How well is the brand of the tourist company respected?
- 7. What are the main complaints or grievances regarding the quality of the service?
- 8. What suggestions could consumers-tourists have on improving performance?

James Evans supports understanding customer requirements when he says a product is of quality if it "justifies its price and is good to use" (James, 2008.)

According to ISO 9000, quality is "the set of properties and characteristics of a product or service that give it the ability to meet the expressed or implied needs" (Militaru, Drăguţ, Zanfir, 2014, p. 11).

In the opinion of F. Haist and H. Fromm, quality "represents the correspondence with the customer's requirements, requirements regarding the functionality, price, delivery time, safety, reliability, environmental compatibility, consulting, etc." (Haist, Fromm, 1989).

According to Law 105, Regarding the consumer protection, "quality is a set of characteristics of a product, service, which gives it the ability to meet, according to destination, explicit or implicit needs" (Legea nr. 105, 2003).

Also, quality is the result of a reasoning that belongs to the beneficiary of the product or service that is based, in the formulation of the reasoning, on the satisfaction of its requirements. On this basis, quality can be defined as "the degree of satisfaction of the requirements negotiated with the beneficiary party".

In the authors' opinion, quality in tourism "represents the set of characteristics of the tourist product or service, which correspond to the requirements and expectations of the consumer-tourist, ensuring its satisfaction by eliminating possible deficiencies".

Particular importance is attached to defining the company's quality requirements. These are obligations arising from laws, regulations, rules, codes, statutes, etc., and they mainly concern the protection of life, personal health and the environment, the proper use of natural and human resources intended for use in tourism.

Quality requirements are defined as those "representing expressions of needs, or their translation into a set of requirements, of the characteristics of an entity, expressed in quantitative or qualitative terms, to enable the realization and examination of that entity" (Oprean, Ţîţu, 2008, p.107).

In order to ensure the quality of service to the tourist consumer, according to article 1595 par. 1) of the Civil Code of the Republic of Moldova, before assuming a contract or any corresponding offer, the tour

operator and, as the case may be, the retail travel agency, are obliged to provide the traveler with the following information:

- 1. the characteristics of the package of tourist / travel services;
- 2. trade name of the economic operator (retail travel agency or tour operator);
- 3. the cost price of the package of tourist/travel services (including taxes and commissions);
- 4. payment terms and conditions;
- 5. the minimum number of persons required for the services in the package to be provided;
- 6. general information on passport and visa requirements;
- 7. the manner and conditions of termination of the contract;
- 8. the manner and conditions for covering the costs of termination of the contract in the event of illness or death.

Deviations from the nominated specifications mean a decrease in quality for the consumer-tourist. Under these conditions, the consumer-tourist has the right to receive adequate compensation from the retail travel agency or from the tour operator for the discrepancy between the conditions stipulated in the contract for the provision of tourist services/travel concluded and improper service as a result of performance.

The quality of the products can be defined through the costs and implicitly of the prices at which the tourist products and services are marketed. A tourist product is considered "quality" when it offers certain performance at an acceptable price level.

Consumers-tourists are willing to pay to receive that value, thus establishing the increase in demand for tourism products and services. Demand, closely linked to the available supply, determines the market price. Those involved in marketing see quality as the thing that adds value, but then focus on how the consumer-tourist perceives value.

In order to determine what customers want in the process of quality defining, the tourism enterprises face the following shortcomings, which are reflected in *Table 1*.

Table no. 1. Deficiencies in defining the quality of tourism products and services

N/o	Type of deficiencies related to the	Difficulty analysis
	definition of quality	·
1.	The consumer-tourist does not know the	The perception of quality by consumers-tourists begins when
	characteristics of quality	consuming the purchased tourist product or service.
2.	Consumers-tourists are specific and have	The price-quality ratio can be the solution in solving this situation.
	different preferences regarding the way of	For example, some consumers-tourists will buy a tourist product or
	organizing the rest, but the retail travel	service that will satisfy them to a certain extent, if the price is in line
	agency or tour operator tries to form and	with expectations, even if it does not offer them everything they
	market a product that will satisfy several	want.
	categories of customers.	
3.	Defining quality in relation to consumers-	The cooperation of experts and specialists in public relations is
	tourists.	needed to determine what consumers-tourists understand in
4	0-14	relation to quality.
4.	Quality costs money.	Consumers-tourists need to be aware that a quality tourism product or service costs more.
-	Comment to the second to the state of	
5.	Consumers-tourists react to advertising	The consumer-tourist can react to certain promotional actions of
	with reference to new tourism products.	the company in order to diversify the way of organizing the holiday.
6.	Consumers-tourists are demanding.	Even as a simple person, people are demanding. But often the term
0.	Consumers-tourists are demanding.	"consumer-tourist" refers to a group of people. Even if the tourism
		product or service were sold to a company consisting of one person,
		that person buys and perceives the same value of the product or
		service both as an individual and as a member of a collective.
7		
7.	The final real value of the tourist product or	In the case of consumption of the tourist product or service, the
	service is often not perceived before the time of purchase.	consumer-tourist fully perceives its value in terms of quality of service.
8.	Influencing the wishes of the consumer-	Only after the tourist consumer has consumed the tourist product
٥.	tourist, through branding and marketing is	or service, the question arises whether a necessity has really been
	an alternative to discover what the customer	met, or only a perceived need has been met.
	really wants.	met, or only a perceived need has been met.
	icany wants.	

Source: Adapted by the authors after (Sitnikov, 2014)

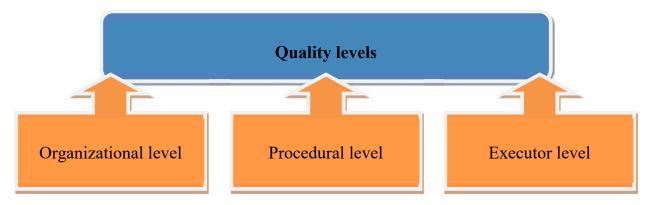
All these deficiencies are human in nature. What makes quality management a challenge is that a successfully defining quality and delivering it to the consumer - tourist requires the use of three skills:

- 1. The managers skills of the tourism enterprise are necessary to establish the requirements and needs of the consumer-tourist in order to manage the team involved in the creation of tourism products and services, in order to satisfy them.
- 2. The skills of using the data and information available at the enterprise are necessary, in order to transform the requirements of the tourist consumer into the tourist products and services requested by him.
 - 3. Professional skills are needed to create and deliver quality tourism products and services.

The key point in this process is the specification of the consumer-tourist requirements. If information can be collected from the consumer-tourist about his wishes and needs and these can be transformed into a clear vision of his requirements, then tourism enterprise will surely be on the wave.

In order to ensure compliance, we consider that the tourism company must take into account the three levels of quality and the key elements specific to each level, which are reflected in Figure 1.

Figure no. 1. Quality levels



Source: Adapted by the authors after (Knowles, 2011, p.192).

At the organizational level, quality focuses on meeting the requirements of external customers. The tourism company must regularly request information from consumer-tourists in order to define the quality at the organizational level. The information is obtained by requesting answers to the following questions:

- ➤ What tourist products and services meet expectations?
- > Do the components of the tourist services package meet expectations?
- ➤ What types of transport would be preferable in traveling for tourism?
- ➤ Which tourist destinations would be interesting to operate in the future?
- > Are tourist products or services provided that are not needed?

At the procedural level, the organizational structures are divided into departments. Because most processes in the tourism business are multifunctional, there is a danger that managers of certain departments will try to optimize the activities for which they are responsible, which can undermine the activities of the tourism business as a whole. At this level, managers need to ask specific questions in order to be able to connect the internal requirements with the external ones of the consumertourists:

- > Which services from the package of tourist services are the most important for the consumertourist?
- ➤ What would be the preferred way to pay for the package of tourist services?
- ➤ How can the package of tourist services be delivered to the consumer-tourist?
- ➤ What impediments prevent the tourist consumer from purchasing the package of tourist services at the moment?

- ➤ Which processes have the most significant effect on the quality standards oriented towards the consumer-tourist?
- ➤ Who are the external customers and what are their needs?

At the level of the executor, the standards of service quality must be based on the fulfillment of the wishes of the consumer-tourist. These quality standards include the requirements for achieving characteristics such as: professionalism, accuracy, completeness, innovation, promptness. The questions asked are:

- ➤ What is requested by the consumer-tourist in terms of information?
- ➤ Which tourist destination is interested to him?
- ➤ What services must the package of tourist services contain?
- ➤ What is the period in which he wants to organize his vacation?
- ➤ What is the duration of the stay?
- ➤ What is the composition of the family?
- ➤ What price is available to pay for the package of the tourist services?

5. Conclusions

Satisfying the customer's wishes requires a rigorous substantiation of all decisions on the design and implementation of a product, based on market research.

By these terms, the fulfillment of the customer's wishes presupposes a rigorous substantiation of all the decisions regarding the design and realization of a product, based on market studies.

The requirements identified and defined by these studies must be duly reflected in the specifications that will be used for the marketing of tourism products and services. Therefore, the specifications are not absolute quality criteria, but only necessary means to meet the expectations of consumer-tourists.

Consequently, as a totalization of what is reported we can deduce the following conclusions:

- 1. Quality management must be customer-oriented, and the tourism company providing services must organize its entire activity in order to meet the needs of consumers-tourists.
- 2. Tourism companies must understand not only the needs of the consumer-tourist, but also the ability of their own entity to meet these requirements.
- 3. The size of the quality of the services provided is largely determined by the activities carried out by the staff of the tourism company. Correctness, receptivity and inspired trust highlight the role of service providers who come into direct contact with the consumer-tourist.
- 4. As the improvement of the quality of services and the increase of productivity are in an inverse relationship, there is a need to carry out the activity in a way that ensures a balance between the quality and quantity of services provided, a balance that is a specific objective of staff use.
- 5. Only when all employees and all departments meet the expectations of the consumer-tourist, the tourism enterprise gains and maintains its trust.
- 6. In order for the quality management system to be effective in the tourism business, organizational processes and techniques must be adjusted to quality standards.
- 7. In order to satisfy the requirements of consumers-tourists, it is necessary to improve the quality at all stages of activity of the tourism enterprise and not only in those involved in the creation and marketing of tourism products and services.

6. References

- Evans, J., 2008. Quality and performance excellence. South-Western Cengage Learning.
- Haist F, Fromm H., 2989. Qualitat im Unternehmen: Prinzipien Methoden-Techniken. Munchen, Wien
- Knowles, G., 2011. Quality management. Ventus Publishing.
- Militaru C., Drăguț B., Zanfir A., 2014. *Management prin calitate*, Ediția II-a *[Quality management. Second edition]*. Bucharest: University Publishing House.

- Oprean C., Țîțu M., 2008. Managementul calității în economia și organizația bazate pe cunoștințe [Quality management in the knowledge-based economy and organization]. Bucharest: AGIR Publishing House.
- Sitnikov C., 2014. Managementul calității organizațiilor. Concepte. Componente. Structuri [Quality management of organizations. Concepts. Component. Structures]. Craiova: Universitaria Publishing House.
- * * * Codul Civil al Republicii Moldova [Civil Code of the Republic of Moldova]. Chisinau: "Cu Drag" Publishing House
- *** Legea nr. 105 din 13.03.2003 "Privind protecția consumatorilor", publicată în Monitorul Oficial Nr. 126-131 din 27.06.2003 [Law no.105 of 13.03.2003 "On consumer protection", published in the Official Monitor No. 126-131 of 27.06.2003].

Students' Perception Regarding the Development of E-learning Activities in Higher Education

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Abstract

In this article we present a descriptive analysis based on the results of a research conducted regarding the e-learning process in higher education institutions. The aim of the study was to reveal students' perceptions of the distance learning process, to determine the influencing factors and to examine the potential and perspectives of this form of education for students and its use in order to improve the quality and accessibility of education.

Key words: E-learning, universities, perceptions

J.E.L classification: A22

1. Introduction

In 2020, with the growing number of cases leading to the COVID-19 pandemic, the global education system has been disrupted, with the impact of imposing restrictions such as quarantine and social distancing measures, along with the closure of educational institutions, as an urgent imperative to slow down the spread of outbreaks. Higher education worldwide has been forced to transition to non-traditional learning environments, namely online learning and teaching(Pelikan et al., 2021).

Conducting remote education at all levels was a significant organizational and academic challenge; however, at the same time it was an opportune time to research distance learning as a form of education, evaluation of its specific tools and the optimization of practices in the field, as well as its social, economic, psychological determinants, to name a few(Zajdel et al., 2021).

An analysis of the results of the research conducted allows us to fill the research gaps in assessing the possibility of using distance learning in the future and in assessing the usefulness of this form of education both in the context of the type of classes (e.g. course, seminars, laboratories, etc.) and different types of educational institutions(schools, colleges, universities). An important aspect of this research was the evaluation of the form in which classes were conducted among teachers and the assessment of their capabilities and competences in operating and using digital tools for educational purposes The period of the pandemic and the implementation of education with the use of distance learning emphasised the need to revise the systems for improving the qualifications of teaching staff in many countries, including Romania, and indicated the need to develop or improve digital teaching tools.

2. Literature review

Online involves "learning that is mediated by the Internet" and is a form or subset of remote education, opposed to in-person learning (Rapanta et al., 2020, p. 2 in Agyeiwaah et al., 2021) that applies a vast set of technology applications and learning processes; it is commonly acknowledged as e-learning, web-based training, virtual learning, or net-based learning or cyberlearning (Urdan & Weggen, 2000 in Agyeiwaah et al., 2021). According to Gomezelj & Civre(2012) in this type of educational process, "teachers and students participate in educational activities, accesing virtual classroom platforms from different places and at different times through an internet connection". A

statement made by the same authors indicate that many researchers highlighted the benefits of online learning, mentioning flexibility as well as being focused on a student-centered approach. Particularly, in higher education, online learning explores the development of metacognitive, reflective and collaborative learning among students (Campbell, 2004 in Agyeiwaah et al., 2021). Yet, online learning can be perturbed by many factors such as technical difficulties (for example poor internet connection or inadequate hardware and software), ease of use which can include aspects such as lack of technical expertise, insufficient learner orientation (Keengwe & Kidd, 2010 in Agyeiwaah et al., 2021). or psychlogical factors (lack of motivation, focus during courses).

3. Research methodology

The research took place during October 2021, and was conducted in the form of an online questionnaire designed through the Google Forms platform, which was distributed through two main social networks, Facebook and Whatsapp, being addressed to people over 18 years of age, students of higher education institutions. Following data collection, 159 answers were obtained, the vast majority belonging to the students of the Faculty of Economic Sciences within the "Ovidius" University of Constanta. Regarding the age distribution of the respondents, the majority were those aged 18-25 years (84.9%), followed by the age category 25-40 years (11.9%) and a last category was taken into account, that of respondents aged 40-65 years (3.1%). The questionnaire was completed mainly by females (74.2%), male respondents representing 25.8% of the sample.

Count of Age

A&B years

A&B years

That years

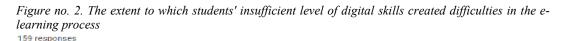
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Figure no. 1. Demographic data regarding the age and sex of the respondents

Source: Processed by authors

4. Results

In the present study we tried to identify the students' perceptions regarding the development of online teaching activities in higher education, taking into account different aspects that could have created difficulties in the learning process. The questionnaire posed a series of questions in order to highlight the issues mentioned, asking respondents to specify their degree of agreement or disagreement, using linear scaling methods (1 being not at all, and 5, to a very large extent). The averages of the results obtained are illustrated in the figures below.



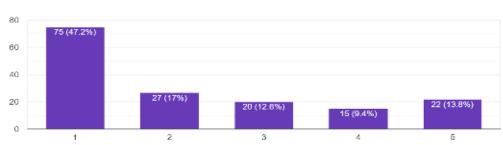
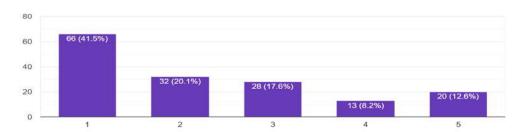


Figure no. 3. The extent to which teachers' insufficient level of digital skills created difficulties for students in the e-learning process

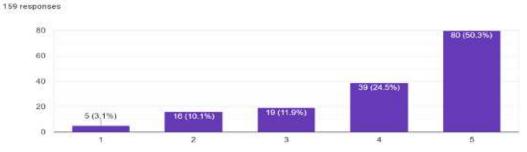
159 responses



Source: Processed by authors

The first two questions in the research itself (except for the demographic ones) concerned the extent to which the insufficient level of digital skills of students (Fig. 2) and teachers (Fig. 3) hindered the e-learning process. Over 47% of students responded that the insufficient level of their digital skills has not created any learning difficulties for them, while 13.8% affirm that this factor has made the e-learning process very difficult for them(to a very large extent). Also, 41.5% of the respondents claim that the insufficient level of digital skills of the teachers did not create difficulties in the online learning process, while 12.6% answered that this factor created difficulties for them in a great measure.

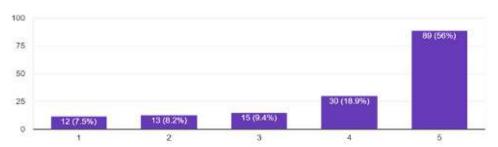
Figure no. 4. Evaluation of e-learning activities according to the degree of interactivity of courses and seminar



Source: Processed by authors

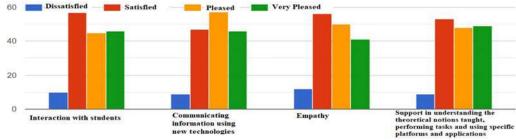
Regarding the interactivity of courses and seminars(Figure 4), the results were satisfying, a little over half of the respondents considering the e-learning activities undertaken very interactive, while a very small percent (3.1%) categorizing them as not interactive at all. The degree of satisfaction among students regarding online teaching activities was high as well, 56% of the respondents declaring that they were very pleased, while only 7.5% stated that they were not pleased at all (Figure 5.)

Figure no. 5. The degree of satisfaction regarding the online teaching activities 159 responses



As to dynamics of teacher-student relationship in the online environment, the results were the following:most students(58 respondents) declared that they were only satisified with the degree of interaction between them and their teachers in the online learning process, 57 respondents stated that they were pleased with the way teacher used new technlogies for communication purposes, and a majority said that the empathy displayed by teachers and their support offered in understanding theoretical notions that were taught in class, performing tasks and use of platforms and applications were at a satisfactional level (Figure 6).

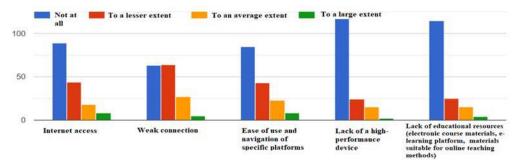
Figure no. 6. Degree of satisfaction regarding the dynamics of the teacher-student relationship in the online environment



Source: Processed by authors

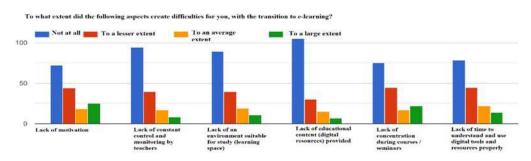
The technical difficulties encountered by students in the development of e-learning were minimal, the vast majority benefiting from internet access, connection, educational resources and the ability to easily navigate specific platforms (Figure 7). In the process of transition to e-learning, the main difficulties reported were lack of motivation and lack of concentration during courses / seminars (Figure 8).

Figure no. 7. The extent to which technical problems have created difficulties for students during their online teaching activity



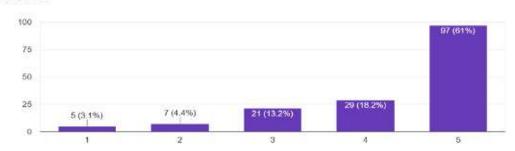
Source: Processed by authors

Figure no. 8. Aspects which created difficulties in the online learning process among students



In Figures 9 and 10, we notice that a majority students have become familiarised(accomodated) with the online learning system and would choose e-learning as an option to continue their studies in this format, with a percentage of 61%.

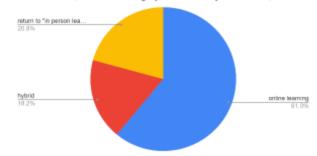
Figure no. 9. Degree of accommodation with the e-learning system 159 responses



Source: Processed by authors

Figure no. 10. Students' preferences of teaching forms (online, hybrid, in person)

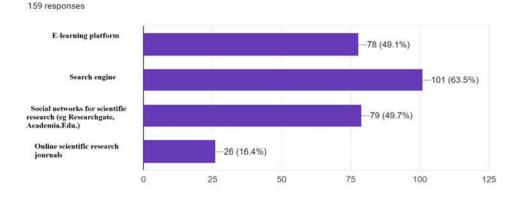
With the experience of participating in courses in the virtual environment, which learning system would you choose, in th...



Source: Processed by authors

Figure no. 11. Online channels frequently used for informational purposes

Which of the following online channels do you use frequently for informational purposes?



What communication channels do you frequently use to communicate with teachers? 159 responses Whatsapp Groups(created by 140 (88.1%) the professor) Social Media -23 (14.5%) 109 (68.6%) Microsoft Teams or any similar platform Direct communication 116 (73%) on videoconference platforms(Zoom, 100 150

Figure no. 12. Frequently used communication channels

Source: Processed by authors

Among the most frequently used channels by students, search engines were the most commonly used for informational purposes, followed by the e-learning platform, and WhatsApp groups created by teachers and videoconferencing platforms were nominated as being the main means of communication with teachers (Figures 11 and 12).

5. Conclusions, limitations and future research

This analysis contributes both to the development of the theoretical framework, as well as identifying future managerial implications concerning remote teaching, allowing to fill the research gaps in terms of evaluating e-learning, assessing its usefulness and prospects for its future use. Important aspects of this research were factors that influenced the students' e-learning process, taking into account variables such as the way the courses were conducted, the evaluation of both teachers' and students' abilities and competencies, the operation and use of digital tools for educational, informational and communication purposes. Higher educational institutions have been significantly impacted by the COVID-19 sanitary crisis, forcing schools and university personnel to face new challenges, to adapt to a new form of teaching and using new technologies, therefore continuous research in this field must be conducted, in order to improve and manage students' performance and satisfaction in the remote learning process.

Overall, the results of this study concerning students' perceptions about e-learning were favorable, most answers indicating a satisfactory level regarding the determinants of the dynamic between teachers and students; courses and seminars were deemed interactive by a majority of the respondents and it is noteworthy that most respondents affirmed that they have become highly accommodated with the e-learning system and would prefer it, rather than returning to in-person learning.

Technical difficulties were not an impediment for most students in the transition to e –learning; however, we must take into consideration other types of difficulties encountered, such as lack of motivation and concentration during courses.

The limitations of this study worth acknowledging are the defined number of attributes, which can be expanded and included in future studies for further predictions in terms of online learning; demographic variables such as the age of the respondents, who were predominantly in the youthful sector, is also a factor that could have influenced the study. Also, the sample consisted almost exclusively of students from the Faculty of Economic Sciences from the "Ovidius" University, located in Constanța, hence, views of the students may differ from those of others from other universities or faculties in other parts of the country and of course, from different countries.

6. References

- Agyeiwaah, E.; Baiden, F.B; Gamor, E.;Hsu, F-C, 2021. Determining the attributes that influence students' online learning satisfaction during COVID-19 pandemic. *Journal of Hospitality, Leisure, Sport & Tourism Education*, https://doi.org/10.1016/j.jhlste.2021.100364;
- Campbell, L., 2004. What does the "e" stand for. Melbourne: Department of Science and Mathematics Education. The University of Melbourne.
- Gomezelj, D., & Civre, Z., 2012. Tourism graduate students' satisfaction with online learning. *Turizam: Međunarodni Znanstveno-Stru* cni Casopis, 60(2), 159–174.
- Keengwe, J., & Kidd, T. T., 2010. Towards best practices in online learning and teaching in higher education. *MERLOT Journal of Online Learning and Teaching*, 6(2), 533–541.
- Pelikan ER, Korlat S, Reiter J, Holzer J, Mayerhofer M, Schober B, et al., 2021. Distance learning in higher education during COVID-19: The role of basic psychological needs and intrinsic motivation for persistence and procrastination—a multi-country study. *PLoS ONE 16(10): e0257346*. https://doi.org/10.1371/journal.pone.0257346;
- Rapanta, C., Botturi, L., Goodyear, P., Guardia, L., & Koole, M., 2020. Online university teaching during and after the Covid-19 crisis: Refocusing teacher presence and learning activity. *Postdigital Science and Education*, 2(3), 923–945.
- Urdan, T. A., & Weggen, C. C., 2000., Corporate elearning: Exploring a new frontier". New York: WR Hambrecht & Co.
- Zajdel, M.; Michalcewicz-Kaniowska, M.; Modrzyński, P.; Komarnicka, A.; Modrzyńska, J., 2021.
 Conditions and Determinants of Distance Education for Students during the COVID-19 Pandemic—
 Evaluation in the Kuyavia-Pomerania Region in Poland. Sustainability 2021, 13, 10373.
 https://doi.org/10.3390/su131810373

The Teachers Career Evolution in Romanian Pre-University Education

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Abstract

The purpose of the paper is to identify the impact of human resources development in Romanian pre-university education system, on the performance of the didactic approach. The need to train employees in pre-university education is closely related to improving knowledge on teaching methodology, improving the design of the teaching approach, improving knowledge of managing educational platforms, including in the teaching of new teaching means and techniques, knowledge regarding the educational management, the acquisition of new knowledge through the prism of reconversion or professional reorientation programs.

Key words: human resources development, professional development, training, stage of career, career evolution

J.E.L. classification: M12, M53

1. Introduction

The lack of training activities at the pre-university education level can lead to undesirable consequences for all the factors involved, to be mentioned low results registered at the level of the educational unit, lack of adaptation of the professional body to the new requirements of methodology and didactics, providing poorly trained human resources on the labor market, unable to carry out their activity at the required level of performance, etc. The stage of career development substantially influences the decisions of employees in pre-university education regarding the participation in various forms of vocational training or training. The standard for the teaching profession includes: the level of knowledge necessary fot the development of the teaching profession, skills to the teaching activity that can be improved with the actual teaching experience and with the evolution in the teaching career.

2. Literature review

The career evolution stages (Cristina Manole, 2013) include the employees' approach to training and improvement and are classified as follows: stage I or the exploration period, stage II represented by adaptation and integration within the organization, stage III or mid-career stage, stage IV corresponding to the last stage of career development.

At the level of pre-university education, the exploration stage is specific to the beginning period, between 0-2 years old, a period in which beginning teachers must go through the initial improvement stage, materialized in the obligation to pass the final exam in education, according to the mobility methodology of education staff, pre-university education and the provisions of the legislation in the field of pre-university education.

Teachers who do not pass the final exam can work only for a certain period and have the status of beginner teacher, the career development being thus conditioned by passing the final exam and subsequent exams for obtaining the second teaching degree and the first teaching degree I.

Obtaining the final exam confirms the possession of minimum professional skills for teaching and is preceded by the other stages of training and improvement through teaching degrees and involves the promotion of a national exam organized by the Ministry of Education and Research, consisting of a written exam with topics and topics established for each specialization in part.

Stage I or the period of exploration characterized by actions to adapt to the requirements of the workplace, is the period in which the employee adapts his requirements and expectations to the reality offered by the advantages of the current job.

The conditions for enrolling in the final exam are represented by (LEN 1/2011): evaluation of the professional activity of the teacher by evaluating the personal professional portfolio; supporting at least two classroom inspections; carrying out the initial psycho-pedagogical training; carrying out an internship during a school year.

3. Research methodology

The research methodology used in this paper is the review of the literature in the field of human resources development in romanian pre-university education system. Through the critical analysis of the specialized literature in the field of training and improvement of teachers in pre-university education system, it was identified the main training and improvement activities (Table no.1, Figure no.1), highlighting also the need to meet the conditions for obtaining teaching degrees. The activity of teachers involves a good professional training doubled by teaching skills, being necessary a continuous training, that begins with the initial training in universities and advances with the evolution in career marked by the gradual obtaining of teaching degrees for Romanian pre-university education.

4. Findings

The training and improvement approaches at pre-university education level must take into account a number of factors:

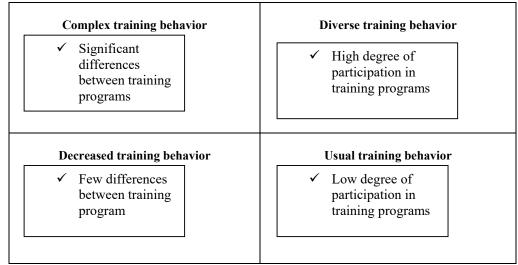
- ✓ the particularities of each educational unit in terms of specializations held by its own employees;
- ✓ motivation to participate in training courses, training for each employee, individually;
- ✓ the stage of career evolution in which the employees from pre-university education are;
- ✓ the level of personal motivation of those involved in the training process;
- ✓ the constraints of the legislation in the field of Romanian pre-university education regarding the need to complete training courses, improvement at certain time intervals;
- ✓ the offer of courses existing at the level of the Teaching Staff House acting at county level, as a training provider for the pre-university education staff;
- ✓ the offer of courses and training internships to which the employees of the pre-university education provided by various bodies and organizations, higher education institutions, etc. have access.

Vocational training in pre-university education is carried out on the basis of professional standards for the teaching profession and involves:

- ✓ completing training courses in the field of specialty, methodology, pedagogy;
- ✓ completing training courses in the field of coordination, evaluation and guidance in preuniversity education;
- ✓ acquiring didactic degrees for the teaching staff from pre-university education: final exam, didactic degree I, didactic degree II.

In *Figure no.1*, Types of training behavior, several behavior models can be regarding the training decision, there were defined depending on the level of involvement -participation of the person interested in training and the degree of differentiation of training programs:

Figure no. 1 Types of training behavior



Source: Developed by the author

Stage II is the stage in which the employee adapts to the requirements and lifestyle imposed by the job, integrates at the level of the organization thus considering the current job as appropriate to their own aspirations.

At the level of pre-university education, this stage is specific to the stage of career evolution between obtaining finalization in education and career evolution by successively obtaining teaching degrees at regular intervals and ends around the age of 45, at an age of 20 years of activity in this field, period in which the teachers acquire the maximum work expertise in the educational field.

The possession of the didactic degree II, represents a stage of evolution in career, being considered a professional advantage, fact confirmed by the promotion of the specialized exams that highlight the possession of a professional advantage compared to the possession of the finalization in education. The teacher who enrolled in obtaining the second teaching degree, must have appropriate professional conduct, to prove the achievement of good results in teaching, thus obtaining the recommendation of the Board of Teachers of the school in which he /she carries out his /her activity in the last two school years prior to enrollment at the didactic degree II.

Obtaining the first degree in pre-university education, a stage conditioned by completing several stages and cumulatively fulfilling several criteria, obtaining the didactic degree I, is the recognition of having the highest level of professional expertise in pre-university education, being considered a career development stage for the staff in pre-university education.

Obtaining the first degree in pre-university education by teaching staff in pre-university education requires the fulfillment of several criteria, according to the Methodology on continuous training of pre-university education staff.

The didactic degree I, represents the highest didactic degree at the level of pre-university education, this being superior to the didactic degree II and respectively the finalized one in education. In order to register for the exam for obtaining the didactic degree I, the candidate must show an impeccable professional and moral conduct, to be distinguished by obtaining special results in the didactic activity, fact confirmed by the written recommendation of the teaching council of the educational unit, where he/she must have been active for at least the last two school years. Stage III is the middle stage of the career, a period in which the employee can assess his/her personal career development so far and can anticipate future developments depending on the actual conditions of the job, compared to the possibilities of professional development within the organization.

The title of professor emeritus in pre-university education is obtained on the basis of a national competition and is conditional on the fulfillment of several conditions: fulfillment of the seniority condition: 15 years of activity in the field, without interruptions, calculated from obtaining the didactic degree I, promoting the admission colloquium for enrolling in the competition for the title

of professor emeritus, proof of obtaining the annual grade- very well in the period from obtaining the didactic degree I, holding a special inspection in order to register for the title of professor emeritus in the presence of the special commission appointed by the Ministry of Education and Research, writing a "research / innovation paper" in areas such as: "educational management, education quality management, information and communication techniques applied in teaching-learning processes, institutional management and data management, alternative or complementary strategies for training, research and innovation in education, communication and partnerships with the social environment", teaching didactics, school psychology and psycho-pedagogy.

The development of human resources in Romanian pre-university education system involves a series of activities carried out in stages during the teaching career (table no.1):

Table no. 1 Professional development and training-activities

Professional training	Professional development
Acquiring new knowledge	Improving current knowledge and skills
Acquiring a new qualifucation	Continuation of the learning process
Learning a trade	Making connections between acquired knowledge
Acquiring new practical skills	Practical application of the acquired knowledge

Source: (Manole, 2013, p. 106)

The political environment influences the training of teachers by the willingness to provide the necessary resources for training, so the political environment must take into account the need for continuous teacher training and the benefits of teacher training on education beneficiaries, teacher training will involve better adaptation to the changes of the environment in which they carry out their activity as well as to obtain better results for the beneficiaries of the education system.

The cultural environment will influence the need for teacher training by adapting the activity carried out by teachers to the cultural specifics of the area. A good example of this factor is the aspect by which in certain areas of Sibiu County, for example, school ends earlier so that students can go to the mountains with their parents and thus preserve the cultural tradition of the area. Teachers will have to be trained to come with different curricula available to the school specific to the cultural environment of the area, the structure of the school year being specially modified by the authorities to respect the ancient custom of the area.

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6. Conclusions

The development of human resources in pre-university education system allows the training and improvement of human resources in accordance with the organizational needs, the desire to train those involved and the available training offer. Once the need for training is identified, it is necessary to plan, organize, carry out the training as well as toevaluate the efficiency of the completed training program. To obtain a efficient training program is a necessity for increasing the quality of the educational process, fact for which the training providers must meet the teachers with complex training offers, structured and adapted to rhe training needs of the pre-university education staff. The training and improvement of human resources in pre- university education influences the quality of the teaching process as well as the school results obtained by students at national exam, being an indicator in estaclishing the quality of the education system at school level but also globally, seen through the whole pre-university education system.

7. References

- Barbu, C.M., Logofătu, M. and Olaru, C., 2019. ISO 26000: The Vital Interconnecting VectorHuman Resource Management Standards. In: S. Idowu, C. Sitnikov, L. Moratis (eds)ISO 26000 - A Standardized View on corporate social responsibility, pp.29-45. Cham: Springer, CSR, Sustainability, Ethics & Governance.
- Currie, D., 2009. *Introducere in managementul resurselor uman e[Introduction to Human Resources Management]*, Codecs Publishing House, Bucharest.
- Feodor, M., Kolesnikova, J. and Salyakhov, E., 2014. Current tendencies of the development of service of Human ressources management. *Procedia-Social and Behavioral Sciences*, 150, pp. 330-335.
- Krulis-Randa, J.,1990. Strategic human resource management in Europe after 1992. *International Journal of Human Resource Management*, 1(2), pp 131-139.
- Manole, C., 2013, Managementul resurselor umane in administratia public[Human resources management in public administration]. Bucharest: ASE Publishing House.
- Manolescu, A., 2001. Managementul resurselor umane [Human Resources Management], 3rd edition, Economic Publishing House, Bucharest.
- Michie, I. and Sheehan-Quin, M., 2001. Labor market flwxibility, human resource management and corporate performance. *British Journal of Management*, 12(4), pp.287-306.
- Nicolescu, O., Verboncu, V., 1999, 3rd edition, *Management*, Economic Publishing House, Bucharest.
- Sitnikov, C.S. and Bocean, C.G., 2012. Corporate sustainability and organizational change. Case of OMV Petrom, *EconomicAmphitheater Journal*, 14(32), pp. 323-332.
- Stanciu, M., Mangra, M.G. and Daea, A.R., 2010. The concept and the strategy of sustainable development. Journal of Young Economists, VIII(14S), pp.125-136.
- Storey, J., 1995. Human resource management: a critical text. London: Routledge.
- Tziner, A. and Birati, A., 2015. Assessing the financial value of human resource, management programs and Employee behaviors: critical tool still coming of age, BASIQ 2015, *New Trends in Sustainable Bussiness and Consumption*, pp. 1-8.
- LEN 1/2011, Published in the Official Gazette, part I

Coronavirus Pandemic Crisis

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Abstract

The global pandemic spread was asynchronous and had a tremendous impact on the economy that simultaneously hit the demand and supply sides. Compared to previous crises, predicting the developments and shock intensity is complex due to factors relating to indeterminacy and the pandemic dynamics. However, the crisis transmission mechanisms are precise and play an essential role by amplifying its effects. The intensity of the crisis will depend on the starting conditions and the policy measures supporting the economic activity. Romania was confronted with it in a phase in which the economy was already experiencing slowdown signs; listed non-financial companies already showed a more marked deceleration growth rate of turnover and profitability than other European competitors, distinguishing for their more outstanding indebtedness; domestic stock market indices in most cases remained chronically lower than those before the 2008 global crisis. On other fronts, the departure conditions did not raise particular concerns.

Key words: crisis, coronavirus, macroeconomics

J.E.L. classification: F12

1. Introduction

Overall, the risks remain firmly to the downside. The pandemic has not been overcome yet, and coexistence with the virus will continue to generate more or less accentuated economic and social repercussions. The current crisis delivers some fundamental lessons. The first concerns the need to refine and develop investigation tools that can effectively meet the policymakers knowledge needs, despite the substantial uncertainty context dominated. International collaboration is also essential to mitigate the downside risks deriving from geopolitical tensions at a global level, accentuated by the Covid-19 crisis, and contain the repercussions from the United Kingdom's Brexit without an agreement. In addition to having a heavy impact on the countries' economic growth, the pandemic also triggers or contributes to accelerating processes potentially suitable for radically changing the socio-economic context of reference. Overall, the Coronavirus crisis is returning to financial markets regulators and supervisory authorities and beyond, a profoundly changed reality that could highlight further evolutions in the future. The Coronavirus infection took on pandemic proportions destined to generate significant economic and social repercussions in just a few weeks. As of 30 June 2020, the pandemic reached over 200 countries, involved around 11 million people, and caused over 500,000 victims, thus resulting in a lethality rate on average equal to about 5%. Although the symptoms of the infection are generally mild, especially in children and young adults, for a significant proportion of the infected (20% according to the WHO), the course is more severe due to respiratory insufficiencies that require hospitalization.

Although the infection symptoms are generally mild, especially in children and young adults, the course is more severe for a significant proportion of the infected due to respiratory insufficiencies that require hospitalization. For Covid-19, neither vaccines nor drugs are currently available, among those used so far, whose therapeutic efficacy is robustly proven. Coronavirus proved to be highly contagious right from the start, and all individuals were potentially susceptible to are potentially vulnerable to contracting the infection. The pandemic is part of the group of severe respiratory diseases that have appeared in recent years: SARS, identified in China at the end of 2002; the H1N1 virus, detected in Mexico in 2009; the MERS-CoV, which spread in 2012 first in Saudi Arabia and

then in other countries of the Middle East. These viruses were characterized by a lower morbidity rate than Covid-19 while recording higher mortality rates.

2. Literature review

The spread of global infection has revealed many national health systems' fragility. Faced with countless research to identify efficient treatments, patients have been set up to ease the pressure on existing structures. Moreover, most affected countries have resorted to the only state measure capable of reducing the rate of infections, namely social distancing. In Europe, the initial flight stoppage to and from China was followed by schools closure, the people's free movement restrictions, suspension of the public event to so-called lockdown. Globally, I applied the lockdown with different timing and intensity. The euro area has adopted strict measures introduced in Spain and Germany and has maintained them in their most incredible power for a relatively extended period. The measures intensification has allowed us to glimpse the heavy repercussions at economic and social levels immediately. Although it allows reducing the contagion, the lockdown causes a shock on both the supply and the demand side, as will be shortly discussed. The intensity of the shock depends on the duration of the social distancing measures and the decrease in hours worked, in turn, a function of two crucial parameters: the morbidity rate and the mortality rate of the infection. The shock intensity depends on the pandemic measures term and the decrease in worked hours and crucial parameters like infection rate.

However, these parameters cannot yet be assessed with a reasonable approximation degree: for example, the mortality rate is calculated concerning the number of confirmed cases which, however, could be vastly underestimated. This makes it difficult to estimate the future development of the crisis. This makes it difficult to estimate future crisis development. Another uncertainty factor concerns a possible virus resurgence and the need to restore more or less limited social distancing measures. Given the uncertainty elements mentioned above, the crisis's extent will depend on identifiable and measurable factors, including the economic and financial conditions and pre-existing country vulnerabilities.

3. Research methodology

The research method used in this paper was an empirical one made through the help of data collected from books and articles published by the national and European institutions.

The documentary sources help both as theoretical underpinning and investigative areas for study. Furthermore, the literature review pays particular attention to primary causes given the investigation plan goals. Primary references include elements published by the European Union and several researchers centering on macroeconomics. All primary resources have been studied in connection with the specific literature.

This scientific documentation, which includes scientific literature, begins from several known experts in development, particularly the European Union's activity. This study was based on a qualitative approach relating themes that underlie the different aspects of the pandemic crisis issue. We planned to question pandemic effects on the economy and qualifying structural transformation, and such an approach to the object of study seemed particularly well indicated. The research obstacles and limits remain crucial in all formal investigations, particularly in human and social sciences.

For this purpose, this question has itself been the subject of complete research in recent years. Moreover, progress in this field, especially in qualitative research, makes it possible with more precision and conviction to identify, label, and describe many of the fundamental epistemological obstacles to information and the limits integrated into this research type. In conclusion, certain vital biases that may affect or damage the researcher's work are relatively well known and preventively offset. It is up to the researcher to identify those who are limited and take them into account, especially by understanding them better and requiring critical attention during the investigation process.

4. Findings

As of March 2020, several international institutions have updated their previous economic growth estimates for 2022 with firmly downward revisions. In April, for example, the International Monetary Fund (IMF) predicted a GDP decline to an average of globally 3%, 6% for advanced economies and around 1% in emerging ones: at the end of June, on the other hand, the projections indicate, a reduction equal to little less than 5%, 8%, and 3%. The OECD also released derogatory updates, distinguishing two scenarios, depending on whether or not the second wave of infections occurs. For our country, the IMF estimates a drop in GDP equal to 12.8% in 2022 compared to a euro area average of 10.2%.

The OECD figures fluctuate between about -12% and -14% depending on whether the single or double hit scenario is considered (for the euro area respectively -9.1% and -11.5%); the summer European Commission July forecasts indicate a contraction of 11.2% (-9.5% according to the spring forecast) compared to -8.7% for the euro area. For 2021, assuming that no new contagion episodes occur, the most recent projections suggest a partial recovery with growth rates fluctuating around globally 5% and between 7.7% for the euro area. For Romania, an increase in economic activity is estimated between 5.4% and 6.1%. However, the risks remain predominantly on the 2022 downside also. In the 2020 summer forecast, the European Commission suggested new infection waves possibility and the persistence of the economic repercussions of the emergency health among the factors that could make a recovery less robust; As part of the so-called upside risk, the European Commission mentioned the EU Next Generation fund, which is expected to significantly boost the economies of the Member States, particularly in 2022.

The major international institutions predict a more severe recession resulting from the 2008 financial crisis. The Covid-19 affair presents some analogies regarding the contagion and transmission channels dynamics to the real economy. In the updates, the progressive worsening of GDP growth forecasts testifies the significant factors dynamics uncertainty of whose effects can only be better approximated through scenario analyses. Furthermore, if confirmed, even the most optimistic forecasts identify the current one as the most severe crisis experienced in recent decades. The current crisis is unprecedented because, in addition to the income, it simultaneously affects critical individual life spheres, such as health and education. The current crisis is unprecedented also because, in addition to the income, it simultaneously affects vital spheres of individual life, such as health and education. The human development index drawn up by the United Nations provides obvious evidence in this regard. Estimates for 2022 show a decline due to the combined impact of the health emergency (with deaths exceeding five million cases in the world), the significant contraction in global GDP, and the drastic reduction in school education for most affected economies.

According to the United Nations, the school's closure has affected almost 150 countries, or about one and a half billion children and young people, equal to nearly 86% of the entire world student population. The only partially contained the negative impact on education through distance teaching techniques, in the face of heterogeneous connectivity conditions between countries and within the same country. Also for this reason the Covid-19 crisis is acting as an amplifier of inequalities, with very negative repercussions from a social as well as an economic point of view. Among the indicators that anticipate the turning points of the cycle, the OECD composite leading indicators recorded a sharp decrease for the economies affected by Covid-19 in the first months of 2020, marking a negative deviation from the level of activity of long term, followed in the second quarter of the year by a rebound which, among the major euro area countries, is more pronounced for Germany.

Starting from March 2020, the PMI indices (purchasing managers indexes) also signaled a sharp decline in economic activity inside the significant euro area, although initiating a substantial recovery in the second quarter of the year due to the easing of lockdown measures and the adoption of measures to combat the crisis at home and internationally. The indicators that reflect in real-time the uncertainty about economic policy perceived and transmitted by the press have also moved in the same direction. After the peak in March, which in Romania vastly exceeded the levels recorded during the 2008 financial crisis, touching the values reached during the sovereign debt crisis, the indicators followed a declining trajectory, albeit remaining at the end of the year. June on higher than pre-crisis levels. For our country, mainly, the INSEE indices show a contraction in consumer

confidence in all areas, although that attributable to the economic climate is more marked despite slight signs of recovery detected starting from the easing of the lockdown measures.

5. The Crisis in Romania: An In-Depth Analysis

In Romania, the crisis manifested itself at a stage in which the economy was already experiencing signs of a slowdown, although the overall conditions of the production and financial system were more solid than in the past, and public finances showed a budget deficit under control. INSEE data for the first quarter of 2020 show a decline in GDP of 5.3% compared to the previous quarter and 5.4% compared to the first quarter of 2019; data has never been recorded since the first quarter of 1995. This expectation depends on many factors. First of all, as already mentioned, in Romania, the epidemic has spread a few weeks after of other advanced economies. According to INSEE data for the first quarter of 2020, the production limitation activities in March would have involved 34% of production and about 27% of value-added. In April 2020, industrial production decreased by more than 40% compared to April 2019, with a more significant decrease in some sub-sectors (approximately -85% for durable consumer goods and -53% for capital goods) and more attenuated in others (-29% for non-durable consumer goods and -14% for the energy sector).

In April 2020, industrial production decreased by more than 40% compared to April 2019, with a more significant decrease in some sub-sectors (approximately -85% for durable consumer goods and -53% for capital goods) and more attenuated in others (-29% for non-durable consumer goods and -14% for the energy sector). The latest data updated to May 2020 indicate a partial recovery, marking a contraction in industrial production of -20% overall compared to the previous year. The marked crisis impact in our country also derives from the significant contribution of the hardest-hit sectors, including the tertiary sector (to which activities such as tourism, catering, and entertainment refer) and manufacturing. INSEE data of the productive sectors shows that the aggregate 'trade, transport, repairs, accommodation and catering' contribute about 21% to the total added value, while the manufacturing industry refers to 17% approx. In the first quarter, the main components of the first aggregate experienced a significant drop in turnover (-24.6% for air transport, -24.8% for accommodation services and catering, -10.8% for the wholesale trade in capital goods compared to measures to restrict mobility between parts of the globe do not suggest a speedy recovery.

The manufacturing sector also had heavy repercussions, with a production contraction compared to 2008. Unlike the aggregates related to the service sector just mentioned, however, the dynamics of the epidemiological emergency and the related containment measures are compatible with a faster restart of activities, although with differences related to the position in the global production chains and the demand conditions. Another factor that could aggravate the repercussions of the Romanian crisis is the strong dependence on exports and, therefore, the greater exposure to significant contractions in international trade. According to the BNR, in 2022, global trade could experience a contraction of about 14%. More optimistic are the data from the European Commission, which fears an 11% drop in spring forecasts, and the updates released by the IMF in June, which estimates a contraction in foreign trade of approximately 12%. With specific reference to the Romanian data, the latest available INSEE data, for the month of May 2020, show a decline on an annual basis of foreign trade of 35% for imports and 30% for exports.

The downward trend in imports in April and May in the two main supply markets, Germany and France, is close to or above 40%. Excluding OPEC data (linked to the unprecedented drop in oil prices), the most significant contraction was in imports from Russia (-45%), which accounted for 3.5% of total imported goods. The decline on an annual basis from April was close to or greater than 40% for all major markets for Romania goods, except Germany and China, where the drop was 34%. In May, the contraction in exports annually is more minor but still very significant. The countries that contribute the most to the fall in exports are Spain (-40%), the United Kingdom (-35%), and France (-34%), followed by the United States (-27%), China (-26%), Germany (-23%) and Switzerland. After a sharp decline in the first quarter of 2022, Household disposable income is expected to recover slightly in the following quarters compared to the social shock absorbers activated to support workers and businesses and the gradual restoration of productive activities. Consistent with the decline in disposable income in the first quarter of the year, consumption fell by almost 8%. Estimates of the savings rate indicate a return to pre-crisis levels in 2021, after a peak of

more than 16% in the current year due to a greater propensity for precautionary savings. Several surveys show a severe impact of the crisis on the current economic situation and the expectations and future programs of Romanian families.

6. Conclusions

The Coronavirus pandemic, which has swept most parts of the globe since early 2020, has now taken on the proportions of an epoch-making event and foreshadows even longer resolution times. For Romania, the risks to economic activity appear to be declining. The pandemic hit the country when it was already in a slow growth phase, which for years remained lower than that of major advanced economies. Pre-existing imbalances in public finances are also a constraint on anti-crisis measures. At the European level, the response of the institutions has been far greater than the measures taken to deal with the crises of 2008 and 2011 and, at the same time, exceptional: think of the activation of the general safeguard clause of the Stability Pact. And growth, which for the first time allows all Member States to deviate temporarily from the medium-term budgetary targets. The nature of the ongoing crisis makes international cooperation more indispensable than ever to ensure effective and timely measures to support economic activity. Failure to coordinate could jeopardize the recovery, which is already hampered by the international relations gradual deterioration. However, the stock market could sharply correct the recovery in prices if general economic conditions worsen or the recovery is slower than expected.

Tensions may arise in the sovereign debt bond market due to the deteriorating state of public finances and increased debt financing needs. In the face of uncertain macroeconomic prospects, the risks also seem to be lower for Romanian listed non-financial corporations, which as a whole are characterized by a higher vulnerability than European companies. This vulnerability makes it more challenging to sustain the higher level of debt that companies will have to incur to meet the increased liquidity needs generated by the crisis more or less intensively depending on the sector to which they belong. The possible increase in insolvencies, the more likely, the longer the economic stagnation will be, the more likely it is that there will be an increase in non-performing loans for banks and, most likely, a credit rationing which in turn will strengthen the recession. A positive note comes from the fact that Romanian banks have recovered their assets and improved the quality of their assets in recent years.

Overall, the pandemic crisis is giving back to regulators and supervisors (of the financial markets and beyond) a profoundly changed reality destined to undergo further developments. Therefore, it is essential to strengthening the capacity to anticipate current developments and their effects on the economic and financial system. To this end, it is essential to strengthening the data-driven approach to regulation and supervision, already adopted in response to the 2008 financial crisis, by expanding its scope and using data science and data analytics tools.

7. References

- Bergeijk, A., G. Peter, 2021. Pandemic Economics, Cheltenham: Edward Elgar Publishing.
- H. O'Hair, Dan, O'Hair, John, Mary, 2021. Communicating Science in Times of Crisis: COVID-19 Pandemic, Thousand Oaks: Wiley.
- Huisman, Jeroen, Tight, Malcolm, 2020. *Theory and Method in Higher Education Research*, Bigley: Emerald Publishing Group.
- Lew, A., Alan, Cheer, M., Brouder, Patrick, Joseph, 2021. *Global Tourism and COVID-19*, Abingdon: Routledge.
- Mečiar, Marcel, Şimşek, Hamza, 2021. The Social and Economic Impact of Covid–19: Rapid Transformation of the 21st, London: IJOPEC Publication.
- Paulsen, B., Michael, Perna, W., Laura, 2019. Higher Education: Handbook of Theory and Research, Cham: Springer.
- Perna, W., Laura, 2020. Higher Education: Handbook of Theory and Research, Abingdon: Routledge.
- Sadler, R., Thomas, 2021. Pandemic Economics, Abingdon: Routledge.
- Tight, Malcolm, 2018. Higher Education Research: The Developing Field, London: Bloomsbury.
- Ziakas, Vassilios, Antchak, Vladimir, Getz, Don, 2021. Crisis Management and Recovery for Events, Oxford: Goodfellow Publishers Limited.

- Covid-19. Impactul Economic, [online] Available at:< https://insse.ro> [Accessed 22 November 2021].
- Reports [online] Available at https://ec.europa.eu/eurostat/data/metadata/covid-19-support-for-statisticians>[Accessed 3 December 2021].
- https://insse.ro.

The Creative Tourism – An Interactive Type of Cultural Tourism

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Abstract

The creative tourism, as concept and practices, is little known or even total unknown in the Romanian hospitality industry, thus an important potential for exploitation still awaits. The difficulties created by the current pandemic urge to limit traveling and so massive economic losses are faced especially by the tourism sector. The creative tourism offer comes with a new range of services, generators of increased added value due to the necessity of employing qualified human resources and their creative work; their talents, knowledge and skills shape the interaction with the travelers and also their experiences, overall the quality of the provided products and services as creative tourism's practices. This paper aims to spread knowledge on this subject by presenting a brief literature review and highlighting the main aspects implied by exploring the cultural heritage in a more involved and interactive way as the creative tourism does.

Key words: creative tourism, creative economy, creative industries

J.E.L. classification: R12; Z10; Z31; Z32.

1. Introduction

As travelers' demands are continuously changing and their expectations are increasing, the tourism offer has to reinvent itself and so a new type of tourism has caught our attention: the creative tourism. In the last decades the concept of creative tourism has emerged as a type of tourism defined by the cultural and creative content and purpose of the holiday, and as a new concept, the creative tourism's practices are little known both in academia and in the hospitality industry, even if the concept is researched since 2005 (Palenčíková & Csapó, 2021, p. 43). The peculiarities of this type of tourism rely in the travelers' active involvement in leisure activities, besides active engagement these practices aim experimenting and learning customs, traditions or other cultural elements of the tourist destination. Obviously, there are various other practices similar to those just mentioned, some of them being recognized as creative tourism practices, and others, more often, as experimental, adventure or cultural tourism activities.

The multitude of innovations has made various domains unsecure to perishability, the tourism industry being amongst these. As more and more tourists develop more complex needs, so the touristic offers have to keep the pace in order to provide satisfying products and services and thus the creative tourism appears as one of the adapted responses to the continuously evolving requests. The rising interest in practicing creative tourism also determined by the numerous possibilities in counteracting the Covid-19 pandemic's effects on tourism, culture and creative industries, as well.

Furthermore, as the creative tourism is directly bonded to the creative economy, it presents significant advantages both at economic and social levels, these advantages being known as: development of new tourism products, experiences and destinations; increased competitiveness and improved image of the destination; new clients to target; sustainable tourism and development of the local community (Palenčíková & Csapó, 2021, p. 13).

2. Literature review

Tourism presents itself as the most pleasurable way to discover and to learn history, to get familiar to different cultures and so, to cultivate tolerance. The culture of a destination represents a resourceful valuable asset always ready to delight and to amaze those travelers curious about it, as Pechlaner & Abfalter pointed out "societal tendencies such as a higher significance of culture and experience and the quest for identity have shown increased interest in cultural tourism (...) and culture becoming an ever more important travel motive" (2005, p. 41).

There are several definitions for the cultural tourism referring to the journey's aims; one of them belongs to Ratz who spots the willingness to get familiar to new cultures by attending cultural events and visiting cultural attractions of the destination (2011). Stebbins also perceives cultural tourism as a type of tourism practiced in order to gain aesthetic, intellectual, emotional, or psychological experiences in a cultural context (Stebbins in Palenčíková & Csapó, 2021, p. 19).

From another point of view, the cultural tourism was perceived as extended by the creative tourism (Richards in Richards & Wilson, 2006, p. 1424), a niche within the first one (Al-Ababneh & Masadeh in Pintea & Bădulescu, 2020, p.88), a provider of meaningful experiences aiming to ensure the understanding of the destination's culture and no serial reproduction of it. The most popular definition of the new concept belongs to Richards and Raymond, who present the creative tourism as the type of "tourism which offers visitors the opportunity to develop their creative potential through active participation in courses and learning experiences which are characteristic of the holiday destination where they are undertaken" (2000, p. 18). Csapó put the spotlight on the creative tourism as a modern and more sustainable type of cultural tourism (2012, p. 229), a more creatively evolved cultural tourism (Richards, 2011, p. 1238) exploiting the heritage of the cultural destinations in order to protect and to create benefits to the local economy, along with ensuring authentic holidays for the tourists (UNWTO in Marques et al., 2020, p. 46). Also, the creative tourism is appreciated by UNESCO as "travel directed toward an engaged and authentic experience, with participative learning in the arts, heritage, or special character of a place, and it provides a connection with those who reside in this place and create this living culture" (2006, p. 3).

The reason behind practicing creative tourism implies the interest and curiosity to learn, to discover, to experiment and to enjoy both tangible and intangible heritage of the visited destination, a far more interactive cultural tourism, so we could consider the creative tourism as the active type of cultural tourism. As the tourist attractions vary and can be transposed into material, intellectual, spiritual or artistic forms, framing in this way the destination's architecture, history, art, culture, lifestyle, societal values and traditions in the same manner as World Tourism Organisation sees the cultural tourism enhanced with the "lifestyles, creativity and day by day culture" (UNWTO în Richards, 2020a, p. 7). The motivation to travel advantages is extremely important in differentiating the cultural tourism from other types of tourism; cultural tourism is based on numerous reasons; exploring the cultural heritage in order to enable the access to a deeper knowledge and understanding of the local culture is one of them, meanwhile benefits to both sectors are created —tourism and the heritage. The cultural heritage attracts tourists, and on the other hand, tourism ensures the preservation of the heritage so the travelers' interest could capitalise it.

The typical creative tourism's activities are conducted all over the world, but the niche character of this segment causes a poor promotion and low visibility of the sector itself. The creative tourism requires to be recognised and promoted by the authorities and the hospitality industry, paying back with sustainable development options for the less popular tourism destination, rural areas or season-dependent destinations.

3. Research methodology

This paper represents rather a theoretical approach of the creative tourism. In this respect, the first sections are designed to introduce the new concept, its characteristics, advantages, the locations and the ways its commodity is promoted and sold. As the creative tourism trades cultural practices performed interactively aiming to enlarge the travelers' experiences and knowledge, it relies on the

destination's cultural heritage. Considering that the creative tourism focuses on activities, we considered essential to present a variety of intangible heritage elements enjoying worldwide recognition. So we took in consideration Romania, other several countries with geographical, historical or cultural similarities with Romania (Republic of Moldovia, Bulgaria, Hungary, Ukraine, Slovakia), and also Greece, Malta, Portugal and Germany, as ones of the richest in cultural heritage European countries. After presenting elements of the cultural legacy which are object of the toursm exploitation, we continue by presenting ways of exploting the intangible cultural heritage in Romania, pointing out that even if the creative tourism is practiced in Romania, its specific activities are not promoted as creative, but rather as rural or experimental tourism.

4. Cultural heritage – commodity for the cultural and creative tourism

The cultural tourism explores both the tangible and intangible cultural heritage, whereas the creative tourism relies mostly on the intangible one. The historical cultural heritage has provided over the time continuity, resilience and economic development (European Commision, 2015). The cultural legacy exploited through the creative and cultural sectors induces growth and development of the destination, positively affecting the local community, their feelings of belonging and stimulating the local pride.

Over the time, the relationship between cultural heritage and tourism have created important advantages such as: development of tourism products, revitalization of existing tourism products, experience in using creative technology to develop tourism and overcome the limitations of traditional cultural tourism models (OECD in Azizova & Huseyn, 2021, p. 670).

Even if the cultural heritage is considered a sector of the creative economy, its enhances the other creative and cultural sectors, as link between the cultural heritage and creativity in urban area has been noticed (Landry & Bianchini, 1995, p. 39; Florida, 2014, p. 39), these areas attract the creative class, concentrate and spread knowledge (Cerisola & Panzera, 2021, p. 15). This enhancement of the creative economy is created by employing or cooperating with the creative class in practicing the creative activities – who could better teach the tourists traditional folk dances or songs than a professional dancer or singer? In order to offer authentic creative experiences, the creative class is the human resource needed and the key element of the creative tourism offer. However, as the creative class is represented by highly skilled and talented professionals, the creative tourism benefits from exploiting talent and intellectual capital by generating sustainable high revenues and added value.

The tangible heritage materializes in monuments, buidings, historic sites and much more, while the intangible heritage is represented by customs and traditions. One of the measures taken to conserve, recognize and promote intangible heritage was to include them in the UNESCO World Heritage List alongside the elements of tangible heritage. The UNESCO heritage, as a plan for recognition of the worlwide culture, aims to preserve and to pass on the cultural heritage to future generations, conserving and highlighting the specific elements of each culture, as the followings table presents. Table 1 includes elements of intangible heritage recognised by UNESCO from ten European countries, including Romania. The other selected countries are geographically close to Romania or they share a similar historical past and determining so cultural similarities (Republic of Moldovia, Bulgaria, Hungary, Ukraine, Slovakia); the motivation of choosing the other countries listed in the table relies in their rich cultural heritage, both tangible and intangible (Greece, Malta, Portugal, Germany) – precious geams of the European culture and tourism.

Table no. 1 Intangible cultural heritage elements recognized by UNESCO

Crt. Country Intangible cultural herita	
110.	ge
- Căluş ritual - Doina - Craftsmanship of ceramics (Horezu) - Christmas-time ritual "Colindat" - Lad's dances - Traditional wall-carpet craftsmanship - 1st of March	
2. Republic of Moldova - Christmas-time ritual "Colindat" - Traditional wall-carpet craftsmanship - 1st of March	
- Bistritsa Babi - Nestinarstvo - Carpet-making in Chiprovtsi - Surova folk feast in Pernik region - Festival of folklore in Koprivshtitsa - 1st of March - Bulgarian Chitalishte	
 Táncház method Folk art of the Matyó Safeguarding of the folk music heritage by the Falconry Blaudruck/Modrotisk/Kékfestés/Modrotlač 	Kodály concept
- Fujara and its music - Music of Terchová - Bagpipe culture - Puppetry - Multipart singing of Horehronie - Blaudruck/Modrotisk/Kékfestés/Modrotlač - Drotárstvo	
6. Ukraine - Petrykivka - Cossack's songs of Dnipropetrovsk Region - Kosiv painted ceramics	
7. Germany - Practicing and organizing shared interests in co - Falconry - Organ craftsmanship and music - Blaudruck/Modrotisk/Kékfestés/Modrotlač - Craft techniques and customary practices of (Bauhütten)	
8. Portugal Portugal Portugal Portugal Portugal Portugal Bisalhães black pottery Craftmanship of Estremoz clay figures Winter festivities, Carnival of Podence	
9. Malta - Il-Ftira	

10.	Greece	 Mediterranean diet Cultivating mastic on the island of Chios Tinian marble craftsmanship Momoeria Rebetiko Art of dry stone walling Transhumance Byzantine chant Polyphonic Caravan
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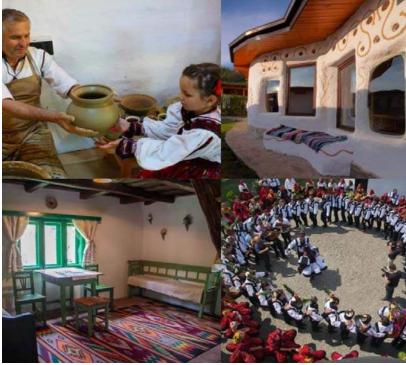
Source: https://ich.unesco.org/en/lists?text=&country[]=00182&multinational=3&display1=inscriptionID #tabs accessed at 27.11.2021

As the creative tourism involves practicing diverse cultural and creative activities in coparticipation with the tourist, it provides for the latter an authentic sense of belonging to the visited destination. In most of the cases, the intangible cultural heritage elements cand find fruition in any part of the destination country, while the travelers gain experience and the direct knowledge of the local / national culture.

5. Practicing creative tourism in Romania

In Romania, the concept of the creative tourism is little known and promoted, so the destinations where the creative tourism is or could be practiced are extremely few, even the official page of Romanian tourism does not consider this type of tourism particularly (Romania travel, online). The creative activities practiced in Romania are rather included in the offer of experimental, rural and cultural tourism practices, most of them aiming to disseminate customs and traditions of the Romanian folklore, as the following pictures prove.

Figure no. 1. Creative tourism practices in Romania: Pottery in the Land of Oaş (1), The cob village (2), Traditional house from Apuseni (3), Romanian folklore (4)



Source: https://www.turism-taraoasului.ro/mestesugari-si-artizani/, https://www.turism-taraoasului.ro/traditii-si-obiceiuri/ accessed at 22.11.2021

The cultural – creative sectors of Cultural Heritage and Art Craft spur the interest of Maramureş's visitors, many visitors being attracted to Negrești – Oaș by various cultural and religious attractions, mountain activities, folklore, ethnography and also, crafts and handicrafts (Visit Țara Oașului, online). Among the cultural attractions, the local tourism benefits from the pottery center, Vama, a place where tourists can learn and practice pottery.

In the village Zece Hotare from Bihor county, there is another possibility to adopt temporary the rural lifestyle and culture offered by the guest house "Casa Bătrână" (Wildventure, online). This guest house provides accommodation in a renovated old house, designed to provide the full experience of the Romanian village from years ago. The guests are either nostalgic Romanians looking for old times and roots or foreigners looking for the freedom of a simpler life, an oasis of peace, away from everyday life's hustle.

The current pandemic of COVID – 19 virus imposed a set of travelling restrictions, thus a large number of Romanian tourists had to give up or weren't able at all to travel abroad and so they were left only with the domestic tourism offer. Fortunately, Romania has numerous tourism attractions, many elements of tangible and intangible cultural heritage, mountain and seaside destinations, lots of opportunities for both rural and urban tourism, but regarding the creative tourism, the options are fewer. However, the Romanian tourism could benefit impressively from the development of the creative tourism, this one being a suitable option for ensuring the tourism activity's continuity for those seasonally dependent destinations.

6. Conclusions

The creative tourism has emerged as niche or a developed type of the cultural tourism, in which the travellers are no longer simply visiting and sightseeing the cultural heritage of a destination; under the creative tourism auspicious, the tourists are getting involved in different activities which aim to create the experience of the local culture as lifestyle, customs and traditions. In this way, the sophisticated travelers learn and discover the local or national culture interactively creating, in the same time, more meaningful experiences.

The cultural tourism trades cultural heritage both its tangible and intangible elements, whereas the creative tourism relies more on the intangible cultural heritage, exploiting it by involving directly the travelers. The tangible cultural heritage is important and valuable also for the creative practices but they are not mandatory; the independence from the material heritage determines several positive effects of the creative tourism such as: possibilities to explore less popular areas, lower costs, avoidance of the overcrowded destinations, potential in ensuring the tourism activity' continuity in season-dependent destinations, generation of higher added value due to the activities practiced and the high skilled employees, etc.

Globally, the creative tourism concept is very little known, meanwhile in Romania we have to admit this term faces a complete ignorance, although there are certain creative activities practiced as other types of tourism resembling or being related somehow to the creative one, or simply promoted as cultural, rural, adventure or experimental tourism practices.

As mentioned previously, the creative tourism is a niche of the cultural tourism, differing itself by the direct involvement of the travelers in practicing customs and traditions specific to the visited destination, and as in Romania the concept is rather unknown, the creative cultural practices are promoted as another type of tourism, mostly as rural, considering the elements of cultural heritage chosen to be promoted.

7. References

- Azizova, G., Huseyn, A.A., 2021. Evaluation The Impact Of The Development Of Culture And Creative Industries On The Tourism Sector. Economic and Social Development, The 70th International Scientific Conference on Economic and Social Development Development, Book of Proceedings, p. 670
- Cerisola, S., Panzera, E., 2021. Cultural and Creative Cities and Regional Economic Efficiency: Context Conditions as Catalyzers of Cultural Vibrancy and Creative Economy. Sustainability 2021, 13, 7150, p. 15, https://doi.org/10.3390/su13137150

- Cob Village (n.d.), *Mini-sat de lut unic în România [Unique clay mini-village in Romania]*. Available at: https://cobvillage.ro/ [22.11.2021]
- Csapo, J., 2012. *The Role and Importance of Cultural Tourism in Modern Tourism Industry*, Strategies for Tourism Industry Micro and Macro Perspectives, DOI: 10.5772/38693, p. 229
- European Commission, 2015. Directorate General for Research and Innovation. Getting Cultural Heritage to Work for Europe, Report of the Horizon 2020 Expert Group on Cultural Heritage. Available at:https://ec.europa.eu/programmes/horizon2020/en/news/getting-cultural-heritage-work-europe [17.11.2021]
- Florida, R., 2014. The Rise of the creative class, Revised Edition, Basic Books, New York, p. 39
- Landry, C., Bianchini, F., 1995. The Creative City. Demos, London, p. 39
- Marques S., A., Madrid, C., Haegeman, K. and Rainoldi, A., 2020. Behavioural changes in tourism in times of Covid-19. Luxembourg: Publications Office of the European Union, Luxembourg, 2020, ISBN 978-92-76-20401-5, doi:10.2760/00411, JRC121262, p. 46
- Palenčíková, Z., Csapó, J., 2021. Creative tourism as a new tourism product in Slovakia. The theoretical and practical analysis of creative tourism: formation, importance, trends. Edition Europica varietas No. 146, Slovakia, p. 13, 43
- Pechlaner, H., Abfalter, D., 2005. Cultural tourism packages: the role of smart cards in the Alps in Sigala, M., Leslie, D., International Cultural Tourism: management, implications and cases, Elsevier Butterworth-Heinemann, Oxford, p. 41
- Pintea, D.C., Bădulescu, A., 2020. The cultural and creative tourism sustainable opportunity for economic development. Proceedings of the 14th International Management Conference "Managing Sustainable Organizations", Bucharest, Romania, p. 88, DOI: 10.24818/IMC/2020/01.08
- Ratz, T. 2011. Cultural tourism în: MICHALKÓ, G. (ed.). 2011. Design and development of touristic products. Pécs: University of Pécs, ISBN: 978-963-642-435-0. Available at: http://www.eturizmus.pte.hu/szakmai-anyagok/Design%20and%20development%20of%20touristic%20products/book.html#d6e1677 [18.11.2021]
- Richards, G., 2020a. Placemaking through creative tourism. Available at: https://www.researchgate.net/publication/339141137 [24.11.2021]
- Richards, G., 2011. Creativity and the tourism. The state of the art. *Annals of Tourism Research*, Vol. 38, No. 4, p. 1238
- Richards, G., Raymond, C., 2000. Creative tourism. ATLAS News, p. 18
- Richards, G., Wilson, J., 2006. Developing creativity in tourist experiences: A solution to the serial reproduction of culture?. *Tourism Management* (27), p. 1424
- Romania Travel, (n.d.), *Explore*. Available at: http://www.romania.travel/en/ [10.11.2021]
- Sava, D., 2020. Economia creativă Motor de creștere și dezvoltare economică a României [Creative economy Engine of growth and economic development of Romania]. *Presa Universitară Clujeană*, p. 118. Available at: http://www.editura.ubbcluj.ro/bd/ebooks/pdf/2652.pdf [25.11.2021]
- UNESCO, 2006. *Towards Sustainable Strategies for Creative Tourism*. Discussion Report of the Planning Meeting for 2008 International Conference on Creative Tourism, p. 3. Available at: http://unesdoc.unesco.org/images/0015/001598/159811E.pdf [23.11.2021]
- UNESCO (n.d), *Intangible cultural heritage*. Available at: https://ich.unesco.org/en/lists?text=&country[]=00182&multinational=3&display1=inscriptionID#tab s [27.11.2021]
- Visit Tara Oasului, (n.d.). *Vama the centre of ceramic*. Available at: https://www.turism-taraoasului.ro/en/vama-the-centre-of-ceramic/ [10.11.2021]
- Wildventure (n.d.), Casa Bătrână: o vacanța de poveste într-o casă tradițională din Apuseni [Casa Bătrână: a fairytale vacation in a traditional house in Apuseni], Available at: https://www.wildventure.ro/cazare-casa-batrana-apuseni/ [22.11.2021]

Global Financial Crisis: Economic and Social Impact

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Abstract

It has been observed in recent decades that there is a higher frequency of crises and that they spread faster from financial markets to the real economy. These observations have brought a growing interest in the academic environment, being at the same time a topical issue for the fiscal-budgetary and monetary policy makers. Thus, in this paper we will address the issue of financial contagion for countries in Central and Eastern Europe, including Romania, while also pursuing the perspective of European and international financial market surveillance, with emphasis on changes in the European banking system, as due to the need to reform it. I will also highlight other important elements in the analysis of the relationship between financial integration and the spread of crises.

Key words: crisis, evolution, financial markets, banking system

J.E.L. classification: G00, G01, G30 și G31

1. Introduction

Integrated financial systems play an important role in allocating resources, being a stimulus for entrepreneurship and innovation. At the same time, they help increase financial market discipline and help maintain financial stability. On the other hand, there are opinions that the free flow of capital leads to an increase in social disparities and may expose the internal financial system to a higher risk of instability.

The economic and financial crisis of 2007-2008 has shown that an increase in the interconnection between financial markets, especially in the case of Europe, leads to an increase in the degree of contagion. At the same time, this risk is exacerbated by weaker regulation of financial markets and the use of derivatives, aspects that have been sought to be achieved since this crisis by various regulations targeting financial markets such as Mifid II or Basel III.

In this paper, we will aim to analyze, through a Pearson correlation coefficient, how the correlation between different stock markets evolved during and after the crisis. We expect that during the crisis there will be an increase in the level of contagion and correlation between markets, so that later, these correlations will decrease. At the same time, it is possible that these correlations have increased with the integration of the analyzed financial markets.

In response to the crisis of 2007-2008, there was a strong debate in academia and decision-makers for better regulation and supervision of financial markets. Financial market integration has also increased this risk, but this integration deserves more attention, through the analysis of risks and benefits. The literature has shown that greater openness improves living standards and economic activity, but makes markets more vulnerable to shocks. This statement is valid both in markets such as Europe and in financial markets such as the United States.

2. Theoretical background

Financial integration helps, in most cases, financial systems to allocate resources more efficiently to the economy and to the financial sectors where they are needed (González-Páramo (2010)). An economy in which a number of optimizations have been made is much less prone to recession and crisis than an economy that relies only on certain sectors.

On the other hand, the economic and financial crisis of 2007-2008 also highlighted the negative effects of financial integration, with the risk that as the level of integration in the financial markets increases, so does the risk of contagion (Ionescu and Popa (2010)). Thus, the imbalances in the economy can be highlighted much more easily and easily, and the crisis of 2007-2008 in the United States highlighted this, namely the imbalances in the subprime lending sector and in the US real estate market.

A second example of assessing the potential for destabilization that may arise as integration levels increase is that of banking system integration. In most cases it is associated with high efficiency, there are many cases in which the banking system participates in achieving imbalances, and some of them occur through over-indebtedness. Thus, easy access to money and relaxation of the rules lead to an increase in indebtedness, which can have a significant impact on the imbalance of the financial system.

The history of economic literature distinguishes between different definitions of financial contagion. However, the most widely used definition is that of Eichengreen et al. (1996) who consider that the effect of contagion is a significant increase in the probability of a crisis in one economy, conditioned by the occurrence of one crisis in another. Forbes and Rigobon (2001) developed their own definition that states that the term contagion is a significant increase in links between markets, after a shock in a country or in a number of countries. Significantly increasing the links between financial markets involve generating or intensifying new transmission channels during the crisis period, regardless of the fundamental principles and response to a crisis in a given country. In general, contagion refers to the spread of financial market disruptions at the regional, or even global, level.

There are several theoretical and practical studies that have focused on the analysis of the contagion phenomenon. Bekaert et. al (2014) analyzes the transmission of the financial crisis from 2007 to 2009 to capital portfolios, using a factor model to anticipate the return to the crisis, defining unexplained increases in factor loads and residual correlations, as an indication of contagion. Research on contagion during the European Sovereign Debt crisis, using correlation analyzes, indicates mixed results. Some studies, including the study by Claeys and Vasicek (2014), show a significant increase in the correlation coefficients between different financial market returns during the Eurozone Sovereign Debt crisis.

In other words, financial integration at the level of the European Union has been an important topic and has been constantly debated in recent years in the literature. At the same time, such a topic has been the starting point for much research by ECB economists, balancing both the costs and the benefits of the highest possible financial integration. Such work could have as its starting point the research of Baele et al. (2004) introducing in addition to the concepts of quantity and qualitative measures to capture the level of integration and convergence such as: price-base measures, quantitybased measures or news-based measures. An extremely important paper for the present research is also the one published by Babecky et. al (2013) which addresses the issue of financial integration at the level of Central and Eastern European countries. This idea is approached considering the two types of convergences in the literature: beta-convergent and sigma-convergent, and the analysis is very useful, being detailed and extended to the economic sectors represented on the stock exchanges in the region. Babecky et al. al (2013) also made a more recent analysis on the level of integration based on sigma convergence and beta convergence, but this time they extended it, along with the capital market and to other financial markets: the market forex, money market and bond market. In view of all these elements, they were able to raise an important issue and were able to draw a number of conclusions relevant to the level of financial integration in the countries of Central and Eastern Europe.

3. Research methodology

The methodology underlying the results and the analysis performed is the one related to the analysis of the correlation that manifested itself in the crisis period from 2008-2010, but also in the post-crisis period. We considered the analysis of this type of relationship for Romania, Hungary, Poland and the Czech Republic, compared to the Eurozone.

We performed the analysis for the stock market, using the main stock market indices in each country:

Poland - WIG 20 Index

Czech Republic - PX Index

Romania - BET Index

Hungary - BUX Index

Euro Zone - Euro Stoxx 50

The period for which the analysis was performed is 01/01/2000 - 28/02/2019, being used daily observations for these indices.

The formula for the Pearson coefficient is as follows:

$$\rho_{i,j} = \frac{Cov(r_i, r_j)}{\sigma_i \sigma_{\sigma j}}$$

This coefficient was calculated for a 6-month horizon and then a floating window was used to dynamically analyze the evolution of the correlation coefficient.

It will be seen whether these correlations were higher during the economic crisis of 2008-2009, or whether these correlations have changed as financial integration has been achieved for the countries analyzed.

We also took into account a qualitative part of the analysis, in which we will specify which were the main directions that were taken into account from a legislative point of view and from the point of view of the issues promoted by the ECB.

Moreover, we will analyze qualitatively what were the effects on the banking system and what were the changes that occurred in the structure of the banking market. We will take into account the trends in macro-prudential oversight, but also the elements that have been taken into account for the new legislation (Mifid II and Basel III) that were introduced in the years following the economic and financial crisis. from 2008-2009.

4. Findings

The effects of the economic and financial crisis have been significant, influencing economic growth, financial stability and banking performance. At the level of the financial markets, a number of challenges have emerged, such as: technological changes, increasing regulation and higher competition in the non-banking area. At the same time, the authorities responded to this crisis by strengthening supervision and promoting projects to reform the financial-banking system. The objectives that were taken into account by these measures were: to increase the resilience of the banking system by increasing capital and higher protection of customers in the financial markets.

In view of these ideas, I would first like to point out the level of contagion in the financial markets for the countries that have recently joined the European Union, compared to the Eurozone. Thus, the aim was to show that during the crisis the contagion, measured by correlation, increases significantly. At the same time, expectations are for an increase in the level of correlation between these markets and the Eurozone as integration has taken place more and more.

The results of the calculation for the Pearson correlation coefficient, in dynamics, are presented below, in the form of a graph.

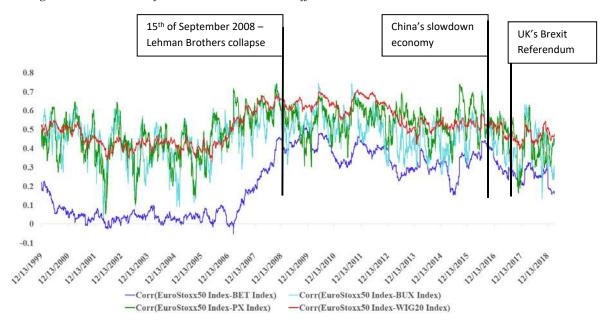


Figure no. 1. Evolution of the Pearson correlation coefficient

Sursa: authors' own calculations

First of all, we can refer to the correlation between the capital market in Romania and the one in the Eurozone, where two interesting elements are observed: i) the level of correlation / integration of the two considered stock markets (Romania and the Eurozone) increases during of economic stress (the global economic crisis of 2008-2009, the fall of Lehman Brothers), ii) also, with Romania's accession to the European Union, the correlation between these markets increased, even in periods without economic turmoil. Thus, we can say that there are both positive and negative effects of a stronger integration, and for the case of Romania this was very easy to highlight. With the accession to the U.E. The capital market in Romania has gradually become more and more correlated with what is happening in the Eurozone, and the risk of a contagion in this direction has increased.

In the following, we will focus on the analysis of the correlation between the Eurozone capital market index (Euro Stoxx 50) and the indices from the other three countries: Hungary, Poland and the Czech Republic. These will be analyzed together, because their evolution was similar, Romania being the one that made the strongest discordant note.

The first thing that can be seen in the case of Hungary, Poland and the Czech Republic is that the capital markets in these areas have been more closely linked to the Eurozone since the beginning of the analysis period, as they were already integrated into the European Union in 2003- 2004, when for the case of Romania low correlation levels were observed. Thus, these markets reacted faster and stronger in the same direction as the Eurozone capital market, and it can be said that a contagion would have had a stronger impact between these countries than in the case of Romania before accession.

In view of these observations, it can be argued that as market integration increases, so does the risk of contagion in a tense market context, all of which can lead to a diminished benefit of diversification in the context of a portfolio. Thus, measuring the level of correlation can also have an important impact on a portfolio manager.

Also, important moments in which the contagion manifested for the capital market are represented by: August 2015 (strong decline in global capital markets due to fears about the slowdown in the Chinese economy) or June 2016 (unexpected result of the Brexit referendum). All these events have generated tension in the financial markets and led to sharp price declines, and panic has spread rapidly from one market to another, highlighting the contagion effect that was captured on the previous chart by increasing the level of correlation between capital markets. analyzed.

These stock market dynamics have been reflected in increasing instability in certain periods and there is an increase in contagion in times of crisis. Thus, these tensions and adverse effects were reflected in the financial system and led to the implementation of decisions and regulations that seek to make the system healthier and more protective of market participants.

The same events occurred at the level of the banking system, all leading to high non-performing loans and possible bankruptcies, especially for the banking system in Southern Europe (Italy, Spain, Portugal) and especially for Greece. Thus, the crisis and the contagion effect were also strong in the banking area, and the subsequent measures and changes were among the strongest.

In order to adapt to the new landscape, most banks have adopted new strategies and business models, re-evaluating the structure of balance sheets, reconsidering costs and scope of activity, as well as the scale of activities. Many of the changes were major, but even so, some of the banks remained in the area of low profits, which can take them out of the industry in the medium and long term.

The evolution of the banking sector during the crisis was marked by the following aspects:

- Changes in the structure and capacity of the banking market. During the period of economic and financial crisis, the cessation of assets in the banking sector for most economies ended, and the indicators showed a decrease in the importance of the banking system compared to the real economy.
- Changes in the business model of banks. Many of the banks participating in the European system have shifted to traditional activities such as lending, giving up their involvement in more complex processes that require derivatives and involve active trading on the financial market.
- Changes in banking performance. Bank performance measured by ROE has declined in most banking systems, and the trend has continued as interest rates have fallen.

The financial crisis of 2008-2009 led to the implementation of some political decisions, and these took into account three important directions:

- ☐ The intermediation services offered to the real economy were resumed, but a series of changes appeared:
- ♦ Credit dynamics have decreased significantly, with banks making changes in risk patterns to reduce exposures.
 - ♦ Many of the banks have left the capital markets area or restricted their trading activity.
- ☐ Banks and investors have had to adapt to new conditions and new legal requirements, all of which have resulted in lower profitability of the banking sector, but also in a higher price of products and services.
- ☐ Consolidation of earnings and use of data. Thus, it is a matter of better supervision of the financial sector and increasing the management of systemic risks. Data availability has increased in recent years, but an increase in the quality of data use is also needed.

The financial crisis of 2007-2008 was a benchmark for the banking sector, both at European and global level. Banks re-evaluated their business models, helped their balance sheets and changed their organizational structures. At the same time, they have improved their risk models and the practices they have applied to business administration.

5. Conclusions

In the decade leading up to the financial crisis, the banking sector has become increasingly global as it has grown faster than economic activity and world trade. The post-crisis adjustments of many advanced economy banks have led to a substantial decrease in the number of jurisdictions in which operations are located. Banks tended to withdraw when local operations were declining, thus helping to reduce the share of foreign banks active in domestic banking systems. As European banks withdrew, foreign debt from other banking systems gradually increased. As the crisis highlighted the structural weaknesses of banking systems, researchers' analysis led to a major shift in the global banking sector. The adjustments made were more pronounced in Europe and the United States, which were hardest hit by the crisis.

The size of banking assets and the number of lending units have gradually declined in Europe and the United States, although the adjustment of the banking sector has been less pronounced. Bank managers aimed to focus on raising and developing capital and liquidity in order to overcome the crisis. Emphasis has been placed on increasing mortgage lending in most banking systems, and major European and American banks have focused on international banking.

The quantitative analysis we performed to observe the contagion effect that manifested itself on the financial markets, but also the evolution over time depending on the level of integration. Thus, it was observed that during the turbulent periods the correlation between the markets of Central and Eastern Europe (Romania, Poland, Hungary and the Czech Republic) and the Eurozone market increased, showing the presence of the contagion effect. Also, as the level of integration increased, the level of correlation between the financial markets in these countries increased, being best highlighted for the case of Romania.

6. References

- Acharya, V., V., Shin, H., S. and Yorulmazer, T., 2011. Crisis Resolution and Bank Liquidity, *The Review of Financial Studies*, 24(6), p. 2166-2205.
- Avadanei, A., 2011. European retail banking integration under EMU: facts and challenges, *Studia Universitatis "Vasile Goldiş" Arad Seria Ştiinţe Economice*, Sercond part II, p. 5-7.
- Badea, L., 2012. Impactul crizei financiare asupra pieței de capital din România în context European [The impact of the financial crisis on the Romanian capital market in the European context], *Theoretical and Applied Economics*, Vol. XIX, No. 3(568), p. 26-39.
- Babecký, J., Havránek, T., Matějů, J., Rusnák, M., Šmídková, K. and Vašíček, B., 2013. Leading indicators of crisis incidence: Evidence from developed countries. *Journal of International Money and Finance*, 35, 1-19.
- Baele, L., Ferrando, A., Hördahl, P., Krylova, E. and Monnet, C., 2004. Measuring European financial integration. *Oxford review of economic policy*, 20(4), 509-530.
- Bekaert, G., Harvey, C., and Lundblad, C., 2006. Growth volatility and financial liberalization. *Journal of International Money and Finance*, 25, p. 370-403.
- Bekaert, G., Ehrmann, M., Fratzscher, M. and Mehl, A., 2014. The global crisis and equity market contagion. *The Journal of Finance*, 69(6), 2597-2649.
- Burghelea, C., (2013), Impactul modelelor economice asupra dezvoltării economiilor Uniunii Europene [The impact of economic models on the development of European Union economies]. *Theoretical and Applied Economics*, Vol. XX, No. 4(581), p. 81-93.
- Caballero, R. and Krishnamurthy, A., 2009. Global imbalances and financial fragility. *American Economic Review*, 99, p. 584-588.
- Caracota, C., R., 2011. Sistemul bancar din România: realizări și perspective [The Romanian banking system: achievements and perspectives]. Bucharest: University Publishing House.
- Claeys, P. and Vašíček, B., 2019. Transmission of uncertainty shocks: Learning from heterogeneous responses on a panel of EU countries. *International Review of Economics & Finance*, 64, 62-83.
- Dedu, V., 2010. Gestiunea riscurilor bancare prin prisma acordului Basel II [Banking risk management in the light of the Basel II agreement]. *Theoretical and Applied Economics*, Vol. XVII, No. 2(543), p. 85-98.
- Eichengreen, B., Rose, A. K. and Wyplosz, C., 1996. *Contagious currency crises*, National Bureau of Economic Research, Working Paper
- Forbes, K. and Rigobon, R., 2001. Measuring contagion: conceptual and empirical issues. In International financial contagion (pp. 43-66). *Springer*, Boston, MA.
- Giannetti, M. and Ongena, S., 2009. Financial integration and firm performance: Evidence from foreign bank entry in emerging markets, *Review of Finance*, 13, p. 181-223.
- Ionescu, L., Popa, C., 2010. Politici și strategii ale organismelor monetar-financiare internaționale în condițiile fenomenelor de integrare și globalizare [Policies and strategies of the international monetary-financial bodies in the context of integration and globalization phenomena], "Mircea cel Bătrân" Naval Academy Publisher, p. 47-50.
- Moessner, R. and Allen, W., A., 2011. Banking Crises and the International Monetary System in the Great Depression and Now, *Financial History Review*, 18(1), p. 1.
- Nagy, A., 2013. Provocările crizei asupra sistemului bancar [The challenges of the crisis on the banking system]. *Theoretical and applied economics* Vol. XX, No. 4(581), p. 4-25.

- Popescu, J., Meiţă, L. and Popa, B., 2016. O analiză comparativă a performanțelor băncilor din România în perioada dinaintea crizei și perioada post-criză [A comparative analysis of the performance of Romanian banks in the pre-crisis and post-crisis period]. Finance the challenges of the future, nr. 18, p. 36-37.
- Trifu, Al., 2010. Comerțul internațional sub constrângerea crizei [International trade under the constraint of the crisis], *Theoretical and Applied Economics*, Vol. XVII, No. 4(545), p. 73-78.

Risk - The Element of Uncertainty in Business Activity

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Abstract

This article describes the role of risk in business. The author also presents the factors influencing entrepreneurial activity. Following the analysis of the researchers' opinions regarding the concept of risk, the author describes her own vision related to the notion of risk.

The importance and complexity of risk in the business economics is also researched.

This article will be useful for professors, students and business researchers dealing with the sciences of entrepreneurship.

Key words: firm, risk, business, business strategy, entrepreneurial activity

J.E.L. classification: L20, D81, M21, L1, L26

1. Introduction

Risk is an undesirable event that can have a negative impact on the intended objectives of the business.

There are several opinions of those who study business, especially of those who work in this field, where risk manifests itself as an element of uncertainty in their activity.

The term risk is defined differently in specialized works in the country and abroad.

2. Theoretical background and Research methodology

The author Nicolae Hoanță, reveals the notion of risk, as "the probability of an unfavorable event to take place. Risk can also be defined as the probability of success or failure, in which success means making a profit and failure involves suffering a loss of money from an investment" (Hoanță, 1996).

Aurel Giurgiu is of the opinion that the risk represents "the probability of an unwanted event occurring" (Giurgiu, 1995).

According to the Explanatory Dictionary of the Romanian language, the term risk comes from the French language, from the word risqué and means a "possibility to reach a danger, to face a trouble or to suffer a damage: possible danger" (Dobrotă, 1999, Creaza.com, 2021).

And, according to the Latin meaning, the term risk refers not only to the chance of losing, but also to the chance of winning.

The definition of economic risk given in Nita Dobrota's "Dictionary of Economics" is that of an uncertain and probable event or process that may cause damage, loss in an economic activity, operation or action. Unlike uncertainty, economic risk is characterized by the possibility of describing a law (rules) of probability for the expected results, as well as by the knowledge of this law by those interested (Dobrotă, 1999).

In our opinion, the risk is a lightning that negatively influences the entrepreneurial activity, but at the same time it can also bring benefits.

The risk is between certainty and uncertainty. It is an impact on the activity, for which the decision maker must identify the possible events, and even the probability of their materialization.

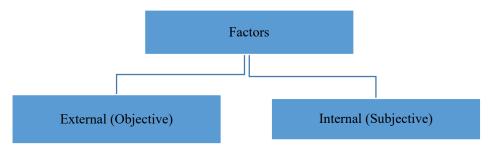
In the activity of an enterprise, the risk intervenes in any field of activity, which can affect them. Another problem, in the process of identifying the risk, consists in highlighting the factors, which determine the appearance of the risk at enterprise level in any field of activity of the enterprise, be it

economic, social, financial or political. Therefore, it is necessary to monitor and analyze the risk factors in order to formulate a response strategy that reduces the effects felt.

The occurrence of risks may be the result of decisions received inside or outside the company, such as: the actions of competitors, suppliers, public opinion, changes market conditions, lack of necessary information, etc.

Specialty literature highlights two large groups of factors that influence the occurrence of risks:

Figure no. 1. Classification of risk influencing factors

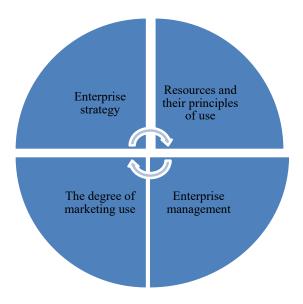


Source: Elaborated by the author based on materials (Stihi, 2010, Scutari, 2020).

The internal factors are those that appear inside the enterprise and that influence only its activity. In turn, the entrepreneur can directly influence these factors, reducing the subsequent negative consequences or capitalizing on the expected positive ones.

These factors are related to the factors of the internal environment of influence of the enterprise, namely:

Figure no. 2. Classification of internal factors influencing risk



Source: Elaborated by the author based on the materials: (Stihi, 2010).

External factors are those that present a danger to the company from the outside, which the entrepreneur cannot influence, but is obliged to take them into account, as they contribute to his result and activity. External factors are divided into two groups: factors of direct influence and indirect influence.

Figure no. 3. Classification of external factors influencing risk

Factors of direct influence

- Legislation regulating entrepreneurial activity
- Unpredictable activities of state bodies
- Fiscal system
- Relations with partners
- Entrepreneur competition
- Corruption

Factors of indirect influence

- Political situation
- Economic situation in the country of activity
- Economic situation in the branch of activity
- International factors
- Natural disasters

Source: Elaborated by the author based on the materials: (Stihi, 2010, Scutari, 2020).

The multitude of factors, which give rise to business risk, conditions its assertion in different situations:

Any study carried out at a company cannot find out exactly whether everything that was produced will be also sold. Demand for a company's products is usually unknown, as consumer choice, price, and supply size are unpredictable. Therefore, the instability of the demand, of the sales, of the price, determines the appearance of the risk in the life of the enterprises.

In some countries, entrepreneurs who run a certain business are encouraged and supported by state bodies, and in other countries future entrepreneurs are ignored.

3. Findings about entrepreneurship in the Republic of Moldova

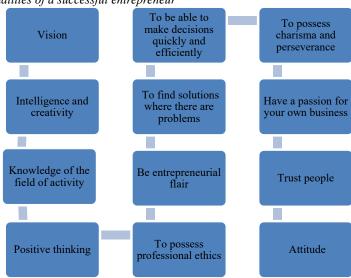
In the Republic of Moldova, the procedure for registering enterprises since 2014 has been simplified. Thus, maintaining the business is easier after the first two years of activity.

But, unfortunately, there are still other factors, apart from those listed above, that can affect the process of entrepreneurship.

Entrepreneurial competence. The main cause of the failure of the newly opened enterprise is entrepreneurial incompetence. Many entrepreneurs do not have the necessary qualities to run a business. The entrepreneur must have skills in production, finance, supply and sales.

According to Marius Ghenea, the qualities of a successful entrepreneur are:

Figure no. 4. The qualities of a successful entrepreneur



Source: Elaborated by the author based on the materials: (Marius, 2011, Scutari, 2020).

Many aspects of entrepreneurial incompetence can be attributed to the fact that business involvement for some people is an unexpected situation. Following the incompetence of these entrepreneurial qualities can lead to various risks related to entrepreneurial activity.

Table no. 1. The main responsibilities of the entrepreneur

1.	Inventary control	Lack of this control can lead to customer dissatisfaction and ultimately loss of customers. The entrepreneur may not only have stocks that are too large, but also their structure may be inadequate. Strict stock control avoids this.
2.	Financial control	The financial success of the company depends on the appropriate credit policy and the capital of the company, which constantly requires rigorous control.
3.	Planning	The changes that are taking place lately require the development of appropriate strategies. Well-designed plans allow the entrepreneur to reap great benefits and prevent the risks that may arise. Without well-established planning, the development of the business becomes very difficult, the entrepreneur can have high hopes and profits will be low.
4.	Location	It is often said that the business location is chosen because a place has been found available without conducting a study. This is a lossy error. In order to set up a business, two factors must be considered: the cost of business location and the related sales volume.

Source: Elaborated by the author based on the materials: (Scutari, 2020, Antreprenor.su, 2012).

For the entrepreneur to be successful, he must be a strong personality, have a developed attitude and imagination to create something, and at the same time assume some responsibilities, including these showed in the Table 1.1.

We can conclude that from the moment of opening a business, the entrepreneur becomes responsible for all the measures that have been planned in his Strategy. Assuming these tasks can lead to a profitable and less risky business.

From the specialty literature, risk is a preferred topic, which demonstrates its importance and complexity in the business economy.

In practice, companies face several risk groups, one of which would be internal and external risks. Entrepreneurs also face in their activity natural risks, occupational risks, risks that affect health, risks that damage the environment and have negative effects on future generations, etc., whose actions are permanent.

Another risk group includes: country risk; risk in foreign exchange operations; contractual risk; risk of bankruptcy; risk in the investment decision; securities risk; marketing risk; insurance risk.

By the nature of the activities carried out within the entities, the risks are classified into:

Legislative risk - current changes in the political framework and administrative structure lead to legislative uncertainty. Among the legislative risks that have a direct impact on the development of entrepreneurship are: the change of the fiscal code, the increase of the related taxes and quotas, of the tariffs, changes in the realization of the quality and control system, the convertibility, the foreign exchange, etc.

Financial risk presents the monetary losses that affect the patrimony and the results of the enterprise. The risks related to financial products can be consumer credit, mortgage credit, investments, bank deposit.

Commercial risk is generated by the appearance of new requirements, by the transformation of some phenomena, by unfavorable evolutions of the exchange rate, dependence on a supplier, modification of new concepts, new legislative regulations, domestic and international contracts.

Image risk can be generated by some negative elements of the company, for example: customer dissatisfaction, certain rumors related to poor quality production and others. Image risk is difficult to prevent and can cause significant damages to the business.

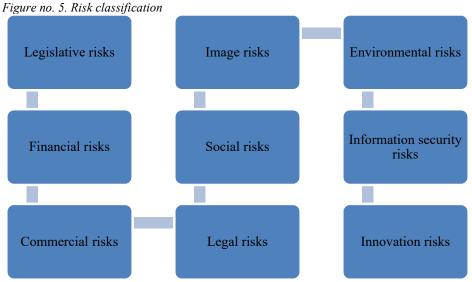
Social risk designates the danger for the enterprise of negative economic consequences of the loss of occupational or social status, caused by major social events (strikes, natural disasters or accidents that cause damages and against the occurrence of which insurance coverage is granted);

Legal risk is a component of operational risk, and represents the risk that affects the profitability of the company as a result of non-application or incorrect application of the legal and contractual framework.

Environmental risk is a risk that cannot be controlled by the company, but which can negatively influence its results, and comes in the following forms: country risk, competitive risk, deficit risk, regulatory risk, etc.

Information security risk has become a major component of the need to ensure the confidentiality, integrity and authenticity of information. This component is relatively new to computer security and technical ways are being sought to solve this apparent problem. Documents and informational messages give many problems to the decision-making act in a modern society, based on competitive economy.

Innovation risk is particularly important in the activity of enterprises, which is at the stage of implementing new ideas to increase the capital allocated for the production of goods and services, as a result of which there may be losses of financial resources in their production.



Source: Elaborated by the author based on the materials: (Creaza.com, 2021).

4. Conclusions

In conclusion, we could mention that in the process of entrepreneurial activity persists a wide range of risk classification that negatively influences the results of a company.

Several causes are identified that generate different forms of risk, including the planning of an incorrect business strategy, the innovation process, unwise decisions, lack of information, inconsistency of the legislative and regulatory basis, persistent financial crises at the country level and globally etc.

We consider that, at present, the degree of correlation of risks is of great importance for estimating their potential impact, therefore the role of the company is to establish a business strategy that corresponds to changes in the economic system and application the right risk management measures that occur in the process of entrepreneurial activity by making the right decisions in real time.

5. References

• Antreprenor.su, 2012. Factorii ce contribuie la dezvoltarea antreprenoriatului, [Factors that contribute to the development of entrepreneurship]. [online]. Available at: http://www.antreprenor.su/2012/05/factorii-ce-contribuie-la-dezvoltarea.html [Accessed 29 of November 2021].

- Coteanu, I., 2009. Dicționarul explicativ al limbii române, [The explanatory dictionary of the Romanian language]. [online]. Available at: https://dexonline.ro/intrare/risc/48965 [Accessed 21st of November 2021].
- Creaza.com.2021. Conceptul de risc si tipuri de riscuri, [The concept of risk and types of risks] [online].
 Available at: https://www.creeaza.com/afaceri/economie/finante-banci/Conceptul-de-risc-si-tipuri-de281.php/ [Access 27 of November 2021].
- Dobrotă, N., 1999. *Dicționar de economie. [Dictionary of economics]*. Bucharest: Economica Publishing House.
- Giurgiu, A., 1995. Mecanismul financiar al întreprinzătorului. [The financial mechanism of the entrepreneur]. Cluj-Napoca: Dacia Publishing House.
- Hoanță, N., 1996. Finanțele firmei. [The company's finances]. Sibiu: Continent Publishing House.
- Marius, Gh., 2011. Antreprenoriat. [Entrepreneurship]. Bucharest: Universul Juridic Publishing House.
- Scutari, S., 2020. Bazele antreprenoriatului. [The basics of entrepreneurship]. Chişinău: ASEM Publishing House.
- Stihi, L., 2010. Managementul riscurilor în afaceri. [Risk management in business]. Chisinau: ASEM Publishing House.

The Rule of Law, From Doctrine to Citizen

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Abstract

The thesis analyzes the level of interest of citizens, over a period of time, for the concept of "rule of law", approached for various purposes by the scientific literature, having an accentuated visibility in recent years, in the field of mass-media, present in public debates, political magazines, electoral campaigns, journalistic investigations, etc.. Frequently, the invocation of the concept of "rule of law" in the debates associated with public space is determined by the purpose pursued and the interest in highlighting the idea of rule, legality, in relation to the topics addressed, being used as a potential discourse strategy.

By using qualitative methods of comparative analysis of the documents presented in the online environment, in order to study the interest of citizens of different countries for the concept of "rule of law", I obtained data and information, validated by the reports generated with the help of search engines, and following a causal correlation, I argue that the interest of citizens is higher in certain periods, specifically in connection with relevant political events.

Key words: rule of law, citizen, law, public power.

J.E.L. classification: P10

1. Introduction

The doctrinal approaches regarding the definition of the concept of "rule of law" have taken into account the formulation over time of some theories of law and of the state, associating the notion with the law, but also with the process of creating the law. The rule of law takes the form of a construction based on legal foundations. The literature defines the rule of law in close connection with society, respectively with its representative component structures. The state is associated with order, with regulation and legal norm, but, sometimes, it's considered idealistic and difficult to perceive at an individual level. In the contemporary reality, the invocation of the concept of "rule of law" often materializes in debates in the public space, being determined by precise goals and by the interest in highlighting the idea of rule, legality, in relation to the topics addressed. Belonging to the everyday existence, invoking the concept is part of a potential strategy of *discourse*, with well-defined goals, often in the political sphere.

The paper analyzes the level of interest of citizens, over a period of time, for the concept of "rule of law", approached for various purposes by the scientific literature. The concept has benefited from increased attention in recent years in the field of mass-media, in political magazines, electoral campaigns, journalistic investigations, etc. Currently, the concept is seen as a slogan or as a symbol of democracy and respect for human rights.

Using qualitative methods of comparative analysis of documents, respectively of reports presented online, we analyzed the interest of citizens from different countries for the concept of "rule of law", given the fact that power emanates from the people and belongs to, them, and the exercise of power is entrusted to the state.

2. Literature review

The literature assigns various meanings to the concept of "rule of law", which is known in German as "Rechtsstaat", in French "État de droit", in Italian "Stato di diritto", in Spanish "Estado de derecho" and in English can be assimilated with the expression "Rule of law", although there are reservations about it being considered a synonym and sometimes the concept's identity is challenged (Lazari, 2014). The French doctrine adopted the term "Rechtsstaat" through the efforts of Léon Duguit, becoming a concept applicable and opposable to French law.

Some authors consider that there are three theories that define the concept of "rule of law", represented by the "state authority" of Maurice Hauriou, the theory of "state service", whose advocate is Léon Duguit, respectively the "rule of law" of Hans Kelsen (Danisor, 2018b).

The doctrinal approaches regarding the definition of the concept "rule of law" are rooted in the structure of the Kelsenian normative system, which is close to the Kantian transcendental idealist philosophy, not being based, in a strict sense, on an empirical approach(Coq, 2021). Hans Kelsen, the most important law theorist of the twentieth century, known for formulating the pure theory of law and the state, associates with the concept, on one hand, the law, and, on the other hand, the process of creating the law, taking the form of a constructions based on legal foundations. The Kelsenian state is a "legal order" and the defining characteristics "make sense in the general theory of law" (Kelsen, 1999). In a broad sense, the state defines "society as such" or a "special form of society" and in a narrow sense, "a nation" (Kelsen, 1999) or entities of society, government and autonomous authorities. Hans Kelsen considers that all the features of the state must be able to be presented as the property of a legal order (Kelsen, 1999).

The contemporary value of the notion of rule of law, as well as its uses, in an analytical, critical and evaluative perspective are aspects that can be properly addressed by jurists and philosophers of law and politics (Costa, 2007).

The rule of law appears in some doctrinal approaches as a means "to achieve a specific goal", with expectations related to the intervention of "law" in "power", embodied in the relationship between power and law, as to ensure the consolidation of the citizens' position (Costa, 2007). The raison d'être of the rule of law is interdependent with the relationship between the state and the citizen, strengthened through the introduction of "restrictions on the sovereign power" (Costa, 2007), in the form of laws, for the individual benefits of the person, assimilated to individual rights. granted by the state to citizens.

The concept is often found in doctrinal and political debates, having "the strength and limits of a myth" (DĂNIŞOR, 2018a). Some authors define the rule of law as a doctrinal concept or as a theoretical notions used by specialists to "know and analyze legal phenomena" (DĂNIŞOR, 2018b).

Pietro Costa mentions that the cardinal points of the rule of law, representing essential conditions for its very existence and meaning, can be political power, represented by the sovereignty of the state, the law, with the legal norm and rules, respectively individuals (Costa, 2007). The rule of law itself is seen by Pietro Costa as a special relationship between the state and the law, which is beneficial for individuals (Costa, 2007). The rule of law benefits from a doctrinal approach referencing an ideal of a political regime in which the state is subject to the law and grants rights to citizens, who are equal before the law.

In French law, the state does not appear as a stable and static entity, "a besieged fortress", but rather resembles a moving train or a slippery ground (Heuschling, 2010). The conceptual and institutional transformation of the rule of law is due to the "capacity for self-renewal of its legal and political mindset" (Heuschling, 2010). The science of French comparative law understands the rule of law as an "endogenous" phenomenon, determined by a specific context and spurred on by external influences (Heuschling, 2010) The concept is currently constituted as a slogan, or as an emblematic word, to which some authors dedicate a true "cult" (the cult of the rule of law), seen as a concept of democracy, which marks a reorientation of French law (Heuschling, 2010).

The rule of law, represented by a pyramidal legal system, based on a construction derived from the law, is established to guarantee the functioning of a political landscape for the exercise of power, as well as to respect for the fundamental rights of citizens (Bălan, 1998). European principles, values and fundamental rights such as the rule of law and democracy are proclaimed in Article 2 of the Treaty on European Union (TEU) and are respected by the member states, beyond the legal limits

imposed by the EU's competences. The rule of law is a fundamental value for the European construction (*Tratatul privind Uniunea Europeană* (versiune consolidată), [*Treaty on European Union* (consolidated version)], 2020).

The exercise of fundamental rights, seen as a rule of law or as a basis for the obligation to protect the rights (von Danwitz, 2008), through fulfilling duties and participating in democratic processes, takes place in a society based on fundamental values, common to each Member State of the European Union. Both the exercise of rights and the obligations to protect them, require clear, explicit and unequivocal regulation, which takes the form of the rule of law, as to ensure the separation of powers, the respect for democratic values and principles, as well as the human rights. The regulation takes into account the totality and complexity of the legal relations in the state activities plan.

In a state of law, power emanates from the people and belongs to them, and the exercise of power is entrusted to the state, as the holder of this power, along with local collectivities and citizens. The organization of the rule of law is based on the separation and balance of powers in order to prevent the abuse of power. The technical dimension of state power is provided by the public administration, which is an activity "closely linked to the executive power" (Bălan, 1998).

Specialized literature, and especially the French doctrine, defines the public administration as the action of the executive power "through the processes of public power" (Bălan, 1998).

3. Research methodology

The methodology applied to achieve the objective of the research was based on a qualitative approach, by using the method of analyzing the documents present online, as well as their comparative analysis, in order to study the interest of the citizens of different countries for the concept of rule of law.

The scientific approach took into account the selection of a non-statistical, random sample, which includes a number of 5 European countries, for which the period of the last 5 years was analyzed, from the point of view of the citizens' interest in information related to the concept of rule of law. Using qualitative methods of data collection, we analyzed the reports obtained through the use of computer (*Google Trends*, 2021), platforms, and respectively information that appeared in the media and in the public space.

The conclusions of the study were based on causal correlations, identifying the high level of interest of the citizen in the concept of rule of law, in relation to important national or international events in the reference period.

4. Findings

The results of the analysis presented in Figure no.1 highlight an association of the highest interest of citizens for the concept of "rule of law" during the periods when events in the political sphere took place.

Figure no.1. The results of the analysis

No.	Country	The period of the	Associated	Related topics
		highest level of interest	event	
1.	Romania	Jan. 29 - Feb. 4, 2017	Anti-corruption protests	Principle, the European
				Union
2.	Moldova	Mar. 1-7, 2020	Crisis of the political class,	Law, State
			electoral year (presidential	
			elections)	
3.	Bulgaria	Feb. 12-18, 2017	Parliamentary elections	Principle
4.	Czech	Oct. 8-14, 2017	Parliamentary elections	Constitution, state
	Republic		-	
5.	France	Sept. 17-23, 2017	Presidential elections	Fundamental rights,
				Politics, Power

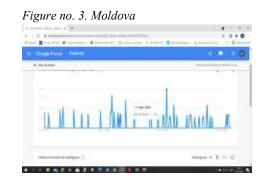
Source: (Google Trends, 2021)

The highest level of interest in Romania can be associated with the events triggered two weeks after the investiture of the Government, in January 2017, in the form of street protests against the government's intentions to amend the Pardon Law and to amend the Criminal Code (Protestele anticorupție din România din 2017–2019, [Anti-corruption protests in Romania from 2017–2019], 2021). The Republic of Moldova has been in a political crisis and in preparations for the presidential elections since the beginning of 2020 (Welle (www.dw.com), 2020).

Figure no. 2. Romania

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Source: (Google Trends, 2021)

Source: (Google Trends, 2021)

In 2017, when interest in the rule of law was at its highest level in Bulgaria, parliamentary elections were held on March 26, elections which had initially been scheduled for 2018, at the end of the term of the National Assembly. But the political situation in Bulgaria, after the resignation of Prime Minister Bozhko Borisov and the failure of the parties to form a government, required holding new elections (*Alegeri Parlamentare În Bulgaria În 2017*, [*Parliamentary Elections In Bulgaria In 2017*], 2017).

In the Czech Republic, the highest level of interest of citizens was reached in October 2017, and was associated with the events held for the parliamentary elections, at which the populist ANO movement of billionaire Andrej Babis, dubbed 'The Trump of the Czech Republic', detachedly won the elections, taking advantage of the Czechs' distrust in the political class in their country and in the directives in Brussels (*Alegeri in Cehia*, [*Elections in the Czech Republic*], 2017). France held presidential elections in 2017, and the highest level of interest of citizens was in September of this year (Alegeri prezidențiale în Franța, 2017, [*Presidential elections in France, 2017*], 2021).

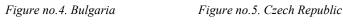
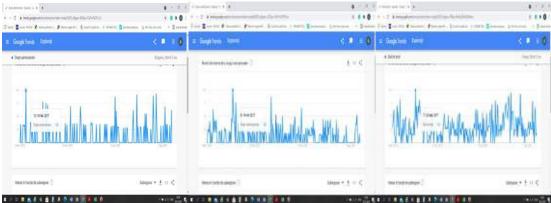


Figure no.6. France



Source: (Google Trends, 2021)

Source: (Google Trends, 2021)

Source: (Google Trends, 2021)

The concept of rule of law has been associated with related topics, such as the notions: principle, European Union, law, state, fundamental rights, politics, power, etc.

5. Conclusions

Following the analysis carried out and by using the correlation of a causal nature, without generalizing, I argue that the results of the research highlight a level of interest of citizens in the concept of rule of law, higher in electoral periods. The scientific approach took into account the selection of a random sample (European countries), for which the period of the last 5 years was analyzed, from the point of view of the interest of citizens for information related to the notion of rule of law. The advantages of the qualitative method, based on the interpretation of the actions taken by citizens, regarding the obtaining of information related to the notion of rule of law, in relation to the specific context, contributed to the understanding of how individuals perceive the rule of law, associated with a principle or power, politics, fundamental rights, etc.

However, the qualitative approach also involves certain limits in the sense that highlighting the ideas and the construction of the meaning are attributed by the one who observes the phenomenon, and the reports generated with the help of computer platforms have a contextual character, exploring the concept in the subject category may have different results from its selection as a search term.

The research contributes to the understanding of a social reality, at a certain moment, although the reasoning is put in the shadow of the reflexive action and the studied problem, and the qualitative limitations imply the position of the researcher, which cannot be independent from the studied phenomenon.

Therefore, the research will help understand and interpret the studied social phenomenon, and I argue that the interest of citizens in the rule of law is higher in certain periods, especially in connection with relevant political events. The scientific approach will be complemented by the comparative analysis for an additional sample, identifying the level of interest of citizens in the concept of rule of law, in relation to the contextual factors that influence the observation.

6. References

- Alegeri in Cehia: Victorie a miscarii populiste a miliardarului Babis. [Elections in the Czech Republic: Victory over the populist movement of billionaire Babis], (2017, October 22). Wall-Street. http://www.wall-street.ro/articol/International/215146/alegeri-in-cehia-victorie-a-miscarii-populiste-a-miliardarului-babis-supranumit-trump-al-cehiei.html
- Alegeri parlamentare în Bulgaria în 2017. [Parliamentary Elections In Bulgaria In 2017], (2017). https://koaha.org/wiki/Elezioni parlamentari in Bulgaria del 2017
- Alegeri prezidențiale în Franța, 2017. [Presidential elections in France, 2017], (2021). In Wikipedia. https://ro.wikipedia.org/w/index.php?title=Alegeri_preziden%C8%9Biale_%C3%AEn_Fran%C8%9Ba, 2017&oldid=14307264
- Bălan, E., 1998. Domeniul administrativ [Administrative field]. Bucharest: Lumina Lex Publishing House.
- Coq, V., 2021. Kantisme et empirisme chez Hans Kelsen. Le Portique. Revue de philosophie et de sciences humaines, 45–46, 229–255. https://doi.org/10.4000/leportique.3801
- Costa, P., 2007. The Rule of Law: A Historical Introduction. In P. Costa & D. Zolo (Eds.), The Rule of Law History, Theory and Criticism (p. 73). Springer Netherlands. https://doi.org/10.1007/978-1-4020-5745-8
- Danisor, D., 2018a. Discursul juridic relativ la statul de drept [Legal discourse on the rule of law]. Public Law Review/Revista de Drept Public, 3.
- Danisor, D. (2018b). Statul-metaforă și realitate juridică [The state-metaphor and legal reality]. *Public Law Review/Revista de Drept Public*, 2.
- Google Trends, 2021. https://trends.google.com/trends/explore?q=stat%20de%20drept&geo=RO
- Heuschling, L., 2010. État de droit. L'influence Du Droit Européen Sur Les Catégories Juridiques Du Droit Public Français, pp. 541–552.
- Kelsen, H., 1999. General theory of law and state. The Lawbook Exchange, Ltd.
- Lazari, C., 2014. Statul de drept—O problemă permanent actuală [The rule of law A permanent issue]. *European Studies*, 2, pp. 61–71.
- Protestele anticorupție din România din 2017–2019. [Anti-corruption protests in Romania from 2017–2019], 2021. In Wikipedia.

 $https://ro.wikipedia.org/w/index.php?title=Protestele_anticorup\%C8\%9Bie_din_Rom\%C3\%A2nia_din_2017\%E2\%80\%932019\&oldid=14646934$

- Tratatul privind Uniunea Europeană (versiune consolidată). [Treaty on European Union (consolidated version)], (n.d.). 17.
- von Danwitz, T. (Ed.)., 2008. Rechtsvergleichende Grundlegung Institutionen und Systemstrukturen der mitgliedstaatlichen Verwaltungsrechtsordnungen. In *Europäisches Verwaltungsrecht* (pp. 11–12). Springer. https://doi.org/10.1007/978-3-540-79878-1 2
- Welle (www.dw.com), D., 2020 (December 31). Republica Moldova: Retrospectiva anului politic 2020
 | DW | 31.12.2020. DW.COM. https://www.dw.com/ro/republica-moldova-retrospectiva-anului-politic-2020/a-56095484.

Assessment of Adequate Use of Public Funds and Ensuring Institutional Performance

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Abstract

In this paper I intend to present the Supreme Audit Institution's involvement efforts, through specific mechanisms, for the proper use of public resources at the level of public administration entities. Through the use of qualitative methods of document analysis, in conjunction with the descriptive case study, we identified the link between the specific aspects of the study unit and the advanced theory, providing an overview of the evolution of auditing entities in Romania, in the period 2015-2020, to understand how external public audit contributes to respect the principles of efficiency, effectiveness and economicity in the use of public funds and to ensure institutional performance.

The results of the research highlight the need to improve the audit system in the public administration of Romania, in order to impact good financial management at the level of public entities, by properly applying the principles of economicity, effectiveness and efficiency in the use of public funds and in the management of public assets, a conclusion supported by audit reports, documents and regulations published by competent bodies.

Key words: efficiency, economy, effectiveness, external audit

J.E.L. classification: H83

1. Introduction

The paper analyses the specific mechanisms of performance verification at the level of the public administration entities of Romania, in accordance with the international audit standards, respectively with the legal and procedural framework approved at national level. In order to reflect the implementation of the performance verification mechanisms, the research strategy used is based on the descriptive case study applied to the Supreme Audit Institution of Romania, as to identify the connection between the specific aspects of the study unit and advanced theory, providing an overview of the evolution of public administration entity auditing in 2015-2020, in order to understand how the external public audit contributes to the application of the principles of efficiency, effectiveness and economicity in the use of funds public and ensuring institutional performance.

The role of the external public audit in improving the performance of the public sector can be understood through a summary presentation of the evolution of the external public audit, namely the transformations based on legal norms, regarding the types of audit, based on international standards specific to the Supreme Audit Institutions. The case study, which represents a retrospective of the results of the auditing of the public administration entities, with a focus on the modern elements in the field, from 2015-2020, will constitute a theoretical basis for understanding the applicable legal and procedural framework and performance verification mechanisms at the level of public administration entities of Romania.

By using the qualitative method of document analysis, we have obtained data and information from available reports, strategies, regulations and official documents in archives and databases of public institutions and international bodies.

Following the analysis carried out, I argue that there is an important contribution of the external public audit to the observance of the principles of efficiency, economicity and effectiveness in the use of public funds and ensuring institutional performance at the level of administrative entities public. The conclusion follows an analysis, validated by the results of audit reports carried out by the Court of Auditors of Romania, during the period 2015-2020, which answers the question: how does the external public audit contribute to compliance with the principles of efficiency, effectiveness and economicity in the use of public funds, and, respectively, to ensure institutional performance in the public sector?

The results of the research highlight the need to improve the audit system in the public administration of Romania, in order to impact good financial management at the level of public entities, by properly applying the principles of economicity, effectiveness and efficiency in the use of public funds and in the management of assets.

2. Theoretical background

In line with European policies, the International Organization of Supreme Audit Institutions (INTOSAI), an "autonomous, independent, and non-political" entity (Home - INTOSAI, 2021), founded in 1953, with" special advisory" at the United Nations Economic and Social Council (ECOSOC) (Home - INTOSAI, 2021), supports the Supreme Audit Authorities (SAIs), cooperation and improvement of institutional performance, with the aim of promoting good national governance (Members, 2021). INTOSAI's important role as a "key participant in governance issues and standardization body for external audit" is (Dodaro, 2014) also reflected in the Strategic Plan 2017—2022 (Strategic Plan of INTOSAI 2017–2022, 2016).

At European level, through annual meetings organized by the Contact Committee of the European Union (CC), there is cooperation between the Supreme Audit Institutions (SAIs) and the European Court of Auditors (ECA), which, according to Article 287 of the Treaty, aims to 'verify all the revenue and expenditure accounts of the Union" (Tratatul privind functionarea Uniunii Europene (TFUE)., 2012), as well as the role of "independent guardian of the financial interests of citizens of the Union" (Supreme Audit Institutions | EUROPEAN COURT OF AUDITORS, 2021). Cooperation between the European Court of Auditors (ECA) and the SAI is carried out "in the spirit of mutual trust and in conditions of independence" (Amsterdam Treaty, 1999), and is further supported by the Treaty of Nice (Nisa Treaty, 2003).

The European Organization of the Supreme Audit Institutions (EUROSAI), which celebrates its 30th anniversary in 2020, is one of the regional groups of INTOSAI, which aims to "promote professional cooperation" and "study of public sector audit" (Obiectivele EUROSAI, 2021). INTOSAI, members of INTOSAI who share the use of French language and the values of Francophonie met in the AISCCUF Association, created in 1994, an active member of the International Organization of Francophonie (OIF) (Supreme Audit Institutions | EUROPEAN COURT OF AUDITORS, 2021).

Almost every Supreme Audit Institution in the world is a member of the International Organization of Supreme Audit Institutions (INTOSAI), which is working on establishing and disseminating international standards and good practice (Members, 2021).

The Supreme Audit Authorities have jurisdiction, established at national level by fundamental law, to carry out the external public audit, being considered "an important player in a country's chain of accountability" (External Audit – Supreme Audit Institutions - OECD, 2020). Due to the "supervisory role in the proper use of public resources and ensuring accountability" (Pitulice & Ștefănescu, 2021), the Supreme Audit Institutions make a key contribution to reform the public sector, providing "an analysis to the legislative and executive powers". independent on the management of public finances, as well as the implementation of public policies" (Pitulice & Stefănescu, 2021).

The Supreme Audit Institutions, by their very formation and functioning as independent entities, are part of the system established to ensure the fundamental rights of citizens and the exercise of power in the rule of law be respected. The external public audit is the means by which, independently, it is established whether, by the act of organizing the exercise of the law and actually exercising it by the public administration authorities and institutions, the principles of legality, regularity,

efficiency, efficiency and economicity in the provision, administration, management, coordination and control actions, carried out within the limits of the powers established by law, are respected (Bălan, 1998). Many authors stressed the importance of SAIs for the public sector due to their role of "overseeing the proper use of public resources and in ensuring accountability" (Bonollo, 2019).

Reporting the financial performance of public administration authorities and institutions is subject to the external public audit, which states how the principles of legality, efficiency, economicity and effectiveness reflect in their work. Also, the Supreme Audit Institutions "have the capacity to increase the responsibility of state authorities towards citizens, both for the resources used and for performance results" (Slobodyanik & Chyzhevska, 2019). The audit activity makes the decision-makers more responsible at the level of the public administration, the external public audit being "an effective means by which the government is responsible for its fiscal and expenditure policies and for their implementation" (Iacub, 2007).

The activity of the Supreme Audit Institutions, embodied in "system audit, compliance and regularity and performance, financial audit being considered a component of those listed" (Bulat, 2017), is important for policy makers, Parliament, society civil, as well as for the general public.

Traditionally, the Supreme Audit Institutions are recognized for verifying budgetary revenue and expenditure in the public system, identifying issues related to the mismanagement of financial resources, as well as contributing to anti-corruption efforts and to identifying fraud phenomena. However, in the new contemporary approach, the Supreme Audit Institutions have surpassed their traditional supervisory role and contribute to improving the national legal framework when they find legislative inaccuracies or shortcomings, as well as to develop more effective public policies.

The external audit takes into consideration a complex issue, analyzing institutional, partner, and professional relationships, systems designed, implemented and monitored, as well as the compliance with the legal framework applicable to specific areas of activity of the public administration authorities and institutions. The specialized literature argues that the Supreme Audit Institutions provide an "independent analysis on the management of public finances, as well as on the implementation of public policies by the public administration, thus contributing to the continuous improvement of the establishing and implementing of public policies" (Jansons & Rivža, 2017).

In Romania, the Supreme Audit Institution — the Court of Accounts, was established in the Constitution, which stipulates in art. 140: "The Court of Accounts shall exercise control over the formation, administration and use of the financial resources of the state and the public sector" (Romanian Constitution, 2003). The legal framework of organization and operation is approved by Law No. 94/1992. republished, with subsequent amendments and additions, according to which, the Court of Accounts of Romania is the "supreme institution of financial control over the formation, administration and use of financial resources of the state and the public sector", respectively" represents Romania as the Supreme Audit Institution in the international organizations of these institutions"(*LEGE 94 08/09/1992 - Portal Legislativ*, 2021). The Court of Auditors of Romania has been a permanent member of INTOSAI and EUROSAI organizations since its establishment in 1992, and since 1994 it has been a member of AISCCUF, benefiting from the exchange of ideas, knowledge and experiences through cooperation with other supreme audit institutions.

The Court of Auditors of Romania provides reports on the use and management of financial resources in accordance with the principles of legality, regularity, economicity, efficiency and effectiveness, supporting the Parliament, as well as the authorities, institutions and other entities responsible for the management of public funds, with a view to addressing the deficiencies found as a result of the external audit.

According to INTOSAI standards (Audit Standards - INTOSAI, 2021), based on legal norms, manuals and guidelines developed for specific activities, as well as on other internal rules (Regulations - Court of Accounts, 2021), the Court of Accounts of Romania conducts audits on financial implementation accounts, compliance audits and performance audits of projects, processes or operations involving public expenditure carried out at the level of public administration entities (Public Audit in the European Union, 2019). Based on the provisions of the European Regulations, the Audit Authority, a structure within the Court of Accounts, carries out the following types of audits: compliance audit, system audit, audit of operations and audit upon completion of the Community funded project/programme. In order to harmonize with good international practice and to facilitate the implementation of INTOSAI audit standards, as permanent member of the

organization, the Court de Accounts of Romania has developed its own audit standards, in accordance with the general international audit standards accepted (Law 94 08/09/1992 - Legislative Portal, 2021).

Financial audits shall be carried out on a regular basis by examining documents drawn up at the level of public administration entities, assessing the design and implementation of internal managerial control systems, accounting and IT systems, in order to verify whether "the financial statements show a true and fair financial position and the results of the financial activities are in accordance with the accepted accounting standards and principles (Public Audit in the European Union, 2019). Based on the provisions of art. 21, sec. (3), art. 29 and art. 42 sec. (1) of the organization and functioning law (Law 94 08/09/1992 - Legislative Portal, 2021), The Court of Accounts shall carry out financial audit work on the annual implementation accounts of the consolidated public budget, ensuring the economicity, effectiveness and efficiency of the use of public funds (Decision (A) 155 29/05/2014 - Legislative Portal, 2014).

Compliance audits shall be carried out by verifying both the management of the public and the private assets of the state and of the public sector (Law 94 08/09/1992 - Legislative Portal, 2021), and the implementation of the revenue and expenditure budget of the audited entity in accordance with the purpose, objectives and the powers provided for in the normative acts by which the entity was established, and with the principles of legality, regularity, economicity, efficiency and effectiveness (Decision (A) 155 29/05/2014 - Legislative Portal, 2014).

Performance in the public administration system is assessed from the perspective of how "an entity, program, activity or operation operates in terms of efficiency, economicity and effectiveness" (Decision (A) 155 29/05/2014 - Legislative Portal, 2014). The external public audit addresses the concept of economicity as a characteristic attributed to the situation in which "minimization of the cost of resources allocated to achieve the estimated results of an activity is achieved, while maintaining the proper quality of these results" (Law 94 08/09/1992 - Legislative Portal, 2021). Effectiveness is assessed by the external audit in terms of "the achievement of the planned objectives for each of the activities and the ratio of the projected effect to the actual outcome of the activity", and efficiency is analyzed in relation to "maximizing the results of an activity in relation to the resources used" (Law 94 08/09/1992 - Legislative Portal, 2021).

Performance audits carried out by the Court of Accounts for the period 2015-2020 on programs, projects, management systems and procedures used by entities managing public funds addressed various topics in areas such as: environmental policies, research development, consumer protection, natural gas market, air transport, rail freight transport, judicial reform, etc (Reports - Court of Accounts, 2021).

The expected impact of the recommendations formulated by the administrative acts issued by the Court of Accounts and implemented at the level of public entities aims, on one hand, to improve the activity of the verified entity from the point of view of financial accounting, tax records, information system, human resources, etc., and, on the other hand, to improve its management in order to achieve the objectives of the entity, as well as achieving better economic-financial results by reducing public spending, increasing efficiency, effectiveness and economicity in the use of public funds and the management of assets.

3. Research methodology

The methodology applied to achieve the objective of the research was based on the descriptive case study, by which I made an exposition of how the specific aspects of the study unit relate to the advanced theory, trying to identify the functioning of cause-effect relationships. The method was chosen to confirm the theory using data supporting the evolution of the study unit over time, respectively to identify transformation opportunities for auditing the performance in the public sector in Romania. The methodology considered the logical reasoning and arguments based on common sense, in order to carry out the descriptive case study, concurrently with the document analysis method.

Using qualitative data collection methods, we analyzed the applicable legal framework, rules and regulations, reports available in archives and databases of international institutions and bodies. The scientific approach had the purpose of selecting the audit reports carried out by the Court of Accounts

of Romania, between 2015-2020, in order to identify how external audit contributes to the efficient, economical and efficient use of public funds and to ensure institutional performance, in public administration.

Based on the assumption that the Supreme Audit Institutions have the supervisory role in the proper use of public resources, we analyzed documents relevant to the activity of the Romanian Court of Accounts in 2015-2020, namely:

- annual public reports on the audit of the management accounts of the consolidated general budget for the preceding financial year;
- annual activity reports with information on the strategy, mandate, responsibilities, mission and relations of the Supreme Audit Institution with different actors, international activity and the allocated human and financial resources;
- reports on local public finances of local public administration authorities;
- own-initiative audit reports of the Supreme Audit Institution in key areas of public interest (Reports Court of Accounts, 2021).

By using qualitative methods of document analysis, the research outlines the involvement efforts of the Supreme Audit Institution to understand how external public audit contributes to respecting the principles of efficiency, effectiveness and economicity in the use of public funds, i.e. to ensure institutional performance, at the level of public administration entities.

4. Findings

From the analysis of the activity reports carried out between 2015-2020 by the Court of Accounts of Romania, using qualitative data collection methods, we obtained information on the external public audit activity and the results of the specific activity of the study unit.

Figure no. 1. Situation of audit activity 2015-2020

Document	Total number of audit actions	Financial audit	Performance audit (themes)	Compliance audit	No audited entities	No cases of deviations/irregu larities
Activity report for 2015	2.773				2.541	25.224
Activity report for 2016	2.610	1.699	40	768	2.437	23.514
Activity report for 2017	2.325	1.619	35	656	2.402	21.427
Activity report for 2018	2.289	1.670	30	572	2.522	18.980
Activity report for 2019	2.291	1.620	17	525	2.246	18.176
Activity report for 2020	2.988	1.546	17	1.425	2.647	17.666

Source: (Reports - Court of Accounts, 2021)

According to the data shown in Figure 1, it is noted that the total number of audit actions carried out at the level of the study unit shows a decreasing evolution between 2015-2019, and in 2020 the most audit actions were carried out, with a total of 2,988. The number of audited entities recorded a minimum in 2019. i.e. 2.246, and in 2020 the maximum number of 2,647 was recorded, in accordance with the fact that several types of audits were carried out in some entities (financial, compliance and performance audit), depending on the objectives pursued within each of them, and, consequently, the number of entities audited is not the same as the number of missions carried out.

The external public audit actions were also carried out at national companies or societies, autonomous administration of national and local interest, companies with the majority capital of the state or of administrative-territorial units, as well as at their branches and subsidiaries, entities with in the banking or privatization domains, etc.

The financial audit holds a significant share in the total actions carried out each year, of more than 50%, i.e.: 65.09% in 2016, 69.63% in 2017, 72.95% in 2018, 70.71% in 2019 and 51.74% in 2020. This is due to the commitments made at the level of the study unit for the annual auditing of the accounts of entities in the central apparatus whose heads are chief authorizing officers, and of more than 30% of the accounts of entities managing the local budget, whose directors also have the status of chief officers (Annual activity report, 2020).

The financial audit was carried out on the annual implementation accounts of the state budget, state social insurance budget, unemployment insurance budget, budget of the Single National Health Insurance Fund, State Treasury budget, General Public State Debt Account, budgets of public authorities and institutions, respectively budgets of administrative-territorial units.

Compliance audit, carried out through thematic controls, takes the second place in the total annual audit actions. From the data shown in Figure 1, it follows that in 2016 the compliance audit missions (control) accounted for 29.42% in the total audit actions carried out, 28.21% in 2017, 24.98% in 2018, 22.91% in 2019 and 47.69% in 2020.

The highest number of compliance audits is registered in 2020, motivated by the request of the Romanian Parliament for carrying out control actions on the management of public resources during the state of emergency, established in the context of the epidemiological situation determined by the spread of the coronavirus SARS-CoV-2. For the implementation of the Special Report on the management of public resources during the emergency state, a number of 949 control missions were carried out, of which 284 at local public administration level and 665 at local public administration level. The conclusions resulting from the control carried out reveal that, in most cases, "the use and management of public resources and funds used to prevent and combat the COVID-19 pandemic was in line with the aim, objectives and the duties provided for in the normative acts related to the state of emergency" (Annual activity report, 2020).

In 2020, the main topics addressed for compliance audit were: control of the legality of contracting or guaranteeing, as well as the use and reimbursement of reimbursable financing at the level of administrative-territorial units, verification on issues related to the management of assets of the entity, control of compliance with the legal provisions on training, highlighting, tracking and collecting local budget revenues, control of compliance with legal provisions on employment, liquidation, authorizing and payment of public expenses, verification of certain aspects included in the references/petitions received by the Court of Accounts regarding the violation of the legal provisions in the field of public acquisitions, verification of the NBR operations that fall within the competence of the Court of Accounts of Romania, control of the way of functioning and of the administration of public entities, control of the exercise by the tax authorities, of the legal powers in the field of administrative and tax litigation, etc. (Annual activity report, 2020).

The performance audit has a small share in the total audit actions performed at the level of the study unit. The topics addressed were "programmed in areas where value can be added for increasing the economy, efficiency or effectiveness of the use of public funds and which also aim to contribute to accountability and transparency in the public sector" (Annual activity report, 2020). Audit topics covered include:

- the effectiveness of the use of funds allocated to the promotion of foreign trade for the period 2014-2017;
- consumer activity for 2015-2018;
- administration of the sports heritage of the Ministry of Youth and Sports during 1990-2016:
- the effectiveness and efficiency of the measures to recover the claims of the Single National Health Insurance Fund, as well as its use for the period 2011-2019, at the National Health Insurance House;
- the effectiveness and efficiency of the research and development activity financed for national institutes;
- the performance of the management and exploitation of living aquatic resources in natural fishery habitats and aquaculture during the period 2016-2019 (Annual activity report, 2020)

According to the data shown in Figure 1, there is a decrease in the number of cases of deviations, irregularities or errors found as a result of external public audit actions, from 25,224 cases in 2015 to 17.666 in 2020. Analyzing this aspect, it can be mentioned that the external public audit carried out in 2015 revealed an "insufficient concern on the part of public entities for ensuring the accuracy of data from financial statements and for a financial management governed by good management. economic-financial" (Annual activity report, 2015). This conclusion confirms that "public funds and public assets of the state are managed in a regime in which the performance of their use is not a priority criterion" (Annual activity report, 2015).

As the external public audit activity is carried out in the coming years, an adequate level of concern for the management of the entity is revealed in order to achieve sound financial management, by ensuring legality, regularity, economicity, effectiveness and efficiency in the use of funds public and public heritage management (Reports - Court of Accounts, 2021). However, the external audit found frequent deviations from legality and regularity or compliance with the principles of efficiency, economicity and effectiveness in the management of public funds, similar to those recorded in previous years, or deficiencies that persist for a long time, because measures put in place at the level of public administration authorities and institutions do not ensure the elimination of the causes which have caused or favoured the occurrence of deviations, but often only seek to eliminate the identified effects or consequences.

5. Conclusions

The specific performance verification mechanisms at the level of public administration entities in Romania are in line with international audit standards, and the legal and procedural framework approved at national level is connected to advanced theory in the field. External public audit contributes to respecting the principles of efficiency, effectiveness and economicity in the use of public funds and to ensure institutional performance through all specific mechanisms concerning the complexity of audit types performed to assess the adequate use of public funds by the supreme audit institutions.

The results of the research highlight the need to improve the audit system in the public administration of Romania, in order to impact good financial management at the level of public entities, by properly applying the principles of economicity, effectiveness and efficiency in the use of public funds and in the management of assets.

6. References

- Bălan, E., 1998. Domeniul adminsitrativ [Administrative field]. Bucharest: Lumina Lex Publishing House.
- Bonollo, E., 2019. Measuring supreme audit institutions' outcomes: Current literature and future insights. *Public Money & Management*, 39(7), pp. 468–477.
- Bulat, I., 2017. Abordarea auditului financiar în sistemul de control intern [Approach to financial audit in the internal control system]. pp. 106–110.
- Court of Accountants, 2015. Activity report 2015. [online] Available at: www.curteadeconturi.ro
- Court of Accountants, 2020. Activity report 2020. [online] Available at: www.curteadeconturi.ro
- Dodaro, G. L., 2014. INTOSAI Task Force on Strategic Planning Efforts. International Journal of Government Auditing, 41(2).
- Iacub, I., 2007. Locul și rolul Curții de Conturi în cadrul sistemului organelor de stat [The place and role of the Court of Accounts in the system of state bodies]. PhD Thesis in Law, Chișinău.
- Jansons, E., & Rivža, B., 2017. Legal aspects of the Supreme Audit Institutions in the Baltic Sea region. *Research for Rural Development*, 2.
- Pitulice, I. C., & Ştefănescu, A., 2021. Harmonisation and Emergence Concerning the Performance Audit of the EU Member States' Public Sector. Romania's Case. *Sustainability*, 13(7), 3673.
- Slobodyanik, Y., & Chyzhevska, L., 2019. The contribution of supreme audit institutions to good governance and sustainable development: The case of Ukraine. *Ekonomista*, 2019(4), 472–486.
- * * * Public audit in the European Union, 2019. [online] Available at: https://www.eca.europa.eu/ro/Pages/DocItem.aspx?did=48906
- * * * Romanian Constitution, 2003. [online] Available at: http://www.cdep.ro/pls/dic/site.page?id=339

- * * * Amsterdam Treaty, 1999. [online] Available at: https://www.europarl.europa.eu/about-parliament/ro/in-the-past/the-parliament-and-the-treaties/treaty-of-amsterdam
- * * * Nisa Treaty, 2003. [online] Available at: https://www.europarl.europa.eu/about-parliament/ro/in-the-past/the-parliament-and-the-treaties/treaty-of-nice
- *** Treaty on the functioning of the European Union (TFUE), 2012. [online] Available at: https://eurlex.europa.eu/resource.html?uri=cellar:2bf140bf-a3f8-4ab2-b506-fd71826e6da6.0001.02/DOC 2&format=PDF
- * * * Strategic Plan of INTOSAI 2017–2022, 2016. [online] Available at: https://www.eurosai.org/en/databases/products/Strategic-Plan-of-INTOSAI-20172022/
- * * * Reports Court of Accountants, 2021. [online] Available at: https://www.curteadeconturi.ro/publicatii
- * * * Supreme Audit Institutions | EUROPEAN COURT OF AUDITORS, 2021. [online] Available at: https://www.eca.europa.eu/ro/Pages/SupremeAuditInstitutions.aspx
- *** External Audit Supreme Audit Institutions—OECD. (2020, December 10). [online] Available at: https://www.oecd.org/gov/external-audit-supreme-audit-institutions.htm
- * * * Home—INTOSAI, 2021. [online] Available at: https://www.intosai.org/
- * * * Decision (A) 155 29/05/2014 Legislative Portal, 2014. [online] Available at: http://legislatie.just.ro/Public/DetaliiDocument/163127
- *** Law 94 08/09/1992 Legislative Portal, 2021. [online] Available at: http://legislatie.just.ro/Public/DetaliiDocument/2364
- *** Members, 2021. INTOSAI. [online] Available at: https://www.intosai.org/about-us/members
- * * * EUROSAI Objectives, 2021. [online] Available at: https://www.eurosai.org/en/about-us/about-eurosai/the-objectives-of-eurosai/

Remote Working: How the Working Life Changed During the COVID-19 Pandemic

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Abstract

The first wave of the COVID-19 pandemic led to the introduction of precautionary measures by governments globally in the interest of preventing the further spread of the disease. These measures interfered with the normal daily operations, and people, as well as organizations, had to change and adapt. Changes included complete restructuring and redefining the fundamental processes that keep the society running. Organizations had to find a way to keep providing their services or conducting their daily businesses while maintaining the set measures. Teleworking became the new normal overnight as all sectors turned to it for continuity and maintaining their relevance in their respective industry. Working from home did present some challenges that were not anticipated, and they reduced productivity. Remote working is not a new concept, but its adoption is not something that happens overnight. Overall, the current investigation provides context-related insights and acquires logically applicable bits of knowledge by examining how virtual work characteristics shape the remote work experience in the one of a kind context of COVID-19.

Key words: remote work, telework, the COVID-19 pandemic, workplace, transition. **J.E.L. classification:** J62, J81, M29.

1. Introduction

When the COVID-19 pandemic broke, the whole world was brought to a standstill where all the functions of all countries were put on a test. These functions include social, economic, legal, and political processes, which had to undergo complete restructuring in the way they function. Different guidelines were issued by institutions responsible for public health regarding the conduct of operations, and in an attempt to comply, the working life took an unprecedented change. The World Health Organization announced the COVID-19 outbreak as a pandemic in March 2020, and by July, it had become a global catastrophe damaging the global socio-economic infrastructure, and individuals were forced to change their working styles and employment prospects. These changes were introduced in order to align with the guidelines provided for precaution, and as a result, remote working gained popularity. It befits several working approaches and interpretation, but it is popularly defined as "any activity that involves the processing of information and its delivery via telecommunication link that is carried out away mainly or partly from the main premises of an organization." Remote working manifested as a solution to keep institutions running and maintain the directives of the lockdown procedures caused by the first wave and the consecutive waves.

This paper will shed light on how different organizations transformed their working styles from traditional to remote working. The paper will also reveal the experiences and impact of remote working for different parties and settings. The results will be important for managers to provide an understanding of remote working and the need for operating a flexible institution. The information provided will help in understanding how working life changed during the COVID-19 pandemic.

2. Literature review

Many researches in the field of organizational sciences, according to Johns (2018), have lack of contextual awareness. Remote working is defined as "a flexible work arrangement whereby workers work in locations, remote from their central offices or production facilities, the worker has no personal contact with co-workers there, but is able to communicate with them using technology" (Di Martino & Wirth, 1990). Current research maintains that remote work is any work conducted outside the premises of an institution utilizing the aid of Information and Communication Technologies ICTs. Research pegs this concept as twofold with strict boundaries of time and involves the performance of duties that are beneficial to the company. Freelancers and start-ups utilize remote work to leverage freedom and independence where the outcome is remote working becomes a third method of working beside the standard and the traditional. Research indicates that ICTs have been significant in the adoption of remote working by different entities, and their continued evolution has increased the efficiency of tasks performed through remote working (Wang et al., 2021). The investigation carry out by Wang et al. (2021) exposes the difficulties employees are challenged by in performing their jobs efficiently (such as work-home interference, inadequate communication, procrastination, and loneliness) and sheds light on the necessity of social support and self-discipline. Employees with more job resources and requests report less boredom at work, according to Metin Taris and Peeters (2016), which can lead to reduced procrastination. Golden and Gajendran (2019) also discovered that the positive connection between remote working intensity and job performance was stronger for employees with limited social support.

Other literature has also investigated and revealed the impacts that working from home has on individuals and their personal lives. According to a study by Vander Elst et al. (2017), the extent of remote working was unfavorably connected to social support, which caused emotional exhaustion to intensify. This research maintains that productivity depends on employees being at a capacity to focus on their tasks and find time to decompress from work-related stress. However, the COVID-19 pandemic changed all this and presented a challenge in maintaining a healthy work-life balance and successfully coping with stress. According to A. Hickman (2019), remote work increases corporate outcomes, attracts talent, and an engaged workforce has the best financial outcomes. They discussed how remote workers are affected by workplace isolation as a result of a lack of management, organizational expertise, and the development and implementation of remote work policies and procedures. On the other hand, according to Kelliher and Anderson's (2010) qualitative study, most remote workers undergone work intensification because they could avoid interruptions at the office and work more intensely. A large number of studies have found that remote working has a positive impact on autonomy.

Research goes further to indicate that even experienced remote workers find it difficult to execute effective stress coping strategies. Additionally, remote working is filled with physical and digital distractions, which impact the focus of individuals. There is also research concerned with the takeaway from the pandemic, especially how the magnitude of the pandemic affected the speed of institutions changing and adapting. This research indicates that the Human Resource executives were on the front lines of the problems and changes presented by the pandemic (Nyberg et al., 2021). If there is a department in the working world that can issue insightful lessons on the impacts of the COVID-19 pandemic, it is the HR department because they experienced it firsthand and continuously. Hence the saying, experience is the best teacher. Organizations had to make fast changes to remain relevant and keep their organizations running, even those which were unwilling to change (Reimer & Bryant, 2020).

However, not all organizations were caught off guard by the pandemic and forced into shifting from conventional to virtual working methods. Some were ready for such a scenario, and their transition was gradual and organized. This research indicates that remote working is not a new concept, and organizations have been utilizing this concept since the advent of the internet. Institutions used remote working- which this research maintains is the concept of working away from the physical premises- to maximize flexibility and schedule planning. A nation like the United Arab Emirates had a smooth transition into virtual working, prioritizing the health sector and later incorporating all public sector employees (Al Marar et al., 2021). Similar efforts were also encouraged for the private sector. Remote working was also extended to the education system, where

learning moved to e-learning. Lessons were conducted virtually, and teachers had to work remotely to provide lessons to their students.

Additional research maintains that the COVID-19 outbreak forced organizations globally into a de facto experiment and suddenly made remote working the 'new normal. The outcomes of remote working might be substantial between workers with extensive remote working knowledge and those who are not accustomed to remote working. This research incorporated work design in their research to better understand remote working during the pandemic and the role of the virtual work features in mounding working settings. Additionally, research indicates that there is a difference in remote working caused by the COVID-19 pandemic and prior remote working (Rudnicka et al., 2020). This is because remote working prior to the pandemic was voluntary compared to the one during the pandemic, which research terms as forced Working from Home (WfH), which is involuntary. It is highly likely that this situation will erupt new challenges and deterrents to remote working.

There is also literature that maintains that lockdowns were the most significant causes of remote working because they restricted mobility and, in turn, commuting to the workplace. Information from surveys indicates that the number of individuals working from home skyrocketed with the COVID-19 outbreak. The greatest challenge for most people was the lack of familiarity with Information Technology, which is odd considering that we are in a digital era (Prasad et al., 2020). The shift from conventional to remote working meant that employees had to up-skill or re-skill swiftly to remain relevant to the organization or be cut out. It also maintains that remote working has its benefits and its shortcomings. Management would prove to be difficult if, as a manager, you are managing an unskilled and unorganized workforce because there would be no flow of work and really hard to maintain high productivity.

3. Research methodology

This paper reports on a review of current research into the COVID-19 pandemic and remote working as presented in various settings and numerous manifestations in which remote working has evolved amidst the pandemic. The study finds the explorative approach suitable for obtaining insight about existing knowledge about remote working as an outcome of the COVID-19 pandemic. This study will make new contributions to the existing knowledge to create a deeper understanding of how the working life changed during the pandemic focusing on remote working.

In an effort to address the research problem, the study utilizes a systemic review methodology and analyses the variables related to remote working. The researcher identified and chose the sources for review and data collection utilizing an open-ended series of searches from relevant search engines such as Google Scholar, online libraries, and other journal publication databases. For effective results, the study incorporates terms such as remote working, COVID-19, working from home, and pandemic crisis included in book chapters, thesis, research chapters, and publications. Studies qualifying to be included in the review for this study were publications that were published in the last ten years, published in English, and are directly associated with COVID-19 and remote working or both in different organizational environments. The studies under scrutiny for this research include peer-reviewed articles, essays, journals, thesis and books. All these sources were put under a scope and analyzed for the dependability of the information collected by examining their methodologies, samples, findings, and implication to other sources. The study eventually identified critical conclusions, different themes, content examination, and contrasting summaries.

4. Findings

The outbreak of the COVID-19 changed the ordinary lifestyle of people globally and the established procedures of conducting the daily tasks, including the most serious ones such as the energy sector, economic models, and the health sector that keeps the societies running. The introduction of precautionary measures to curb the spread of the disease changed our perception of our daily activities. This outbreak put the spotlight on the health sectors of every nation globally, where world leaders attempted to keep their health systems from capsizing, and the economy was put in an artificial coma. This crisis created inefficiency in the fundamental systems and left them vulnerable (Kylili et al., 2020). This, in turn, led to a swift change of the economy and service

delivery from office settings to home settings aided by teleworking. In an effort to convert homes to offices, numerous challenges arose that hindered the efficiency of working and integrity. There was little time to anticipate that there would be power outages, no backup power, insufficient internet connection, and water shortages that affected the completeness of tasks. Local authorities and service providers had the most difficult time attempting to incorporate remote working in their environment.

COVID-19 caused a global restructuring of the complete truth of work and work practices. To make sense of this statement, we infer a term known as gamma change which involves forcing people to redefine their institutional truth to the level that is incomparable to the previous State. Gamma changes involve eternal major forces, in this case, COVID-19 pandemic to change an institution which aid the institution regain some extent of stability through immense adjustments, in this case, remote working. Additionally, remote working also presents challenges in the new settings of working from home (Bezzina et al., 2021). This is because maintaining the boundary between personal life and work-life in conventional working settings is easy. However, in remote working, this boundary becomes very thin and blurry, which means numerous distractions and less productivity. Gender stereotyping within the household was reported to have been amplified by the lockdown procedures, which increased tensions in households compared to the desired supportive environment for productivity.

Human Resource facets experienced serious changes as a result of the mass migration into virtual working. Job searches and vacancies also changed since institutions now hired according to the new process of working, which is remote working during the pandemic. The methods of conducting interviews transitioned to virtual, including positions of seniority. This approach of doing things could have been actualized eventually, but the pandemic fast-tracked this process. It is apparent that numerous organizations are embracing a future that involves utilizing virtual hiring methods as part of the process. The issue that is disturbing employers is how to handle employees who have wholeheartedly accepted remote work and wish to continue working from home (Nyberg et al., 2021). Some of their concerns include how to maintain high output over time, modifying the physical establishments to fit the workforce make-up, and effective cost reduction. Evidence supports the notion that teleworking produces results and that employees found the transition easy. These employees also maintain that they have more room to work. Meeting deadlines has been easy; however, this notion appears to support employees earning top dollar while middle-income and low-income employees don't subscribe to this notion.

The current era is a digital era, and technology is ever-evolving in an effort to address the surging fast-paced life, which is why remote working is not a new concept to some parties. However, regardless of the credibility of this information, the transition requires to be a gradual process which is why the COVID-19 pandemic caused an imbalance in the adoption of remote working by nations. Some sectors had few complications in making it work, while others faced numerous challenges. The education sector is among those sectors that were affected by remote working where teachers had to conduct lessons virtually. Analyzing the case of the United Arab Emirates, research indicates that the Ministry of Education took measures after the pandemic hit to respond to these serious conditions (AlMarar et al., 2021). To effectively transition into virtual learning, the Ministry deployed policies aimed at successfully achieving virtual learning to three target groups: General Education, Higher Education, and within the Ministry of education departments. These policies included numerous procedures, including providing laptops/tablets to the less privileged families to enhance accessibility by all students. This learning method had its upside and a downside, but numerous nations have adopted it, and they have bent it to their will.

The COVID-19 pandemic has amplified the need for working remotely. Employees can work flexibly in different settings and access their labor tasks by utilizing Information and Communication Technologies. Interestingly, the pandemic caught people off-guard, and since there were no warning signs, organizations and governments lacked the appropriate response. This meant that the adopted responses were new to most people, and there was no time for getting familiar. Additionally, when remote working became the suitable alternative to conventional working, employees were forced into it (Rymaniak et al., 2021). With the execution of lockdown and quarantine procedures, mobility became limited, and as nations turned to telework, countries with low telework were having a very difficult time. However, some countries such as Sweden and Netherlands had incorporated remote working in their workforce, and studies maintain that before the pandemic, these countries were

already well over 30%. Research also maintains that earlier studies into remote working suffered the weakness of selection bias because the nature of remote working was voluntary. A study conducted among Spanish social workers revealed information about employee perceptions, as represented in *figure 1* and *table 1*. The same research also found that workers felt overwhelmed, and there was a great extent of overloading of executives who telework. Incorporating forced telework and in the workplace produced correlations between the views of working conditions and the prospective changes that the pandemic on the labour market may produce. This information is represented in table 1.

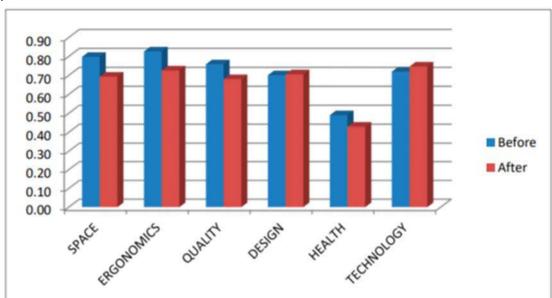


Figure no.1 Comparisons of work-related variables before and after the forced adoption of telework in Spain

Note: The variables take the values between 0 and 1, where 1 indicates strong agreement with employees' perception of the surveyed statements. *Source:* (Sustainability, 2021, 13, 7180)

Table no. 1. Correlations of the employees' working conditions after the forced adoption of teleworking with the impact of the pandemic on the Spanish labor markets conditions.

Impact of the Pandemic	Space	Ergonomics	Quality	Design	Health -0.450 *	Technology	
Salary cuts	-0.023	-0.307	-0.488 *	-0.092		-0.032	
Changes in tasks	-0.115	-0.462 *	-0.420 *	0.015	-0.506 *	0.033	
Changes in work contracts	-0.296	-0.510 *	-0.496 *	-0.120	0.340	-0.220	
Layoffs	-0.260	-0.428 *	-0.544 **	-0.137	-0.154	-0.306	
Changes of working downtimes and breaks	-0.308	-0.596 **	-0.441 *	-0.292	-0.405	-0.357	
Temporary telework	0.091	0.127	0.310	0.156	0.106	0.223	
Permanent telework	-0.390	-0.275	-0.173	0.040	-0.296	-0.208	

Level of significance: *p < 0.05, **p < 0.01.

Source: (Sustainability, 2021, 13, 7180)

5. Conclusions

Remote working is not a new concept, but this is a very new concept for most developing countries. However, the transition to remote working is a necessity and happens in dire conditions. Employees had to find ways of getting acquainted with remote working or risk being laid off by their respective institutions because they could not deliver. The COVID-19 pandemic caused institutions

to respond without anticipating challenges that would emanate from adopting remote working. As it stands, remote working for some people, especially those with families, presented a major challenge maintaining a work-life balance and boundaries between personal and professional work. From the information collected, remote working supported gender equality to some extent and amplified gender stereotypes in homes. Nobody had anticipated that bringing the office home could have caused some major social issues. Remote working has taught people the value of having the right environment to maximize productivity. Additionally, effective adoption of remote working requires making efforts to boost employees' organizational commitment and job satisfaction.

More studies need to be conducted to look into the feasibility of remote working in the future and how responsive organizations and employees will be towards the idea. There is also a gap in knowledge about remote working during the pandemic and what lessons organizations and government have made to better prepare for such a moment in the future. However, the research that exists will be of great importance to a manager who decides to adopt remote working permanently because it will give them a better insight into what works and what does not. They will be able to design tasks better for their employees to be acceptable to the essence of remote working. Additionally, the manager will have better luck managing a virtual workforce from the lessons that their counterparts before them who were pioneers of remote working in their respective organizations faced. We continue to figure out the long-term implications of COVID-19 and the workplace.

6. References

- Bernstein E, Blunden H, Brodsky A., 2020. The implications of working without an office. *Harvard Business Review*.
- Di Martino, V. and Wirth, L., 1990. Telework: A new way of working and living. *International Labour Review*, 129(5), p.529–554.
- Dingel, J. I. & Neiman, B., 2020. How many jobs can be done at home? J. Public Econ
- Cassar, V., Marmara, V. and Said, E., 2021. Surviving the pandemic: Remote working in the Maltese Public Service during the COVID-19 outbreak. *Frontiers in Sustainability*, 2, p.9.
- Golden, T.D., & Gajendran, R.S., 2019. Unpacking the role of a telecommuter's job in their performance: Examining job complexity, problem solving, interdependence, and social support. *Journal of Business and Psychology*, 34(1), p.55–69.
- Hickman, A., 2019. Workplace Isolation Occurring in Remote Workers. Doctoral Thesis. Walden University.
- Houghton E., 2020. Coronavirus and the workforce: working from home in the 'new normal': the pros
 and cons of using digital technologies to work from home during COVID-19. Chartered Institute of
 Personnel Development.
- Johns, G., 2018. Advances in the treatment of context in organizational research. *Annual Review of Organizational Psychology and Organizational Behavior*. 5, p.21–46.
- Kelliher, C., & Anderson, D., 2010. Doing more with less? Flexible working practices and the intensification of work. *Human Relations*, 63(1), p.83–106.
- Kylili, A., Afxentiou, N., Georgiou, L., Panteli, C., Morsink-Georgalli, P.Z., Panayidou, A., Papouis, C. and Fokaides, P.A., 2020. The role of remote working in smart cities: Lessons learnt from COVID-19 pandemic. *Energy Sources, Part A: Recovery, Utilization, and Environmental Effects*, p.1-16.
- Nyberg, A.J., Shaw, J.D. and Zhu, J., 2021. The People Still Make the (Remote Work-) Place: Lessons from a Pandemic. *Journal of Management*, 47(8), p.1967-1976.
- Phillips, S., 2020. Working through the pandemic: Accelerating the transition to remote working. *Business Information Review*, 37(3), p.129-134.
- Prasad, D.K., Mangipudi, D.M.R., Vaidya, D.R. and Muralidhar, B., 2020. Organizational climate, opportunities, challenges and psychological wellbeing of the remote working employees during COVID-19 pandemic: a general linear model approach with reference to information technology industry in hyderabad. *International Journal of Advanced Research in Engineering and Technology (IJARET)*, 11(4).
- R., Alkhodari, A., Atia, D.Y., Mohamed, S., and Shubair, R.M., 2021. Working Remotely During the COVID-19 Pandemic: Efforts of the Ministry of Education in the United Arab Emirates. *TIJAB The International Journal of Applied Business*, 5(1), p.1-17.
- Reimer, D., & Bryant, A. 2020. Superhuman resources: How HR leaders have redefined their C-suite role. Harvard Business Review.

- Rudnicka, A., Newbold, J.W., Cook, D., Cecchinato, M.E., Gould, S. and Cox, A.L., 2020. Eworklife: Developing effective strategies for remote working during the COVID-19 pandemic. The New Future of Work Online Symposium.
- Rymaniak, J., Lis, K., Davidaviciene, V., Perez-Perez, M. and Martinez-Sanchez, A., 2021. From Stationary to Remote: Employee Risks at Pandemic Migration of Workplaces. *Sustainability*, *13*(13), p.7180.
- Vander Elst, T., Verhoogen, R., Sercu, M., Van Den Broeck, A., Baillien, E., & Godderis, L., 2017.
 Not extent of telecommuting, but job characteristics as proximal predictors of work-related wellbeing. *Journal of Occupational and Environmental Medicine*, 59(10), p180–p186.
- Wang, B., Liu, Y., Qian, J. and Parker, S.K., 2021. Achieving effective remote working during the COVID-19 pandemic: A work design perspective. *Applied psychology*, 70(1), p.16-59.
- Yang, L., Holtz, D., Jaffe, S., Suri, S., Sinha, S., Weston, J., Joyce, C., Shah, N., Sherman, K., Hecht, B. and Teevan, J., 2021. The effects of remote work on collaboration among information workers. *Nature human behavior*, p.1-12.

Human Capital Theory in Respect to Cultural, Digital Implications and Integrated Communication

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Abstract

This article highlights from a different perspective of comprehending the implications which scholars relates HCT besides the known linear development of individual development in respect to education – labor market – workplace. The alternative perspective highlights closely towards a sociological perspective regarding not only the limits of HCT that appear during researches, but also in respect to new trends of development, such as the process of digitalization, which prepares not only the next industrial revolution, but creates also the environment for individuals to adapt towards either virtual, or augmented reality. This article begins with a briefly description of HCT mentioned by various authors, followed by a detailed perception of individuals within the society, and concluding with alternative methods of understanding de development of individuals, and our society as well.

Key words: Human Capital Theory, digitalization, culture, integrated communication

J.E.L. classification: E24, J24, O14

1. Introduction

Human Capital Theory (HCT) receives further interests among academicians who want to uncover the complex jigsaw that links education – labor market – workplace in respect to the ongoing development of the society. In this regard, HCT does have a heavy burden to properly, thus clearly, explain the importance of the line which individuals follow starting from education towards their workplace. However, this aspect remains debatable, due to the fact that the HCT gains multiple critics from each domain especially when it comes to "educators, economists, sociologists, and philosophers" (Tan 2014:1). Moreover, the mentioned critics are not necessarily solid in terms of research, but rather as author Tan mentioned, multiple yet fragmented critics among peculiar domains. Which is indeed expected, due to the implication of multiple spheres which need to be segmented, explained, and comprehended.

2. Literature review

A short description of the ongoing development of HCT was pointed out by authors Fredrick Muyia Nafukho, Nancy R. Hairston and Kit Brooks (2004:544-545), which they gathered various concepts and explained diverse perspectives, in addition to broad perceiving of peculiar authors which researched the domain of HCT. In this regard, the authors point out that the HCT developed since 1950' regarding the examination of peculiar domains of production, such as physical capital, labor, land, and management mentioned by authors Mincer (1962), as well as Becker (1993). However, starting with the early 1960', authors (Denison 1962; Krueger 1968; Schultz 1961) engaged in challenging research to highlight and explain the link of economic growth among the four mentioned domains (physical capital, labor, land and management). Furthermore, they also point out that "the gap" will consequently lead towards the "residual factor", hence approaching towards the notion of "human capital" (Schultz 1961). However, even if the

authors argue about the fact that the concept "capital" is commonly used within economic, financial, or other similar domains, the authors also point out the fact that:

"The fundamental principle underpinning Human Capital Theory is the belief that peoples' learning capacities are of comparable value to other resources involved in the production of goods and services (Lucas 1988, 1990)."

The concept "capital", in relation with HCT, will gain a peculiar and significantly sophisticated process of elucidating and highlighting complex and relatively unique mindset of understanding individuals' behaviors, especially within their life-cycle choices within the society, hence the close relation between education - labor market – workplace of a given individual.

Starting from this point of view, HCT limitations could also be comprehended yet from an alternative sphere, which represents the cultural sphere, as well as the globalization trend due to the ongoing and rapidly development of digitalization. The first aspect which need to be highlighted, remains the fact that peculiar cultural implications molds not only the behaviors of individuals, but also the interrelation of individuals within the society. However, the intention is not to uncover a new theory for the definition of culture in general, but rather understand the concept of culture as a significant factor/barrier of change. As author Birukou (2009:3-5) points out that:

"Culture is a slippery and ubiquitous concept. [...] culture is learned, it is associated with groups of people and its content includes a wide range of phenomena including norms, values, shared meanings, and patterned ways of behaving"

Moreover, author Birukou also indicates that together with the implication of globalization and digitalization, there will be eventually a new trend of culture. However, now will arise the question: why should culture be a possible indicator for future analysis and further research? A possible answer represents the fact that the means of production will be reshaped, due to the fact that the next industrial revolution could take place besides the existing reality, but also within the virtual reality. For instance, as author Min Xu (2018:91) pointed out:

"Now a Fourth Industrial Revolution is building on the Third, the digital revolution that has been occurring since the middle of the last century. It is characterized by a fusion of technologies that is blurring the lines between the physical, digital, and biological spheres."

Moreover, to make this aspect further possible, human capital becomes significantly more valuable in terms of future development. In addition, besides the ongoing need of energy sustainability in order to maintain the virtual/digital world, the need of involved individuals within digital, as well as the augmented reality, increases even further. It is indeed indubitably true the fact that HCT receives also critics when it comes to clearly highlight the link between education – workplace – production within the labor market. One possible answer could also mean that, as the labor market changes in time, similar to the industrial revolutions, in the same manner will also the definition of production within that specific era will change, hence reshape. In this regard, a peculiar perspective in affiliation with the education of an individual was pointed out by authors Aliaga (2001), Becker (1993), Benhabib and Spiegel (1994), Engelbrecht (2003) and Hendricks (2002) arguing about an important aspect of HCT which investigates and clarifies the significant process of gathering knowledge, or education, as well as the preparation and training as a "form of investment" in human resources. The authors summarize the fact that:

"[...] education and schooling are seen as deliberate investments that prepare the labor force and increase productivity of individuals and organizations, as well as encouraging growth and development at the international level" (Fredrick Muyia Nafukho et al. 2004).

However, and from a speculative perspective, if we take money as unit of production, and education as a direct factor, then this causal effect could be true. Undoubtedly, education could amplify the probability to receive abilities to increase monetary power, however, it also depends on what type of education are we referring to. If we refer to formal education, such as schools or universities, it is a clear possibility but not a guarantee that scholars will gain a place within the workforce. In addition, there is also the informal aspect of education, an education similar with the experience gained through their lifetime, without receiving any formal education. Even so, informal education could prepare the individual to gain monetary power within the community, or society in which he continues to live. In this regard, as many academicians criticizes HCT due to the fact that even if its relatively vague in terms of a clear explanation regarding the link between

education – labor market – workplace, the theory still exists. In this respect, HCT does have a high potential, but lacks when it comes to highlight all possible factors which an individual deal with in terms of comprehending their own development. For instance, the process of human development, as also author Nee (1998) considers that:

"From the vantage point strict methodological holism, the relationship between individuals and society can be metaphorically compared to that between leaves and the tree. Leaves come and go accordingly to the seasons, but it is the tree's branches and trunk that over the years shape their pattern and distribution. In this view, individual action is likened to the fluttering of leaves in a breeze" (Nee 1998:4).

3. Findings

To further develop authors Nee (1998) point of view, there are peculiar limits regarding the analyzes of HCT, such as comprehending each leaf in tree as individuals, respectively foresee or predict each leaf's behavior or movement, thus predicting each individual's behavior. The peculiar example which author Nee pointed out, it is not necessarily difficult to understand, but rather to choose the desired method of understanding each leaf without over-inspecting it. For instance, the first step of changing the perspective of analysis, starts from what type of behavior of research is needed, hence each type of tree or forests behave differently, such as the comparison between pine tree and oak tree. Meaning, that each leaf on the tree represents an individual, however, the individuals are not characterized as extrinsic aspects based on races, country, or body dimensions, but rather on their intrinsic behaviors, such as how they behave at school, workplace, home, virtual reality, etc. The next step follows the analysis of the tree itself, which is a similar analysis of the leaf's but at the tree level, which is the dimension itself. For instance, the tree represents not the company, but the organizational culture within the company, or the entire globe of behavior within the family sphere, academic sphere, and so on.

This kind of cultural analysis will become even more essential, when it comes to comprehend not the practical aspects of the human capital development, but rather the intrinsic aspects that the individual deal with, forming it and developing adequately towards the status-quo of today technological development. Furthermore, the curious aspects that scholars, or academicians, have been allured by the theory consists mainly in respect to a peculiar liaison between education and (marginal) productivity of labor which attend towards an increase of earnings. This idea was argued by author Simon Marginson (2019) pointing out the fact that "the value of investment in education is defined by the lifetime earnings of education labor", as well as the fact that the "education, work, productivity and earnings are seen in linear continuum" (Marginson 2019:287). However, it lacks the intrinsic aspects, or rather the external factors which molded intrinsic behavior. For instance, if the individual is academically prepared in terms of philosophy, could he use the acquired knowledge to survive in the wilderness? Theoretically, the chances are slim, hence the important fact to understand is that achieving knowledge does not necessarily mean the increase of earnings, but rather broadening their perspectives in terms of comprehending alternative or new methods of efficiency in respect to already existing products from society itself. Moreover, if by discovering new methods of efficiency in what they exceed could increase their earning, does solidifies and proves that education could increase monetary power. But on the other hand, it is not necessary true, due to the fact that many academicians comprehend this causal effect closely to an engineering causal effect perspective, and not from a sociological perspective. Indeed it is more efficient and simpler to highlight a causal effect of an individual in respect to the linear development between education - labor market - workplace, but it lacks entirely to cover intrinsic aspects that could offer further clues in terms of understanding one individuals intentions. However, this situation is not jointly possible due to the fact that each individual is a complex being, hence if analyzing one individual is difficult, does this mean that analyzing the entire society is impossible? Yet again, both aspects are not entire vague due to the complexity of research, but rather there are similarities which cannot be eliminated.

Returning to the comparison between the pine and oak trees, both of them have different types of leaf's, thus when the wind blows, the probability that pine leaf's remain attached to the tree is higher, compared to the oak tree. However, on the other hand, the oak tree could persist in high

temperatures significantly better, compared to pine trees, resulting to a better survivability. This example highlights foremost the fact that each illustrated interaction behaves in peculiar conditions, hence the digitalization will eventually, if not already, creates a new culture which individuals behave differently compared to other spheres within the society. The possible called 'digital cultures' among involved individuals, could eventually lead toward forming new digital products which serve our society in order to gain not only monetary power, but to make our ways of living significantly efficient. One example, represents the creation of online platforms, which consequently lead to the construction of "Uber-platform", hence a new created digital product in respect to taxi services. This platform, is mostly available for people who are already connected to the digital, or virtual, world, offering an alternative and significantly more efficient in terms of creating connections between demand and offer, as well as simplifying the payment possibilities as an alternative to physical money. Moreover, due to new societal products, individuals within a given society will develop besides specific cultural behavior, alternative beliefs as well, which eventually lead towards adopting also alternative lifestyles in close concordance with digitalization and globalization as well.

4. Conclusions

HCT researchers need to take into consideration the fact, that starting at the individual level, human capital development it is not limited just to be educated and consequently to produce in order to gain earning. Thus, individual development depends mostly on aspects which are complex to analyze yet needed in order to gain new paths of comprehending HCT. It is undoubtedly, that with each digital progress, or milestones, there will be a new process of forming a new culture within the virtual reality. An essential component in order to clearly understanding not only towards what we are tending to, but also to embrace alternative paths to construct the first bedrocks for the next industrial revolution, regardless if its within the existing reality, virtual reality, or both.

5. References

- Aliaga, A. O. 'Human capital, HRD and the knowledge organization', in O. A. Aliaga (ed.)
 Academy of Human Resources Development 2001: Conference Proceedings, Baton Rouge, LA:
 AHRD, pp. 427-434, 2001.
- Becker, G. S. Economic imperialism. Religion & Liberty, 3(2). 1993b. Retrieved from http://www.acton.org/pub/religion-liberty/volume-3-number-2/economicimperialism
- Becker, G. S. Human capital: A theoretical and empirical analysis, with special reference to education. Chicago, IL: University of Chicago Press, 1993a.
- Benhabib, J., & Spiegel, M. M. The role of human capital in economic development. Journal of Monetary Economics, 34(2), 143–173, 1994.
- Birukou A., Blanzieri E., Giorgini P., and Giunchiglia F., 'A formal Definition of culture', Technical report #DISI-09-021, University of Trento, June 2009. Accessed on: http://eprints.biblio.unitn.it/1604/1/021.pdf
- Denison, E. The Sources of Economic Growth in the United States and the Alternative Before Us. New York: Committee for Economic Development, 1962Emrullah Tan. Human Capital Theory: A Holistic Criticism, Review of Educational Research September 2014, Vol. 84, No. 3, pp. 411–445. DOI: 10.3102/0034654314532696.
- Engelbrecht H., 'Human capital and economic growth: cross-section evidence for OECD countries', Economic Record 79 (Special Issue): 40-51. 2003.
- Fredrick Muyia Nafukho, Nancy R. Hairston and Kit Brooks (2004), "Human Capital Theory: Implications for human resource development", Human Resource Development International. pp. 545-511. DOI: 10.1080/1367886042000299843. Rouledge, 2004.
- Hendricks, L. 'How important is human capital for development? Evidence from immigrant earnings', American Economic Review 92(1): 198-219. 2002.
- Krueger, A. O. 'Factor endowments and per capita income differences among countries' The Economic Journal 78:641-659, 1968.
- Min Xu, Jeanne M. David and Suk Hi Kim, 'The Fourth Industrial Revolution: Opportunities and Challenges', International Journal of Financial Research, Vol. 9, No. 2; University of Detroit

- Mercy, USA 2018.
- Mincer, J. "Investment in Human Capital and Personal Income Distribution." Journal of Political Economy 66 (4): 281–302, 1958.
- Prisecaru, P. Challenges of the Fourth Industrial Revolution. Knowledge Horizons. Economics, 8(1), 57-62. 2016. Retrieved from https://search-proquest-com.ezproxy.libraries.udmercy.edu:2443/docview/1793552558?accountid=28018
- Schulz, T. W. 'Education and economic growth', in N. B. henry (ed.) Social Forces Influencing American Education, Chicago, II: University of Chicago Press, 1961.
- Simon Marginson (2019) Limitations of human capital theory, Studies in Higher Education, 44:2, 287-301, DOI: 10.1080/03075079.2017.1359823. To link to this article: https://doi.org/10.1080/03075079.2017.1359823
- Victor Nee, Sources of the New Institutionalism. Cornell University, 1998. https://www.researchgate.net/publication/247594425 Sources of the New Institutionalism

The Tracking of Industrial and Digital Revolutions and the Importance of Human Capital Development

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Abstract

The following paper highlights new approaches of comprehending the core aspect of human capital development within the ongoing process of new technological development era. The literature review dwells with headlining key aspects in relation to education and production, aspects that influence the ongoing development, as well as highlighting the importance of solid binding links which causes multiple issues along with its rewards. One of the prominent concern that highlights unusual issues, as well as unique rewards, represents the development and assimilation process of digitalization. In this regard, new atypical and unique jobs that appear within society, offers new possibilities together with new obstacles which need to be solved differently.

Key words: industrial revolution, digitalization, human capital development, path-dependence,

future developments

J.E.L. classification: E24, J24, O14

1. Introduction

To outline the contemporary trend of digitalization, briefly highlighting the outline and trace of technological development in respect to industrial revolution, represents the framework of understanding why the changes would exist in the first place. The second approach encompasses the reshaped core perception of production (productive and non-productive sectors) within each phase of the industrial revolution. When it comes to the redefining the meanings of production, mostly it also depends on what sectors the units of production are analyzed. Hence, productive sectors, and non-productive sectors (also known as service sectors), have theoretically different methods of measuring, especially when it comes to income or expenses. For instance, in the productive sector, where the measure could be made on the number of produced vehicles, the sales of the cars could represent the units of efficiency and production, hence the economic growth. However, when it comes to the non-productive sectors, such as teaching or educating, domain of military or security (cybersecurity as well), the measures are mainly different, due to the fact that the expenses and the results are different in this case. Moreover, pointing out which are the significant units of measure represented mostly by the income implemented for each sector by the state. The third part highlights the relevance of culture in relation with the ongoing technological development. Until now, most of the units of measures were either products, or needed services. However, there is an unclear situation in regard to the importance of cultural aspects, which are analyzed together with productive and non-productive sectors. This situation needs to be considered due to the fact that efficiency could affect ethical aspects. Meaning which are the limits which an enterprise could increase efficiency, without putting in danger ethical aspects, or there also could be intrinsic aspects (beliefs, or desires) which could be changed in order to increase efficiency.

2. Theoretical background. The industrial revolutions and the perspectives of logistical and ethical barriers

A suitable illustration of the four industrial revolutions was highlighted by author Prisecaru (2016) presented within authors Min Xu et al. article (2018), detailing briefly (within Table 1) the period together with the transition period, the main energy input source thrusters, followed by the output torque of technical achievements, the output of main developed industries, as well as the means of transportation of that peculiar era.

Interestingly enough, simply by analyzing the table, we witness aspects which need to be considered. For instance, the first outstanding aspect represents a rather decrease trend of the time period between the period and transitional period of each era. As we observe in table 1, the period between each industrial revolution becomes relatively faster and shorter compared to the former period. This aspect could be also influenced by other indicators which develops other means and opportunities in terms of development. As example in this regard, by also analyzing the main source of their energy resource, as authors Min Xu et al. (2018:90), point out:

"The first industrial revolution [...] The steam engine allowed the transition from farming and feudal society to the new manufacturing process. [...] The second industrial revolution began in 1900 with the invention of the internal combustion engine. This led to an era of rapid industrialization using oil and electricity to power mass production. The third industrial revolution [...] was characterized with the implementation of electronics and information technology to automate production. [...] The fourth industrial revolution now involves computer generated product design and three-dimensional (3D) printing [...]. (Prisecaru, 57-62)"

Each industrial revolution encompasses peculiar and distinct sources of developments, starting with the type of resources which were used before. As first example, as author Prisecaru (2018) highlighted, in the first industrial revolution coal represented the main source input to develop steam as primal source output of energy. Besides the aspect that the obvious transition from feudal society towards a new method of industrial manufacturing process, the rather curious aspect represents the logistics methods which were used in that period, rather than the processing and end-product period. For instance, that era's capacity of gathering the main source input of energy represented one of the most significant as well as the first step of coordinating a new internal mechanisms of a given enterprise.

The main aspect which need to be considered in this situation, represents mainly the needed resources to maintain the industrial revolution, the important logistics that fuel in the end the maintenance of the industrial revolution, for what rewards were those acts done for, and finally, which were the main expenses invested in order to achieve not only the first steps of industrial revolutions, but the followings as well. This being mentioned, the second industrial revolution, developed from coal as main input resource source towards oil and electricity. Interestingly enough, the development towards internal combustion engine, which consequently developed new products (cars, for instance), and concomitantly new perspectives in terms of internal mechanisms, besides the shortening of logistics and time as well. For instance, in order to progress towards new means of development, it also represents a new method of efficiency. Hence, considering that the main source of energy remained coal for each industrial revolution, would this have been accepted in the future? Probably not, due to the increase protection of nature, for example, but this aspect we will detail it later on. Nevertheless, extracting other sources of energy, also means that there could have been significant changes in the strategies of logistics, which were changed in order to achieve faster developments in other domains.

As consequence, if electricity was not achieved with the help of oil extraction and oil refining, then the next industrial revolution would not be reached, respectively new means of production and further efficiency would not have been reached. The third industrial revolution developed efficiency, and logistics even further, eliminating mainly the majority of the search of coal and oil resources (theoretically), and started pursuing other sources of energy, such as natural gas (an alternative form of energy from oil and coal), and even more efficiently the development of nuclear energy. The third industrial revolution also brings significant products necessary for the next industrial revolution, such as the appearance of computers, robots, planes, more efficient cars, and so on. However, the interesting aspect start mainly between the third and fourth industrial

revolution, because the main source of energy input starts to be limited by other ethical barriers, which are mainly two important aspects: (1) the protection of workers, and (2) the protection of environment. Both of mentioned spheres deal with the reaction of society itself. In the first case, the protection of workers with social protection policies, develops an interesting restriction.

Enterprises are theoretically limited to develop if they do not respect some ethical or other similar types of barriers (such as the destruction of nature for the development of the industry), or if they do not offer significantly better protection for workers in terms of instruments, suitable equipment's, etc., but also adequate income in order to perform, for instance if the income is not high enough, then individuals will not be interested to work that specific job, yet on the other side, if the income is too high, then it is possible that the end-product is not profitable enough, meaning that there is no more interest in developing that sector anymore. Finally, there is the fourth industrial revolution, which searches even further alternative methods of energy input resources, such as green energy, consequently developing even further products and other aspects which constructs our society in our days. Nevertheless, even though there are mainly new searches for alternative energy resources, this will not necessarily mean that there will also be at the same efficiency level, because of to the ethical and practical limitations of those resources. For instance, a comparison between nuclear energy and green energies, on one hand the nuclear energy offers significantly higher energy output than the wind power energy, or solar panel energy. Hence, even thou nuclear plants are mainly dangerous for the environment and the society (Chernobyl case), the energy output is relatively higher than the green energy outputs. For instance, even if the solar panel generate significant higher energy generation, storing that energy in batteries represents a challenge (besides the energy consumption during night), or in the case of wind power energy, when there is a possibility that there will be a lack of winds.

Conclusively, the protection of nature represents one of the highest priority in order to maintain our current society, however, on the other side, if there is not enough energy to generate, then there is the possibility that the next industrial revolution to not occur, due to the lack of energy. However, this does not mean the fact that there is a decrease in terms of development, on the contrary, it means that due to societal constrains, the internal mechanisms of development changed from "hard and solid products" (trains, cars, computers, robots, etc.) towards "complex and digital products" (internet, genetic engineering, software's, digital platforms, higher performance electric cars, significant efficient planes, ultra-fast trains, decrease in size among electric circuits). This new approach in respect to development, also need another suitable approach of human capital development, which will be detailed further in the next part.

Table 1. Main characteristics of industrial revolutions

Period	Transition Period	Energy Resource	Main Technical Achievement	Main Developed Industries	Transport Means
I: 1760-1900	1860-1900	Coal	Steam Engine	Textile, Steel	Train
IE: 1900-1960	1940-1960	Oil Electricity	Internal Combustion	Metallurgy, Auto,	Train, Car
			Engine	Machine Building	
III: 1960-2000	1980-2000	Nuclear Energy	Computers, Robots	Auto, Chemistry	Car, Plane
		Natural Gas			
IV: 2000-	2000-2010	Green Energies	Internet, 3D Printer,	High Tech	Electric Car,
			Genetic Engineering	Industries	Ultra-Fast Train

Source: Prisceam, P. (2016). "Challenges of the Fourth Industrial Revolution." Knowledge Horizons. Economics, 8(1), 57-62. Web https://search-proquest-com.ezproxy.libraries.udmercy.edu:2443/docview/1793552558?accountid=28018.

3. Findings. The prioritization of production and the importance of human capital development

When it comes to comprehending and measuring units of production, or simply the definition of production in general, firstly it depends on what type of production is envisioned, followed by the level of expenses on those specific spheres. Thus, the peculiar difference between productive-, and

non-productive sectors lies among their forms of products, and calculated (theoretically) with the level of investments, or governmental expenses, for those sectors. For instance, considering the article from authors Tuan T. Chu et al. (2018), they mention that:

"Researchers have differentiated between productive and non-productive government expenditure and have shown how a country can increase its economic growth by changing the mix between these alternative forms of expenditure (Tuan T. Chu et al. 2018)"

Moreover, as author Tuan T. Chu highlights, other academicians such as Kneller (et al. 1999), who also considers that:

"[...] productive government spending influences private sector productivity and hence has a direct impact on growth, while non-productive expenditure, which normally has an effect on citizens' welfare, is likely to have a zero or negative growth impact."

There are many aspects to develop when it comes to expenses in general, because as I mentioned previously, there are production units which are significantly easy to measure within the production sector (such as the number of produced cars, followed by the profit after the industry sells the cars), compared to the non-productive sector (services in general, such as teaching, or in general theoretical services) which as author Kneller (1999) mentioned "is likely to have a zero or negative growth impact".

However, author Kneller mentioned mainly the fact that the 'growth impact' within non-productive sector (or service sector) are theoretically unattractive and unprofitable when it comes to invest as private entity, but most needed among citizens, compared to the production sector. This situation, nevertheless, is partially true, due to the fact that the service sector in general is difficult to be measured. In addition, there is also the aspect of necessity and efficiency, thus the production sector cannot maintain or perform without the non-production sector. Employees in order to be suitable within an industry, it needs firstly the basic preparedness of skills and knowledge in order to be a top performance employee. In addition, and considering author's Prisecaru (2016) table, there is also an indication of an increased need of highly educated employees in order to perform in the new industrial era (such as, IT employees, digital engineers, robotic engineers, etc.).

Moreover, the base necessity of human capital development lies together with the industrial revolution, when it comes to development in terms of increasing productivity within new spheres, and not automatically within the production sectors. Undoubtedly, the production sector remains one of the main source of progress and development, however without the development of service sector, especially in regard to human capital development, the production sector cannot develop at its peak performance. However, considering authors Tuan T. Chun (2018) results, even if the education of citizens in general in respect to the new trends of industrial developments, the governments in general prefer to expend towards mainly the productive sector and ignoring, if not reducing, expenses within the non-productive sectors. Tuan T. Chun (2018) highlights that:

"[...] the findings show that a shift in government expenditure towards productive government expenditure and away from non-productive expenditure has a positive relationship with economic growth. In relation to low- to middle-income countries, we find a similar relationship, [...]. However, by shifting from non- productive to productive forms of public spending, countries can move closer to a more optimum growth level. These results support our conclusion that our low- to middle-income countries sample has followed the fiscal policy approach of high-income countries, in allocating government expenditure in favour of productive government spending at the expense of non-productive expenditure to enhance economic growth."

In this regard, it is debatable if the necessity of expending further within productive sectors diminishes the economic pressure from the non-productive sectors. Furthermore, the necessity of maintaining the private sector as a type of vanguard of economic and industrial development represents one of the significant factors in terms of developing new methods of efficiency. Moreover, regardless of expenses within researching industrial development, but also researching a more efficient method in educating and discovering new trends of human capital development also represents a significant priority, which needs to be supported economically. In this respect, the decision-making actors within governments, also represents one key aspect of understanding the maintenance, or the change factors, hence:

"[...] our findings have implications for governments in deciding how to allocate their expenditures. For high-income countries, allocating more expenditure to education, housing and general public services will enhance economic growth. Meanwhile spending more on health and economic affairs bring the same result for low- to middle-income countries. However, expenditure on social protection has a negative impact on economic growth for both sets of countries (Tuan T. Chu 2018)."

Within this quote, there are three aspects which need to be highlighted, thus: (1) the implication of the governments, (2) expenses in regard to health and economic affairs, and (3) expenses in respect to social protection. Starting with the first aspect, the implication of the governments represents one of the most important actors in terms of changing the prioritization of internal mechanisms with policies, or legislative means. In this regard, the concept of path-dependence (Colin and Farrell 2004) becomes further significant when it comes to changes, or transitions, at a high magnitude level. Comparing high-level income countries, with low-, middle-income countries, also points out the fact that, theoretically, high-level income countries rejoice the implementation and development of latest developments in terms of industrial and human capital developments. Meaning that countries with low-, middle-income did not increase the allocation for "more expenditure to education, housing and general public services" (which will enhance economic growth) due to the lack of economic sustainability from the production sector, compared to highincome countries. This aspect also proves the importance of the necessity of transitioning from one industrial revolution, towards the next one, due to the fact that, there could be latter countries which if not stagnating, could decrease in terms on economic growth, especially when it comes to worldwide economic competition and technological developments. The second aspect, encompasses the fact that health and economic affairs, could mean that the ongoing internal mechanisms are already performing. For instance, the existing expenses within the healthcare system depends mainly on the existing 'routine' within that society, with the condition that there will not be any kind of a health crisis, which will put eventually pressure on public expenses. The economic affairs, on the other hand, creates or maintains economic relation betwixt states.

However, economic affairs have also a significant role when it comes to international Trade Agreements. These agreements, theoretically could increase even further economic growth among the states. The third aspect regarding the social protection expenses, generally is rather a non-profitable domain, but necessary to the welfare state, respectively to the citizens. This sector represents mainly a vanguard toward multiple situation which the state needs to use the finances in order to offer possibilities for the citizens to either be protected economically (unemployment expenses, accident expenses, peculiar expenses in respect to pension, and so on), and regardless on the income of each state, it needs to be funded and further adequately prepared for current statusquo needs of internal mechanisms of the given state.

4. Conclusions

Due to new approaches and new technological discoveries which aid towards a significantly improved way of increasing production, along with preparing, and educating employees to handle new methods and habits in order to perform correspondingly with advanced knowledge. This paper concludes that there is not necessarily the need of finding new products, as well as new methods of comprehending the new industrial revolution, but rather understanding firstly the status-quo of already existing peculiar logistical methods of energy inputs, followed by significant and efficient methods of transportation, but rather focusing even further with developing human capital in order to perform with a high degree of complexity when it comes of digital technicalities. Meaning that the industrial revolution could actually develop not within the existing world, but rather within the digital world. However, the virtual reality could not be maintained if there is no economic sustainability, as well as the insurance of a solid social protection system, in order to maintain both existing as well as digital reality. Moreover, even if there is a peculiar trend of investing further in the production sector, investing within the non-production sector could mean further digital developments, as well as further industrial developments. This could also be considered as the beginning, if not already existing new industrial revolution, hence shifting towards the digital revolution within the industrial development.

5. References

- Bagozzi, R.P., 2007. The Legacy of the Technology Acceptance Model and a Proposal for a Paradigm Shift.. *Journal of the Association for information systems* JAIS. University of Michigan. [online] Available at:
 - https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.361.5863&rep=rep1&type=pdf
- Bagozzi, R.P., U.M. Dholakia, and L.R. Klein Pearo, 2007. Antecedents and Consequences of Online Social Interactions. *Media Psychology*, 9, pp. 77-114.
- Birukou A., Blanzieri E., Giorgini P., and Giunchiglia F., 2009. *A formal Definition of culture*, Technical report #DISI-09-021, University of Trento, June 2009. [online] Available at: http://eprints.biblio.unitn.it/1604/1/021.pdf
- Chu, T.T., Hölscher, J. & McCarthy, D., 2020. The impact of productive and non-productive government expenditure on economic growth: an empirical analysis in high-income versus low- to middle-income economies. *Empir Econ* 58, pp. 2403–2430. [online] Available at: https://doi.org/10.1007/s00181-018-1616-3
- Crouch C., Farrell H., 2004. Breaking the path of Institutional development? Alternatives to the new determinism. *Rationality and Society*, Sage Publications.
- Dabholkar, P.A. and R.P. Bagozzi, 2002. An Attitudinal Model of Technology-Based Self- Service: Moderating Effects of Consumer Traits and Situational Factors. *Journal of the Academy of Marketing Science*, pp. 184-201.
- Kneller R, Bleaney M, Gemmell N, 1999. Fiscal policy and growth: evidence from OECD countries. J Public Econ 74(2), pp. 171–190.
- Xu M., David J.M., Kim S.H., 2018. The Fourth Industrial Revolution: Opportunities and Challenges. *International Journal of Financial Research*, Vol. 9, No. 2.
- Prisecaru, P., 2016. Challenges of the Fourth Industrial Revolution. Knowledge Horizons. Economics, 8(1), pp. 57-62. [online] Available at: https://search-proquest-com.ezproxy.libraries.udmercy.edu:2443/docview/1793552558?accountid=28018

The Life Expectancy and the Economic Conditions in Pandemic Context in EU

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Abstract

This study debates the life expectancy at birth in the pandemic context at EU level. Starting from the hypothesis that COVID-19 influences the health and the economic conditions for a large majority, we analysed if the life expectancy at birth and life expectancy at the 65 age are or not in decline at present due to the pre-pandemic period. Using descriptive methods, we identified which are the European countries where high mortality has led to significant reductions in life expectancy and, respectively, whether these reductions are higher among men than among women.

We find that COVID-19 has contributed to the reduction of life expectancy and has caused many years of life lost in most European countries. There are just few countries where life expectancy at birth increased or remained at the same level.

Key words: life expectancy, pandemic context, COVID-19, European countries

J.E.L. classification: I10, J17

1. Introduction

The pandemic context influences all the aspects of our life, including life expectancy and new economic conditions. A brief look at the social conditions data in the European Union shows that Europeans had lower life expectancy in 2020 than in 2019. At the same time, the GDP per capita has declined and economic conditions do not seem to be favourable. This happened in almost all European countries after decades in which life expectancy and GDP per capita constantly increased.

In December 2021, the WHO reported more than 3.3 million deaths caused by COVID -19, attributed directly and indirectly, and the number is likely to be higher. In this context, we analyse the evolution of life expectancy at EU level, given that it could show us the impact of COVID-19 on health.

2. Literature review

Life expectancy is an indicator calculated as an average and it can be determined for different ages. The most popular is life expectancy at birth and it measures the mortality of a country, allowing comparisons between generations. This offers key information about the health, the welfare and the development level of a country.

McGranahan et al. proposed an index of socio-economic development that was composed of nineteen indicators, including life expectancy at birth and per capita-per day consumption of animal protein for measuring health. (McGranahan *et al*, 1972). Starting from that, Morris proposed the Physical Quality of Life Index (PQLI), which is calculated as an arithmetic mean of three indicators, including life expectancy (Morris, 1978).

Using the results of multivariate stochastic dominance and applying this technique for measuring the inequality, Atkinson and Bourguignon explored different aspects of this problem, especially when this includes more than one dimension. For 61 countries, they used indicators as the life expectancy and the international distribution of income in such a model and they

demonstrated that even if the marginal distributions are identical, there are different degrees of correlation. (Atkinson and Bourguignon, 1982)

The Human Development Index is one of the most important composite indices that include it. IDU is based on three dimensions: living standards, education and health. For the latter, life expectancy at birth is used, starting from the premise that a high level of human development means a long and healthy life (Anand and Sen, 1994).

Using a utility function for measuring full income, with life expectancy and income as indicators, Becker, Philipson and Soares found that the disparities in income decrease significantly when life expectancy is used (Becker *et al.*, 2005)

Fleurbaey and Guillaume measured the living standards for 24 OECD countries, including life expectancy into indicators. They concluded that the GDP per capita is a very fragile indicator for comparisons about the living standards and it did not offer enough information. So, using other indicators as life expectancy, cost of unemployment or level of leisure as non-income dimensions, they obtained a different general ranking of countries than in the situation in which when only economic indicators is used. There are countries with similar living standards and similar social development models, but without similar characteristics for the economic development or for the income distribution (Fleurbaey and Guillaume, 2009)

In 2010 Andersen made a study using the life expectancy and joint distribution of GNP per capita for poor and non-poor countries. The results show us an overall improvement for the situation of the poor in terms of polarization of income and life expectancy, an improvement based on the progress made by China and India. But comparing Africa and the Rest of the World he found that Africa's relative position is becoming progressively worse. (Andersen, 2010, p.97)

Jones and Klenow used life expectancy in a metric indicator for measuring social welfare considering that a long life means a high level of welfare, even if they appraise life expectancy as an imperfect indicator for measuring health. They found that cross-country inequality in welfare is greater than inequality in incomes. In the developing countries, the level of welfare is lower than the incomes, because of the shorter life expectancy and of the high level of inequality (Jones and Klenow, 2016).

Islam, N. et al. estimated, for 37 countries from all continents, the impact of Covid-19 pandemic on life expectancy and the changes in years of life lost. Using time series analysis, the study shows without doubt a reduction in life expectancy in almost all countries, with three exceptions. For three countries there is no modification of this indicator and for the other 31 countries the reduction in life expectancy was registered for both men and women. In this situation, more than 222 mill. years of life were lost in 2020, with a lower rate for women than for men. (Islam *et al.*, 2021)

In a recent study, Aburto at al. found that for 27 out of 29 countries, most European countries, the USA and Chile, the life expectancy at birth declined in 2020 and the largest loss was registered for male in the USA and Lithuania, 2.2 and 1,7 years respectively. The reduction in life expectancy was mainly in the age group over 60 years and this increase of mortality should make us think because it is comparable with the loses registered in the World War II. (Aburto *et al.*, 2021)

All these studies prove it to us that life expectancy is a widely used indicator to characterize health and the welfare. In the pandemic context, there have been significant decreases of life expectancy and many people have lost their lives, especially the elderly.

4. Research methodology

In this paper we discuss about health in the pandemic context and the impact of Covid-19 to the life expectancy at EU level. The research method is preponderantly descriptive, with the aim of identifying those EU countries in which Covid-19 has produced significant decreases in life expectancy. Therefore, the hypotheses considered in the study are:

- Did Covid-19 influenced the reduction of life expectancy at EU level?
- If so, for which category, men or women, the effect is most significant?
- What happened with life expectancy at the age of 65 in 2020 compared with the previous year?

5. Findings

Life expectancy is one of the most widely used indicator that permits cross-nationally comparisons and offers a representation of the impact of the pandemic context on mortality. At EU level, after decades of increases in life expectancy, for the year 2020 was registered a decrease in life expectancy for almost all the EU countries. This phenomenon affects both men and women.

Table no. 1 Life expectancy in EU countries

Table no. 1	Life expecta	incy in EU c	countries	ı			Increase/Decre
Countries	Life expectancy at birth (years) 2016	Life expectancy at birth (years) 2019	Life expectancy at birth (years) 2020	Increase/Decrease of Life expectancy at birth (2020/2019) (years)	The gap for Life expectancy at birth for men (years) (2020/2019)	The gap for Life expectancy at birth for women (2020/2019) (years))	ase of Life expectancy at age 65 (2020/2019) (years)
Spain	83.5	84.0	82.4	-1.6	-1.4	-1.6	-1.6
Bulgaria	74.9	75.1	73.6	-1.5	-1.7	0.2	-0.9
Lithuania	74.9	76.5	75.1	-1.4	-1.5	-1.2	-1.2
Poland	78.0	78.0	76.6	-1.4	-1.5	-0.6	-0.6
Romania	75.2	75.6	74.2	-1.4	-1.4	-1.1	-0.7
Belgium	81.5	82.1	80.9	-1.2	-1.2	-1.2	-1.2
Italy	83.4	83.6	82.4	-1.2	-1.3	-1.0	-1.0
Czechia	79.1	79.3	78.3	-1	-1.1	-0.9	-0.9
Slovenia	81.2	81.6	80.6	-1	-0.9	-1.1	-1.1
Luxembourg	82.7	82.7	81.8	-0.9	-0.8	-1.0	-1.0
Slovakia	77.3	77.8	76.9	-0.9	-0.8	-0.8	-0.8
Portugal	81.3	81.9	81.1	-0.8	-0.7	-1.1	-1.1
Croatia	78.2	78.6	77.8	-0.8	-0.8	-0.7	-0.7
Hungary	76.2	76.5	75.7	-0.8	-0.8	-0.6	-0.6
Sweden	82.4	83.2	82.4	-0.8	-0.8	-0.6	-0.6
France	82.7	83.0	82.3	-0.7	-0.7	-0.6	-0.6
Netherlands	81.7	82.2	81.5	-0.7	-0.8	-0.6	-0.6
Austria	81.8	82.0	81.3	-0.7	-0.8	-0.7	-0.7
Greece	81.5	81.7	81.2	-0.5	-0.6	-0.5	-0.5
Estonia	78.0	79.0	78.6	-0.4	-0.3	-0.3	-0.3
Ireland	81.7	82.8	82.4	-0.4	:	:	:
Malta	82.6	82.9	82.6	-0.3	-0.4	0	0
Germany	81.0	81.3	81.1	-0.2	:	:	:
Cyprus	82.7	82.3	82.3	0	0.	-0.1	-0.1
Latvia	74.9	75.7	75.7	0	0.	0.	0
Denmark	80.9	81.5	81.6	0.1	+0.1	+0.1	+0.1
Finland	81.5	82.1	82.2	0.1	+0.1	+0.2	+0.2
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Source: Eurostat database

For the EU countries in 2019 the life expectancy at birth ranged from maximum 84.0 years for Spain to 75.1 years in Bulgaria. In 2020 it decreased and ranged from 82.6 years for Spain to 73.6 years for Bulgaria. Also, for Romania life expectancy at birth decreased from 75.6 years in 2019 to 74,2 years in 2020.

Life expectancy at birth decreased in 2020 than in 2019 at EU level with more than one year for 9 countries. There are 14 countries in which the indicator decreased less than one year, two countries in which life expectancy has been maintained and just 2 countries in which life expectancy has increased.

From 2019 to 2020, women and men in 8 countries lost more than one year of life expectancy at birth. For exception, in Slovenia, Luxembourg and Spain life expectancy losses is wider for men than for women.

Life expectancy at the age of 65 decreased in 2020 than in 2019 at EU level with more than one year for 7 countries. There are 16 countries in which the indicator decreased less than one year, two countries in which life expectancy has been maintained and just 2 countries in which life expectancy has increased for this age group. There are also 2 countries with unavailable data.

Romania, one of the countries with the smallest life expectancy at birth at EU level, also registered decreasing values for this indicator in 2020. In fact, for the Romanian man life expectancy has decreased to 70.5 years in 2020 from 71.9 years in 2019. In the case of Romanian women, the situation is not good, life expectancy at birth was 78.4 years in 2020 compared with 79.5 years in 2019.

6. Conclusions

Life expectancy is an indicator that is part of many composite indices. Calculated as an average, the indicator shows us aspects of the quality of life and the level of health. Consequently, we can consider that a high level of this indicator means that the societal well-being and success are present in our life.

Life expectancy at birth declined in almost all European countries for men and women from 2019 to 2020 with some exceptions such as Finland and Denmark. The magnitude of declines in life expectancy at birth offsets most gains for the 5 years prior to the Covid-19 pandemic in EU countries.

It is important to specify that changes in life expectancy could be random especially for the countries with smaller population. Therefore, the ranking is affected by the pandemic context but at the same time by the randomness of death counts.

The pandemic context could still have a negative effect to life expectancy and to economic conditions. Moreover, we must consider that the population could die prematurely not only from the virus, but also from delayed treatment of other diseases.

7. References

- Aburto J.M., Schöley J., Kashnitsky I., Zhang L., Rahal C., Missov T.I., Mills M.C., Dowd J.B., Kashyap R., 2021 Quantifying Impacts of the COVID-19 Pandemic through Life-Expectancy Losses: A Population-Level Study of 29 Countries. *International Journal of Epidemiology 2021*, pp. 1 12;
- Anand, S. and Amartya, S., 1994 Human Development Index: Methodology and Measurement. Human Development Report Office, *United Nations Development Programme (UNDP)*, New York. (http://hdr.undp.org/en/media/Anand and Sen HDI.pdf
- Anderson, Gordon, 2010 Polarization of the Poor: Multivariate Relative Poverty Measurement sans Frontiers, *Review of Income and Wealth 56*, pp. 84-101;
- Atkinson, Anthony B., and Francois Bourguignon, 1982 The Comparison of Multi Dimensional Distributions of Economic Status, Review of Economic Studies 49, pp.183-201;
- Becker, G.; Tomas P. and Rodrigo Soares, 2005 The Quantity and Quality of Life and the Evolution of World Inequality, *American Economic Review 95 (1)*, pp. 277–91;
- Jones, Charles I., and Peter J. Klenow. 2016 Beyond GDP? Welfare across Countries and Time, *American Economic Review*, 106 (9), pp. 2426-57
- Islam, N.; Jdanov, D.A.; Shkolnikov, V.M.; Khunti, K.; Kawachi, I.; White, M.; Lewington, S.; Lacey, B., 2021 Effects of Covid-19 Pandemic on Life Expectancy and Premature Mortality in 2020: Time Series Analysis in 37 Countries, *BMJ* 2021, 375, e066768, doi:10.1136/bmj-2021-066768.
- Fleurbaey, Marc, and Guillaume Gaulier, 2009 International Comparisons of Living Standards by Equivalent Incomes, *Scandinavian Journal of Economics* 111 (3), pp. 597–624.
- McGranahan, Donald V., Claude Richard-Proust, N. V. Sovani, and M. Subramanian, 1972. Contents
 and Measurement of Socioeconomic Development: A Staff Study of the United Nations Research
 Institute for Social Development (UNRISD), New York: Praeger.
- Morris, M.D., 1978). A Physical Quality of Life Index. *Urban Ecology*, 3(3) pp. 225–40.

European Investigation Order's Issuance Procedure for Smuggling Crime Investigation

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Abstract

Applying the European Investigation Order to solve smuggling crime cases improves the process of obtaining evidence to prosecute people involved in illegal activities.

Those people try to do things in such a way that they are not caught, usually one of the desideratum of those who commit criminal acts, acting in such a way as to make it difficult to identify and prove criminal actions, that is why, in this paper, we will try to identify investigative measures used in European Investigation Order's issuance procedure for smuggling crime investigation.

Key words: issuance procedure, investigation order, smuggling

J.E.L classification: K140

1. Introduction

Criminal activity at Member State level has intensified by applying persons's and goods 's free movement principle across Europe, and to combat it Member States's judicial cooperation in criminal matters needed to be improved and efficient.

Smuggling is such a criminal activity, as the illicit trade in excise goods (the products subject to excise duty are: alcohol and alcoholic beverages, energy products and electricity, as well as tobacco products - https://europa.eu/youreurope/business/taxation/excise-duties-eu/product-excise-duties/index_en. htm, consulted on 27.09.2021), namely tobacco, has generated substantial losses for public revenues, causing billions of euros in losses to the European Union and Member States' budgets each year.

Cigarette smuggling is a source of income for criminal groups in Europe and elsewhere, and there are indications that in some cases it is also linked to the financing of terrorism, and the fight against the illicit tobacco trade is therefore essential to protect the security of the European Union, becoming a major concern for Europe.

People involved in smuggling activities try to do things in such a way that they are not caught, this is usually one of the desideratum of those who commit criminal acts, acting in such a way as to make it difficult to identify and prove criminal actions.

This instrument's use to investigate smuggling crime improves the process of obtaining evidence from collection, retention until transfer.

In this paper, we will analyse the issuance procedure for smuggling crime investigation by identifying the investigative measures used for it.

2. Theoretical background

The European Investigation Order is the newest instrument used between european states. Its implementation in the Romanian legislation determines a new paradigm in the procedure for obtaining evidence abroad.

Using the European Investigation Order to investigate smuggling crime it is an improvement in the process of obtaining evidence from collection, retention until transfer, because it is applied directly between euopean states in order to implement one or more specific investigative measures to obtain evidence or to transmit evidence already in the possession of the competent authority.

3. Research methodology

The objectives were achieved by using this research methods:

- Analysing national, european legislation and european jurisprudence in order to apply the obtained allegations in romanian court case;
- Synthesising the normative acts and relevant judicial practice on this topic quantitative method:
- Forming my own opinion about all data and information from national and european laws, as well as of the judicial practice secondary analysis.

4. Findings

4.1. General considerations on the European Investigation Order

The European Investigation Order represents from the perspective of art. 1 para. (1) of the Directive Directive 2014/41 / 3.04.2014 as well as in the light of art. 328 para. 2 lit. of Law no. 302/2004 republished, a judicial decision issued or validated by a european judicial authority to implement one or more specific investigative measures in another state to obtain evidence that the executing stat's competent authority has.

As we can see, both european and romanian legislation keep the same terms as "issuing state" or "executing state" which are also used in the matter of the european evidence warrant, or in the mandate european arrest warrant. We consider this to be a good decision, so an identity is provided common to legal texts at european level. We consider that the reasoning behind this choice results from the fact that all the acts listed above are subject to enforcement on the basis of the principle of mutual recognition. As we can see from the definition, it is emphasized that the european order of inquiry is member state authority's judicial decision, and once the terms "issuing judicial authority" have been defined, discussions on this notion have ended in the light of other instruments of judicial cooperation in criminal matters based on mutual recognition, as this concept may include not only a judge or the courts of a Member State, but the judicial authority is represented by a judge, a court, an investigating judge or a prosecutor competent for the case in question, as well as any other competent authority as defined by the issuing state, acting in that case as the investigating authority in criminal proceedings, which has the power to order the taking of evidence in criminal proceedings in accordance with national law (Article 2 lit. c) point i) of the Directive, as well as art. 328 para.2 lit. d of Law no. 302/2004).

In national law, European Investigation Order is issued by the prosecutor the prosecutor handling the criminal investigation or the competent judge, according to the procedural phase, ex officio or at the request of the parties or main procedural subjects (Article 330 para. (1) of Law no. 302/2004).

When Romania is a executing state, European Investigation Order's recognition and execution are within the competence of the prosecutor's office or the court materially competent and according to the quality of the person and to Romanian law. Territorial jurisdiction is determined by the place where the investigative measure is to be carried out. European Investigation Orders concerning facts which, according to the law, are within the competence of the Directorate for the Investigation of Organized Crime and Terrorism or of the National Anticorruption Directorate are recognized and executed by them.

The mandatory content of the European Investigation Order is found in art. 5 of the Framework Decision which is reflected in art. 331 para. (2) of Law no. 302/2004 (the European Investigation Order shall include in particular the following information: a) data on the issuing authority; b) the object and reasons for issuing the European investigation order; c) the necessary information available on the person; d) the description of the deed that is the object of the criminal trial, as well

as the applicable legal provisions; e) investigative measure and requested evidence details) and is developed in the form annexed to both normative acts. Therefore, from a formal point of view, the European Investigation Order is a single form available to the judicial authorities of the Member States, intended to compensate for the differences between its judicial systems.

European Investigation Order's purpose is the execution of the investigative measures and the obtaining of evidence from the executing authority in a Member State.

Therefore, the European Investigation Order excludes other forms of assistance which are not aimed at obtaining evidence or for which there is a simpler procedure for transmission or enforcement, such as the notification of procedural documents.

4.2. Types of procedures in which the European Investigation Order may be issued

Before analyzing the types of proceedings in which a European Investigation Order can be issued, it would be appropriate to determine what measures may be the subject of a procedure in which it is used.

Article 1 of the Directive, which contains provisions defining the European Investigation order, refers to the term "investigative measures", which does not have a correspondent in Art. 2, the instrument covers a very wide range of procedures, including, surprisingly, "proceedings initiated by administrative authorities" which have a criminal dimension (Article 4 of Framework Decision 2014/41 / EU).

Instead, the this term is used in Romanian legislation, which is synonymous from an institutional point of view, providing a definition (Art.328 para. 1 lit. of Law no. 302/2004).

Such a vague term could lead to the inclusion of so-called coercive measures in the scope, the author listing a number of measures that cannot be used in this purpuse (Steve PEERS - TheproposedEuropeanInvestigationOrder: Assault on human rights and national sovereignty, may 2010, p. 4,5 - https://www.statewatch.org/media/documents/analyses/no-96-european-investigation-order.pdf, accessed at 20.09.2021).

So, practically, we are in a situation where we cannot know exactly what falls and what does not fall within the scope of this term, apart from those listed in Chapter IV entitled specific measures for certain investigative measures, and without a general definition valid at European level of the term "investigative measures" we may find ourselves in a situation where the issuing State considers that a certain measure is covered by the legal term and wants to execute it for the purpose of obtaining evidence, and the legal system of the executing State does not recognize a such a measure.

In conclusion, it is necessary to standardize the law, by establishing which investigation can be apply with an European Investigation Order.

We return to the procedures in which can be issued and we specify that art. 4 of the Directive contains the provisions, which were also taken over by the romanian legislator at art. 329 of Law no. 302/2004 and which include not only criminal proceedings, but also certain administrative or civil proceedings.

In relation to these provisions and taking into account the romanian judicial practice, we consider that the issuance for gathering evidence in a criminal case aimed at investigating smuggling crime was a judicial procedure initiated by a judicial authority or which may be initiated before a judicial authority.

Until now, only defendant's and witness's hearing has been requested through an European Investigation Order (Criminal sentence no. 75 of 11/08/2021 - Vrancea Tribunal, as well as the Criminal Conclusion no. 1599 of June 25, 2020, Timişoara Court, www.lege5.ro, accessed on 15.09.2021) and the hearing by videoconference of a witness (Criminal decision no. 430 / A of 28/05/2020 - Bucharest Court of Appeal; www.lege5.ro, accessed on 15.09.2021).

In essence, the European Investigation Order has as object any investigative measure used in a criminal trial, in order to gather the evidence necessary to solve the case, including the unavailability of goods, meaning for romanian authorities the administration and preservation of evidence, the application of special surveillance measures or research or conducting evidentiary proceedings.

4.3. Competent authorities

In terms of jurisdiction, we specify that, as a rule, the materially competent to try in the first instance smuggling crime is the court, and if smuggling crime is retained in competition with the crime of organized criminal group, and most often is, taking into account of the mode of action of the persons involved, the materially competent to resolve the cause is the appeal court.

At the same time, we have the situation in which a prosecutor's office from a higher court takes over the criminal case from a lower court in order to carry out the criminal investigation, having the materially competent to resolve the cause can be any court.

According with Law no. 302/2004 - 330 para. 2, on criminal investigation phase, prosecutor's office attached to the competent court is sending or executing the order.

Thus, art. 285 para. 1 from Criminal Procedure Code stipulates that the criminal investigation's purpose is to gather the any evidence to prove that a crimes exist, to identify the persons who committed it and to establish their guilt, to determine whether or not it is necessary to press charge against them.

Art. 299 from the same law stipulates that the prosecutor supervises police investigator's activity, so that any crime is discovered and any person who has committed a crime is prosecuted and prosecutor supervises police investigator's activity so that no suspect or defendant to be detained only in the cases and under the conditions provided by law, investigators being obliged to carry out his orders (art. 303, art. 349 in conjunction with art. 327 and art. 328 Criminal Procedure Code).

Instead, the court settles the case brought before the court following the issuance of the indictment (the court notification act), guaranteeing procedural subjects's rights by ensuring the evidence administration for the complete clarification of the case's facts, in full compliance with the law.

In conclusion, after dealing with general issues relating to the European Criminal Investigation Order aimed at providing an analysis of the regulations in the Directive and in national law on the latest instrument of evidence in criminal proceedings, that a European Investigation Order works, starting from the origins of the Directive and presenting some novelties for the instruments of cooperation in criminal matters under the umbrella of the principle of mutual recognition.

Next, we will perform an analysis of the procedure for issuing and transmitting the European Investigation Order combining theoretical aspects with examples from judicial practice.

4.4. European Investigation Order's issuance procedure

According with art. 330 of Law no. 302/2004 provisions, romanian issuing authorities of the European Investigation Order are the prosecutor who carries out or supervises the criminal investigation or the competent judge, according to the procedural phase, automatically or at the request of the main parties or procedural subjects. However, we specify that the issuing authorities must comply with the conditions imposed in art. 6 para. (1) of the Directive such as the necessity, proportionality and condition of the possibility of taking identical measures in a similar internal case, conditions that have been regulated and are found, almost identically, in art. 331 paragraph 1 of Law no. 302/2004. In Romanian criminal law, the authority that has the competence to analyze such conditions is the judge of rights and freedoms, who analyzes the condition of proportionality in taking preventive measures or special methods of supervision or investigation.

Thus, **during the prosecution**, the prosecutor has the competence to issue a European Investigation Order, but also the judge of rights and freedoms, including when he is called to approve a request made by the prosecutor for obtaining evidence.

During the trial in the first instance, in order to clarify the circumstances regarding the participation of a defendant in the commission of the smuggling offense, after another defendant declared, during the criminal investigation, that she participated in the criminal activity, at the request of the two defendants it was carried out by european order a request for hearing the defendant whose participation is uncertain, the questions being sent to the British authorities, and the rights he may enjoy as a defendant, including the right not to testify, being also communicated (Criminal sentence no. 75 of 11/08/2021 - Vrancea Tribunal).

On this occasion, the defendant showed that his mother was not involved in any way in the criminal activity and that he stated otherwise in the criminal investigation because he was under threat of the prosecution service, it was not her will, they wrote in their favor to she enlarged the group, her mother having no involvement in her activities. While she was leaving the country, her mother was and only took the money without knowing where the money came from, she never stored cigarettes at home, she never sold cigarettes, and when she left, she just went to get the money, without knowing where the money came from. He also showed that he never met his partner in the group until the trial, and that everything was under pressure and the threat of criminal prosecution, she only met the person who supplied her with cigarettes, they did not know about others. people, ie other people participating in their activity and that he did not always know to whom he was carrying cigarettes.

The court finds that, having been heard by a European Investigation Order, it did not give any explanation as to why it was under threat from the prosecution service, most likely referring to the judicial bodies during the criminal investigation, nor what these threats consisted of.

The court finds that it is not identified what would have been the gain of the criminal investigation bodies to write in documents something specific "to expand the group", they perform and prepare the documents in the file according to what resulted from the investigation, and the investigation resulted given and from the statements of the defendants in question.

During the trial, the European Investigation Order may be issued ex officio or at the request of the prosecutor by the court seised of the case.

Opinions on the competence of the judge of the preliminary chamber in the legal doctrine are divided on his quality of authority issuing the european order.

The first author claims that the judge of the preliminary chamber will never be able to be the issuing authority of a European investigation order taking into account the provisions of art. 54 para. (1) lit. b) C. proc. pen., since it is only the competent body in establishing the legality of the evidence by the prosecutor, not being able to administer evidence, in relation to the rigors imposed by art. 100 C. proc. (Mircea SALOMIR - European Investigation Order, Premium Legal Universe no. 9/2018, Bucharest, p.6) and the second author considers that the pre-trial judge may issue a European investigation order, stating that such an order may be issued during the criminal proceedings by the prosecutor conducting or supervising the criminal investigation or by the competent judge, according to the procedural phase, ex officio or at the request of the main parties or procedural subjects (Mihaela PĂTRĂUŞ - Reflections on the transposition of the European Investigation Order (EIO) into national legislation, Legal Universe, 09.02.2021, p. 5).

Compared to the two opinions in the doctrine, we agree with the second one in the sense that the judge of the preliminary chamber can also be the judicial authority issuing a European Investigation Order, in relation to the provisions of art. 330 para. (1) of Law no. 302/2004, according to which when Romania is the issuing state, it may be issued by a competent judge, according to the procedural phase in which the case is.

5. Conclusions

In this research I pointed out that the institution of the European order offers procedural guarantees and speed in obtaining evidence to be used in criminal proceedings for smuggling offence.

We believe that, until a somewhat constant practice is reached in the application of the institution of the European Investigation Order, the use of this mechanism will not be common in the investigation of smuggling crime.

In conclusion, when Romania is the issuing state, the European Investigation Order is issued by the judicial authority which has the file assigned: the prosecutor in the criminal investigation phase, or the courts the trial phase, ex officio or at the request of the parties or the main procedural subjects, no other formalities than filling out a form.

Summarizing, we appreciate that the aspects of the judicial practice, are the clear proof that the romanian judicial authorities are reluctant to use this form of judicial cooperation in criminal matters to investigate smuggling crime considering that they made only parties or procedural subjects hearing.

Following this reluctant use, we believe that over time the European Investigation Order will nevertheless succeed in imposing itself in cooperation practices as an appropriate, rapid and effective tool for the cooperation and coordination between the european judicial authorities for a good administration of criminal justice in European Union smuggling crime investigation.

6. Reference

- Pătrăuș, M., 2021. Reflections on the transposition of the European Investigation Order (EIO) into national legislation. Legal Universe, 09.02.2021
- Peers, S., 2010. The proposed European Investigation Order: Assault on human rights and national sovereignty, may 2010, p. 4,5. [online] Available at:
 https://www.statewatch.org/media/documents/analyses/no-96-european-investigation-order.pdf, accessed at 20.09.2021;
- Salomir, M., 2018. European Investigation Order, Premium Legal Universe no. 9/2018
- * * * Law no. 302/2004 on international judicial cooperation in criminal matters, republished in the Official Gazette of Romania, Part I no. 441/27 May 2019
- * * * Law no. 135/2010 on the Code of Criminal Procedure, published in the Official Gazette of Romania no. 486 of July 15, 2010, with subsequent amendments and completions
- * * * Directive 2014/41 / 3.04.2014 on the European Investigation Order published in European Union's Official Journal L 130/1, 01.05.2014
- * * * Criminal sentence no. 75 of 11/08/2021 Vrancea Tribunal, www.lege5.ro, accessed on 15.09.2021;
- * * * Criminal Conclusion no. 1599 of June 25, 2020, Timişoara Court, www.lege5.ro, accessed on 15.09.2021;
- * * * Criminal decision no. 430 / A of 28/05/2020 Bucharest Court of Appeal; www.lege5.ro, accessed on 15.09.2021;
- www.lege5.ro, accessed at 15.09.2021;
- https://europa.eu/youreurope/business/taxation/excise-duties-eu/product-excise-duties/index_en. htm, consulted on 27.09.2021;
- https://www.statewatch.org/media/documents/analyses/no-96-european-investigation-order.pdf, accessed at 20.09.2021).

The Dynamics of the Verbal and Non-verbal Communication Process in Professional Rapports

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Abstract

The article is designed with two purposes in mind. First, it takes us through the essential aspects of communicating assertively by exploring the verbal and nonverbal communication patterns. Second, it aims to describe the art of building trust-based relationships through questioning and listening techniques.

The results emphasize that the best proof of the benefits of managing strong trust-based relationships lies in our own experience. In this respect, trust becomes a bilateral affair, a precondition for effective trade talks, job-related conversations with superiors, or signing successful contracts.

Key words: channels of communication, listening, questioning, trust-based relationships **J.E.L. classification:** Z13

1. Introduction

The success of the communication process highly depends on keeping our messages as clear and concise as possible, in other words, having the emotional intelligence to be alert to people's responses, feelings, and manage them constructively to be able to control situations without experiencing stressful pressures.

As far as the verbal and non-verbal channels of communication are concerned, they are bound together and help the process of interpersonal communication be more effective and focused. Strong trust-based rapports are profitable for speaker and hearer alike in order to reach integrative agreements.

To this end, practical examples of carefully worded/well crafted questions will be provided in the next sections to let the interlocutors know we are listening and understand their position.

Thus, the focus will be on how verbal and non-verbal communication operates; if we do not want our message to be distorted, we should keep these two channels of communication under constant observation.

2. Theoretical background

All forms of communication (building rapport with colleagues, holding interviews or staff appraisals, persuading, giving feedback, presentations, designing official documents, writing emails, letters or reports) are the end products of a complex process based on critical thinking.

The Finnish academic Osmo Wiio (1978) warns against the euphoria of believing that we have got the message right when, instead, we ignore at our peril the weakness in understanding others' messages correctly. He forcefully points to the idea that our perception becomes incredibly sloppy in the way that we are too confident when we take communication for granted and seem to disobey some basic rules:

- 1) If communication can fail, it will.
- 2) If a message can be understood in different ways, it will be understood in just that way which does the most harm.
- 3) There is always somebody who knows better than you what you meant by your message.

4) The more communication there is, the more difficult it is for communication to succeed. (Wiio, 1978 quoted in Pardey, 2007, p. 54)

Given that communication is an essential and dynamic process in our daily lives, it is governed by 5 main elements whose aim is to generate a desired outcome:

- ► The sender the person encoding the message
- ► The message what is being transmitted by various media
- ► The receiver the person decoding the message
- ► The feedback the receiver's response to the message
- ▶ The channel the medium through which the message is transferred from the sender to the receiver.

The understanding of communication as the *emotional glue* which keeps people united in both personal and professional relationships rests upon some solid, guiding principles. The process can display the following characteristics:

- ♦ Dynamic permanently undergoing change;
- ♦ Continuous after hanging up the phone, we are delivering the message that the discussion has got to the point where nothing more can be said;
- ♦ Circular communication has to be a two-way process. We take in the factual information, listen effectively and respond cognitively and emotionally;
- ♦ Irreversible we cannot change something back (we cannot 'unsay' words);
- ♦ Complex we cannot always be sure that our communication hits the mark given the multitude of meanings assigned to words in general. This stems from our backgrounds, education and experience. An example of workplace communication would be:

A manager (*sender*) approaches his subordinate (*receiver*) at a café meeting on the corridor and asks: *Have you seen my new office*?

The employee replies:

No, sir. All ready to start working, I'm sure.

At first sight, this very simple example is a conversation about a person's office, but in fact it is far more profound. The manager's intention is to establish a friendly and relaxed atmosphere. The *real message* is:

You don't have to be tense. I'm opening up to you.

and the subordinate has replied to this by providing *feedback*:

That's great. I look forward to sharing this moment with you.

The manager's question denotes a way of creating a relationship with his employee as part of strengthening professional rapport.

Building our assertiveness by communicating clearly and articulately has a positive effect in overcoming any problems which might arise from non-assertive behavioural tendency. Such approach to integrating specific skills like questioning, listening, giving feedback, working with emotions, expressing yourself assertively, negotiating effectively, overcoming barriers or rolling with resistance into the process of building constructive and relaxed conversations is strongly advocated by Mills (2000), Robbins (2005), Barker (2006), Pardey (2007), Bonham-Carter (2013). In their view, the benefits of controlling our behaviour, emotions and thoughts as well as the ability to ask questions are instrumental to an effective communication.

3. Research methodology

This research has used two clear directions with the aim of making business communicators aware of the importance of consistency and openness to dialogue which have an impact on interpersonal communication, in the broad sense of the word. The emphasis was placed on both the verbal and non-verbal channels of communication and the questioning/listening techniques as primary communication skills.

The research methodology concentrated on showing and explaining verbal and non-verbal cues for a better understanding of the communicative and linguistic aspects of business interactions, on the one hand, and on carrying out a dynamic analysis of the different types of questions and the active listening skills used in face-to-face exchanges, on the other.

In this case, the objectives of the paper have been to describe the multi-layered nature of non-verbal communication, to provide examples of emphatic language in contrast to neutral speech, and enlarge upon questioning styles coupled with the function of giving feedback or reflecting back.

In the workplace, research has shown that most activities are bipolar: either personal-casual (behaving/talking informally with/to a colleague) or social-consultative (in formal dialogues with someone having a higher position or rank).

Therefore, priority is given to communicating assertively, listening to others with respect and honesty, and practising specific techniques which acount for the desired results.

4. Findings

The results of the paper can be structured around two communication axes, i.e. the essential aspects of verbal (speech, tone of voice and emphasis)/non-verbal (body language cues) communication patterns and the process of building constructive conversations by exploring both questioning and listening techniques.

4.1. Channels of communication: verbal and non-verbal

Finding out *how* others see us will allow us to modify the signals we send out, both verbally and non-verbally. In Pardey's (2007) words, "*How* you communicate with people affects the way that the message is received and understood. The most common medium - or channel - of communication is through speech, but this is a very complex channel and often combined with others" (Pardey, 2007, p. 57).

In normal conversation, the message is not only in the words, but also in:

- the speaker's voice (choosing and speaking the right words)
- his face (the *eye contact* he made with the receiver)
- his body (the *posture* and proximity to the receiver)

In my opinion, we cannot delimit these two channels when having a face-to-face conversation with someone. To ensure that it ends positively, verbal communication puts forward a combination of elements where the emphasis placed on different words is the deciding factor. At the same time, non-verbal communication has a multi-layered nature in which the concept of body language can be decomposed into the following items: posture, proximity, hand gestures, face expression, eye contact.

The choice of clear and understandable words in conversation, on the one hand, and the use of technical language or jargon, on the other hand, can make a significant difference between informal and formal communication. A marketing director might tell his production workers that he *gives* them *more control* to build up sales models, but he wouldn't stand up in a conference room full of business delegates and use these words. Instead, he is more likely to convey a professional message like:

e.g. Following a serious *market research*, my team decided to *empower the production line* to design sales *forecast* models so that we know our customers' preferences and *target* these products.

Tone of voice and emphasis count a great deal when we care about how we sound (happy or disappointed) while stressing different words in the same sentence:

- 1. *I* thought you could arrive at your goal this month by planning well. (supportive statement; using the first person pronoun *I* as emphatic word)
- 2. I thought you could arrive at your goal *this month* by planning well. (being up in arms about someone's performance)
- 3. I thought you could arrive at your goal this month by planning well. (using the adverb well as emphatic word; sounding disappointed).

It is the powerful effect of our voice to support an opinion that makes our argument strong and more emphatic. In contrast to neutral speech, where the key words that are stressed are generally nouns and verbs, in emphatic language pronouns and determiners are stressed if we wish to emphasize a particular point. The words stressed indicate the speaker's intention.

Similarly, expression and eye contact can lift the barriers to effective communication and hence, reduce the risk of being cut off from contact with the outside word. The benefit to people who create an opportunity to make eye contact far outweighs this risk.

A person's future career or position in an organization depends, sooner or later, on the relationship he/she establishes with someone from the senior management team. This type of relationship can reveal either dependency or vulnerability, or both of them. The unwanted consequences are that this kind of rapport tends to become more *emotional* rather than rational and that a more *directive* style of leading/managing slowly but surely prevents the employees from experiencing problems on their own

- ♦ A *dependent* subordinate has limited access to decision-making until consulting his/her manager first, reduced personal autonomy, and an almost inexistent independence of mind.
- A *vulnerable* subordinate loses self-esteem, is likely to suffer (verbal) abuse from his superior and is laid down with distrust due to a lowered personal defence mechanism. However frightening it may sound, people don't have to push the panic button and concede defeat. Since there are so many strategies and techniques at hand, they would better pull together the skills they need to be effective as organizational communicators.

4.2. The art of managing trust-based relationships through questioning and listening techniques

Strong trust-based rapports are profitable for speaker and hearer alike. As primary communication skills, questioning and listening techniques can help us gain mutual respect and be more confident in talking with our interlocutors.

Let us now take a look at the practical skills involved in interpersonal communication in order to overcome any problems which might arise from non-assertive behavioural tendency.

The results emphasize that standing up for ourselves and feeling confident by taking ownership of our words and thoughts involve following a reasoned approach to help us act and respond in a way that is conducive to our personal development. Priority is given to practising specific techniques for "changing our behaviour in situations where we have a tendency to act non-assertively" (Bonham-Carter, 2013, p. 1).

In this way, *questioning* serves as a springboard to broaden communication and make sure we have understood the message correctly. Mills (2000) argues that the power of questions not only clears out blockages and keeps the discussion flowing smoothly but also paces the interlocutor and persuades him to share our perspective even if he/she was reluctant to do it at the beginning: "Successful influencers use questions to plant ideas in the other party's mind and then get him or her to nurture their ideas as if they were his or her own. [...] Most of us try to persuade others to accept our point of view with reasons, yet people are often highly resistant to this form of persuasion. Hence, successful negotiators use questions, rather than reasons, as their main persuasive tool" (Mills, 2000, pp. 190-191).

Two main questioning techniques used currently are *leading* and *rhetorical questions*. According to Pardey (2007), *leading* questions are "a hybrid of open and closed questions – they are open (because respondents can choose how they answer) but closed because they are based on an assumption about what has happened and so imply that only a certain type of answer is possible" (Pardey, 2007, p.71). They usually suggest what the respondent's answer may be by overcoming his/her reluctance, or admitting to a possible failing.

- e.g. You've taken part in several training seminars for the new network, yet still seem to have problems using it. Haven't you found them very effective? (the question causes the interlocutor to acknowledge his own weakness and admit to a possible failing. It is less critical than the more direct question: Why didn't you learn from the training seminars? which would force the interlocutor on the defensive)
 - Were the seminars the usual waste of time? (the question is too generalizing, judgemental, and implies that *all* training is not worth the time spent, which shows a complete lack of professionalism).

A simple exercise to help us persuade someone rather than obtain information from them is by asking *rhetorical* questions. Their effectiveness shows up in the way they encourage reflection and engage the listener's mind (Mills, 2000; Pardey, 2007). They almost put the answer into the respondent's mouth and influence the listener to accept "a narrowly predetermined conclusion" (Mills, 2000, p. 199):

e.g. We all want a fair treatment, don't we?

You really felt proud of yourself, didn't you?

Don't you wish you could always be an inspirational leader?

Isn't it a benefit to the company to have employees who are contributing to its profitability?

That's not really the most careful way to raise the money, is it?

An accurate evaluation of verbal interaction is essential to negotiate from the best position possible (Mills, 2000; Chaney and Martin, 2007; Pardey, 2007). Business people who are mentally sharp know how to look behind the words using questioning and listening as their main weapon to emphasize the positives and win their interlocutors' trust.

The paper reveals that the art of giving feedback or reflecting back is largely a function of assisting people to perform better. One can distinguish between the different types of feedback and acknowledge that *reflective listening* can be just as important as *reflecting content* and *feelings*.

The first type (*reflective listening*) is one of the best ways to prove that we have not only heard, but also understood the other person's words. Unlike passive hearing, active listening is exercised through the techniques of questioning and reflecting. It *reflects* or *paraphrases* the content (the words) and feelings of the speaker.

The second type (*reflecting content*) is concise and briefly explains the speaker's message. It also eliminates verbal scattering. As Mills (2000, p. 196) aptly puts it, "If you get too wordy, you can easily derail the speaker's train of thought [...]. Don't fall into the trap of simply parroting the other person's words; reflecting is not parroting. Parroting stunts conversations, whereas reflecting encourages discussion. So don't make the mistake of repeating the speaker's exact words". Making an effort to listen actively can be rendered by some useful phrases which reflect content:

- Showing interest: Really?; That's curious; Right/OK
- Asking for details: So what happened next?; What did you do exactly?
- Clarifying: Are you saying...?; Could you be more specific?
- Summarizing: So, you're saying...; You mean...; It seems that ...; In other words...; It sounds like...; I guess...;
- Repetition/Question tags: A) We've introduced a 100% e-commerce operation. B) 100%? Have you?

The third type (*reflecting feelings*) equally implies the listeners' ability to see the problem from their interlocutors' point of view. The emotional overtone during the discussions is often balanced with common phrases such as *I know how you feel*, *That must have been awful*, *Seems like you're feeling unjust and frustrated* (showing empathy) to win them over. This reassures the speakers that we are listening and gains their friendship and confidence.

From my point of view, questioning styles largely depend on culture profile. While in some cultures, asking direct questions is no sign of offence, other cultures prefer to ask more polite questions, using vaguer terms which allow for more detailed answers.

Mill's (2000) landmark statement on how self-persuasion works in meetings, negotiations, or sales deserves special attention: "With questions, you can control the issues you want to discuss – and also what you want to avoid. Using questions, you can set the mood and tone of a meeting, slow down or force the pace of a discussion, and bring a meeting back on track after losing direction" (Mills, 2000, pp. 190-191).

In agreement with Mills, Barker (2006) lays emphasis on the 3 main elements of the pattern-matching process of building rapport, i.e. verbal behaviour, vocal behaviour, and physical behaviour. According to Robbins (2005), creating the potential for improved communication can be achieved through a joint effort since communication cannot exist without the *transference* and *understanding* of meaning. His technique of questioning could be summarized as "providing clarification, ensuring understanding, and assuring the speaker that one is listening" (Robbins, 2005, p. 154).

5. Conclusions

Because most business interactions are based on keen observation, adaptability and patience, good coaches/sellers/negotiators must be careful to not mince their words, but to think before they speak and once they get into conversation, to do it in an agreeable, civil manner. They should constantly develop their active listening skills by learning how to reflect back (summarize or backtrack information) and reinforce understanding.

To prepare for a win-win approach, business professionals must adjust their questioning system accordingly. Communicating adequately is difficult when the business interests of the participants differ. Since the purposes of the interactions between people within the organization vary, so do the vocabulary, emotions and feedback that develop to achieve rapport.

The lesson to be learnt is that whatever strategy we adopt (questioning, observing, listening, reflecting back), we should always search for opportunities to ask quality questions and hence, encourage the other person to overcome whatever inhibitors.

6. References

- Barker, A., 2006. *Improve Your Communication Skills*. London: Kogan Page.
- Bonham-Carter, D., 2013. Express Yourself: A Practical Guide to Assertiveness. UK, London: Icon Books Ltd.
- Chaney, L.H. and Martin, S.J., 2007. *Intercultural Business Communication*. 4th Edition. New Jersey: Pearson Prentice Hall.
- Mills, H., 2000. Artful Persuasion: How to Command Attention, Change Minds, and Influence People. USA, New York: Amacom.
- Pardey, D., 2007. Coaching. Burlington, MA: Elsevier-Butterworth-Heineman.
- Robbins, S.P., 2005. Essentials of Organizational Behaviour. 8th Edition. New Jersey: Pearson Prentice Hall.
- Wiio, O.A., 1978. Wiion lait ja vähän muidenkin (Wiio's laws and some others). Espoo: Weilin + Göös
- Zamfir, C.M., 2020. Business at Work: Company Communication Patterns through a Linguistic Lens. Bucharest: Universitara Publishing House.
- ***Longman Business English Dictionary 2000. England: Pearson Education Limited.
- ***Merriam-Webster Dictionary. 2015. Encyclopædia Britannica Online.

Section IV

Marketing – Management

Uncertainty Management Using Triangular Fuzzy Numbers with Associated Variable Indicators

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Abstract

Any decision-making process encounters many difficulties in ensuring the necessary amount of information (the available knowledge being incomplete and insecure, usually in different proportions), respectively the way of determining the optimal decision-making variant, achieving consensus on how to implement.

Therefore, the process of making decision under conditions of uncertainty required the development of new ways of its reduction or absorption.

It is important to notice that from a practical point of view, the fuzzy numbers are closer subjects for the logic argumentation of an action course specific for III^{rd} degree uncertainty conditions, that will ultimately support new perspectives for an easier manner of information modelling in regard with economic and social phenomena.

In therefore makes sense the increasing concern for the above mentioned specific instruments theoretical framework developments. The current paperwork considers the uncertainty analysis within the management processes, by using the triangular fuzzy numbers with variable associated indicators, by actually using an uncertainty specific associated absorption indicator, along with elementary operations. Furthermore, an optimal decision analysis, specific for random values of the absorption of the uncertainty indicator it is considered, within different methods.

Key words: decision making, uncertainty, triangular fuzzy numbers, index of uncertainty management

J.E.L. classification: D81, M10

1. Introduction

Uncertainty is the factor that exposes any economic or social system to many situations of crisis or opportunity, the difference between the two antagonistic situations being made only by senior management through visionary quality, experience and the volume of material and human resources available to the company at a time. dat.

It is thus necessary to intensify the theoretical efforts that through interdisciplinary approaches and methodological loans to structure a complex of procedures and techniques that will contribute to the diminution of this phenomenon within the economic decision-making processes.

To reduce uncertainty, several strategic management directions have been crystallized so that entrepreneurs can show a logically structured attitude in extreme situations. In practice, an important place is occupied by the technocratic methods which consist in the use of the best forecasting techniques, to anticipate future contexts and to elaborate specific contingency plans.

In the case of our paper, the focus was to develop a new model for making decisions in conditions of persistent uncertainty (degree III) starting from the formal or informal methods of managing uncertainty, by using triangular fuzzy numbers with associated variable indicators.

The main steps in the use of fuzzy numbers in the decision-making process are proposed:

- 1. Brief structure of the context / activity based on input data, socio-economic and ethical information
- 2. defining the problem by analysing the organizational objectives, identifying the difficulties or gaps

- 3. formulation of alternative solutions
- 4. assessing the consequences and formalizing alternative solutions by fuzzy numbers which involves:
 - determining the values to be kept or promoted
 - identification of the rules, laws and regulations that apply
 - evaluation of the consequences through quantitative and qualitative characteristics of the alternative solutions, of their uncertainty and subjectivism
 - choosing the best method for formalizing information by fuzzy numbers (by interval, triangular number, trapezoidal number, etc.)
 - formalization of information through a matrix of variants and consequences
 - 5. hierarchy of alternative solutions
 - o identifying the best method for ranking fuzzy solutions (simple ordering, distance from an optimal, etc.)
 - o hierarchy of solutions.
 - 6. choosing the optimal solution based on an optimal criterion.
 - 7. implementation of the solution
 - 8. evaluation of the approaches for solving the problem (feedback)

Even though the main features that underpin the evaluation and description specific for a situational decision vary across domains (economic, social, political etc.). Finally, it can be retained a definition that relies on the approach specific for the decisional context development, while the information quantity and quality leads towards identifying decisional consequences that are difficult to anticipate and control, while the specific uncertainty is hard to absorb.

Thus, it is proposed to develop a new theoretical direction to approach the decision-making processes in conditions of uncertainty and specific tools much closer to the practical way depending on an index for management of uncertainty.

2. Theoretical background

We can talk about many approaches regarding a representation of a **triangular fuzzy number** (NFT_r). Starting from the definition given by Zadeh (1975) and up to the many theoretical and practical developments utilized in the last decades are useful to our demonstration. In view of the objective pursued, a NFT_r may be represented simply by an ordered triplet of the form $\langle T \rangle = (T_s, T_m, T_d) \in \text{NFT}_r$, where $T_s, T_m, T_d \in R$, defined having the membership function $\mu_T: R \rightarrow [0, 1]$, as follows (Bodjadziev, Maturo, Tofan]:

$$\mu_{T} = \begin{cases} \frac{x - T_{s}}{T_{m} - T_{s}}, & T_{s} \leq x \leq T_{m} \\ 1, & x = T_{s} \\ \frac{T_{d} - x}{T_{d} - T_{m}}, & T_{s} \leq x \leq T \\ 0, & x \notin [T_{s}, T_{d}] \end{cases}$$
(1)

We will present some of the most representative and suggestive ways to perform operations with triangular fuzzy numbers.

Elementary operations with triangular fuzzy numbers:

Let there be triangular fuzzy numbers with variable centers of gravity:

$$< T1 > = (T1_s, T1_m, T1_d), < T2 > = (T2_s, T2_m, T2_d) \text{ and } < T3 > = (T3_s, T3_m, T3_d) \in NFT_r$$

Starting from the exhaustive way developed (Zadech, 1975; Pride), with various contributions from many contributors (Bodjadziev, 1995, p 85; Jacobsen, 2004, p82) the following addition, multiplication, subtraction and division operations have been described in a more accessible form for practical applications:

The addition

$$< T3 > = < T1 > \oplus < T2 > = (T1_s + T2_s; T1_m + T2_m; T1_d + T2_d)$$
 (2)

The multiplication of two triangular fuzzy numbers

 $< T3 > = < T1 > \otimes < T2 > =$

$$(\min(T1_s * T1_d; T1_s * T2_d; T1_d * T2_s; T2_s * T2_d); T1_m * T2_m; \max(T1_s * T1_d; T1_s * T2_d; T2_s * T1_d; T2_s * T2_d))$$
(3)

The subtraction of two triangular fuzzy numbers

$$< T3 > = < T1 > (-) < T2 > = (T1_s - T2_d; T1_m - T2_m; T1_d - T2_a)$$
 (4)

The division of two triangular fuzzy numbers

$$< T3 > = < T1 > (/) < T2 > =$$

$$(\min(T1_s/T2_d;T1_s/T1_d;;T2_s*T2_dT1_d*T2_s);T1_m/T2_m;\max(T1_s/T2_d;T1_s/T1_d;;T2_s*T2_dT1_d*T2_s))$$
(5)

Analyzing this trend of increasing the degree of operationalization of fuzzy numbers in different applications and technology transfer to different fields, operations with fuzzy numbers have seen many developments (Maturo, 2009; Tofan, 207)):

The addition
$$\langle T3 \rangle = \langle T1 \rangle \oplus \langle T2 \rangle = (T1_s + T2_s; T1_m + T2_m; T1_d + T2_d)$$
 (6)

The multiplication
$$< T3 > = < T1 > \otimes < T2 > = (T1_s * T2_s; T1_m * T2_m; T1_d * T2_d), \text{ (for } T1_s, T2_s \ge 0) (7)$$

The subtraction
$$\langle T3 \rangle = \langle T1 \rangle (-) \langle T2 \rangle = (T1_s - T2_d; T1_m - T2_m; T1_d - T2_s)$$
 (8)

The division
$$\langle T3 \rangle = \langle T1 \rangle (/) \langle T2 \rangle = (T1_s / T2_d; T1_m / T2_m; T1_d / T2_s), \text{ (for } T1_s, T2_s \ge 0) (9)$$

In order to be able to work with these triangular fuzzy numbers, many simple or synthetic indicators have been defined. Among the simple indicators we recall (Tofan, 2017; Gherasim, 2005):

 $N(T) = \{T_{m}\}$ The core (which coincides with T_m): $Sp(T) = (T_s, T_d)$ The support: $LSP(T) = T_d - T_a \ge 0$ The length of the support: $NN(T) = T_{...}$ The middle of the core: $SP(T) = \frac{T_s + T_d}{2}$ The middle of the support: (10) $S^{L}(T) = \int_{T}^{NN(T)} \mu_{T}(x) dx$ Area to the left: $S^{R}(T) = \int_{NN(T)}^{T_s} \mu_T(x) dx$ Area to the right: $S(T) = S^{L}(T) + S^{R}(T)$ Total area: $\delta(T) = \begin{cases} sign(NN(T)), & NN(T) \neq 0 \\ sign(SP(T)), & NN(T) = 0 \end{cases}$ The sign:

The synthetic indicators are real numbers associated with fuzzy numbers whose value belongs to the support, which are determined by the shape and size of the fuzzy numbers. The purpose of developing these sizes was to build a real synthetic image representative of a triangular fuzzy number, thus helping to ease the specific calculations.

3. Material and methods

A different step from these approaches was developed by Gherasim (2005) who developed an associated indicator called the center of gravity of the fuzzy number:

$$G(T) = \frac{T_s + 2T_m + T_d}{4} \tag{11}$$

Starting from these concepts are proposed (Gherasim, 2005) the following elementary operations:

The addition
$$\langle T1 \rangle \oplus \langle T2 \rangle = (T1_s + T2_s; T1_m + T2_m; T1_d + T2_d)$$
 (12)

The multiplication of a triangular fuzzy number with a scalar $a \in R$

$$a \cdot \langle T1 \rangle = (a \cdot T1_s; a \cdot T1_m; a \cdot T1_d) \tag{13}$$

The multiplication
$$\langle T1 \rangle \otimes \langle T2 \rangle = \frac{\langle T1 \rangle \cdot G(T2) + T2 \cdot G(T1)}{2}$$
 (14)

The subtraction
$$\langle T1 \rangle (-) \langle T2 \rangle = (T1_s - T2_s; T1_m - T2_m; T1_d - T2_d)$$
 (15)

The division
$$\langle T1 \rangle (/) \langle T2 \rangle = \frac{\langle T1 \rangle \cdot G(T2) + \langle T2 \rangle \cdot G(T1)}{2G(T2)^2}$$
 (16)

To capture the potential of endogenous uncertainty, we propose (where the situation requires it, where the internal entropy of the system cannot be accurately or probabilistically determined) the use of fuzzy numbers with associated variable center of gravity.

The synthetic indicators are real numbers associated with fuzzy numbers whose value belongs to the support, which are determined by the shape and size of the fuzzy numbers. The purpose of developing these sizes was to build a real synthetic image representative of a triangular fuzzy number, thus helping to ease the specific calculations.

We intend to discuss the index of uncertainty management and variability center of gravity associated to a general fuzzy number starting from the general definition (Alecu, 2011, p.7, Alecu, 2019, p. 23):

$$G(\langle T \rangle_{\alpha}) = NN(T) + (\alpha - 1) \cdot S^{L}(T) + \alpha \cdot S^{R}(T)$$
(17)

where: $\alpha \in [0,1]$ - is an indicator of absorption / uncertainty management.

The uncertainty is captured by an associated coefficient - α which can take strictly positive and subunit values, between 0 and 1.

As its values experience a tendency toward 0, the fuzzy numbers capture a state of total ambiguity and pessimism internal to the system, which influences the evaluations made. In the diametrically opposite case, when the values of α experience a tendency towards 1, an optimistic state is expressed, where the mechanisms of absorption of uncertainty tend to cover a large part of the difficulties.

The way in which uncertainty is represented and managed true a triangular fuzzy number with variable associated indicator can be seen in the following graph.

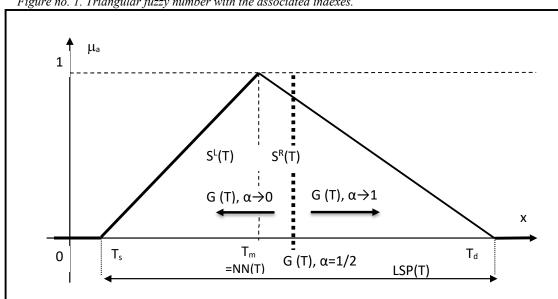


Figure no. 1. Triangular fuzzy number with the associated indexes.

Source: Alecu 2019, p. 25

Let there be triangular fuzzy numbers with variable centers of gravity:

 $\langle TI \rangle_{\alpha} = (TI_{s}, TI_{m}, TI_{d})_{\alpha}, \langle T2 \rangle_{\beta} = (T2_{s}, T2_{m}, T2_{d})_{\beta}$ and $\langle T3 \rangle_{\gamma} = (T3_{s}, T3_{m}, T3_{d})_{\gamma} \in NFT_{r}$, where α , β , $\gamma \in [0, 1]$ are the assumed levels of absorption of uncertainty, then the specific gravity centers with respectively are $G(T1_{\alpha})$, $G(T2_{\beta})$, $G(T3_{\gamma})$.

Elementary operations with triangular fuzzy numbers using associated indicators are poposed Alecu (2016, 2019)]:

The addition

$$\langle T3 \rangle_{\gamma} = \langle T1 \rangle_{\alpha} \oplus \langle T2 \rangle_{\beta} = \begin{cases} (T1_s + T2_s; T1_m + T2_m; T1_d + T2_d)_{\gamma} \\ \gamma = (\alpha(T1_s + T2_s) + \beta(T1_d + T2_d))/(T1_s + T2_s + T1_d + T2_d) \end{cases}$$
(18)

The multiplication of a triangular fuzzy number with a scalar $a \in R$

$$\langle T3 \rangle_{\gamma} = a \cdot \langle T1 \rangle_{\alpha} = \begin{cases} (a \cdot T1_{s}; a \cdot T1_{m}; a \cdot T1_{d})_{\gamma}, & \gamma = \alpha, t \ge 0 \\ (a \cdot T1_{d}; a \cdot T1_{m}; a \cdot T1_{s})_{\gamma}, & \gamma = 1 - \alpha, t < 0 \end{cases}$$

$$(19)$$

The multiplication of two triangular fuzzy numbers

$$\langle T3 \rangle_{\gamma} = \langle T1 \rangle_{\alpha} \otimes \langle T2 \rangle_{\beta} = \begin{cases} (\frac{T1_{s} G(T2)_{\beta} + G(T1)_{\alpha} T2_{s}}{2}; \frac{T1_{m} G(T2)_{\beta} + G(T1)_{\alpha} T2_{m}}{2}; \frac{T1_{d} G(T2)_{\beta} + G(T1)_{\alpha} T2_{d}}{2} \\ \gamma = (\alpha \cdot \beta) / ((\alpha + \beta) / 2) \end{cases}$$
(20)

The subtraction

The subtraction
$$\langle T3 \rangle_{\gamma} = \langle T1 \rangle_{\alpha} (-) \langle T2 \rangle_{\beta} = \begin{cases} (T1_{s} - T2_{s}; T1_{m} - T2_{m}; T1_{d} - T2_{d})_{\gamma} \\ \gamma = (\alpha(T1_{s} + T2_{s}) + (1 - \beta)(T1_{d} + T2_{d}))/(T1_{s} + T2_{s} + T1_{d} + T2_{d}) \end{cases}$$

$$(21)$$

The division

$$\langle T3 \rangle_{\gamma} = \langle T1 \rangle_{\alpha} (/) \langle T2 \rangle_{\beta} = \begin{cases} \langle T1 \rangle_{\alpha} \cdot G(\langle T2 \rangle_{\beta}) + \langle T2 \rangle_{\beta} \cdot G(\langle T1 \rangle_{\alpha}) \\ 2G(\langle T2 \rangle_{\beta})^{2} \\ \gamma = (\alpha \cdot (1 - \beta))/((\alpha + (1 - \beta)/2)) \end{cases}$$
 (22)

The ordering of the triangular fuzzy numbers with variable centers of gravity is done upon the basis of several successive criteria: the gravity center criterion, the core means criterion, the criterion of the sign lengths of the supports (cores).

4. Findings

In order to highlight the way in which these elements can be used in uncertainty management, we propose the analysis for different values of the variable center of gravity ($\alpha = 0, 1/2, 1$) the optimal variants that can be identified by the Wald criterion, max- max and Laplace.

We discuss the following decision-making situation for setting up a water supply point for a local company. Several decisional situations (V1-V5) and 4 states of nature (E1-E4) were are taken into account (depending on technical, technological, financial and socio-economic indicators), obtaining the following matrix of consequences.

Table 1 Consequence matrix

	V1	V2	V3	V4	V5
E1	[0.33; 0.44; 0.77]	[0.11; 0.22; 0.44]	[0.11; 0.55; 0.77]	[0.22; 0.33; 0.55]	[0.11; 0.44; 0.55]
E2	[0.44; 0.66; 0.77]	[0.33; 0.55; 0.88]	[0.44; 0.55; 0.66]	[0.22; 0.44; 0.66]	[0.44; 0.77; 0.88]
E3	[0.33; 0.55; 0.88]	[0.44; 0.55; 0.77]	[0.33; 0.55; 0.66]	[0.44; 0.88; 0.99]	[0.33; 0.66; 0.99]
E4	[0.55; 0.66; 0.77]	[0.33; 0.66; 0.88]	[0.44; 0.55; 0.88]	[0.55; 0.77; 0.99]	[0.44; 0.66; 0.88]

Source: data obtained by the authors are normalized from the decision situation

By applying the Wald criterion, the following optimal variants were obtained:

- $\alpha = 1/2$, V3> V1> V5 > V4> V2
- $\alpha = 0$, V1> V3> V4> V5> V2
- $\alpha = 1$, V1> V3> V4> V5> V2

By applying the max-max criterion, the following optimal variants were identified>

- $\alpha = 1/2$, V4> V5> V1> V2> V3
- $\alpha = 0$, V4> V1> V5> V3> V2
- $\alpha = 1$, V4> V5> V2> V1> V3

By applying the Laplace criterion with equidistant probabilities, the following optimal variants were obtained.

- $\alpha = 1/2$, V5>V4>V1>V3>V2
- $\alpha = 0$, V1>V5>V4>V3>V2
- $\alpha = 1, V5>V4>V1>V3>V2$

We notice that by managing the uncertainty using different strategies and representing with the help of the uncertainty absorption indicator α (in our case for the 3 hypothetical situations 1, 1/2 respectively 1) the manager can identify different optimal decision variants. Therefore, the way in which the manager approaches the uncertainty in a certain decision-making context can be represented through this theoretical construct.

5. Conclusions

Analysing the contributions to the management of uncertainty in social and economic processes, from an epistemological point of view we can say that the use of fuzzy numbers is a great progress. As for assessing the development of elementary processes by using variable indicators as associated to fuzzy numbers, in addition to an interdisciplinary approach of decision management, results show an important addition for the interdisciplinary socio-economic phenomena, of the governing law and the holistic uncertainty of the risks for their development, but also within strategy performance and implemented programs reviews.

In the case of our article, the concern was to develop a new model for substantiating decisions in conditions of persistent degree III uncertainty starting from the classical methods of uncertainty management, formal or informal, using an interdisciplinary theoretical framework based on numbers. triangular fuzzy with variable associated indicators, with specific elementary operations, with rules and criteria for managing inaccuracy and imperfection of information, etc ..

Reflections on the specificities of for developing a variable center of gravity vastly associated to fuzzy numbers may suggest: the use of estimated information specific for uncertain events that are insufficiently statistically analyzed (seen as possibilities and not possible events); another point of view takes into consideration environmental tendencies (growth, recession etc.); one other view overtakes potential informational entropies coming from internal system assessments; one contribution avoids the excess use of mathematical expectation; it may also define the affinity and/or aversion towards risk of the assessor; the last point of view that is considered lens towards the subjectivity of the absorption mechanisms specific for the uncertainty, as defined by organizational management.

This construct of fuzzy numbers with associated variable indicators and specific elementary operations becomes an important tool for managing uncertainty in management methods. Through an interdisciplinary approach aimed to achieving the proposed objectives, a logically structured model can be defined in assuming one direction of action to the detriment of another based on medium and long-term strategies.

6. References

- Alecu C.I., 2011, Epistemic analysis of methods using elementary triangular fuzzy numbers with associated indicators, *The Yearbook of the "Gh. Zane" Institute of Economic Research*, 20, 5-12.
- Alecu C.I., 2019, Methodological aspects regarding the use of triangular fuzzy numbers with associated variable indicators in decision making, *The Yearbook of the "Gh. Zane" Institute of Economic Research*, 28, 21-32.
- Alecu C.I., Jaba O., 2009, Unconventional methods of strategic distribution of the uncertainty, The Yearbook of the "Gh. Zane" Institute of Economic Research, 18, 15-28.
- Bojadziev G., Bojadziev M., 1996, Fuzzy sets, Fuzzy Logic, Aplications, World Scientific, Singapore.
- Gherasim O., 2005, Mathematics of triangular fuzzy numbers, in Romanian Performantica Publishing, Iași, Romania.
- Giarini O., Stahel W., 1996, Limits of certainty, in Romanian, Edimpres-Camro Publishing House, Bucharest, Romania.
- Herrera F., Herrera-Viedma E., 2000, Linguistic decision analysis: Steps for solving decision problems under linguistic information, *Fuzzy Sets a Systems*, 115, 67-82.
- Lafuente A.M. 1994, *Financial analysis in conditions of uncertainty*, in Romanian, AIT Laboratoires Publishing House, Bucharest, Romania.
- Maturo A., 2009, Alternative Fuzzy Operations and Social Sciences, International Journal of Intelligent Systems, 24, 1234-1264.
- Maturo A., Maturo F., 2017, Alternative Fuzzy Operations: A Critical Approach and Applications in Social and Economic Sciences, The Yearbook of the "Gh. Zane" Institute of Economic Research, 26, 11-12.
- Schjaer-Jacobsen H., 2004, Modeling Economic Uncertainty, Fuzzy Economic Review, IX, 75-92.
- Tofan I., 2007, Toposes of totally Fuzzy sets, Advances in Abstract Algebra, Al. Myller, Iasi, Romania.
- Tofan I., 2011, Some remarks about fuzzy numbers, *International Journal of Risk Theory*, 1, 87-92.
- Ion Tofan, F.Eugeni, C. Volf, 2006, Special Hyperstructures and Fuzzy Sets,vol. Advances in Mathematics of Uncertainty, Performantica
- Wang J., Zhang Z., 2009, Aggregation operators on Intuitionistic Trapezoidal Fuzzy Numbers and its applications to Multi Criteria Decision Making Problems, *Journal of Systems Engineering and Electronics*, 20, 321–326.
- Zadeh L.A., 1975, The concept of a linguistic variable and its applications to approximate reasoning-I, *Information Science*, 8, 199-249.

Managerial Challenges and the Impact of the Pandemic at the Level of a Corporate Governance Enterprise

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Abstract

The paper presents some aspects on the economic and social life of an enterprise vital for the community of the Mountain Banat region. I thus considered it relevant to study challenges and practices at all managerial levels, encountered by this enterprise, in the context of the Covid-19 pandemic. Taking into account specific legislation and the pandemic period, I tried to highlight the role of each managerial level in ensuring the continuity of activity and economic resilience, in order to respond operatively and legally to all the challenges of this period. The approach was also pragmatic, by using the interview and directed thematic discussions at each managerial level as well as an analysis of the pandemic impact on the company's performance, trying to highlight the biggest challenges, the measures imposed and some pragmatic recommendations.

Key words: administration, governance, corporate management, analysis, performances.

J.E.L. classification: M12, M21, M41, M42, M48, M51

1. Introduction

Considering the author's predilection for theories and approaches in the field of management, made over time by renowned professors Nicolescu O. (2005, 2007), Verboncu I. (2013), Nicolescu, (2007), Ilieş L. (2005, 2009), Petrişor I. (2007), and many others, it is easy to understand why the presentation of the complex issues addressed is made in a systemic context that involves approaches at all managerial levels, discussions and events with different intensities on the topic of managerial functions exercised in each function of the economic entity chosen for study, especially in those areas that have been more challenged and influenced by the changes imposed by the impact of the pandemic over the past two years. The challenges and measures in these areas, as these were observed, analyzed and interpreted, created the possibility to highlight the managers' qualities, competence, ability to adapt to new and exceptional situations, as well as the ability to choose the best decision-making options and the most compatible management methods, in the context of situations or challenges that have arisen.

The title of this study creates the premises for the thematic approach at several managerial levels within the enterprise with corporate governance, the managerial approach of which includes participatory management bodies, for a better substantiation and elaboration of managerial decisions in order to achieve the proposed objectives.

2. Theoretical background

The enterprise analyzed was established and operates as a result of the national and local policies that were aligned with the acquis communautaire, in the transition period from the date of establishment or registration with the Register of Commerce, from 2004. The newly created institutional framework made possible the alignment with the provisions of the legislation in force, as well as the transposition of the "in-house" regulations of the regionalization process. Law 31/1990 could not ensure, on its own, wide possibilities of strategic alliances in order to access

some consistent financing, with the achievement of ambitious objectives and the inclusion in the short time document of the major projects to be implemented. For this reason, the incidence of specific legislations was imposed, which allowed the reorientation of the enterprise and corporate governance, the extension of the support received from the county council and the local councils that were formed in the Intercommunity Development Association and delegated the management of water and sewerage services for this operator.

In conclusion, there is a need to deepen this incidental legislation without ignoring the fundamentals regarding the organization and functioning of enterprises, added to the management descriptions provided by the authors listed in the references of this study (Andres, 2006, 2008, 2014). The presentation of some legislative recommendations and the enriching of the managerial theory content can constitute the premises of a new research.

3. Research methodology

This rather complex issue, approaches and explanations and thematically guided discussions together with the individual and collective interviews, but also the analysis of the economic entity functionality, implicitly the comparative analysis for the last three years of performance and interest indicators for the management of the analyzed entity, generated relevant recommendations and conclusions for the chosen topic, which, I hope, will lead to progress in the knowledge, theory and practice of the field of management and activity of the company.

In this context, it can be easily observed that the methodology approached, as a systematic and coherent study for all the proposed aspects, affected by the pandemic, could not be confused with the theory, although according to the famous professor Crăciun (2015), the principles of analysis and research are extracted from the principles of theory. Thus, I consider that the chosen methodology was not limited to certain techniques or practices, analyzes used or recommended and the result of the interaction between theory and investigation, between theory and practice is the one that is actually underlined, creating the premises of good practice models even in exceptional situations, arose during the pandemic.

4. Some issues regarding the managerial challenges and the impact of the SARS-COV-2 Pandemic at the level of a corporate governance enterprise

The choice of an enterprise with corporate governance for study was justified by the fact that it offers more opportunities for analysis and interpretation, given that there is a special legal framework governing its organization and operating: the Law no. 326/2002, the governmental decree no. 32/2002 and GEO no. 109/2011 on corporate governance of public enterprises, participatory bodies such as GMS (general meeting of shareholders), Board of Directors, Director Committees, Advisory Committees, Specialized Commissions, but also a flexible and efficient organizational structure, adapted whenever necessary to the situations arising in times of continuous change, especially in the period 2020-2021, when monthly changes were decided in this regard. The enterprise thus needed to continuously adapt its activities by transferring staff, according to competencies held towards productive and implementation functions of projects and by reducing the administrative and bureaucratic apparatus.

The company has full state capital and as stated by the general manager in the presentation of the Annual Activity Report for the period 01.01.2020-31.12.2020, "the enterprise functions in the Caras-Severin County since 2005 as an operator, aiming to increase the degree of access of the county population to quality services through its operational and financial performances", having therefore as values "the quality of services and the promptness of interventions in order to satisfy the client's requirements". He also declared that "a satisfied customer represented and will always represent the best form of promotion".

The following provisions of legislation, harmonized with European legislation: GEO no. 109/2011 on corporate governance of public enterprises; GD no. 722 of 2016 for the approval of the Methodology for the implementing of GEO no. 109/2011; Law no. 31/1990; the Constitution articles of the enterprise (including the Regulation on the organisation and functioning of the enterprise) and the Management Delegation Contract were taken into consideration by the Board of

Directors of which I am an honorary member (appointed by the GA on 18.08.2017, by contract, following the prior selection made by the Guardianship Authority (The Caras-Severin County Council). In agreement with the provisions listed, the executive management from all organizational levels understood the need to develop and implement elements of corporate governance that together with the implicit GMS support of the Guardianship Authority could help in the achievement of ambitious goals for which opportunities have arisen in this context. The enterprise was not reluctant to the challenges and changes that have arisen and set ambitious goals, as evidenced by:

- ensuring the development and preparation of the POIM project "Regional Project for the development of water and wastewater infrastructure in the Caras-Severin County 2014-2020" (in compliance with Directive no. 98/83 / EC- increasing the level of water supply services from 85% to 100% after implementation and with Directive no. 91/271 / EEC increasing the rate of collection and proper treatment of domestic wastewater from 74% to 100% after the project implementation);
- convening and putting on the agenda of the GMS according to the regulated competencies, important issues with major impact such as: changing the structure of repayable financing and extending the maturity of the credit facility, concluding addendums to the Contract for delegating the management of public water supply and sewerage services; regarding the updating of Annex 2 Inventory of concession goods, annex regarding the delivery receipt of the rainwater sewerage service from the Resita municipality, the assignment of the entire water system sewerage water treatment of the Socol commune etc., change of offices and administrative headquarters in Resita, approval of the Activity Reports of the Board of Directors, the Audit Report and the annual financial statements, the revocation / appointment of the members of the Board of Directors, the appointment of the general manager, directors and the approval of the general manager's management plan, the establishment of their remuneration, etc.;
- convening the GMS, meetings with representatives of the Guardianship Authority and the 77 ATUs in the county, for discussions to negotiate with the latter to become partners in a future project funded by the National Recovery and Resilience Plan (NRRP), of which 42 ATUs have already confirmed;
- convening large problematic entrepreneurs for discussions, contractual negotiations, etc.;
- participating in discussions with representatives of DGRFP TM, in order to obtain fiscal facilities to ensure business continuity, because the obligations to the general consolidated state budget, unpaid by the previous management exceeded 2,000,000 lei and the penalties exceeded the debt (following the payment of the monthly instalment rate, the debt remained in the amount of only 680,000 lei in the conditions in which the current rates of 850,000 lei / month were paid simultaneously with the rates on the loan guaranteed by Caras-Severin County Council);
- meeting in at least two Board of Directors meetings per month and in working meetings whenever necessary and issuing an average of 60 decisions per year (23 decisions in 2017, 55 decisions in 2018, 108 decisions in 2019 and 54 decisions in 2020);
- professional appreciation from the Guardianship Authority and the GMS by renewing the administrators' mandates on 10.06.2020.

I consider that the Board of Directors still faces significant challenges and responsibilities, but so do executive directors at all managerial level. The financial challenges are represented by large obligations towards the general consolidated state budget, co-financing / ineligible expenses for the projects to be implemented, for possible endowments with modern equipment and means of transport, maintaining the reserve fund within legal limits (5% of profit), share capital increases as a result of legislative changes or replenishment of share capital to ensure financial stability (with the convening of the GMS if the net asset is less than half of the share capital), but also for maintaining the market share, simultaneously with the implementation of the taxes policy.

In order to pay more attention to the framing in national and local policies, to keep up with the new legal regulations on corporate governance and not only, in order to increase the efficiency of the administrators' work, we proposed to increase the number of meetings / working meetings (with at least one weekly meeting, physically or online, as appropriate), in order to exchange

experiences, to clarify legislative issues, to outline new directions to follow, to fulfil the tasks of the GMS or provide the support requested by the Director General, as appropriate, because the information to be processed and the issues to be solved are usually extensive in the exercise of the power and the obligations conferred and established by the mandate contract and by the relevant legal regulations are numerous.

My training as: an economist and graduate of long-term undergraduate studies provided by the West University of Timisoara; as manager by graduating from master's and doctoral studies; as financial and project manager by graduating accredited accounting and specialization courses in the fields of auditing and trainer programs; but also my experience and practice: as economist in a company with full state capital that has successfully gone through the privatization process; as representative of the Ministry of Public Finance; 14 years in the field of financial control - within the Caras Severin Public Finance Directorate; as member of two Boards of Directors (with entities that ran large and risky infrastructure projects in progress during this period); as expert accountant of the economic agents in different fields of activity, since 2017; but also as a tax advisor during the operation within the DFFPCS, offer me the possibility to my desire to support the society, implicitly the county communities in the context of the inclusion policy "Sustainable Development Strategy of the Caras-Severin County 2015-2020". I can also underline that, depending on the sensitive financial stage inherited at the end of 2016, the challenges of subsequent projects for the modernization and development of water and wastewater infrastructure in Caras-Severin, the financial and economic-social challenges from the pandemic period, European funds (as sources of financing) but also other amounts from the state budget (state aid, subsidies) and budgets local or even from other bank loans, commercial loans, etc. are needed in addition to the amounts received from the Investment, Replacement and Development Fund, set up at the enterprise level.

Financing, in this context, is a real challenge but also a risk for the company and implicitly for the new Board of Directors, who, together with the executive managers, must constantly analyze and supervise all economic-financial, technical, social and risk issues in order to manage them correctly, in order to ensure the functioning of the public enterprise in a profitable and financially stable manner, in order to create, in fact, the premises for the successful accomplishment of the mission, purpose and strategic and operational objectives.

In this context, my proposal would be to establish internal regulations and procedures or revise them as appropriate and arrange for regular internal audits and unannounced inspections on each area of activity or function of the company, in order to ensure compliance and correct deficiencies in a timely manner, improve activities efficiency, precisely because I have competencies in this field as well, gained from my experience in internal and quality audits, having the opportunity to report non-compliances, to assess risks and to order compliance measures. In this regard, I believe that together with the other members of the Board we can provide advice and support to the general manager and directors at other management levels.

I also consider it appropriate to implement an improved customer relationship management system, integrated into the billing and utility payment system; to improve or optimize the IT platform, which needs to be flexible, interactive, effective and efficient, to bringing my contribution through knowledge in the field, deepened by applying the CECCAR standard no. 40 regarding the relations with the clients of the expertise company, for the accountant's office as well as for the course published and held at the "Eftimie Murgu" University in Resita – Management of Customer Relations in order to fulfil the company's mission.

In the same context, of fulfilling the mission of the company, I could also integrate the development of employees', of the human resources' professionalism, the only value creators in the company, which train and capitalize efficiently the other available resources, which must be used and managed efficiently. I can provide support and advice if required, for streamlining activities, having acquired skills in human resources management and financial management through doctoral studies in the field of Management but also from my practice in management and administration, during 14 years of experience in management positions within the General Directorate of Public Finances Caraş-Severin, respectively as Head of State Revenue Administration Service, Head of VAT Service, Head of Financial-Fiscal Control Service, Fiscal Control Director, Deputy Executive Director.

I consider that by mastering the 3 managerial components, Financial Management, HRM and Customer Relations Management, mentioned above the premises for good hierarchical and functional collaboration are created, together with the premises to improve the activities of other management and administration components, to successfully fulfil the other components of the declared mission, thus: developing operational capabilities, better and effective communication with customers in order to understand and meet needs and expectations but within reasonable costs and ensuring customer loyalty and maintaining profitable customers in the database, increasing efficiency in repairing damages and solving notifications, the implementation of modern technologies for compliance with environmental standards and ensuring the quality of water and services in the field, improving the company's performance, of managerial, economic and financial performance.

Knowing that the mission of non-executive directors focuses on strategy and corporate governance and not on the operational issues assumed by the executive directors of the company, I believe that economic and financial indicators and those established as an addendum to the mandate contract, should be pursued as a matter of priority, analyzed easily, because the numbers written in the documents are balance sheet elements that reflect the consequence of a sound management on achieving the company's objectives, which I consider, are quite ambitious in the context of current challenges and large debts and arrears on payment of obligations towards the consolidated general budget of the state.

In fulfilling the general purpose and objective of managing water resources responsibly and optimally, both in the medium and long term, the Board of Directors aimed to achieve the 16 strategic objectives, ensuring increased efficiency of activities: protection of the environment and water quality and implicitly, by supporting the further modernization of the infrastructure with the financing risks and the involvement of own sources, the replacement where appropriate of asbestos-cement pipes with HDPE pipes, the replacement of chlorine disinfectant with chlorine dioxide or sodium hypochlorite, the replacement of sulphate coagulant with aluminium polychlorides, sludge management, continued implementation of asset management, efficient use of drinking water for household consumers through media coverage and awareness / controls and sanctions as appropriate with examples of condominium residents who were instructed to form tenant associations, development and customer communication system, improving the integrated quality management system - environment - health and safety at work, ensuring maintenance leading to lower repair costs and investment costs, reducing water losses by installing flow meters, pressure sensors networking and the acquisition of state-of-the-art technologies, improving the quality of services while maintaining reasonable costs, modernizing the SCADA system and transferring professionals to the system, modernizing the laboratory for water testing in a minimum and maximum time degree of accuracy.

The specific objectives were not neglected: the increase of the market share, where one can highlight the significant increase of users of the company's services, especially condominiums / associations and economic agents (approx. 160,550 beneficiary inhabitants and over 1200 economic agents); further strengthening the market position by expanding the networks especially in the last two years (expanding the water network by 74 km); customer satisfaction expressed by the significant reduction in the number of complaints and the subsequent maintenance within planned limits, efficiency in their resolution; continuous monitoring of activities and issues regarding water and environmental quality aiming at continuous modernization of the central laboratory and maintenance of RENAR accreditation, of the metrological laboratory authorized by BRML Timisoara, stage and results of internal and external audits in the field, etc., in order to align with EU Management Directives quality and environmental protection; reducing specific water losses and optimizing the consumption of raw materials, materials and energy, etc.

The general managers were summoned periodically, by the general manager, in order to obtain information, the analysis of the financial planning with the physical planning, the analysis of the water balance, of the consumptions, etc.

In order to maintain the state of the enterprise, of profitable operation, in order to achieve the general objectives and in compliance with the requirements of European standards on quality of life and environment, managers need to monitor the evolution of economic indicators of volume, production capacity, costs, changes in assets, number of employees, reserves, provisions, stocks,

etc., volume indicators that express the effects of income or turnover, profit, value added, etc., and the evolution of quality indicators that refers to labour productivity, the evolution of which is compared to the wage fund, economic profitability, liquidity, solvency.

In order to achieve this objective, we analyzed the annual financial statements, the monthly balances, we compared them with the provisions of BVC in detail and we requested clarifications in meetings where the Economic Director was invited.

I propose to transpose the performance indicators and some significant balance elements to be followed, especially in dynamics, in order to preserve the integrity of the patrimony and the transparency in achieving objectives, in one document and to send it to subunits, so that there can pursue the same objectives added to the specific ones, so that they can be analyzed by revenue centres, cost centres and management as integral parts of the company's assets.

I can mention a positive evolution of the balance sheet indicators except for the pandemic year 2020, when some of the economic agents implemented the Telemunca (work at home) program, some even reducing activity, resizing their staff structure. These agents thus registered low consumptions that were reflected in lower revenues with the company analysed, achieved in a percentage of only 93% compared to the one planned. An amount of 43,326 thousand lei is still an increase compared to the achievements of previous years and compared to 2019, an increase in absolute values of 177,000 lei. Given the consequences of the pandemic year and the need to maintain the company's functionality, recovery from previous losses and turning the company into a profitable company, the executive management needed guidance and considerable efforts were made to keep expenditures below the level planned (93%) and below the level of realized incomes, the expenses amounting to 43,102 lei. This situation generated a profit in 2020 of only 224 thousand lei. In the same pandemic context, there was an increase in receivables due to nonpayment or late payment of invoices by affected customers, an increase in absolute values of 133 thousand lei compared to 2019 and 614,000 lei compared to 2018. However, collection efforts of receivables led to a degree of debt collection of 97% (maintained in 2021), above the planned level of 95% (96% in 2021). Also, the ISPA receivable was extinguished in April 2021 when the payment of the last Financial Agency instalment was made. However, the situation of debts to the general consolidated budget of the state, accumulated in the previous period and from current debts (balance of December 2020, 5030803 lei), remains a problematic one.

If the volume indicators still present an optimistic vision for the activity continuation in conditions of efficiency and profitability, the qualitative efficiency indicators do not assure us that we can maintain a financial balance without drastic measures, strategic objectives, analysis and review of contracts, etc. precisely to achieve first the objectives reflected by the qualitative indicators that express effects, indicators that are also provided in the corporate governance legislation, as a priority in assessing the performance of directors.

For this reason, I propose the annual evaluation of staff and the reduction of staff if the situation so requires in order to maintain the correlation between rewards-performance-job satisfaction and an index of labour productivity growth that outpaces the index of growth of the wage fund (although from 2017 until now when the company operates with 478 employees, the reduction of staff was significant, with over 200 employees), the application of the Telemunca and Kurtz Arbeit program during the pandemic in the case of unproductive staff, the efficient use of existing staff (example: existing staff of new connections to the sewerage network, connections to the water network, separation of water consumption at the apartment level in condominiums, activities that do not require high qualification if it is the case of repairs, administrative, etc.), programs internal and external training, etc. I also consider that it is necessary to intensify the control and audit of the operating units, implicitly the unexpected control of users or potential users, the establishment of joint control teams to remedy deficiencies / damages, detection and elimination of losses, detection of thefts, etc., so as to it ensures the increase of the production, implicitly of the productivity, the increase of the cash flows from the operation, the maintenance of the positive net treasury, of the current assets implicitly of the current liquidity in the acceptable limit around 2 (2.5 for the company analyzed).

The performance indicators, annexed to the mandate contract, were met, being within the initially planned limits, some of them even exceeding the plan.

I consider that all the objectives provided in the Management Plan, cascades in the managerial plan and the action plans of the exploitations are SMART, but these are achievable only with huge financial efforts, both from the enterprise's sources and from attracted sources, being obligatory to follow the effects of their attraction, the possibility of attracting them more easily without making it difficult to repay or co-finance when needed.

It is thus advisable to try to access state and government aid, given the support of the public guardianship authority, the economic and social destination of investments and the quality of services for the population and profitable customers. However, the support of financing from one's sources implies: administrative and managerial measures for monitoring, profit maximization, reinvestment of net profit, non-distribution of dividends (during the validity of the Delegation Agreement being prohibited the distribution of dividends); as well as measures needed to improve executive level managerial performance, in order to carry out profit-generating activities. For all these measures I could provide specialized assistance to executives, to improve specific indicators such as maintaining or improving financial and competitive position, managerial and social performance, performance specific management procedures regarding the adaptation of the most modern management methods and systems compatible to the enterprise, the increase of the intensity and decision specialization, the increase of the quality of the information generated by the enterprise activity, ensuring the objective correlation - organizational components - correct sizing of positions, correlation of rewards, performance - satisfaction, etc.

However, caution must be exercised to maintain a low risk level of indebtedness, given that the projects being implemented must have a successful completion (in 2023) and some subsequent impact on the community, otherwise the amounts could be claimed for reimbursement, for not fulfilling the indicators imposed as mandatory objectives and targets. I also recommend caution in determining the current investment needs to avoid burdening the society and ensuring the viability of projects.

Regarding the classification of the operator as a joint stock company, with shareholders including the councils in Caraş-Severin County and the County Council, having the main object of activity with lasting economic and social importance and achieving the objectives of quality of life, quality of environment as well as operational objectives, it is easy to understand why the decision makers at macro and micro level, chose at the right time, the reorganization of the company, the establishment of relations on the hierarchical managerial chain according to the Articles of Association and the organization and functioning), guardianship as well as the establishment of relations with shareholders (according to the specific legislation and the Delegation Agreement).

All the objectives proposed in this paper are possible while respecting corporate governance legislation, the national legislative framework harmonized with that of the EU, which is likely to undergo changes and updates over time, which should be taken into account in the context of the subsequent challenges in adapting to the realities. We have been able to propose the development of new activities without modifying the main object of activity, enriching the activities content, as well as supplementing the object of activity with other related activities (although the Articles of Association provide for 42 secondary types of activity) or, why not, outsourcing certain unprofitable services over time - if necessary, thus making amendments and additions to the Articles of Association, profits that can support the continuation of investments in order to achieve the strategic objectives of the company delegation).

5. Conclusions

Given the information presented in the current pandemic context, I believe that the participatory body of management and administration of the company, the board of directors and managers at other hierarchical levels, must base their decisions on extensive and periodic managerial analysis. Whenever there are problems within the company, these need to be solved within the limits of competencies, on certain data and information held or requested by the subunits, which are summarized in databases, reports and SWOT type analyzes, so that the strengths and weaknesses are continuously known.

The managing team must ensure: the achievement of the initially proposed strategic objectives and the development of new strategies / directions to follow, the monitoring, functioning and transparency of the accounting system and financial control, the monitoring and the execution of the mandate contract, a management plan and plans of actions by subunits, the evaluation of managerial activities in relation to them, the operative support for the organization of the GMS whenever necessary, the proposal of measures and substantiation notes as appropriate, the fulfilling of decisions, the monitoring and supporting of the Director General activities, for the fulfillment of the implicit tasks of the Board of Directors in order to ensure the efficient use of all available resources (material, financial, human and informational), but also to reorient the directions to be followed in order to achieve the performance objectives provided by the corporate governance legislation.

6. References

- Andreş S., 2012, Management. Sinteze, teste, îndrumări. [Management of Human Resources. Synthesis, tests, guidance] Eftimie Murgu Publishing House, Resita.
- Andreş, S., 2008, Eficienta microeconomică, [Microeconomic efficiency]. Eftimie Murgu Publishing House, Resita.
- Andreş S., 2006, Managementul participativ, cale de crestere a eficacității conducerii si a eficienței activitățiii organizație, [Participative management, a way of increasing management and organisation activity efficiency]. Mirton Publishing House, Timisoara.
- Crăciun, C., 2015, Metode şi tehnici de cercetare, [Research methods and techniques], University Publishing House, Bucharest.
- Government Decision no. 722 of 2016 for the approval of the Application Methodology of the Government Ordinance no. 109/2011, [online] Available at: < http://legislatie.just.ro/Public/DetaliiDocument/182501> [Accessed 15 November 2021]
- Ilieş, L., Crişan, E., 2009, Managementul firmei şi planul de afaceri, [Company management and business plan], Risoprint Publishing House, Cluj Napoca.
- Ilieş, L., Stegerean, L., Lungescu D., Osoian C., 2005, Managementul firmei, [Company management] Risoprint Publishing House, Cluj Napoca.
- Law no. 31/1990, on companies, [online] Available at: https://www.fondulproprietatea.ro/files/live/sites/fondul/files/en/corporate-governance/Legea%2031_1990_engleza.pdf [Accessed 15 November 2021]
- Law no. 111/2016 on the approval of the Government Ordinance no. 109/2011 on corporate governance of public enterprises, [online] Available at: http://legislatie.just.ro/Public/DetaliiDocument/178925> [Accessed 15 November 2021]
- Nicolescu, O (coordinator), 2007, *Managementul organizației*, [Organisation management] Economica Publishing House, Bucharest.
- Nicolescu, O., 2006, Strategii antreprenoriale, [Entrepreneurial strategies] Olimp Publishing House, Bucharest.
- Nicolescu, O (coordinator), (2003), Sistemul organizatoric al firmei, [Company organisational system] Economica Publishing House, Bucharest.
- Petrișor, I., 2007, Management Strategic. Abordare potențiologică [Strategic management. Potential approach] Brumar Publishing House, Timisoara
- Verboncu I. (coordinator), 2013, Management Eficiență, Eficacitate, Performanțe, [Management Efficiency, Efficacy, Performance] University Publishing House, Bucharest, 2013
- ***http://www.mfinante.ro, Accessed on: 09.11.2021

Business Strategy: Choosing the Right Fit

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Abstract

According to the available strategy literature, companies constantly adapt their business strategies in response to their ever-changing environment. This variation can make it difficult for businesses to choose the best strategic fit. When someone selects a business strategy, he/she must take several steps to achieve his/her aims. As a result, determining the best strategic framework for achieving the end goal is a critical first step. A strategic mindset and vision can help an organization determine its best strategic approach. The paper proposes a conceptual framework for developing a business strategy that will allow a company to meet its stated objectives. The existing literature review produced a synthesis of the required steps, leaving room for future research.

Key words: strategy, business strategy, company, strategic tools

J.E.L. classification: M1, M19

1. Introduction

Since the 1960s, strategy has become a challenging topic in the business literature. Recent years have witnessed the diffusion of an increasing turbulent business environment all over the world (Toma *et al*, 2013a; Toma *et al*, 2015a). This is why companies, irrespective of their size, understood the need to design and implement their own strategies in order to successfully compete in the age of risk and uncertainty (Toma *et al*, 2015b). In this respect, they used various strategic tools, methods and techniques in their activities such as lean management, Six Sigma and creative thinking (Toma, 2008; Marinescu *et al*, 2008; Toma *et al*, 2013b).

The aim of this paper is to establish a framework that will enable a company to select a business strategy that is appropriate for its objectives. To achieve this, an assessment of the last five years' worth of academic works was performed to observe and pinpoint the most pervasive and relevant attributes of strategies and typologies in designed to help in determining a company's strategic path. Additionally, the authors analysed some of the preceding decade's most prominent economic experts in order to gain a better understanding of how this concept's practical application has changed over the years. After reviewing these works, the authors of this study proposed a model based on the most important conceptions from scholars who have undergone extensive studies in this field. To attain the article's objective, the authors used a quantitative research method. The following sections discuss the literature review, followed by the research methodology. The paragraph on results and findings summarizes and reaffirms the observation - based findings of the study. Finally, the concluding section highlights the findings of the research, leaving room for additional assessment in a subsequent paper.

2. Literature review

Since its emergence, studying strategy from a business standpoint has become a critical endeavour from the start (Toma, 2013). Most authors agreed on the fact that in its beginnings strategy has been a part of the military domain (Peng, 2015; Toma *et al*, 2015c). Strategy is believed to be the result of a deliberate process and decision. To succeed, strategy must generate power, which facilitates it

to exert influence over the forces in its surroundings in order to accomplish its objectives. Power can be generated when an entity's assets are applied innovatively to opportunities it uncovers in its environment, and once the entity's various components work cooperatively. This is accomplished through the use of a cohesively organized collection of guiding decisions, or decision rules, which together form a persuasive rationale, a sound theory of victory. However, as with any theory that is predicated on certain hypotheses and suppositions, it must be validated against reality in order to be honed, revised, or altered as reality continues to unfold. This combination of requirements is highly improbable to work by chance. A theory of victory that requires testing and validation must be deliberate. Given the complexity of strategy, it requires efforts to develop. It may begin with a hazy idea or a perspective as the germ of a concept, but a conscious effort to refine and test it is necessary for strategy to exist. Situations by default, spontaneity, or being compelled do not constitute strategy. A survivorship strategy cannot be credited to someone who is cast onto an island by sea waves. A business cannot be said to have a strategy simply because it has market opportunities. A military organization cannot be said to have a strategy simply because it is at war. A hasty, incoherent response to the questions of who the targeted consumers are, what products and services to provide them, as well as how to design and implement these products and services is insufficient to define strategy. Khalifa proposes to define strategy as a unified core of decision-making. It is an entity's emerging theory of victory in high-stakes situations by leveraging resources and opportunities in uncertain conditions (Khalifa, 2020).

Top management are becoming enamoured with the term "strategy" or "strategic" that it has become misapplied in their companies. There are numerous strategies available today, including marketing strategies, HR, IT, operational, and financial strategies. There seems to be a strategy for an industry or a segment of consumers, a strategy for government relations, and a strategy for development. One aspires to effective management in an industry through strategic advertising and strategic innovative thinking, both of which are supported by strategic research & development efforts. The issue is that because everything is a strategy, nothing is. Communication and comprehension of managerial behaviour and choices become more difficult as a result of the confusion caused by the use or misappropriation of this word. Having numerous "strategies," does not automatically imply that an organization is strategy-rich. The more "strategies" a company has, the less probable it is that it has any strategy at all. There is a quick and easy indication of strategy in a company: if every manager in the entity can affirm the organization's strategy in a clear and concise manner, chances are there is one. If nobody can articulate the strategy in a straightforward, simplistic, and easy to comprehend manner, then there probably is not one in place. It makes no difference what the official documents indicate; if the employees in the company are unable to articulate a common strategy for the organization, the company lacks a strategy, since the actions taken by individuals are not linked into an integrated manner toward a common, shared goal. As a result, the organization lacks a strategy (Fairbanks et al, 2018).

Having taken the foregoing theories into consideration, the authors searched the academic literature for a way of determining how a business should endeayour to develop an effective strategy. According to Miles and Snow's interpretation of the research literature in the 1970s, there are three primary strategic types of organizations: Defenders, Analysers, and Prospectors. Each form has its own distinct strategy for approaching its target market(s), as well as a distinct design of technology, structure, and procedures that is consistent with its own business strategy. The Defender (i.e., its upper executives) purposefully focuses on establishing an environment conducive to a stable organizational structure. Stability is achieved primarily through the Defender's identification and resolution of its entrepreneurial problem. Defenders describe their entrepreneurial dilemma as how to isolate a percentage of the overall market in order to ensure a sustainable domain, which they accomplish through the production of a small number of products targeted at a narrow market segment of the overall market opportunity. Prospectors react almost in the reverse directions to their selected contexts as the Defender does. In some ways, the Prospector is identical to the Defender: its methods to the three adaptation problems are highly consistent. By and large, the Prospector creates a more dynamic system than other types of businesses within the same sector. Unlike the Defender, for whom the primary capability is to serve a stable domain effectively, the Prospector's primary capability is to identify and exploit new markets and opportunities. The Defender and the Prospector appear to be at diametrically opposed ends of a spectrum of adjustment strategies. Between these

opposites is a third organizational type known as the Analyzer. The Analyzer is a hybrid of the Prospector and Defender strategies that offers a viable alternative towards the other two. A true Analyzer is an entity that aims at minimizing risk while increasing profit potential - that is, a seasoned Analyzer integrates the Prospector and Defender strong points into a unified system. This strategy is challenging to implement, particularly in industries associated with rapid market and technical innovations, and thus the Analyzer's adaptive technique is commonly described as "balanced." The Reactor is a fourth form of organization they encountered during their research. The Reactor displays a conflicting and volatile pattern of adaptation to its surroundings; this type appears to lack a list of predetermined mechanisms that it can regularly employ when confronted with a changing environment. As a result, Reactors are almost perpetually unstable. The Reactor's "adaptive" cycle is typically characterized by inappropriate responses to environmental unpredictable changes, poor performance as a result, and a subsequent reluctance to act aggressively in the long term. Thus, the Reactor is a "remnant" strategy that occurs as a result of one of the other three strategies being pursued inadequately (Miles *et al.*, 1978).

Another perspective on strategy classification has been given by M.E. Porter when he created the formulaic competitive strategy classification scheme, which advanced the concept that a company's source of competitive advantage is contingent on the amount of value it creates for its various stakeholder groups. He asserted that cost leadership and differentiation strategies are the two primary standard strategies that impose constraints on achieving competitive advantage, whilst target marketing is a subcategory of the latter. He stated that strategies were also mutually exclusive and that organizations that pursue upwards of one generic strategy concurrently will become trapped in the midpoint (Porter, 1980).

While studies have extensively defended Porter's strategic purity viewpoint, new research has fuelled debate about whether pure strategies can coexist with hybrid strategies and produce project outcomes. Companies, on the other hand, are adopting a broader range of competitive strategies in practice, which goes far beyond the pure strategies generated by hypothesis and leads to the development of hybrid strategies. Hybrid strategies reflect reality by providing firms with a plethora of strategic options with various shades at the business level, regardless of industry (Anwar *et al*, 2017).

There are numerous tools available to assist businesses in determining their optimal strategic fit. Aliekperov proposes one such tool. TASGRAM is a system for developing strategies that consists of seven components: Thinking, Analysing, Strategy, Goals, Risks, Actions, and Monitoring. Each component, aided by the appropriate tools, carries out its specific function, assisting in the formulation of the company's strategy. Due to the cross-industry nature of the tools used, the knowledge gained will aid in the future application of the TASGRAM system for the purpose of developing strategy for any business:

- Thinking: Developing a viable business strategy for the company in order to prepare for further assessment and endorsement;
- Analysing: Gathering and analysing data necessary for strategic decision-making;
- Strategy: Based on the information gathered in the preceding phases, the final business strategy is developed, defining the company's future development;
- Goals: Establishing and disclosing of objectives that facilitate the execution of the business strategy and corporate strategy;
- Risks: Identifying risks that could jeopardize the strategy's implementation;
- Actions: Establishing actions directed at accomplishing the business and corporate strategy's objectives;
- Monitor: Establishing markers to monitor the implementation and efficiency of business and corporate strategies (Aliekperov, 2021).

As such, the authors suggest that companies can use this tool to differentiate and select from the various strategy typologies currently available.

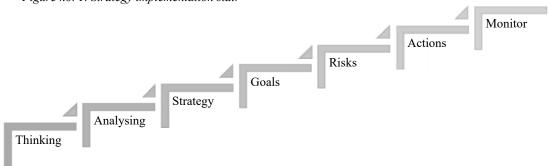
3. Research methodology

This paper was written in answer to a quantitative research study's findings. Numerous business and strategy publications, as well as research journals, were consulted to conduct research on the available strategy archetypes and on how a company can choose the best strategy for itself. This informed the scope of the research. The authors then conducted a literature review and have synthesised the findings.

4. Findings

As mentioned previously, the author proposes that businesses use TASGRAM as a possible model for developing a strategic framework as part of their business planning process. By delving deeper into the meaning of each component, one can gain a better understanding of how to implement each phase. The author illustrates the implementation steps and their relationship, thus forming a process, in Figure 1.

Figure no. 1. Strategy implementation stair



Source: (Aliekperov, 2021, p.16)

The initial step in implementing this model is called Thinking. This refers to the planning stage, during which one must begin developing a viable business strategy for the company in preparation for further evaluation and endorsement. This requires the business to consider their objectives. Once a goal is established, planning can begin, and it provides a target to work toward.

The second stage is referred to as Analysing. This step entails gathering and analysing all relevant and necessary data in order to initiate strategic decision-making based on the findings. A business must analyse its available resources and devise methods for obtaining the missing data necessary to make an informed decision about their course of action.

The third step is referred to as Strategy. This means that after analysing the previous step's findings, a business strategy is developed to define the company's future development. This means that the course of action has been determined, the path chosen, and while this should imply that it is the final strategy, in practice, it is necessary to leave room for unforeseeable future events.

The following step is titled Goals. While the ultimate objective was established in the preceding step, this stage entails the establishment and disclosure of milestones that will aid in the execution of the business and corporate strategy.

As the name implies, step five highlights the risks associated with implementing the chosen strategy. It is insufficient to select a strategy and immediately begin implementing it. Additionally, one must identify the risks that could jeopardize the implementation of the strategy, as well as the risks associated with the strategy's implementation.

The sixth step is a call to action. It is critical to establish the actions that must be taken to accomplish the business and corporate strategy's objectives during this stage. This means that it is critical to identify the tactics that will be used to achieve the strategic framework's objectives.

The final step, Monitor, is just as critical as the previous ones. After implementing the strategy, it is critical to monitor the situation to determine whether any new developments necessitate the implementation of a new tactic or approach. Establishing indicators to track the implementation and effectiveness of business and corporate strategies is critical because it enables a company to be proactive in the event of any unforeseen circumstances.

5. Conclusions

The goal of this article was to develop a framework that would enable a business organization to select a business strategy based on its objectives. To accomplish this, it was necessary to gain a better understanding of what the term "strategy" means in today's business world and of which are the best methods proposed by different researchers. Following a comprehensive review of the literature, the authors propose a model based on the TASGRAM framework. As a result, the paper shows the fundamental steps that any business, whether new or established, should take in order to determine their strategic path. This proved to be a viable approach for the paper's direction, and it enables future research to determine a more detailed classification of business strategies and the optimal approach to take in order to accomplish a strategic goal.

6. References

- Aliekperov, A., 2021. Creating Business and Corporate Strategy: An integrated strategic system. New York: Routledge Focus.
- Anwar, J. and Hasnu, S.A.F., 2017. Strategy-performance relationships: A comparative analysis of pure, hybrid, and reactor strategies. *Journal of Advances in Management Research*, 14(4), pp.446-465.
- Fairbanks, S. and Buchko, A., 2018. Performance-Based Strategy: Tools and Techniques for Successful Decisions. Bingley: Emerald Publishing.
- Khalifa, A.S., 2020. Strategy: restoring the lost meaning. *Journal of Strategy and Management*, 13(1), pp.128-143.
- Marinescu, P. and Toma, S.-G., 2008. Implementing Lean Management in the Romanian Industry. In:
 T. Koch, ed., 2008. Lean Business Systems and Beyond. New York: Springer, New York. pp.269-276.
- Miles, R., Snow, C. C., Meyer, A. D. and Coleman, Jr., H. J., 1978. Organizational strategy, structure and process. *The Academy of Management Review*, 3(3), pp.546-562.
- Peng, M. W., 2021. *Global Strategy*. 5th ed. Boston: Cengage Learning.
- Porter, M. E., 1980. Competitive Strategy: Techniques for analyzing industries and competitors. New York: Free Press.
- Toma, S.-G., 2008. What is Six Sigma? *Manager*, 8, pp.152-155, [online]. Available at: https://www.ceeol.com/search/viewpdf?id=547433 [Accessed 2 November 2021].
- Toma, S.-G., 2013. *Economia Întreprinderii*. București: Editura Universității din București.
- Toma, S.-G. and Marinescu, P., 2013a. Global strategy: the case of Nissan Motor Company. *Procedia Economics and Finance*, 6, pp.418-423, [online]. Available at: https://www.sciencedirect.com/science/article/pii/S2212567113001573 [Accessed 2 November 2021].
- Toma, S.-G., Bratu, A. and Burcea, M., 2013b. When business strategy meets creativity. *Network Intelligence Studies*, 2, pp.148-153, [online]. Available at: https://seaopenresearch.eu/Journals/articles/NIS 2 17.pdf> [Accessed 2 November 2021].
- Toma, S.-G. and Marinescu, P., 2015a. Strategy and change. *Manager*, 21(1), pp.145-150, [online]. Available at: http://manager.faa.ro/en/article/Strategy-and-Change~818.html [Accessed 1 November 2021].
- Toma, S.-G., Marinescu, P. and Grădinaru, C., 2015b. Strategic planning and strategic thinking. Revista Economică, 68(5), pp.168-175, [online]. Available at: http://economice.ulbsibiu.ro/revista.economica/archive/68515toma&marinescu&gradinaru.pdf [Accessed 1 November 2021].
- Toma, S.-G. and Grădinaru, C., 2015c. From military strategy to business strategy. *Strategii Manageriale*, 31(1), pp.227-233, [online]. Available at: < http://www.strategiimanageriale.ro/papers/160132.pdf> [Accessed 1 November 2021].

An Overview on the Entrepreneurship in Constanta County during the COVID-19 Pandemic

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Abstract

The Romanian entrepreneurship faced multiple challenges amid the current economic situation generated by the COVID 19 pandemic. This paper aims to determine how the local entrepreneurs from the Constanta County have managed to cope with this new context. The local entrepreneurship's evolution was analysed based on the data provided by different specialized studies and by the official statistics. The increased number of newly registered entities in 2021 compared to 2020 (first year of the pandemic) leads to the conclusion that local entrepreneurs have not lost their business appetite and managed to adapt to this new specific business environment.

Key words: local entrepreneurship, pandemic, Constanta County

J.E.L. classification: M10, M13

1. Introduction

The entrepreneurial activities in Romania have rapidly developed over the years which preceded the COVID-19 pandemic. The Romanian Entrepreneurship Barometer (2015) indicated that 99, 6% of the active companies in our country were small and medium size enterprises (SMEs). They hand an important contribution to the national GDP creation.

It also well known that in all economies the entrepreneurship plays a major role in the development process through jobs and welfare creation.

Since the beginning of pandemic in our country (in February 2020) over 1.79 million cases have been registered. Our country faced a total lockdown between march and may 2020 and since then placed in a state of alert. Along with the specific issues concerning the public health system, the pandemic generated numerous economic challenges.

This paper intends to analyse the evolution of the Romanian entrepreneurship during the pandemic period, especially the one located in Constanta County based on the information provided by the official institutions. The introductory section it is followed by a presentation of the current state of entrepreneurship in our country, using the information provided by different specialised studies. Then the research methodology is discussed in the next part of this paper. The next section is reserved for data analysis and interpretation.

2. Theoretical background - State of Romanian Entrepreneurship

The rapid development of entrepreneurial activities in Romania during the previous years of COVID-19 pandemic is demonstrated by the number of active SME's that increased in 2019 compared to 2018 at 581.080 units from 566.208 units (www.insse.ro).

This evolution was noticed by various researchers that have approached the subject (Marine,2018, Moldovan,2015). They underlined the support offered by the Romanian authorities to the entrepreneurial environment, through the specific legislative framework. At the same time the entrepreneurs' opinions reflected continuous challenges to effective implementation.

One of the most important issues related with the entrepreneurial activity that was revealed in different specialized studies was the access to finance (Romanian Entrepreneurship Barometer, 2013, 2015). This situation was approached also by other studies that revealed an opposite position. Thus, the World Bank Doing Business Report, ranks Romania in the 7 th place for ease of obtaining credit (Specific Support to Romania – Starts-ups, Scale-ups and Entrepreneurship in Romania, 2017).

Excessive taxation was identified as an important obstacle in the process of starting a business by the Romanian entrepreneurs (Prelipcean et. al., 2021).

Another study pointed out that the Romanian entrepreneurs are the more advanced in the use of digital technologies among the countries in Central and Eastern Europe (PwC Central and Eastern Europe Private Business Survey, 2019).

In the past two years, local entrepreneurship faced many challenges in the context of pandemic. These challenges have been approached in different studies. The most important issues were considered in 2020: the uncertainties of future developments, the declining of domestic demand, temporary suspension of activity due to the evolution of COVID-19 pandemic (White Charter of Romanian SMEs – 18th Edition, 2020). The same study (White Charter of Romanian SMEs – 19th Edition) identified in 2021 that almost 68% of the interviewed entrepreneurs considered the pandemic as the main threat for their activity.

Another study has indicated that the pandemic remains one of the most important threats against the companies activities (https://www.bdo.ro/ro-ro/resurse/rethink-insights/1-an-de-pandemie-covid-19-impactul-asupra-firmelor-romanesti). At the same time the participants in this study revealed that in their opinion the teleworking system was a success factor during this period. They also have considered that digitization and process improvement were ones of the strong points for their businesses.

All the above-mentioned studies indicated the Romanian entrepreneurship has rapidly evolved in the past decade. For the last two years, local entrepreneurs have faced the challenges of COVID-19 pandemic. The results of these studies seem to indicate that the entrepreneurs have managed to cope in general with those challenges.

In order to analyse the evolution of domestic entrepreneurship during this period in the next sections we aim to take a closer look to data concerning the entrepreneurial activity in Constanta County.

3. Research methodology

The main objective of this paper is to investigate the evolution of the entrepreneurial activity in Constanta County As a mean to achieve this objective we choose the descriptive analysis based on the official data provided by the National Trade Registry Office of Romania (NTRO).

The information processed concerns the evolution of incorporations of natural and legal persons, suspensions, dissolutions. We decide to include in our analysis the years 2019, 2020, 2021 in order to obtain a better image on the subject approached.

4. Findings

The entrepreneurial activity in Constanta County has developed in the considered period, between 2019-20221. As a proof, the evolution of the SME's number is presented in the table no.1.

Table no.1 The number of SME's in Constanta County (2019-2020)

Number of employees	2019	2020
0-9 persons	20862	22139
10-49 persons	2073	1972
50-249 persons	316	276

Source: www.innse.ro

The data in the table indicate that the number of micro enterprises has raised in 2020 compared to 2019. The number of small and medium enterprises has decreased in 2020.

This situation can easily be explained by the fact that the micro enterprises are the most widespread category of companies. At the same time, they tend to be more flexible and adaptive to the new context. Meanwhile, the larger companies encountered difficulties in adapting to new conditions.

The data provided by the NTRO concerning the incorporations of natural and legal persons between the 2019 and 2021 was analysed and the results are presented in the figure no.1.

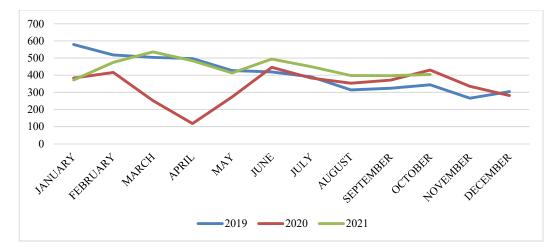


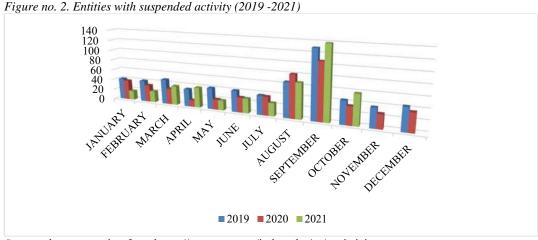
Figure no. 1. Incorporations of natural and legal persons (2019 -2021)

Source: data processing from https://www.onrc.ro/index.php/ro/statistici

The data in the figure indicate that the evolution of the incorporation of natural and legal persons in the considered period has maintained a similar trend. The exception was the period march-april 2020 when our country was in lockdown due the pandemic situation. Many entrepreneurs have postponed the decision to start a business.

Overall, we can acknowledge that in some months the number of the incorporation in 2020 and 2021 was superior to the one in 2019. Therefore, we can assume the local entrepreneurs have not lost their business appetite, despite the pandemic conditions.

Results concerning the number of entities that have suspended their activities during the considered period, are presented in figure no.2.

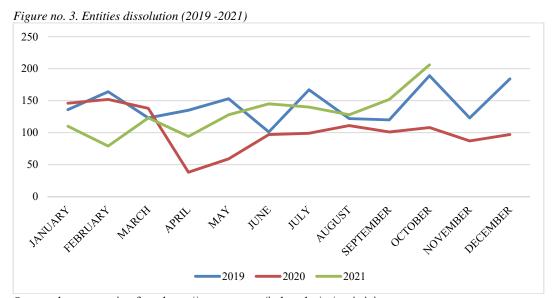


Source: data processing from https://www.onrc.ro/index.php/ro/statistici

We can notice from the figure that the number of suspended entities was lower in 2020 compared to 2019. The year 2020 was the first year of the pandemic, marked by numerous restrictions on economic and social activities. This situation could be explained by the support measures applied by the central authorities to diminish the effects of the pandemic. We can mention the support for technical unemployment, reduced working hours, financial grants for SME's activities.

In 2021 the number of suspended entities was almost the same as in the previous year. We can assume that the support measure mention before kept the local entrepreneurs in business.

The final step of our analysis regarding the evolution of the entrepreneurial activities in Constanta County during the pandemic refers to the number of dissolved entities in the considered period. The results are presented in the figure no. 3.



Source: data processing from https://www.onrc.ro/index.php/ro/statistici

We can notice from the data presented that there is no significant increase in the number of dissolutions during the years 2020 and 2021. Therefore, we can assume that many of the entities affected by the pandemic accessed the support measures or decided to suspend their activities until the general economic conditions will improve.

5. Conclusions

The Romanian business environment offers to local entrepreneurs improved conditions to develop new businesses. At the same time there are still several obstacles that will be encountered in the process of starting a business.

Romanian entrepreneurs have resented the effects of the COVID-19 pandemic, which has generated important economic distortion.

This paper aimed to analyse the evolution of local entrepreneurship, namely the one in Constanta County, during the pandemic years.

The results indicate that despite the initial shock produced by the Covid-19 crisis, the entrepreneurial activities in the considered region continued to develop. The increased number of newly registered entities in 2021 compared to 2020 (first year of the pandemic) leads to the conclusion that local entrepreneurs have not lost their business appetite.

It can be also noticed based on the results of the analysis that the support measure implemented by the central authority to diminish the impact of the pandemic crisis seemed to have helped the entrepreneurs to stay on business throughout this challenging period. This study has its limitations related in the first place with the considered period. The COVID-19 pandemic is still ongoing and a comprehensive analysis of its effects on the entrepreneurial activities needs to be deployed over its entire period. Moreover, a more in depth analysis should be used in order to determine the real effect that the support measures mentioned above will have had over the Romanian entrepreneurship.

6. References

- Marine, C. 2018. Regional Entrepreneurial Ecosystems in EU Markets: The Case of Romania, Journal of Global Politics and Current Diplomacy, 6(1) 17-41.
- Moldovan, I, 2015. Aspects of Entrepreneurship and Entrepreneurial Education in Romania, *Studies in Business and Economics no. 10(3)*, pp.52-61.
- Prelipcean, G, Boghean, C., Lupan, M., 2021. The Impact of the Covid-19 on Entrepreneurship in the North East Region Resilient Growth Solutions, ASSESSING THE EU'S ACTORNESS IN THE EASTERN NEIGHBOURHOOD EURINT 2021, pp.150-164.
- www.romaniajournal.ro PwC Central and Eastern Europe Private Business Survey, 2019.
- http://carpathiacapital.eu/en/tag/romanian-entrepreneurship-barometer Romanian Entrepreneurship Barometer 2013,2015.
- http://cnipmmr.ro/category/carta-alba-a-imm-urilor-din-romania White Charter of Romanian SMEs - 18 th, 19th Editions.
- https://www.bdo.ro/ro-ro/resurse/rethink-insights/1-an-de-pandemie-covid-19-impactul-asupra-firmelor-romanesti.
- http://tatajinnovation.com/wp-content/uploads/2018/05/Report-romania.pdf Specific Support to Romania - Starts-ups, Scale-ups and Entrepreneurship in Romania, 2017.
- www.innse.ro
- www.onrc.ro/index.php/ro/statistici

Quality Management in the Romanian Tourism Industry: An Approach Regarding the Rural Mountain Areas

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Abstract

More and more people are putting a special emphasis on health and relaxation and when it comes to vacations, they seek to escape from routine in places where nature and tranquility predominate. Personal and true experiences take the place of the standardized holidays offered by mass tourism, satisfying to a greater extent the desire of tourists to detach themselves from the daily life of crowded and hectic cities. In this context, there is a movement of tourists to nature and to places that can offer traditional outdoor activities such as hiking, horseback riding or kayaking, etc. Authentic food, clean air and tranquility have also become the criteria of tourists in choosing a destination. Thus, tourism in rural areas of Romania, especially in the mountains, has become very sought after and appreciated. The stressful daily life and the fast pace of the cities make people want to spend their holidays in the most relaxing environment. Unfortunately, the rural tourism in our country is not very well developed and, consequently, has a lot to recover in terms of tourist offer. Although nature and people can offer unique experiences to tourists, few of the foreign tourists manage to reach these places and get to know the local natural beauties. For this reason, the focus of this paper is on tourism quality management in these areas, in order to identify the current situation and to develop possible suggestions as ways to improve the quality of rural tourism services.

Key words: quality management, tourism, mountains **J.E.L. classification:** Z3

1. Introduction

Rural tourism has developed with the pressure of the hectic lifestyle that most people in urban areas feel. Although the need to escape from a city can turn a place outside of it into an attractive one, it is not the only reason why rural tourism is in high demand. Rural experiences are a tourist getaway described by romantic notions of people and traditions, which offer tourists the vacation they need, through simplicity, hospitality and friendship.

Rural tourism in Romania is characterized by rich villages from a natural point of view and welcoming locals but, on the other hand, by the multiple shortcomings related to infrastructure, utilities and material poverty, which place living standards in Romanian villages on the periphery of the European civilization. It is considered necessary to develop the rural tourism product in Romania in order to be in line with the requirements of the European market, to meet certain quality standards and facilities for modern tourists. However, this does not mean removing the defining elements of village life and their deep cultural resonance, but achieving the necessary quality standards for a comfortable and pleasant stay. It is very important to adapt to European tourism standards in terms of rural tourism in order to be able to develop and make known the beautiful and rich places in culture and traditions and to foreign tourists. This involves initiating and promoting actions that include emphasizing sustainable development in rural tourism areas in Romania, but also the development of processes of education and training of a mentality open to change and development. Efforts need to be coordinated at both regional and national level, addressing larger gaps such as infrastructure or spatial planning, which involve the development of projects with spatial implications. The steps

required to transform rural tourist areas into European tourist destinations are difficult and multiple, but I have chosen to approach this issue from the point of view of quality management to establish the current level and possible adjustments that can be made.

2. Literature review

Rural tourism is that type of tourism that takes place in rural areas and is defined by different characteristics and functions. Rural tourism is a form of tourism that takes place in rural areas and has a functional structure of heterogeneous services and accommodation. The incomes from the rural tourism have a permanent character and the services are offered by an employed and specialized personnel (Dinu, M., 2002, p.261). Sharpley and Roberts (2004) mentioned the location of the destination in the countryside, the small-scale buildings and settlements and the connectivity with the locals as characteristics of holidays in rural areas. (Sharpley and Roberts, 2004, p. 123). Moreover, the concept of rural tourism includes rural customs and folklore, local traditions, values, beliefs and common heritage. According to Negrusa et al. (2007), rural tourism is "a form of tourism offered by locals in rural areas, with small-scale accommodation, rural activities and living habits". (Negrusa et al., 2007, p. 1). Another author defines rural tourism a few years later as "a tourist product that offers visitors a personalized touch, a taste of the physical and human environment of the rural environment and, as far as possible, allows them to participate in activities, traditions and lifestyles of the locals" (Aref and Gill, 2009, p. 68). Rural tourism is seen as tourism that takes place "in the country", but what constitutes "in the country" varies significantly between and even within countries (Lane, 2009).

One of the most significant attempts to define rural tourism is that of the OECD (Organization for Economic Cooperation and Development), together with Bernard Lane (Lane, 2009, p.). This definition describes rural tourism as a discreet activity with distinctive features such as its size, location and character. In his 1994 paper, Lane described a typology of rural tourism ranging from "pure rural" to urban. He suggested that the demand for rural tourism is directly related to the specific characteristics of rural areas (such as location, physical environment, etc.) and that the main motivation of tourists to visit rural areas is to experience "rurality". (Lane, 1994, p)

Tourism is often understood as a form of escaping from the pressures of everyday life, and this can be especially true in rural tourism, where the combination of an often-idealized notion of "rural", simple and easy, is combined with fun and relaxation of the tourism and vacation. Therefore, rural tourism can be defined as a form of tourism characterized by authentic elements that define the rural environment as a whole and which, for people in urban areas or other regions or countries, can be novelties that contribute both to the relaxation of tourists and as well as to their entertainment.

Rural tourism is characterized by the variety of rural tourist destinations and natural riches, picturesque landscapes, as well as deep-rooted culture and traditions. The main characteristics of rural tourism are related to space, population, community, food, leisure, recreation and treatment. The main distinguishing feature of rural tourism refers to the fact that it develops outside urbanism, being an alternative source of activities, which offers multiple possibilities for the development of national tourism, because it contributes to the diversification of the tourist offer. Another extremely important feature refers to the fact that rural tourism uses a wide range of natural, cultural, historical, ethnographic and culinary resources, being a factor that promotes cultural heritage, having multiplier effects.

By using all the characteristic elements, rural tourism can bring multiple benefits if managed properly. According to Okech et al. (2012), there are three main benefits of rural tourism for rural areas, namely:

- (1) providing opportunities for transactions and businesses.
- (2) economic growth, job creation, emigration, development of public services, development of infrastructure, social contact and environmental protection.
 - (3) facilitating access to remote and non-urban areas. (Okech et al., 2012, p. 41).

We can say that rural tourism has benefits for the economy and society, for the environment, locals and tourists in general. Rural tourism should be seen as an opportunity for developing countries.

On the other hand, due to the pressures determined on sensitive environments, rural tourism is in a position where it needs a very well-developed quality management system. Although the quality of services in rural tourism is a frequently debated topic, it is not put into practice in tourism in rural areas. The quality of services is closely and indivisibly linked to satisfaction, and its relationship and influence on customer loyalty has been the subject of a great deal of research. Tourist satisfaction has been measured and evaluated through a variety of tools, namely overall satisfaction, performance, expectations, positive recommendation, etc. (Yoon and Uysal, 2005, p. 47). Given the importance of this topic, I consider it necessary to approach it in the context of tourism in rural areas of our country, where, although landscapes and natural resources are superlative, the tourism industry does not know how to capitalize on them to the fullest.

In rural tourism in Romania, quality management represents, first of all, the modernization of facilities for customers in order to improve the quality of tourist services in this area. This should be seen as an integral part of the entire tourism sector, which could benefit the national economy, as each link in the tourism value chain provides important elements to the overall product. The quality of the tourist services offered in the rural area, together with the experience obtained in the chosen rural destination determines the customer's satisfaction with his trip / vacation and implicitly forms an opinion about the tourist services in Romania.

Although the quality of tourist services is the accumulation of perceptions and subjective opinions of each tourist, which are also influenced by personal sensibilities, psychological and social influences or simply by everyone's preferences, the overall picture is given by the degree of satisfaction of tourists to facilities and hospitality. Thus, the rural tourist areas in Romania need to be improved, first of all in terms of accommodation conditions, transport, food, but also the approach of the hosts. We must specify that in the rural tourist areas there are many "guest houses". Thus, the locals offer accommodation in their own homes or outbuildings of the houses, built in order to provide accommodation. Although the experiences in such accommodation are authentic and unique, it is necessary to have slightly minimum quality standards for guests, which take into account the rules in force so that the stay of tourists is fully satisfactory and they want to return to the places visited. In addition to natural and cultural resources, tourist facilities, accommodation, restaurants must be the basic resource of any tourist destination, including those in rural areas. The use of quality management in all this can bring the success of Romanian tourism in tourist destinations in rural areas.

In rural tourism, it is difficult to use quality assurance tools and apply techniques such as certificates and rewards. We could say here that there is a lack of completeness because quality management techniques are applied in a selective manner, without taking the concepts of TQM as a comprehensive philosophy. These quality management processes have less accessible monitoring and feedback tools for tourism practitioners in rural areas. The problem becomes even more complicated as tourists consume other elements of the total tourism product during their overall experience, such as the destination area. Thus, it is even more difficult to control the quality of all elements of the tourism product offered by suppliers operating in the rural tourism area.

In Romania, tourism in rural areas needs considerable improvements in terms of service quality to attract more tourists, and even more so from outside our country. It is very important for locals and owners of boarding houses and hotels to understand that a quality management system can help increase customer satisfaction and thus increase the number of tourists as well as revenue. Quality management involves the continuous improvement of the services offered in order to meet the expectations of customers as best as possible. For this to be possible in rural tourism areas in Romania, it is necessary for small entrepreneurs to understand all the attributes of tourism services that contribute to customer satisfaction and loyalty. Therefore, the quality in rural tourism approached by setting individual quality standards, must be resized with the growing needs and expectations of tourists.

3. Research methodology

The Alba Mountain area was chosen for the research, given the fact that it is an area rich in exceptional mountain natural settings, ancient cultural and culinary traditions. Also, here you can see historical monuments such as the Museum of Mines in Roşia Montană, Sebeş Fortress, Aiud Fortress,

medieval buildings but also cathedrals and churches. Moreover, here we find the Scărișoara Karst Complex, Huda lui Papară Cave, Arieș Gorge, but also gorges and valleys with imposing landscapes. The mountain, hill and high plateau regions predominate in this area. Alba County is covered by the Târnavelor and Secașelor Plateau to the east and the Apuseni Mountains to the west. To the northwest, the area is guarded by the Great Mountain and the Bihor Mountains.

Given the geographical location and the main resources of Alba County, its economy is characterized by the industry and services sectors. The industries that have developed in Alba are: the wood processing industry, the food and beverage industry, the chemical industry, the leather and footwear industry, the textile industry, the extractive and derived products industry, the furniture industry and the machinery and equipment industry.

The area of the Apuseni Mountains and the Şureanu Mountains can find in tourism a way of sustainable economic development. A major resource of tourism in Alba County is and will remain the rural space both through the multitude of types of natural attractions and through multiculturalism. In mountainous areas, rural settlements are scattered and sometimes isolated, which determines the absence of a stimulus in terms of the development of utility infrastructure, which in turn is an obstacle to the development of tourism. In addition, awareness of the option of using unconventional utility solutions is limited.

The aim of this research is to identify the factors that can influence the quality of tourism in this area. The objectives of this study are to establish the evolution of the number of tourist structures in operation and the accommodation capacity, as well as the number of tourists in the last four years. The focus was on identifying the number of foreign tourists and its evolution during the analyzed period. We also aimed to identify the attractions and tourist activities in this area, as well as the opportunities offered by the rural tourism region of Alba.

In order to achieve these objectives, we analyzed from an evolutionary point of view the data collected with the help of the statistical directories available at national level regarding the accommodation structures in operation, the accommodation capacity and the number of tourists in the analyzed period. The information on tourist activities and attractions was obtained from nationally validated sources and in terms of identifying possible opportunities and challenges in the upland region in rural areas in terms of tourism we chose a qualitative research approach - based on interviews and their analysis with GABEK. Qualitative research is recognized as suitable for providing "strong descriptions" and detailed accounts of complex phenomena. The GABEK method of qualitative analysis is applied in social science studies, as well as studies related to tourism, being applied to locals who have an accommodation structure of any type in rural areas. The present study is based on empirical data that emerged from semi-structured interviews applied to the owners of structures with accommodation function in the upland rural area of Alba.

4. Data, results and discussions

4.1. Analysis of the evolution of tourist accommodation structures and tourists

Following the analysis of the numerical data published at national level, we made the table below (see table 1) in which a relatively small total number of accommodation units can be observed.

Table no. 1. Toi	irist reception structur	res with accommoda	tion functions b	v types of structures in Alba

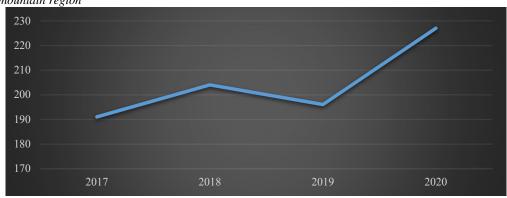
Types of accommodation	2017	2018	2019	2020
Hotels	19	19	18	19
Hostels	4	3	3	4
Motels	5	6	6	6
Tourist villas	10	12	10	29
Tourist chalets	11	6	7	6
Bungalows	0	3	1	3
Camping	1	1	1	1
Tourist stops	2	3	3	2
Tourist houses	0	0	1	1
Student camps	3	3	3	3

Tourist pensions	28	29	30	27
Agrotourism pensions	108	119	113	126
Total	191	204	196	227

Source: INSSE

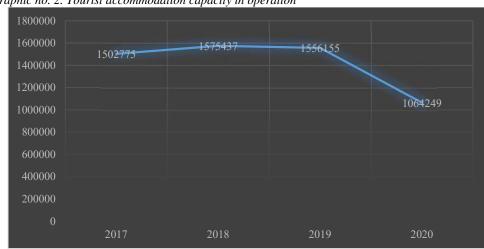
The agrotourism pensions are the ones that have the largest share of the total tourist reception structures with tourist accommodation function in Alba. Thus, out of a total of 227 accommodation structures, 126 were agritourism pensions in 2020. This means more than half. There are 29 tourist villas and 27 tourist hostels. There are only 19 hotels in this region. The fewest accommodation structures are campsites and tourist houses, numbering 1 in 2020. Regarding the evolution of accommodation structures in the analyzed period (see graphic 1), there is an increase followed by a decrease and then another growth. However, in total, there is an increase in the number of accommodation structures with tourist functions in the Alba Mountain area during this period.

Graphic no. 1. Evolution of tourist reception structures with accommodation functions in the Alba mountain region



Source: made by the author based on INNSE data

Regarding the tourist accommodation capacity in the analyzed mountain region, a rather large decrease was observed in 2020 compared to 2017, although in the period 2017-2018 it knows a slight increase. This drastic decline in 2020 could also be caused by the emergence of the new SARS COV-2 virus and the beginning of an epidemiological pandemic that we are still facing.



Graphic no. 2. Tourist accommodation capacity in operation

Source: made by the author based on INNSE data

The number of tourists in this area has experienced an upward curve until 2019, increasing little by little, but constantly. In 2020, however, with the pandemic, the number of tourists in the Alba region decreased drastically, by over 30%, the region registering with over 100,000 fewer tourists. The number of foreign tourists is small compared to that of Romanian tourists, decreasing in 2020 by over 80%, representing a huge loss for rural tourism in the Alba Mountain region. Given the major importance of the impact of the pandemic on tourism in general and rural tourism in this region in particular, it is necessary to take this into account when assessing the data analyzed.

Table no. 2. Overnight stays of Romanian and foreign tourists in the Alba region

Tourists	2017	2018	2019	2020
Romanians	293,683	304,599	317,929	212,407
Foreigners	56,646	59,875	52,821	7,339
Total	350,329	364,474	370,750	219,746

Source: INSSE

The COVID-19 pandemic has been and continues to be an obstacle to raising the quality standards of tourism in the region under review and to the overall evolution of rural tourism. All the more so as in rural areas the regulations on restrictions and hygiene were less respected in Romania. The development of tourism projects of the development strategy of Alba County in terms of adaptation to European and international trends was stopped during the pandemic, which further hindered the integration of quality in tourism services in rural areas of the Alba Mountain region. The vision of this strategy is to further identify and address issues related to tourism shortages in this area, as well as to allocate resources for rural development and the implementation of indicators to monitor the quality of tourism services in order to make further improvements.

4.2. Tourist attractions and activities

Among the most important attractions of the rural tourist area of Alba are: Scărișoara Glacier located in one of the most important caves in Romania; Transalpine - the highest road in Romania, reaching an altitude of 2,145m; Râpa Roșie - characterized by a spectacular landscape; Găina Mountain - famous for the annual fair, the Girls' Fair; Snail Hill - paleontological reservation; Rimetea village - one of the most beautiful villages in Romania; Galleries from Roșia Montană - a town with an ancient tradition in terms of the exploitation of precious materials. All these tourist attractions are located in rural areas of Alba County and represent true natural and cultural values of our country. Their capitalization through tourism is extremely important, attracting Romanian and foreign tourists can be achieved by providing quality tourist services, to meet the requirements of tourists not only visually but also the conditions of accommodation, food, transport, etc.

In terms of tourist activities, they can be numerous, but here, too, it is necessary to introduce quality in order to offer the widest and most satisfying experience possible for tourists. In order for the customer's satisfaction with the tourist product to be as high as possible, it is important to be satisfied with every component that tourism is responsible for. One of the most enjoyable activities that can be done in the analyzed area is the participation in the annual Fair of Girls from Mount Găina. In this ancient tradition, unmarried girls are promised to be married and the "moți" meet here to party. Visiting the monasteries in the rural Alba area, hiking, dining experiences as well as visiting the picturesque villages at the top of the mountain are special tourist attractions in this area.

5. Opportunities and challenges - interview

The structured interview included questions about the opportunities that accommodation owners see for the development of these areas from a tourism point of view and about the challenges they face in carrying out tourism activities, as well as how they view the idea of quality. within the tourist services it provides. A number of 20 managers and entrepreneurs were interviewed.

The first question regarding the reasons for success in the development of rural tourism was recorded the keywords most frequently mentioned by respondents of good mountain practices. Based

on the analysis of the interviews, we can identify six key groups that explain the success in the development of rural tourism. (see table 3).

The development of the quality of rural tourism is based on the strengths that these areas offer. The strengths identified following the analysis of the answers obtained in this study were all built on the natural and cultural environments offered by the rural tourist area Alba. In other words, the exceptional natural landscapes, ancient traditions, the authentic lifestyle of the locals in the rural area, the culinary experiences rich in natural products, created even in people's households, all these are part of the respondents' answers about the opportunities offered by the analyzed area. These issues should be taken into account equally and capitalized at the maximum.

Adding a surplus of quality, through the careful management of both natural and cultural heritage, would give visitors the opportunity to be satisfied with incredible experiences that lead to the successful development of rural tourism. Moreover, the results suggest that rural communities in the analyzed area are not only not deprived of mass tourism and its negative impacts, but also reject this classic approach to tourism development, thus indicating a commitment to a more sustainable form of tourism.

Table no. 3. The reasons behind the success of tourism in the analyzed rural area

	Domain	Key words	Answers
Factors that can determine the success of rural tourism in the analyzed area	Products and services	Quality	"The involvement of the locals in offering the most varied, quality and authentic services is essential in the rural environment".
	Participatory approach	Cooperation	"Cooperation plays a key role in rural areas. We always need financiers and allies."
	Open approach	Opening Initiative	"In rural tourism, there is always a need for someone to take the initiative and involve others."
	Management	Organization	"Management in the field of tourism is essential from all points of view. Organization is the key to quality tourism."
	Communication	Multimedia	"The use of modern information techniques is more difficult for some entrepreneurs in the country, so they need to be informed about the major importance of their internet presence. Romanian travel agencies should promote more rural tourist areas in our country.

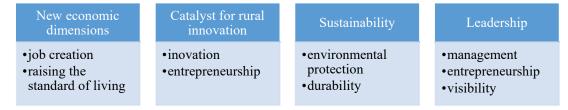
Source: Authors' contribution

In terms of opportunities, we analyzed the possibilities for rural tourism in the Alba area. By generating direct and indirect employment opportunities, rural tourism opens up new economic dimensions for the local population. Entrepreneurial activities and local business can grow over time. The successful development of rural tourism can lead to a new vitality and dynamism in the rural areas of Alba County. According to the respondents, the revitalization of the communities is visible in the new products and services described by the quality that benefits visitors and leads to both architectural reconstructions and changes in demographic patterns.

The development of rural tourism creates and strengthens regional economic cycles and generates synergies between different branches and businesses. It can be a catalyst for community innovation, thus promoting local entrepreneurship and improving the quality of life of the local population. Finally, rural tourism initiatives are a way to rediscover a region and successfully position it as a tourist destination.

Following the analysis of the answers obtained following the application of the structured interview, the following groups of opportunities were identified in the tourist area in the rural area of Alba County (see table 4).

Table no. 4. Opportunities in rural tourism in the Alba area



Source: Authors' contribution

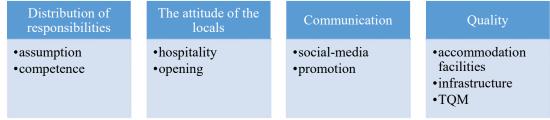
Rising rural areas generally face weaknesses related to territory and settlement, but also specific challenges to the implementation of rural tourism activities (table 1.4.). The results of the interview suggest that acceptance among locals is usually one of the most sensitive topics. Generating interest in tourism is often difficult, as low self-esteem in the tourist attractiveness of the region in which they live often predominates among the inhabitants, considering that rural areas are not necessarily a tourist place, which could benefit them.

On the other hand, the respondents of the interview consider that the process of promotion on social media is a general aspect but also difficult to achieve in the absence of administrative support at a higher level. However, from the perspective of the interviewees, the promotion and visibility in the online environment remain some of the most important forces for the development of rural tourism in Alba.

From the point of view of respondents, especially managers, the success of a rural tourist destination depends on the satisfaction of tourists, which in turn depends on several individual components such as strategic planning based on a total quality management system, together with various tools and techniques that continuously improve the facilities offered to tourists. The aspect regarding the facilities but also the infrastructure from the rural tourist areas in Romania, in general, depends on the approvals and financing of the government. Even if hospitality, safety, attractions can satisfy some of the wishes and needs of tourists, it takes more than that to be able to develop this type of tourism at a higher level, which will bring its contribution to the national economy.

Following the analysis of the answers provided by the interviewees, a series of key words were extracted, based on which the main challenges faced by tourism managers and entrepreneurs in the rural highlands of Alba were outlined. (see table 5)

Table 5. Challenges in rural tourism in the Alba area



Source: Authors' contribution

From the point of view of managers and entrepreneurs, the first step towards the development of rural tourism areas is the awareness followed by concrete joint actions, which should come from both the authorities and the locals. An integrated approach to rural tourism in Romania is needed to achieve success.

6. Conclusions and recommendations

Rural tourism is a form of tourism that offers a wide range of experiences and is characterized primarily by its location outside urban areas, which attracts tourists looking for a place to relax and escape from everyday life. On the other hand, rural tourist areas are defined by natural resources and cultural traditions that offer a special charm. However, while we believe that rural mountainous areas in Romania have much to offer and can be further developed as tourist destinations, it must be borne in mind that quality management must be applied to several sectors of rural tourism, depending on the type of location., owned resources and market.

The continuous improvement of the market segments in the field of rural tourism is a very important aspect, because the needs of the tourists are constantly changing. At present, they are extremely interested in tourism activities aimed at physical and mental health (retreat), as well as environmental issues. In this context, the requirements for high standards of accommodation and accommodation units are also increasing. In this sense, it is necessary to increase the quality that visitors feel, in order to improve their image compared to rural tourism.

The need to implement a quality management system in rural areas of the Alba upland region lies in the vitality of quality in tourism services, quality being a key element of tourism development in these areas. Quality depends very much on consumers' expectations of the performance of services and the delivery of services. Thus, the satisfaction with the quality of tourist services lies in the main differences between the expected and the felt quality. That is why it is recommended to constantly evaluate customer satisfaction and use specific methods to assess the quality of tourism services offered.

7. References

- Aref, F.; Gill, S. S., 2009. Rural tourism development through rural cooperatives, *Nature and Science*, Vol. 7, No. 10
- Dinu, M., 2002. Geography of tourism, Bucharest: Didactic and Pedagogical Publishing House, R.A.
- Lane, B., 2009. Rural Tourism: An Overview, in The SAGE Handbook of Tourism Studies, SAGE Publications
- Negrusa, A. L.; Cosma, S. A.; Bota, M., 2007. Romanian rural tourism development a case study: rural tourism in Maramureş, *International Journal of Business Research*, Vol. 7, No. 4.
- Okech, R., Haghiri, M., Babu, G., 2012. Rural tourism as a sustenable development alternative
- Sharpley, R.; Roberts, L., 2004. Rural Tourism-10 Years On, *International Journal of Tourism Research*, Vol. 6
- Yoon, Y., Uysal, M., 2003. An examination of the effects of motivation and satisfaction on destination loyalty: A structural model. *Tourism Management* 26

Management Strategies for the Recovery of the Romanian Tourism Industry in the Covid-19 Pandemic Context

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Abstract

The Covid-19 pandemic is one of the biggest health crises that seems to have not yet been resolved. Although the vaccine against the virus is an important step towards a return to normalcy, it still seems quite difficult to achieve it at the present. In this situation, the tourism sector, which has suffered enormously, must find a way to recover and continue to function in one way or another. Measures and restrictions have been put in place to prevent the spread of the virus and in the end on getting back to life before, but as this is currently not possible, we need to adapt, reorient, develop new strategies or methods to continue to exist and develop. So is tourism. This article presents the international and national pandemic situation and how it has affected tourism and the economy as a whole.

As I mentioned, it is important for tourism to find a way to continue to function, adapting to the pandemic times. For this to be possible, methods and strategies, plans and regulations are needed to stabilize tourism businesses and give tourists the confidence to travel again. Thus, by studying the existing situation at national and European level, an analysis was made of strategies that could provide citizens with the possibility and safety to travel and strategies for relaunching tourism, established at the level of the European Union and implicitly applicable to Romania. Each member state of the European Union must make individual efforts for the recovery and relaunch of tourism, especially since Romania also needs development strategies and adaptation to the requirements of the European market.

Key words: tourism, Covid-19 pandemic, restrictions, economy

J.E.L. classification: Z3

1. Introduction

COVID-19 (coronavirus 2019) is an infectious disease caused by the SARS-CoV-2 virus. The virus was first detected in Wuhan, Hubei Province, China, at the end of 2019, spreading at a very high speed around the world. Due to the serious situation created, the World Health Organization (WHO) declared a state of health emergency on January 30, 2020. On March 11, a month and a half after the declaration of a state of health emergency, due to the fact that the disease had overcome the epidemic situation, it has been declared a pandemic state. Due to the novelty of the disease, there were no medicines or vaccines to protect people against the virus at that time, so the measures taken then were focused on distance and social isolation. Currently, although there is a vaccine against COVID-19, the virus has been unstoppable, affecting millions of people and causing hundreds of thousands of deaths. On the other hand, measures based on social distancing, isolation, restriction of all transport and other areas of activity have caused an unimaginable economic crisis worldwide. Of course, among the affected economic sectors is that of tourism or especially that of tourism.

For most countries in the world and for many of the member states of the European Union, tourism is a major contribution to the economic and social structure. Tourism has the capacity to provide jobs and vital incomes. In many regions, tourism is the main economic activity, with no other sources of employment. Thus, the tourist ecosystem was severely affected. Although tourism is not the main pillar in the Romanian economy, its contribution is very important. During the pandemic, many

employees in the tourism sector lost their jobs, sales and profits fell, contributing to the economic crisis caused by the COVID-19 pandemic.

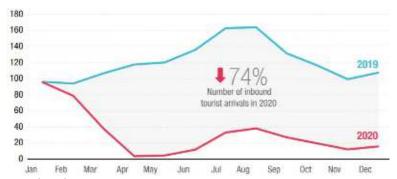
This research presents the comparative situation of the last three years (2019-2021) regarding the tourism activity in Romania and shows the main measures and strategies taken by the Romanian government, but also at European and international level, as well as the initiatives taken by entrepreneurs in the field and hoteliers to carry out the activity in the most prosperous conditions possible. Research on the impact and recovery of COVID-19 on hospitality in Romania is conducted on the basis of data, contributions, conceptual reflections and empirical research currently available, which shows that the pandemic is not yet under control. Therefore, the situation is unpredictable and research is essential to help restore tourism and its associated industry.

2. Theoretical background

The effects of the COVID-19 pandemic have had and continue to have devastating effects on tourism around the world and implicitly in Romania. Crises are quite common events in tourism, many destinations being affected by natural or man-made crises for which resilience and mitigation tactics and strategies have been developed over the years (Ritchie, Jiang, 2019). The crisis caused by the Covid-19 pandemic is unique and totally different in many ways. Firstly, the decline in travel, hospitality and tourism has been global (UNWTO, 2020b). Secondly, the economic collapse was dramatic. Thirdly, the current crisis has the potential to bring fundamental changes in many tourism segments, and fourthly, the end of the crisis is not in sight, although the emergence of the vaccine should have been the solution to the general crisis caused by the pandemic.

Vaccines are a critical part of the solution, albeit with considerable uncertainty, even once access and distribution issues are overcome. Although it is effective in limiting severe cases and deaths caused by the virus so far, it is not clear that current vaccination efforts completely stop the spread of the infection. There are people who are reluctant to receive the vaccine. On the other hand, people who have received the vaccine tend to be less responsible for other preventative measures. The possibility of lowering the effectiveness of vaccines against new variants of COVID-19 adds another level of concern. However, a major challenge today is the unequal availability of vaccinations and the low number of vaccinated people in many countries, including Romania.

Tourism was most affected by the application of travel restrictions due to COVID-19. According to the United Nations World Tourism Organization (UNWTO), almost every country in the world has implemented various travel restrictions, such as travel bans, visa controls and quarantine upon arrival in the country (UNWTO, 2020). In this context, tourism was suspended internationally between April and May 2020. Arrivals of tourists from around the world fell by 74% in 2020.



Graphic no. 1. International tourist arrivals

Source: UNCTAD based on UNWTO.

Being an economic sector of major socio-economic importance, tourism provides jobs and livelihoods for many informal workers in developing countries. The Covid-19 pandemic had a very negative effect in this regard. UNWTO (2021) estimates that there are 100 to 120 million jobs in

tourism. Given the impact on tourism, the decline in international arrivals has caused a huge loss of GDP in 2020 and continued to cause losses in 2021.

The European Union and its member states have provided both financial and other support to the tourism sector. One of the important actions taken is the EU digital certificate for Covid, which harmonizes, at Union level, vaccination evidence, Covid-19 test results and certified recovery from COVID-19 disease. However, despite efforts to harmonize travel rules at Council level, EU member states still apply different rules for travelers.

Since the beginning of the pandemic, the European Union has taken steps to provide financial support to tourism businesses. In this respect, flexibility has been provided under state aid rules, so that member states can introduce guarantee schemes for vouchers and liquidity. The European Union continues to provide liquidity to businesses affected by the crisis through a coronavirus investment initiative, which is administered jointly with member states.

Tourism can also receive support from the Recovery and Resilience Facility (part of the Next Generation EU), which also aims to mitigate the economic and social impact caused by the COVID-19 pandemic. The member states of the European Union are responsible for drawing up individual national plans for the recovery and resilience of the allocation of funds for the rehabilitation of tourism during this period. Tourism can be recovered both through tourism-specific measures and through horizontal measures relevant to all sectors. Some actions may include: renovation of tourism infrastructure; investing in clean mobility and improving connectivity to tourist destinations; providing training for tourism entrepreneurs, workers and destination managers; or supporting the digitalization of public administrations responsible for tourism policy. (Niestadt M., Re-starting tourism in the EU amid the pandemic, 2021).

3. Research methodology

The research methodology is based on the analysis of the existing situation at European and national level, both from a statistical point of view and from a legislative point of view. In this regard, statistical data was reviewed regarding the arrivals and overnight stays of Romanian and foreign tourists during the period analyzed according to official data at national level, as well as the legal provisions on security measures against COVID-19 and on improvement strategies. of the tourism situation during this period.

We have identified and analyzed the strategies to ensure the citizens the possibility and safety to travel and strategies for relaunching tourism, established at the level of the European Union and implicitly applicable to Romania as well. An analysis was made of both the measures identified both nationally and internationally to help tourism businesses and to recover the economy.

All data analyzed in the research were taken from official documents at national and international level, so that the information provided is as accurate as possible.

4. Findings

Arrivals from the tourist reception structures in September of 2021 amounted to 1,072.5 thousand tourists, increasing by 35.0% compared to those of September, 2020. Out of the total number of arrivals, in September 2021, the arrivals of Romanian tourists in the structures of tourist reception they represented 86.9%, while the foreign tourists only 13.1%.

Regarding the overnight stays in the tourist reception structures in September 2021, they amounted to 2,389.4 thousand, increasing by 25.0% compared to those in September 2020. Out of the total number of overnight stays, in September 2021, the overnight stays of Romanian tourists in the structures of tourist reception they represented 87.7%, while the overnight stays of foreign tourists registered a percentage of 12.3%.

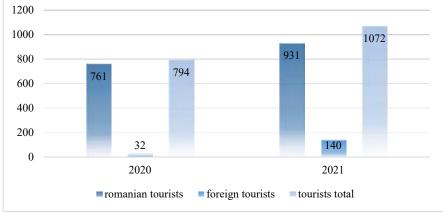
Table no.1. Arrivals and overnight stays in tourist reception structures with accommodation functions - September

September						
		ARRIVALS		O,	VERNIGHT STA	AYS
	September 2020	September 2021	September 2021	September 2020	September 2021	September 2021
	-thousand-	-thousand-	compared to September 2020 %	-thousand-	-thousand-	compared to September 2020 %
Total	794.5	1,072.5	135.0	1,912.0	2,389.4	125.0
Romanian tourists	761.7	931.65	122.3	1,839.4	2,095.5	113.9
Foreign tourists	32.8	140.9	429.6	71.6	283.9	404.8

Source: INSSE

The average length of stay in September 2021 was 2.2 days for Romanian tourists and 2.1 days for foreign tourists. The index of net use of tourist accommodation, in September 2021, was 31.7% of total tourist accommodation structures, increasing by 5.4 percentage points compared to September 2020. (Press release, September 2021, National Institute of Statistics)

Graphic no. 2. Tourist arrivals between September 2020 and September 2021



Source: made by the author based on INESSE data

4. Measures and strategies for the recovery of tourism during the COVID-19 pandemic at European level

The crisis caused by COVID-19 has forced hospitality companies to adapt and change their operating strategies. Given that the pandemic has generated high levels of uncertainty, rapid responses have been and are needed to cope as well as possible with negative impacts. However, both previous research and the current situation have shown that there are no optimal preparations and solutions for a crisis situation in the hospitality industry. In the face of the economic crisis caused by the COVID-19 pandemic, a number of restrictive measures have been taken to prevent the spread of the virus, as well as measures and strategies to maintain and recover tourism and stabilize the economy, both internationally and nationally. These measures have been complemented by specific actions by hotels and tourism entrepreneurs.

The actions and measures taken address two major issues: the restrictions imposed to limit the spread of the virus and the attempt to stop the COVID-19 pandemic, and economic measures that provide tourism with strategies and funds to create safe destinations that will allow the tourist sector to recover.

The European Commission aims to support all EU member states in resuming normal social life and tourism. Romania complies with the general restrictions and measures taken at the level of the European Union. However, each member state has the possibility to establish its own measures on

the basis of the common principles, proposals and recommendations of the European Commission, depending on the epidemiological situation in the country.

Table no. 2. Strategies to provide citizens with the opportunity and safety to travel

Measures	Actions
Restoring free movement in safety	Communication "Towards a step-by-step and coordinated approach to restoring free movement and lifting internal border controls";
conditions	 Replacing measures and restrictions as the circulation of the virus is reduced; Lifting restrictions, first in areas with a low epidemiological situation.
Restoring transportation in safety conditions	 taking coordinated and risk-based measures; adoption of specific measures for each area; providing safe public transport options.
Resumption of tourist services with a minimum of health risks	 protection of tourists and the workforce; adopting flexible measures depending on the local epidemiological situation; ensuring a balance between restoring tourism services and protecting public health;
Using the technology	 adoption of sanitary protocols in tourist accommodation structures. providing access to real-time information on borders, travel restrictions and recommendations and available services; monitoring and limiting the spread of the virus through digitalized applications.
Protecting people's rights	 providing support by the European Consumer Centers (ECC) network for cross-border bookings and purchases; providing transparency in booking procedures.

Source: made by the author on the basis of information obtained from the Communication of the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, Brussels, 2020

According to the European Commission, through the Guide for the progressive resumption of tourism services and for the sanitary protocols in the tourist reception structures, actions and measures for the gradual resumption of tourism activities must be taken in safety measures. Thus, the Commission established the following criteria to be considered before deciding to relax the restrictive measures: (1) the low incidence of COVID-19; (2) the existence of sufficient sanitary capacity; (3) the existence of surveillance and monitoring systems; (4) the ability to test and track contacts; (5) the existence of communication and coordination mechanisms.

Strategies for relaunching tourism both at European and national level are based on relaxing or lifting restrictive measures. Tourism also needs financial support in order to stay in the market and to be able to relaunch itself once health restrictions are lifted.

Table no. 3. Strategies for relaunching tourism

Measures	Actions
Solving the liquidity crisis	 the adoption of state aid for the granting of direct grants, loans or guarantees; redirecting cohesion funds to provide liquidity to SMEs in the tourism sector; stimulating additional investments to strengthen resilience; channeling funds to investments aimed at regaining the trust of tourists.
Offering travel vouchers	providing travel vouchers as a viable alternative to reimbursing canceled holidays
Saving jobs	 mitigation of the risks of technical unemployment; supporting tourism workers to find a new job in the shortest possible time; increasing the level of competition through European funds.
Promoting local tourism	online promotion;offering vouchers.

Collaboration with partners	 collaborations between local, regional and national authorities; collaborations between customs officials, transport service providers, accommodation service providers and all other actors in the ecosystem; creating coordination mechanisms for connecting European
	Union agencies and bodies.
Sustainable development	improving infrastructure and transport;
strategies	diversification of the tourist offers;
	promoting tourist areas at European level.

Source: made by the author on the basis of information obtained from the Communication of the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, Brussels, 2020

In order to travel safely, The EU Guide to Health Protocols in Tourist Reception Facilities sets out measures to prevent and control SARS-COV-2 infections, as well as protocols for tourism service providers (hotels and other tourist reception facilities), with the aim to ensure the safety of tourist structures and to guarantee the health of guests and employees. The measures to protect the health of guests and employees of tourist accommodation facilities must be constantly re-evaluated and adapted, according to expertise and relevant considerations, so that the measures taken are directly proportionated to the current level of health needs.

5. Measures to save Romanian tourism

The Alliance for Tourism offers solutions for supporting and relaunching Romanian tourism, with immediate application (see table 1.5.) and with long- and medium-term application (see table 1.4.). The crisis situation caused by COVID-19, requires urgent measures, but also in the longer term, to help the recovery of Romanian tourism, and even more so to develop in the future this field of activity in our country. It is very important for tourism to overcome, first of all, the crisis situation, and then to change the perception of Romanian tourism and to realize the economic implications it can have. (Graphic 3.).



Graphic no. 3. The contribution of tourism in Romania's GDP

Source: made by the author based on INESSE data

Increasing the direct contribution of tourism to Romania's GDP can be achieved by increasing tourism revenues, increasing average spending per tourist and the average length of stay of tourists. It is very important to increase the number of foreign tourists but also the number of jobs. These things can be possible, firstly by taking immediate measures on the recovery of tourism during the crisis caused by CVID-19 and then by creating safe long-term strategies for the development of tourism in Romania.

Table no. 4. Measures with immediate application for the recovery of Romanian tourism

	iale application for the recovery of Ro	
Measure	Purpose	Benefits
Supporting the tourism	Encouraging the employer to	Retention of employees;
workforce after the end of the	retain staff;	Supporting entrepreneurs
state of emergency by prolonging	Relieving the state social	
the technical unemployment	insurance budget;	
borne by the state and during the	Reducing the number of	
state of alert and also by the	unemployed	
method of part-time work		
Granting of grants to tourism	Maintaining and keeping on	Retention of employees;
enterprises affected by COVID-	the market the small and	Supporting entrepreneurs
19, as well as granting of	medium companies in the field	in the field
subsidized working capital loans	of tourism;	
and / or investment loans to	Reducing the number of	
SMEs and large tourism	technically unemployed	
companies	people.	
Reduction of local taxes and / or	Possibility to retain	Retention of employees;
postponement of payment	employees;	Supporting entrepreneurs
obligations during the period in	Maintaining companies in the	in the field.
which the tourist units were	field	in the nera.
closed	neid	
Partial or complete bearing of the	Maintaining health and safety	Ensuring the health of
costs generated by the hygienic-	conditions;	tourists and employees at
sanitary measures by the state	Increasing the confidence of	work
sanitary measures by the state	tourists and employees	WOIK
Ctimulating tourist tuefficher	Stimulating the demand to	Increasing the demand for
Stimulating tourist traffic by	travel on the Romanian	➤ Increasing the demand for tourism and travel in the
granting vouchers		
	territory	country;
		> Supporting
D. J. S. L. L.	D	accommodation units
Reducing bureaucracy by	> Process efficiency	> Employee and tourist
digitalizing all operational	> Achieving better	protection;
processes in the field of tourism	accommodation control;	➤ Increasing guest
	> Efficient analysis of tourist	satisfaction;
	data.	Optimizing and
		streamlining operational
		processes
Adaptation of legislation for	Efficiency of the employment	Administrative adaptation
remote work	relationship;	to the specifics of tourism;
	Retaining employees in travel	Streamlining and
	companies	optimizing administrative
		activities.

Source: made by the author on the basis of official information existing at national level

We must note and acknowledge that Romanian tourism has, in general, even without the coronavirus crisis, very great shortcomings. Although Romania has a huge natural potential, the objectives for the development of tourism are never reached. Due to the deficiencies at the managerial and economic level, there is a very small number of foreign tourists, the services offered within the Romanian tourism not being close to those of the developed European countries. The alarming situation of Romanian tourism requires more than taking immediate measures regarding the Covid-19 pandemic, requiring radical and medium and long-term measures aimed at the intelligent use of natural resources, obtaining funds for the development of tourist areas and for the implementation of management programs that raise the level of quality of tourist services.

In the table below are presented some proposals for measures with long-term application through which the reset and development of Romanian tourism can be achieved. Their purpose is to change the position we have on the tourism market within the European Union, attracting foreign tourists and occupying an important place in the country's economy. (see table 1.5.).

Table no. 5. Proposals for measures with long-term application for the reset of Romanian tourism

Measure	Action	Benefits
Declaring tourism by Government Decision as a strategic and priority economic field	Signing of a NATIONAL PACT for tourism, through which the Multinational Tourism Development Strategy should be agreed by all political parties	Changing market position;Greater contribution to the country's economy.
Establishment of the National Advisory Council for Tourism	 Ministerial Order proposing the new criteria for the functioning of the National Tourism Advisory Council 	➤ Authority and credibility; ➤ Stimulating associativity.
Financing the activity of Destination Management Organizations	Introducing the local promotion tax for all economic actors of a tourist destination	 Providing the necessary resources for organization, development and promotion in destinations; Sustainability and competitiveness.
Promoting Romanian tourism	Romania's registration in the relevant bodies of world tourism in order to play an active role in these institutions	 know-how transfer; easy implementation of EU decisions on tourism
Digitalization	 Reducing the budget apparatus, by eliminating positions without performance and without relevance; Creating a platform for interaction between authorities and the private sector - for transparency and efficiency 	 Reducing the costs of the budget apparatus; Streamlining public policies; Increasing confidence in public authority.

Source: made by the author based on the information from the "Tourism Alliances" Project, 2020

6. Measures for hotels, restaurants, tourism entrepreneurs

The rules established at both European and national level require structures operating in the field of tourism to implement safety and protection measures for tourists and employees, which aim to limit the spread of the COVID-19 virus.

Table no. 6. Public health measures adopted in tourist accommodation units

Machine The purpose of the Artises taken		
Measure	The purpose of the	Actions taken
	measure	
Risk communication	Tourist safety	 Elaboration of a training plan with measures applicable at the moment of opening the tourist units; Establishing concrete measures for the periods of stay of the guests.
Staff training and management	Safety and health of tourists and employees	 Knowing and observing the sanitary measures imposed to limit the spread of the virus; Staff training on essential measures to prevent and control the virus.
Informing guests	Protecting tourists	 Information on the instructions in force issued by the authorities; Ensuring the availability of guests' contact details if they are suspected of being infected with COVID-19
Physical distance	Limiting the spread of the virus and protecting tourists and employees	 Ensuring physical distance in tourist units, according to the provisions in force; Establishing a maximum number of guests, authorized by law; Cancellation or restriction of entertainment events.

Source: made by the author on the basis of official information existing at national level

Measures applied in tourist accommodation must be so that to minimize the possibility of transmitting the virus. Therefore, they need to establish strategies for the prevention and control of infections, following the recommendations of the health authorities. Tourist reception units must provide training to the staff on the procedures applicable to the prevention and control of the spread of the virus, as well as to the management of COVID-19 cases. It is necessary to limit the number of guests that can be received in an accommodation unit according to the physical distance instructions. There are also many other hygiene rules: the existence of disinfectants, physical distance, online registration, etc.

Hotel management to establish a training plan in consultation with local public health authorities. This plan includes prevention and control measures against COVID-19. Management also provides staff training and forming in COVID_19 infection prevention and control procedures. A very important thing is to limit the number of guests so that physical distance is guaranteed. Disinfection products must be provided at the hotel reception and physical separation must be ensured. Digitized solutions should also be considered for scrutiny and reception operations.

As for restaurants and dining areas, the number of guests and physical distance must also be limited. Furthermore, optimal ventilation and regular cleaning of system filters must be ensured and air recirculation must be reduced so as to minimize the spread of COVID-19 virus.

7. Discussions and conclusions

In conclusion, it can be said that the epidemic caused by COVID-19 is the largest pandemic that has affected the world in the last hundred years and has caused devastating effects on the world, economy and social life in general affecting individual nations, especially in the field of tourism. These negative effects on tourism have been caused by drastic restrictions on travel in most countries and a reduction in the disposable income of many families, which has affected the ability to buy tourism products even after measures have been taken to isolate and restrict mobility have been eased.

In the face of this situation, the response of national institutions, especially the European Union, was prompt. The European Union has been heavily involved in relaunching economic activity in its sphere of action, providing significant financial resources to the countries most affected by the pandemic. In the same way, all nations have made an important commitment to emerge from the crisis with labor, financial and fiscal measures.

The decrease of the GDP in tourism, of the employment in tourism and of the incomes from tourism was not extremely high as a percentage (1%), representing in 2020, 1.7% of the GDP of Romania. However, given the poor tourism in a developing country such as Romania, this percentage may mean its collapse. That is why the Romanian government had to take urgent measures and mobilize in order to adopt strategies for relaunching, developing and modernizing national tourism, so as to meet the criteria of the European Union and reach a level as close as possible to tourism in developed European countries.

During this period, the hospitality industry should focus on building the confidence of tourists, strengthening their brand and adapting their operations to the so-called "new normal". These strategies could be valuable in this period and in the near future, when the pandemic is to be controlled to a greater extent.

Regarding the measures taken by the Romanian government for rescuing and recovering tourism in Romania, they are based on those established at the level of the European Union regarding the recovery of tourism, the safety of citizens to travel and strategies for relaunching tourism. All this must be adapted to the poorly developed context of Romania in terms of tourism activities. Romania needs very well-developed, complex and extremely thorough strategies to bring tourism in the country on a normal path, far from it being even before the COVID-19 pandemic.

In this sense, Romania needs investment funds, infrastructure, promotion and a lot of involvement from state institutions. Until then, however, it is necessary to establish measures with immediate application for the recovery of Romanian tourism, such as supporting the workforce, offering grants, reducing local taxes, stimulating tourist traffic, etc. It is also necessary for all HORECA units to comply with the public health measures adopted regarding risk communication, staff training and management, physical distance, etc.

The recovery of tourism in the European Union will take time, being a difficult process in this context, but with the necessary resources, we believe that things will return to normal as soon as possible. Regarding Romania, the situation is more complicated given the existence of gaps prior to the COVID-19 pandemic that affected tourism. Plans aimed at relaunching tourism strategies in Romania must take into account long-term development and promotion.

So, beyond the immediate rescue measures, we should look ahead to the future of tourism and transport and look at ways to make them more resilient and sustainable, learning from the crisis and anticipating new trends and consumption patterns related to it.

8. References

- European Commission, 2020. EU guide to the gradual resumption of tourism services and health protocols in tourist facilities COVID-19. Official Journal of the European Union, 2020/C 169/01
- Niestadt M., 2021. Re-starting tourism in the EU amid the pandemic [online] Available at: https://www.europarl.europa.eu/RegData/etudes/BRIE/2021/696166/EPRS_BRI(2021)696166_EN.pd
 f
- Ritchie B.W., Jiang Y. A review of research on tourism risk, crisis, and disaster management. *Annals of Tourism Research*. 2019;79 doi: 10.1016/j.annals.2019.102812.
- UNWTO, 2020a. Impact assessment of the Covid-19 outbreak on international tourism [online]
 Available at: .https://www.unwto.org/impact-assessment-of-the-covid-19-outbreak-oninternational-tourism
- UNWTO, 2021b. *Tourist Numbers Down 83% But Confidence Slowly Rising*. [online] Available at https://www.unwto.org/news/tourist-numbers-down-83-but-confidence-slowly-rising
- World Health Organization, 2020. Infection prevention and control during health care when COVID-19 is suspected: interim guidance. Geneva.
- * * * Alliances for tourism, solutions for organizing and supporting Romanian tourism, 2020, [online] Availabe at: https://aliantaturism.ro/sos-turismul-romanesc.pdf

The Internal Managerial Control Applicable to Public Entities: Regulation, Achievements, Perspectives

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Abstract

Internal managerial control provides the manager of an entity with an array of means for the prevention / elimination of the dysfunctions in the activity of the respective entity. Although more than two decades have passed since the official establishment in Romania of this form of control, the expected results have not appeared yet. While, from the perspective of the legislator, the steps taken have been considerable, the elimination of the deficiencies in the implementation of the specific system depends on the human resource, be it in management or in operating positions. The authors have formulated a series of proposals regarding the improvement of the analyzed system, after first coming up with approaches in terms of the regulations in the matter and the concrete achievements resulted from the implementation of the respective institutional framework in Romania.

Key words: Internal managerial control, applicable standards, public entities, normative framework. **J.E.L. classification:** H11; H70; M48.

1. Introduction

A careful observer of the way the regulation, organization, operation and performance of the different forms of control within the Romanian socio-economic system have evolved in the last 2-3 decades, can note relatively easily that if in the beginning there were multiple deficiencies - lack of regulatory framework, forced adaptations of outdated / incomplete norms, difficulty in accepting new legal regulations, sluggish implementation, etc., during the current stage the quasi-generalized opinion is that the proper functioning of the control system in general is more than necessary.

Obviously, in the spirit of legality, and of achieving the goal of the highest possible performance in all activity sectors. Certainly, when referring to all this, we are also considering the internal managerial control ("a process effected by an entity's board of directors, management, and other personnel, designed to provide reasonable assurance regarding the achievement of objectives relating to operations, reporting, and compliance", COSO, 2013) of public entities. To a large extent, it has been proven that also in Romania "it is a collection of good management practices, generated by the past managerial experience, good practices that must be observed by all organizations." (Garitte and Tomoială, 2020).

From our study on the respective concept, we have found out that at international level there are several definitions given by prestigious institutions and competent bodies (Ordre des Experts-Comptables/The Order of Chartered Accountants in France, The Consultative Committee of Accountancy Bodies in Great Britain, The American Institute of Certified Public Accountants, The Committee of Sponsoring Organizations of the Treadway Commission in the US, The Canadian Institute of Chartered Accountants); however, they "are not essentially contradictory, each one showing that it is a set of elements implemented by managers at all levels so as to have control over the operation of the organization's activities, in relation to the set objectives." (Central harmonization unit for financial management and control, 2007; Management and Internal Managerial Control,

2020 / Draft SIPOCA Code 87 / SMIS 120801). At the level of the European Union Executive (EC, 2010), the concept in question includes elements related to all policies and procedures applied by the organization's management, aimed at achieving objectives in an economical, efficient and effective way, compliance with external rules, protection of assets and information, prevention of fraud and fraud. timely management and financial information.

The synthetical treatment of this category of control (Internal managerial), which is the theme of our research, allows us to resort to a series of approaches, which we consider essential, after consulting other authors who have drawn up papers, on a larger or a smaller scale, on the same topic (Benoit, 2017; Munteanu et al., 2020; Simionescu et al., 2006; Zecheru, 2004; Iepure-Moise, 2020; Iepure-Moise et al., 2020; Craciun, 2006; Ghiţă and Iatco, 2006; Petcu-Broju and Constantin, 2013).

From a structural point of view, our approach is based on the regulations in the field, the actual achievements arising from the implementation of the respective institutional framework and some perspectives we are currently witnessing.

2. Research methodology

The authors consider it fully appropriate, in order to tackle the topic of this paper - Internal managerial control of public entities: regulation, results, perspectives -, to resort primarily to investigating the specialized literature and the legal framework applicable to the internal managerial control of public entities.

At the same time, we resort to an in-depth research that involves taking into account the official documents issued by some prestigious institutions (Ordre des Experts-Comptables/The Order of Chartered Accountants in France, The Consultative Committee of Accountancy Bodies in Great Britain, The American Institute of Certified Public Accountants, The Committee of Sponsoring Organizations of the Treadway Commission in the US, The Canadian Institute of Chartered Accountants), which contain relevant data, of great interest in relation to the goal of the paper.

As readers may notice, a consequence of the research methodology chosen by the authors is that a number of elements specific to the descriptive method are highlighted.

3. The evolution of the normative framework related to the internal managerial control of public entities

The theory and practice of what "internal control" means are of Anglo-Saxon origin, the English expression "internal control / to control", meaning "to have control / to control", and in subsidiary "to verify/check". Therefore, the meaning of the expression "internal control" is as comprehensive as possible and should not be assimilated into any type of inspection (although it does not exclude inspections), verification or control, but it does not exclude it. That is why we can see the internal managerial control as the answer to the question "what can be done to have the best possible control over the activities?" (Central harmonization unit for financial management and control, 2007).

As a EU Member State, Romania must pay attention to the fact that "The European Commission's internal control framework is designed to meet key objectives - according to the Financial Regulation applicable to the EU budget: (a) the effectiveness, efficiency and economy of operations; (b) the reliability of the information reported; (c) protection of assets and information; (d) the prevention, detection, correction and monitoring of fraud and irregularities; and (e) the sound management of the risks relating to the legality and regularity of the related transactions, taking into account the multiannual nature of the programs and the nature of such payments. Without prejudice to the specific situations at the level of each country, these objectives can be considered as applicable to all forms of public management and budgetary expenditures and, as such, remain unchanged in crisis situations. In accordance with legal requirements, there will be an expectation from citizens and stakeholders that public sector managers are held accountable on the basis of these principles" (Kraff, 2020).

With reference to the local institutional space, we notice that the activity of internal managerial control at the level of public entities was established by adopting Government Ordinance no. 119/1999 on internal control and preventive financial control. The text to which we refer, considers the activity of internal managerial control includes all forms of control in a public entity, including

internal audit, in correlation with the objectives, regulations in force, for an efficient management of own resources. (Government of Romania, 1999).

The respective normative act stipulates that this type of control, in view of its proper functioning, includes appropriate organizational structures, methods and procedures. Such "good functioning" is intended to ensure the achievement of objectives regarding the qualitative fulfillment of the institution's attributions, correlated with the established mission, protection of own funds, observance of legal norms and managerial decisions, realization of an information system that allows the elaboration of good reports, including those intended for publication. (Government of Romania, 1999).

Extremely important is the fact that the same normative act (Government of Romania, 1999) establishes several definitions, which are very important within the internal managerial control system (SCIM), given that they significantly help in understanding and implementing it. Among other things, the following are referred to: compliance, public funds, public entity / institution, legality, public patrimony, etc.

In the context of the key pursuit of the entity's performance objectives, the important concepts defined in the above-mentioned normative act are: (i) economic efficiency/cost-effectiveness, (ii) effectiveness, (iii) efficiency and (iv) opportunity (Government of Romania, 1999).

We can talk about standards in the matter, as such, from 2005, when the Order of the Minister of Public Finance no. 946/2005 on the approval of the Internal Control Code, including the management / internal control standards for public entities and on the development of SCIM (MFP, 2005) was issued. Although there was a minimum regulatory framework, up until the year 2014 the results in this regard were moderate (Iepure-Moise, 2020), which is why "the policy in the field of internal managerial control has been revised and also completely restructured", adopting - Government Emergency Ordinance 86/2014 on the establishment of reorganization measures at the level of the central public administration and on the modification and completion of some normative acts (Government of Romania, 2014). According to it, the General Secretariat of the Government, through the Internal Managerial Control and Interinstitutional Relations Department, is responsible for (i) developing and implementing policy in the field of SCIM, and at the same time (ii) methodologically guiding, coordinating, and supervising the implementation of SCIM. The European Commission periodically checks public internal control systems at Member States' level, publishing the most important findings (EC, 2012).

In the year 2015, a new code of internal managerial control of public entities is adopted by Order of the Secretary-General of the Government no. 400/2015 (amended by Order of the Secretary-General of the Government no. 600/2018 on the approval of the Code of internal managerial control of public entities), reducing the 25 internal control standards stipulated in the Order of the Minister of Public Finance no. 946/2005, to only 16 control standards (Table no. 1), which define a minimum of management rules applicable to all public institutions.

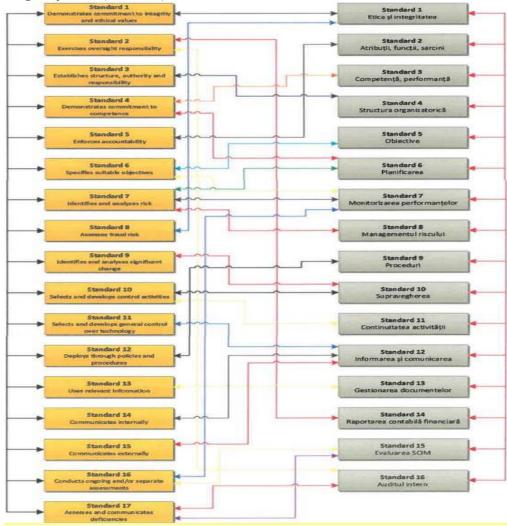
The correlation of the principles of internal control defined at the level of the European Commission according to C (2017) 2372, with the standards of managerial internal control in Romania (Order of the Secretary-General of the Government/OSGG, 2021) is shown in Figure no.

Table no. 1. Internal control standards (Order of the Secretary-General of the Government no. 400/2015)

Standard no.	Name of standard of internal managerial control	Standard no.	Name of standard of internal managerial control
Standard 1	Ethics and integrity	Standard 9	Procedures
Standard 2	Duties, functions, and tasks	Standard 10	Supervision
Standard 3	Competence, performance	Standard 11	Continuity of activity
Standard 4	Organizational structure	Standard 12	Information and communication
Standard 5	Objectives	Standard 13	Document management
Standard 6	Planning	Standard 14	Accounting and financial reporting
Standard 7	Performance monitoring	Standard 15	Evaluation of the control system
Standard 8	Risk management	Standard 16	Internal audit

Source: Order of the Secretary-General of the Government/OSGG, 2021

Figure no. 1. The elements specific to the field addressed by the managerial staff in the practice of their managerial function (SGG, 2021)



Source: https://sgg.gov.ro/1/wp-content/uploads/2021/06/Raport-SCIM-OPC-2020.pdf, p.13

It should be mentioned that the Order of the Secretary-General of the Government no. 600/2018 (SGG, 2018) expressly stipulates that the SCIM organization of public entities has in view the achievement of three categories of objectives: operational, reporting and compliance. With regard to

the implementation of SCIM at EU and at national level, it should be mentioned that the whole European framework is made up of "general good practice principles, accepted at international level", and "the way in which these principles are transposed into SCIM is country-specific, being determined by the legislative, administrative, cultural conditions, etc. In the context of the general good practice principles found in the EU law, internal control is associated with a wider meaning, being seen as a management function and not as a verification operation" (SGG, 2020).

In general, by exercising the managerial function, addressing the specific elements of the field (Figure no. 2), "the management finds the deviations of the results from the established objectives, identifies the factors and analyzes the causes that determined them, ordering the necessary corrective measures" (SGG, 2020).

Figure no. 2. The elements specific to the field addressed by the managerial staff in the practice of their managerial function (SGG, 2020)

Internal Managerial Control						
Control environment	Performance and risk management	Control activities	Information and communication	Evaluation and audit		

Source:

https://sgg.gov.ro/1/wp-content/uploads/2020/06/Raport-SCIM-2019-f%C4%83r%C4%83-semn%C4%83.pdf, p. 8

In terms of the specific requirements of each public entity, which must be taken into account in the implementation and permanent development of SCIM (SGG, 2020), we show that it requires adaptation to the size, complexity and environment of the entity, orientation toward all levels of management and all activities / operations. Furthermore, the same system must be built using the same "tool kit" in all public entities, ensure that the objectives will be achieved and, this is mandatory, be governed by the general minimum management requirements contained in the standards of internal management control mentioned before. Last but not least, the sum of the costs related to the application of SCIM should be inferior to the benefits resulting from it (SGG, 2020).

Answering the question *When is the internal control applied (in time)*?, we note that it takes place throughout the operations carried out by the entity, respectively prior to the execution of operations, during the preparation of the budget, during operations and after the completion of operations, when analyzing the profitability of operations and the existence of compliance (MFP, 2009).

Regarding the specific relationship between audit and internal control, we recall that this presupposes that the first is the subject and the second - the object, the matter subject to investigation and evaluation. Therefore, the entire internal control system of the public institution is the subject of the audit (Zecheru, 2004).

4. Recorded achievements and some perspectives on internal managerial control at the level of public entities in Romania

The construction of an image on the general stage of SCIM implementation is related to the analysis of the centralized situations and annual reports submitted to the General Secretariat of the Government (SGG, 2018), by public entities which have the quality of Principal Authorizing Officer (OPC), according to Annex 3 of the Law of the state budget for the year 2020 no. 5 / 06.01.2020, containing structured information on SCIM, at the level of the public entities and their subordinated entities. It should be borne in mind that public institutions in the national defense, public order and national security system (The Ministry of Internal Affairs, Ministry of National Defense, Ministry of Justice, Foreign Intelligence Service, Protection and Guard Service, Special Telecommunications Service and Romanian Intelligence Service) have to prepare the mentioned reports, but do not have the obligation to submit them to the SGG for centralization. In this sense, art. 6 para. (1) of Law 51/1991 on national security, but also certain provisions of the normative acts on their organization and functioning are in force.

In any case, for the year 2020, 44 OPCs submitted complete information on the state of implementation and development of SCIM at the level of their own apparatus, as well as that of the

subordinated public entities, under their coordination or authority. At their level, the degree of implementation of SCIM is as follows (Figure no. 3).

Internal audit Evaluation of SCIM Accounting and financial reporting Document management Information and communication Continuity of activity Supervision Procedures Risk management Performance monitoring Planning Objectives Organizational structure Competence, performance Duties, functions, and tasks Ethics and integrity 20% 40% 60% 80% 100% ■ 2020 ■ 2019 ■ 2018

Figure no. 3. The degree of implementation of SCIM at the level of OPCs and subordinated public entities (2018-2020) (SGG, 2021)

Source: https://sgg.gov.ro/1/wp-content/uploads/2021/06/Raport-SCIM-OPC-2020.pdf, p.24

The average degree of implementation, partial implementation, and non-implementation of SCIM standards, as it results from the centralizing situations at the level of the 48 OPCs (2017 - 2019) is as follows (Table no. 2).

Table no. 2. The average degree of implementation, partial implementation, and non-implementation of SCIM standards (44 OPCs - Own apparatus, 2018 - 2020) (SGG, 2021)

Degree of implementation own apparatus of	Average degree of implementation of standards of internal managerial control				
principal authorizing officers	Year 2018	Year 2019	Year 2020		
Implemented	76%	81%	85%		
Partially implemented	21%	16%	13%		
Not implemented	3%	3%	2%		

Source: https://sgg.gov.ro/1/wp-content/uploads/2021/06/Raport-SCIM-OPC-2020.pdf, p.34

The final analysis shows that out of the 44 OPCs, only 12 implemented all 16 internal managerial control standards for the year 2019 (the Romanian Academy, the State Secretariat for Recognition of Merits of Anti-Communist Fighters, the National Integrity Agency, the Chamber of Deputies, the Competition Council, the National Audiovisual Council, the National Council for Solving Complaints, the National Council for Combating Discrimination, the Superior Council of Magistracy, the Judicial Inspection, the Ministry of Public Finance and the National Registry Office for Classified Information).

With regard to the subordinated units, the situation for the same period is as follows (Table no. 3).

Table no. 3. The average degree of implementation, partial implementation, and non-implementation of SCIM standards (1226 Subordinated Units, 2018 - 2020) (SGG, 2021)

Year	2018	2019	2020
The average degree of implementation of standards of	89%	89%	91%
internal managerial control at the level of public			
subordinated units			

Source: https://sgg.gov.ro/1/wp-content/uploads/2021/06/Raport-SCIM-OPC-2020.pdf, p.60

It is interesting that regarding SCIM compliance, at the level of the 44 OPCs, 27% of them, representing 12 public institutions, reported an internal managerial control system "compliant" with SCIM, 46%, representing 20 public institutions, reported that they are "partially compliant" with SCIM and 27%, representing 12 public institutions, reported that they are "limitedly compliant with internal control standards". Referring to EPS / OPC subordinated public entities, only for the last analyzed year (2020), in relation to the degree of compliance of their own SCIM, the situation is as follows: 43%, representing 648 EPS, had a compliant SCIM, 49%, representing 747 EPS, had a "partially compliant" SCIM, 7%, representing 110 EPS, had a "limitedly compliant" SCIM and 1%, representing 18 EPS, had a "non-compliant" SCIM.

Overall, if 4 OPCs registered an evolution in the year 2020, compared to the year 2019, going from a certain level of SCIM to a higher one, 5 OPCs registered a regression of SCIM (the Presidential Administration, the Authority for State Assets Management, the Ministry of Culture, Ministry of Education, the Public Ministry), 1 OPC is in the first year of reporting and another 34 OPCs have maintained the same level of SCIM, SGG stating in the mentioned report that the level is the same as in the year 2019.

A quintessence of the causes for the lack of visible progress: "(...)Getting lost in detail and / or insisting on the form of the procedures and not on their content can lead to possible errors in the implementation of SCIM. The purpose of this standard system must always be kept in the center of attention, i.e., the efficiency of the activity of a public institution / authority, which is not achieved by multiplying unnecessary documents, but by assuming and applying procedures that are easy to understand by anyone, regardless of the status of the employees, whether newcomers to the system or experienced staff, in the same public system." (Management and internal control Management, 2020, Project Code SIPOCA 87 / SMIS 120801).

However, it seems gratifying that in 2020, the share of UCIs in the existence of a SCIM that allows management to provide reasonable assurance that the allocated public funds have been used legally, effectively, efficiently and economically has increased to 73%, compared to 2019 when the percentage was 67%. (SGG, 2021).

5. Conclusions

For a national public system manager, internal control is the one that can offer him/her solutions for the prevention / elimination of dysfunctions in the activity of the entity he/she runs. Although more than two decades have passed since the official establishment in Romania of this form of control, the expected results have not appeared. The fact that at the highest level - OPCs (Ministries, National Agencies, etc.), regarding SCIM compliance (2020), only 27% (representing 12 central public institutions) reported an internal managerial control system "compliant" with SCIM, is as eloquent as can be. However, let us add to that the fact that in the case of EPS / public entities subordinated to OPCs, the situation is somewhat more favorable - 43%, representing 648 EPS which were compliant.

Whereas from the perspective of the legislator, the steps undertaken were considerable, we believe that the elimination of the deficiencies in the implementation of SCIM depends on the human resource, be it managerial or operating staff. The "training" component could be solved by including training and professional development courses on SCIM in the Development Programs at OPC level, but also training the staff from the subordinated entities. Greater technical support from SGG is also recommended, requiring guidance missions to OPC-target groups where the same malfunctions are reported, in order to eliminate them. We consider that the creation of work teams to ensure permanent

guidance on any SCIM issue, which is as much as possible available to those involved, would be very productive.

Even if, in general, SCIM has not fully been assimilated in the organizational culture of the Romanian public entities, not being aware of the possible benefits, as often stated by some authors, we do not advocate for coercive measures (fines, penalties, etc.), but rather for the improvement of communication and of the level of training of the staff involved. In addition, relying on accountability, we appreciate that including tasks related to the implementation of SCIM in the job descriptions of the respective staff would lead to a sounder professionalization.

6. References

- Benoit, P., 2017. Audit et controle interne [Internal audit and control], EMS GEODIF Publishing House.
- EC, 2010. Cartea Alba a reformei manageriale in cadrul serviciilor Comisiei Europene [White Paper on managerial reform within the services of the European Commission], Bruxelles.
- CE, 2012. Compendium of the public internal control systems in the EU Member States, European Commission, ISBN:978-92-79-19982-0, [online]. Available at:
- https://www.mdlpa.ro/uploads/articole/attachments/5dd68b4f5aec4212842784.pdf [Accessed on May 28, 2021].
- COSO/The Committee of Sponsoring Organizations of the Treadway Commission, 2013. *Internal Control Integrated Framework*, [online]. Available at: https://www.coso.org/pages/ic.aspx [Accessed on May 11, 2021].
- Craciun, S., 2006. Auditul intern: evaluare, consiliere [Internal audit: evaluation, counseling], Economic Publishing House, Bucharest.
- Garitte, J.P., Tomoială, M., 2020. Manual de control intern managerial în sectorul public [Manual of internal managerial control in the public sector], Bucharest: University Publishing House.
- Ghiță, M., Iațco, C., 2006. Sistemul de control intern [Internal control system], Iași: Corona Publishing House.
- Government of Romania, 1999. Ordinance no. 119 on internal control and preventive financial control, [online]. Available at: https://mfinante.gov.ro/documents/35673/225078/OG119_1999_10112015.pdf [Accessed on May 12, 2021].
- Government of Romania, 2014. Emergency Ordinance no. 86/2014 regarding the establishment of reorganization measures at the level of the central public administration and for the modification and completion of some normative acts, [online]. Available at: http://legislatie.just.ro/Public/DetaliiDocumentAfis/183599 [Accessed on May 28, 2021].
- Iepure-Moise, C.M. (2020). Evoluții ale sistemului de control intern managerial în organizația militară [Evolutions of the internal managerial control system in the military organization], *Bulletin of the National Defense University "Carol I"*, March 10. 12753/2065-8281-20-12, pp. 91-97.
- Iepure-Moise, C.M., Clenci, E., Pleşanu, T., (2020). Necesitatea unei aplicațiilor informatice de control intern managerial pentru organizațiile militare [The need for a computer application for internal managerial control for military organizations]. In: Vol. International Scientific Conference "Romanian Military Thinking", pp. 494-507, [online]. Available at: https://docplayer.ro/200131399-Introducere-carmen-maria-iepure-moise-doctorand-universitatea-na%C8%9Bional%C4%83-de-ap%C4%83rare-carol-i-bucure%C8%99ti-elena-clenci.html [Accessed on May 25, 2021].
- Kraff, M. Director-General of the Internal Audit Service of the European Commission. In: Garitte, J.P., Tomoială, M., 2020. *Manual de control intern managerial în sectorul public [Manual of internal managerial control in the public sector]*, Bucharest: University Publishing House, [online]. Available at: https://www.emag.ro/manual-de-control-intern-managerial-in-sectorul-public-jean-pierre-garitte-marius-tomoiala-9786062810900/pd/DBR1KYMBM/ [Accessed on May 26, 2021].
- Management si control intern Managerial [Management and internal managerial control], 2020. Course support developed within the project: "Ensuring performance and quality management in Ploiesti", Code SIPOCA 87/SMIS120801, [online]. Available at: https://fdocumente.com/document/curs-demanagement-si-control-intern-managerial-suport-de-suport-curs-management.html [Accessed on May 21, 2021].
- MFP (Ministry of Public Finance), 2009. Order of the Minister of Public Finance No. 3055/2009 approving the Accounting Regulations compliant with European directives, [online]. Available at:
- https://static.anaf.ro/static/10/Anaf/legislatie/OMFP 3055 2009.pdf [Accessed on June 4, 2021].

- MFP (Ministry of Public Finance), 2005. Order no. 946/2005 for the approval of the Internal Control Code, including the management / internal control standards for public entities and for the development of managerial control systems, Official Gazette of Romania, Part I, no. 675 of July 28, 2005.
- Munteanu, V. (Coord.), 2020. Controlul financiar. Abordare teoretica si practica [Financial control. Theoretical and practical approach], Bucharest: University Publishing House.
- Petcu-Broju, A., Constantin, N.V., 2013. Analiza implementării sistemelor de control intern/managerial în organizațiile din sectorul public implicate în gestionarea fondurilor uniunii europene [Analysis of the implementation of internal / managerial control systems in public sector organizations involved in the management of European Union funds]. In Vol. of the Conference organized by the Commercial Academy, pp. 56-63, [online]. Available at:
- http://conferinta2013.academiacomerciala.ro/_VOLCONF2013PDF/volumconferinta/ANALIZA%20I MPLEMENTARII%20SISTEMELOR%20DE%20CONTROL%20INTERN_MANAGERIAL%20IN ORGANIZATIILE%20DIN%20SECTORUL%20PUBLIC%20IMPLICATE%20IN%20GESTIONA REA%20FONDURILOR%20UNIUNII%20EUROPENE_PETCU_CONSTANTIN.pdf [Accessed on May 26, 2021].
- SGG (Secretary-General of the Government), 2018. Order of the Secretary-General of the Government no. 600/2018 on the approval of the Code of internal managerial control of public entities, [online]. Available at:
- http://legislatie.just.ro/Public/DetaliiDocument/200317 [Accessed on May 28, 2021].
- SGG (Secretary-General of the Government), 2020. General Secretariat of the Government, Report for 2019 on the state of implementation of internal managerial control systems at the level of public institutions where the function of principal authorizing officer of the state budget, the state social insurance budget and the budget of any special fund are exercised, Bucharest, [online]. Available at: https://sgg.gov.ro/1/wp-content/uploads/2020/06/Raport-SCIM-2019-f%C4%83r%C4%83-semn%C4%83.pdf [Accessed on May 30, 2021].
- SGG (Secretary-General of the Government), 2021. General Secretariat of the Government, Report for 2020 on the state of implementation of internal managerial control systems at the level of public institutions where the functions of principal authorizing officer of the state budget, the state social insurance budget and the budget of any special fund are exercised, Bucharest, [online]. Available at: https://sgg.gov.ro/1/wp-content/uploads/2021/06/Raport-SCIM-OPC-2020.pdf [Accessed on June 2, 2021].
- Simionescu, A., Buşe, F., Bud, N., Purcaru-Stamin, I., 2006. *Control managerial [Managerial control]*, Bucharest: Economic Publishing House.
- Public internal control systems in EU member states, 2012. Brussels, 27/28 February, [online]. Available at: https://www.mdlpa.ro/uploads/articole/attachments/5dd68b2d8faae144216840.pdf [Accessed on May 28, 2021].
- Central Unit for Harmonization of Financial Management and Control Systems, 2007. Îndrumar metodologic pentru dezvoltarea controlului intern in entitatile publice [Methodological guide for the development of internal control in public entities], MFP, Bucharest, [online]. Available at: https://documente.net/reader/full/indrumar-metodologic-pentru-dezvoltarea-controlului-intern-in-[Accessed on May 14, 2021].
- Zecheru, V., 2004. Controlul managerial, object de audit public intern [Managerial control, object of public internal audit], *Economy*, No.1/2004, pp. 11-15, [online]. Available at: http://www.management.ase.ro/reveconomia/2004-1/5.pdf [Accessed on 2021].

The Aim of Primary and Secondary Sources in International Supply Chain Selection Process

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Abstract

The role of supply logistics has become increasingly important over the years in meeting customer requirements. In supply logistics, supplier selection is one of the most important tasks. In modern companies it is evaluated as a critical factor to be successful in competition conditions, starting with purchasing of raw material which is the first step, ending with delivering the products.

As a main objective in the supplier selection problem, we find the strengthening of the relations between suppliers and buyers, in the long run, respecting the principles of optimizing the supply costs and maximally reducing the risks involved. The aims of the paper are to study the theoretical concepts of supply logistics process and the aspects of raw materials supplier selection and to integrate them at the practical level through analyzing a relatable study case. Methodology includes several economic methods: logical methods (analysis and synthesis), quantitative and qualitative methods, modelling.

Key words: supply logistics, global trade, supply chain management, criteria of suppliers' selection, supply-delivery

J.E.L. classification: M21, F14

1. Introduction

Logistics represents an essential area of modern company's activity. In fact, in the last 15-20 years, more and more reference is made to the term logistics, its field registering truly spectacular mutations (Adeinat & Ventura, 2015). All these changes that are reflected both from a practical and conceptual point of view materialize at the level of the entire internal logistics system, starting from basic functions and ending with the specific operations that ensure added value in the supply-delivery system.

The supply chains of some industries are becoming more and more complex, and the flows of materials that are slipping into them are becoming more and more voluminous, as conclude other researchers (Chamodrakas, et.al. 2010; Lee et.al. 2009; Mithat, et.al. 2011; Segura & Maroto, 2017). Due to the globalization of markets, industrial and business markets also receive more or less commercial markets. Thereby, new ways of gaining or maintaining the customers are developed. The main direction is to reduce costs through progressive enterprise management systems and through long-term socio-economic sustainability and environmental protection (Aksoy & Ozturk, 2011).

These systems should meet the requirements of flexibility, stability, resilience and security, in connection with the development of the contemporary supply chain (Bowersox & Closs, 2010). The important part of the management systems of the information enterprise is, in the context of the development of the current supply chain, the integrated logistics management system.

2. Literature review

Supply logistics is the management of material flows in the process of providing the enterprise with raw material resources (Amin et.al., 2011, p.335). The purpose of supply logistics is to meet production needs with raw materials at minimum costs (Bulat &Ciaikovskii, 2020, p. 69). The objective of supply logistics is to ensure the complete, complex and timely provision of the economic unit with material resources at the established place and term.

Supply logistics can be divided according to its forms of realization (Chai, 2012, p.452):

- *Direct supply* represents the partnership relations formed directly with the supplier of raw materials, involving making payments and transfer of material resources from supplier to consumer directly.
- *Indirect supply* represents the partnership relations that involves working with one or more intermediaries (subcontractors, agents, retailers, etc.) in order to provide the material resources required by the consumers. (figure 1, annexes)

The tasks of supply logistics are (Zymonik, 2019, p.277):

- 1. Respect the schedule of purchasing raw materials. If the delivery is done before term maintenance, it involves additional costs and the delay could disrupt the production process.
- 2. Respect the balance between quantity delivered and the required production process incorrect calculation of the optimum volume of purchases causes difficulties in organizing production.
 - 3. Guarantee the quality in the supply process of raw materials.

Supply logistics performs the following functions:

- Adopting strategies for purchasing raw materials and forecasting their demand;
- Evaluation and selection of suppliers;
- Adopting acquisition stock management strategies;
- Negotiating prices and fulfilling procurement contracts;
- Quality control of the maintenance of the supply and maintenance of raw materials in the production till their use.

The problem of supplier selection is a process by which economic entities identify, evaluate and contract with suppliers at optimal cost. The selection of the supplier depends on various criteria, including there are several methods for evaluating them, since there is no standard of this process (Rezaei & Ortt, 2013, p. 79). Each selection method is different, which allows a multi-criteria analysis of the selection values taking into account the price, the quality of the product, the delivery conditions, the conditions of transport, etc. Respectively, it is important to know what method should be used in different situations.

Supplier selection methods can be classified into quantitative and qualitative:

- Quantitative research combines mathematical and statistical tools to assess strengths and weaknesses. Quantitative studies involve collecting data in numerical form to quantify the size of the problem so that we can obtain classified and measured quantities in concrete units. As a rule, samples are used on the basis of which hypotheses with a degree of probability are established.
- Qualitative methods refer to tools for representation and systematization of results, as well as brainstorming techniques or other alternative solutions. Qualitative research has a representative character and is used to clarify alternative situations in the representation of the proposed solutions. The usefulness of qualitative methods is to determine the depth and extent of phenomena, as well as the importance of phenomena associated with the problem of supplier selection. The method involves a high level of subjectivity, based on the situation in which the researcher is directly involved in the process.

Quantitative methods are usually more structured than qualitative ones (Büyüközkan & Göçer, 2017, p. 2228). In the literature, both methods are used in an integrated way to generate solutions to the problem of supplier selection. These methods generate indicators of the effectiveness of procurement decisions and systematically implement the decision-making mechanism.

A great importance on the fulfillment of the task of supplier selection have the contracts already signed, based on which the statistics of the selection criteria are established (Bulat, 2020a, p.69). Accordingly, the control system of contract compliance has the ability to store information needed

to assess supplier and establish a final rating. In order to establish the rating of a supplier, it is necessary to establish, firstly, what are the basic criteria for evaluating suppliers.

The criteria of selecting supplier that usually are taken into account (Bulat, 2020b, p.35):

- Quality the ability of meeting quality features (material, size, design, durability), variety, production quality (lines, techniques machinery) and continuous improvement;
- *Delivery safety* the ability of meeting delivery schedules, terms of delivery, returns management;
 - *Price level* unit price, pricing terms, exchange rates, taxes, discounts;
- Performance history the past experiences in the financial, economic, social, organizational area;
- Financial position the status of financial well-being, current balances of assets, liabilities, equity of the supplier;
 - Production facilities and capacity the volume, assortments of products or services;
- Communication system the level of providing the exchange of information between the supplier and the firm (progress data of orders, flexibility);
- *Management and organization* the reputability of the management team and the efficiency of their decision making process and dealing with issues.
- *Procedural compliance* the ability to follow all the requirements (conditions of payments, repair services, professionalism, etc.);
- Reputation and position in industry a ranking of the brand, product, company comparing to its competitors in the same industry;
- Reliability the quality of being trustworthy and dependable on the buyers' feedback, financial stability, past and current partners, cultural awareness, etc.

3. Research methodology

The study analyzes the efficiency of supply logistics in order to achieve the main propose of supply selection criteria. The presented data are based on the concrete aspects taken from official sources of the 47th Parallel LLC company (the subsidiary of Moldova, Republic of) and specialized bibliography. For research, were used the methods of analysis and synthesis, of comparison, statistical method.

4. Findings

In the literature we can find numerous criteria for selecting suppliers and each economic entity must individually determine the criteria that best meet its expectations from suppliers (Hamed and Brard, 2019). The general tendency is to create a greater complexity in the field of determining the selection criteria, taking into mind the realities of the social, political and economic environment in meeting the requirements of consumers, respecting the quality criteria, delivery conditions, costs and adjacent services. Contracting more suppliers offers more considerable flexibility due to the diversification of the offer of products and services, which favors the development of a healthy environment of competitiveness between alternative suppliers.

The joint venture 47th Parallel LLC owns the supermarket network "Nr.1" from the Republic of Moldova. The company was registered on 10.01.2011.

The main objects of its activity are:

- 1) Retail sale in non-specialized stores with food, beverages or tobacco predominating
- 2) Wholesale in non-specialized stores with food, beverages and tobacco products
- 3) Retail trade in stands and markets
- 4) Wholesale of raw agricultural products and live animals
- 5) Retail sale of alcoholic beverages and other beverages
- 6) Retail sale of tobacco products
- 7) Other services rendered to enterprises
- 8) Restaurants and Bars
- 9) Canteens and ready food sales

10) Wholesale of non-food consumer goods

The supply of 47th Parallel LLC aims to meet these conditions and offers customers a wide range of high quality products and services.

Inventories are inventoried at the beginning of each week. Based on the existing stocks in the warehouse and following the analysis of consumer behavior and sales history in the previous period, the quantities to be purchased are established for each product category, after which orders are placed with suppliers. The suppliers are to bring the goods to the supermarket warehouses the next day, between 12.00 and 15.00. The goods are received, the transport documents and invoices are checked, the products are checked qualitatively and quantitatively, and the goods receipt documents are signed. At the same time, an entry-receipt note is drawn up and the differences are found if they exist.

Figure no. 1. Supplier's selection process



Source: Designed by authors

Storage is a very important activity that ensures continuity and efficiency of business. In the case of 47th Parallel LLC the establishment of stocks helps to respond promptly to the requirements and needs of consumers, so the satisfied demand will increase, by the fact that the product is available when the customer wants it. The purchased products are stored in the warehouses of the supermarkets, which has an area of approximately 60 square meters. Also, the storage is static, using shelving with light shelves, and is done vertically. In the warehouse, the products are constantly checked from a qualitative point of view, taking all measures of the storage conditions and promptly remedy any technical problems.

For stock control, the company 47th Parallel LLC uses the JIT (Just in Time) method, whose purpose is to maintain the required amount of material in the right place, at the right time in order to guarantee the right amount of products in the warehouses.

The main features of the JIT method applied at 47th Parallel LLC company are the following:

- Close relations with a small number of suppliers and carriers;
- Sharing information by customers and suppliers;
- High frequency of buying and transporting small quantities
- Removing uncertainty in the supply / delivery channel, whenever possible;
- High quality objectives.

The 47th Parallel LLC company also uses the FIFO (First in, First out) method. At the same time, the record of the validity terms is kept, but also of the sales and inventory flow, so that when the minimum stock limit is reached, a new order is placed to the suppliers.

At the level of firm, inventory management is the most important logistics activity and the one that raises certain problems at the management level, due to the current lack of an efficient management system. It ensures that the needs for monitoring and information related to the physical flow of goods stored within the unit are met. It also allows the prompt resolution of customer requirements, by the permanent existence in storage of a certain quantity of products for each category.

At this enterprise, the management of stocks is established by the decision of the Administrator of the enterprise. Within the management process, the following operations take place: reception of documents, preparation of accounting documents according to the type of management, release from management, inventory, process of information.

Within the 47th Parallel LLC company, daily, weekly and monthly stock analysis are performed, as well as periodic inventories. Daily and weekly stock analysis are mainly carried out on finished products to ensure optimal manufacturing planning based on sales estimates. Monthly stock levels are reported on all product categories, especially on raw materials, materials and finished products, on each product range.

The product categories for which the supply is made are: beverages, food, cosmetics products, household products, crockery, flowers.

The act of choosing suppliers is based on a series of selection criteria, such as: price levels, delivery conditions, market position, conditions of payment, product quality, flexibility and openness to negotiation, financial condition and managerial organization.

Further, we will consider analyzing a study case on the example of 47th Parallel LLC at the level of which we present *the best optimal decision of* the supplier selection problem, according to evaluation of the suppliers rating.

Table no. 1: Evaluation of the suppliers rating at the 47th Parallel LLC company.

	Importance	I	nitial data (d	l)	Evalu	ation rati	ng (R)
Criteria of	weight of	S1	S2	S3			
evaluation	criteria	(extern	(regional	(local	S1	S2	S3
	(W)	source)	source)	source)			
1. Delivery safety	0.25	9	9	8	2.25	2.25	2.0
2. Price levels	0.15	5	4	3	0.75	0.6	0.45
3. Quality of products	0.13	4	7	6	0.52	0.91	0.78
4. Conditions of payment	0.13	7	1	2	0.91	0.13	0.26
5. Assortment of products	0.1	3	2	7	0.3	0.2	0.7
6. Additional delivery	0.07	6	3	4	0.42	0.21	0.28
7. Financial condition	0.07	8	5	3	0.56	0.35	0.21
8. Image on the market	0.05	5	4	2	0.25	0.2	0.1
9. Managerial element	0.05	4	3	1	0.2	0.15	0.05
TOTAL (T)	1	-	-	-	6.16	5.0	4.83

Source: The 47th Parallel LLC company

According to the method, firstly, it was distributed the importance weight of each selection criteria at this company so that when summing the data to obtain the value 1. Secondly, it was calculated the evaluation rating of each criterion on each supplier.

It could be concluding that the supplier S1 is the best optimal decision for providing raw materials at the warehouse of 47th Parallel LLC because it has the best rating of 6.16 in comparison to the supplier S2 (5.0) and the supplier S3 (4.83).

The guarantee of the dynamic development of the network of stores "Nr.1" owned by the company 47th Parallel LLC is based on relationships with partners, honesty and trust. For 20 years of activity of the company, good relationships have been established with responsible suppliers, partners have been selected that fully meet the requirements and standards of the company. This approach allowed 47th Parallel LLC to develop and follow a flexible retail pricing policy, achieving a considerable increase in turnover and, as a result, a strong economic performance.

The success of the enterprise 47th Parallel LLC is attributed to the mutually beneficial relations with the suppliers of the enterprise. A good example of this is the fact that 47th Parallel LLC shares a long-term partnership with most companies that provide goods for the network "Nr.1". The 47th Parallel LLC is always open for new partnerships with suppliers able to ensure the necessary volume of quality products at optimal prices and reasonable conditions.

The 47th Parallel LLC considers efficient those product suppliers with which a close collaboration is established from all aspects of the supply chain, in order to cover the needs and expectations of current and future markets and customers. The 47th Parallel LLC carries out relevant activities, focused on strengthening partnerships with such suppliers.

The 47th Parallel LLC requires from their suppliers to be proactive, ready to change their way of thinking and working and to be interested in looking for more efficient solutions. It is important that the supplier adopts a long-term strategy that defines the objectives to be achieved, the paths to be followed and the required resources.

Sales professionals often say that "every company has the suppliers it deserves." Supplier performance reflects how customers treat the supplier and the grade of fulfilling the expectations of buyers towards the suppliers. As a result of the process of choosing the supplier, the company 47th Parallel LLC goes through five specific stages. (figure 3, annexes)

At the moment, the 47th Parallel LLC company has stable suppliers from Russia, Italy, Germany, Poland, Ukraine, Greece, the Netherlands, Austria, Belarus, Romania.

In order to accumulate information regarding the suppliers, the company 47th Parallel LLC uses primary and secondary sources.

Estimate the rating of suppliers from: primary sourse (S1) and secondary source (S2) according to the following criteria: price (0.5); quality (0.3); security of deliveries (0.2); who delivered products A and B, if known the following informations:

Table no. 2. Dynamics of prices, rejections and delivery delays of suppliers S1 and S2

Period	Supplier	Product	Delivered volume Unit/mont h	Price eur/unit	Nr.of rejections, unit	Nr.of orders	Total retentions, days
1 st period	S1	A	2000 1000	10 5	89	8	28
	S2	В	9000 6000	9 4	555	10	45
2 nd period	S1	A	1200 1200	11 6	69	7	35
	S2	В	7000 10000	10 6	564	12	36

Source: The 47th Parallel LLC company

1. Estimating the rate of price increase. For the evaluation of suppliers according to the criterion price, the average rate of price increase for each supplier shall be calculated after formula:

$$Tp = Tpi \times \delta i;$$
 (1)

where:

Tp - average rate of price increase;

Tpi- rate of increase in the price of product i;

 δi - share of the product i and of the total orders delivered;

n - number of types of products delivered.

The rate of price increase of the product is calculated according to the formula:

$$Tp_i = \frac{p_{i1}}{p_{i0}} \times 100\%; \tag{2}$$

where:

 Pi_0 - price of the product i in the previous period;

 Pi_1 - price of the product i in the current period.

Share of the product I from the total orders delivered is calculated according to the formula:

$$\delta_i = \frac{Si}{\sum Si};\tag{3}$$

where:

Si - total cost of the product delivered.

Using these formulas, determine for S1:

 Tpi_A = - rate of increase of product A: 110% Tpi_B = - rate of increase of product B: 120%

 δ_{i_A} - share of product A from the total orders delivered: 0.60

 δ_{i_B} - share of product B from the total orders delivered: 0.40

 Tp_{S1} - average rate of price increase for S1:113.5 %

According to the same methodology, the average rate of price increase for S2 is calculated:

 Tpi_A - rate of increase of product A: 110% Tpi_B - rate of increase of product B: 120%

 δ_{i} - share of product A from the total orders delivered: 0.60

 δ_{i_B} - share of product B from the total orders delivered: 0.40

 Tp_{S1} - average rate of price increase for S1:127.83 %

It could be concluding that according to the criterion price, supplier S1 has priority because registered an average rate of price increase lower than supplier S2 (113,5%<127,83).

2. Estimation of the rate of increase of rejections. For the evaluation of suppliers' after quality criterion, the rate of increase of rejections is calculated for each supplier, by formula:

$$T_q = \frac{\delta r_1}{\delta r_0} \times 100\%; \tag{4}$$

where:

 δr_1 - share of rejections from the total product delivered in the current period;

 δr_0 - share of rejections from the total product delivered in the previous period;

Using the input informations of the problem, determine the share of rejections in the total of the product delivered for each period, structuring the informations in a table:

Table no. 3. Estimation of the share of registered rejections

Period	Supplier	Total delivered volume, Unit/month	Share of rejections from the total volume,%
1 St a' a .d	S1	3000	2,96
1 st period	S2	15000	3,70
2 nd period	S1	2400	2,90
2 period	S2	17000	3,32

Source: The 47th Parallel LLC company

Determine the rate of increase of rejections for S1: Tq_{S1} = 97.97 %

Determine the rate of increase of rejections for S2: Tq_{S2} = 89,73 %

It could be concluding that according to the criterion quality, supplier S2 has priority because registered a rate of increase of rejections lower than supplier S1.

3. Estimation of the frequency of delays. For the evaluation of suppliers after the criterion of security of deliveries, is calculate the rate of increase of the average retentions of an order, for each supplier, according to the formula:

$$T_R = \frac{R1}{R0} \times 100\%;$$
 (5)

where:

 R_1 - average retention of an order in the current period;

 R_0 - average retention of an order in the previous period.

Using this formula, determine:

 T_{RF1} = 142.86% - rate of increase of the average retentions for S1:

 T_{RF2} = 66.67% - rate of increase of the average retentions for S2:

It could be concluding that according to the criterion security of deliveries, supplier S2 has priority because registered a rate of increase of the average retentions lower than S1.

4. Estimation of the rating of suppliers S1 and S2. The informations obtained in points 1-3 are structures in a table based on which the rating of suppliers is determined:

Table no. 5. Rating estimation for suppliers S1 and S2

Selection criteria	Share	Criterion	evaluation	Product estimation		
Selection criteria	criterion	S1	S2	S1	S2	
Price, Tp	0,5	113.5	127.8	56.8	63.9	
Product quality, T_q	0,3	97.97	89.73	29.39	26.91	
Security of deliveries, T_R	0,2	142.86	66.67	28.57	13.33	
Total	1,00	-	-	114.8	104.14	

Source: The 47th Parallel LLC company

It could be concluding that this method analyzes the increase dynamics of the negative characteristics of suppliers. Thus, priority will be given to the S2 supplier that has registered the lowest rating of negative characteristics then S1.

Primary sources within the organization are considered specialists in the field of production, sales force, technical staff, design engineers, etc.

Secondary sources within the organization offer the possibility to obtain information quickly and at minimal cost. This category includes: databases created within the organization, related to suppliers (which contain files about current suppliers, suppliers approved by the company, suppliers rejected in previous evaluations, etc.); internal notes; company publication.

Primary sources outside the organization are as follows:

- Exhibitions. For 47th Parallel LLC represents the possibility to compare the offers of different competing suppliers and to discuss with the representatives of the selling companies. The catalogs of specialized exhibitions provide details about the main suppliers in a certain field and constitute a reference element for the specialists responsible for purchasing.
- Sales agents. Their framing in the category of primary sources is determined by the fact that the sales agents of the supplier companies know very well the products and after-sales services of the company they represent. In addition, they possess valuable information on the offer of competing suppliers, their strengths and limits.
- Purchasing agencies. A potential informal source is professionals from other companies, who are responsible for the purchasing activity. They have the advantage that they can direct efforts to identify suppliers in the right direction.
- Specialized companies. The necessary information can be obtained on a commercial basis, with the help of specialized companies. For example, for foreign markets, Dun and Bradstreet provides product identification and credit check services to potential suppliers.
- *Potential suppliers*. Current and accurate information can be obtained directly from possible suppliers. To purchase a new product, you can also contact the company's current suppliers, from whom it already buys a number of necessary products.

Secondary sources outside the organization. Depending on its objectives and purchasing strategy, the company 47th Parallel LLC also uses the sources related to the internal market:

- Producers' own catalogs. The information presented refers to the company and its offer. Some catalogs contain detailed technical information. Suppliers create either a compact catalog, which includes their entire offer, or a series of separate, individualized catalogs for each line of goods or services.
- Company directories. In the case of new products, occasional orders or urgently needed products, existing suppliers on the market is obtained from sources specifically published for this purpose. The data presented in the directories are very general, these sources being used as a starting point in any research on the identification of potential suppliers.
- Specialized publications. Articles in specialized journals are used as a source of information about new products appearing on the domestic and world market, the existence of substitute materials, trends in the supply market, the performance of companies and their hierarchy.
- Databases. 47th Parallel LLC uses online databases, because they contain up-to-date information and allow a more efficient use of the space previously used for large reference collections.

A correct interpretation of these "situations", characteristic to the supply market, represents the basis of conceiving an appropriate procurement strategy, which takes into account the hypothetical reactions of the opponents (competitive suppliers or buyers, depending on the case). Failure to take such situations into account, as well as non-compliance with the principles of action and analysis in the elaboration of strategies in material supply, all these can later lead to the formation of the "feeling of dissatisfaction in the purchase of resources".

5. Conclusions

The basic concepts of supply logistics help in explaining the strategic role of the enterprise supply department: establish the form of realization of supplying, ensure the need for material resources in the short, medium and long term, provide information on the characteristics of market demand and supply through fulfilling the tasks and functions of supply.

The solutions obtained in the problem of supplier selection offer us opportunities and perspectives for allocating resources, reducing the risks associated with the acquisition and minimizing costs by optimizing the time, financial resources and effort made. Each assessment in the issue of supplier selection is very flexible, starting from the existing alternative situation. Due to the diversity of the suppliers' offer, we cannot identify a single way of selecting the supplier. Therefore, the analysis of possible positive and negative phenomena assessed within suppliers allows to strengthen long-term relationships to ensure a sustainable development of partnership with suppliers.

The supply activity within the 47th Parallel LLC is carried out weekly, following a preliminary analysis of the stocks and following each stage of the receipt of the goods. The logistics within the company 47th Parallel LLC includes several categories of services, being closely related to the main activities of the company: services related to the supply activity; services related to the storage activity, the logistical activities in this category referring to the actual storage and inventory management; services related to transport activities.

Analyzing the elements of the supply activity of the company 47th Parallel LLC, we notice that the company is supplied from multiple sources that ensures the high quality of this process. This also reflects their willingness to invest enough resources for a vast research on the market through hiring specialists in the area and exploring their own collected information. We can mention that the company 47th Parallel LLC uses the method of direct supply from providers that ensures the quality of the products supplied and a long-term collaboration.

On the example of 47th Parallel LLC, the supplier selection final decision is directly depending on the criteria of evaluation and the methods used. The methods chosen are extremely important to the overall selection process and can have a remarkable influence on the selection results. Then, with those set criteria, the company is able to make a ranking and draw conclusions in order to find the best supplier, according to their economic situations.

Taking into account the high dependence of economic entities on the procurement process, we can conclude that the issue of supplier selection is one of strategic level for organizational development. It is essential to be aware that the good solution to the problem of supplier selection can make a strategic difference in improving the ability to meet the needs of consumers by identifying new and creative ways of selecting suppliers.

6. References

- Adeinat H, Ventura AJ, 2015. Determining the retailer's replenishment policy considering multiple capacitated suppliers and price-sensitive demand. Eur J Oper Res 247/2015 p. 83–92 https://doi.org/10.1016/j.ejor.2015.05.064
- Aksoy, A., & Ozturk, N., 2011. Supplier selection and performance evaluation in just-in-time production environments. Expert Systems with Applications, no.38, p. 6351-6359. https://doi.org/10.1016/j.eswa.2010.11.104
- Amin, S.H., Razmi, J., & Zhang, G., 2011. Supplier selection and order allocation based on fuzzy SWOT analesis and fuzzy linear programming. Expert Systems with Applications, no.38, p. 334-342. http://dx.doi.org/10.1016/j.eswa.2010.06.071

- Bowersox D., Closs D., Cooper B., 2010. Logistics and Supply Chain Management, McGrowHill, New York.
- Bulat V., 2020. Logistics systems in the enterprise and their key elements. In: Economic problems of modern world No. 20/20, Tbilisi, Georgia Publishing house of Paata Gugushvilli Tbilisi State University. P. 67-72. E-ISSN: 2587-4691
- Bulat V., 2020. Fundamentals of stock management. In: Uzhorod National University Herald. International Economic Relations And World Economy No. 33/2020. Uzhorod, Ukraine. p.33-38 ISSN: 2413-9971. 0,6 c.a.https://doi.org/10.32782/2413-9971/2020-33-6
- Bulat V., Ceaikovskii A., 2020. Efficiency of organizational forms of trading and intermediary enterprises In: VESNIK of Volga region State University of Services. Series "Economics". Toliati, Russian Federation. p. 65-78. ISSN: 2219-9721
- Bulat V., Antoci N., 2021. The development of distribution networks for agrifood products in Republic
 of Moldova. IBANESS Congresses Series on Economics, Business and Management-Plovdiv/Bulgaria.
 May 29-30, 2021.
- Büyüközkan G, Göçer F., 2017. Application of a new combined intuitionistic fuzzy MCDM approach
 based on axiomatic design methodology for the supplier selection problem. Appl Soft Comput 52. p.
 1222–1238.http://doi.org/10.1016/j.asoc.2016.08.051
- Chamodrakas, I., Batis, D., & Martakos, D., 2010. Supplier selection in electronic marketplaces using satisficing and fuzzy-AHP. Expert Systems with Applications, 37, p. 490-498. http://dx.doi.org/10.1016/j.eswa.2009.05.043
- Chai JY, Liu JNK, Xu ZS, 2012. A new rule-based SIR approach to supplier selection under intuitionistic fuzzy environments. Int J Uncertain Fuzziness Knowl Based Syst 20/3 p. 451–471. https://doi.org/10.1142/S0218488512500237
- Hamed T., Brard A., Analyzing the process of Supplier Selection Criteria and methods. Procedia Manufacturing. January 2019/32 p. 1024-1034. http://dx.doi.org/10.1016/j.promfg.2019.02.317
- Lee, A.H.I., Kang, H.Y., & Chang, C.T., 2009. Fuzzy multiple goal programming applied to TFTLCD supplier selection by downstream manufacturers. Expert Systems with Applications, 36, 6318-6325. https://doi.org/10.1016/j.eswa.2008.08.044
- Mithat, Z., Cuneyt, C., & Cemal, C., 2011. A combined methodology for supplier selection and performance evaluation. Expert Systems with Applications, 8, 2741-2751. http://dx.doi.org/10.1016/j.eswa.2010.08.064
- Rezaei J, Ortt R., 2013. Multi-criteria supplier segmentation using a fuzzy preference relations based AHP. Eur J Oper Res 225/2013 p.75–84 https://doi.org/10.1016/j.ejor.2012.09.037
- Segura M, Maroto C., 2017. A multiple criteria supplier segmentation using outranking and value function methods. Expert Syst Appl 69:87–100. http://dx.doi.org/10.1016/j.eswa.2016.10.031
- Zymonik A., 2019. Logistics and Supply Chain Management, Lotz University, Poland, 478 pg.
- Annual report of activity at 47th Parallel SRL, 2019;

Conflict Management in Organizations – The Role of Alternative Dispute Resolution

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Abstract

The current paper addresses the issue of conflict management in organizations and in particular the emerging role of alternative dispute resolution or ADR.

In the content of the article we review the theoretical background on conflict, and then discuss the particularities of organizational conflict.

We introduce the concept of ADR, which has its origins in the United States and describes a series of practices used in conflict management resolution, practices that can be used as an alternative to conventional ones. Also, through the analysis of the literature we identified differences between the conventional approach and ADR practices.

The main finding in this article refers to the fact that ADR practices enable the actors taking part in the conflict to not feel restricted in terms of the direction to follow to resolve the dispute, as happens in the case of conventional linear practices.

Key words: conflict management, organizational management, alternative dispute resolution.

J.E.L. classification: M10

1. Introduction

The conflict has been permanently present in any social context: at individual, group, organizational, interstate level (Rubin, 1994, p.33). It has often been associated with violence, aggression, fighting, which can easily lead to feelings of fear, anxiety, threats regarding a certain order of things.

We can think of two meanings of the term conflict. The first derives from the Latin word "conflictus" which refers to battle, direct conflict, even armed, the second refers to the meeting of opposing feelings or interests that differ, conflicts of interest, quarrels, disagreements, domination of a person, struggle for power (Pastor P. et al, 2007, p.13).

In the organizational context, the conflict would be ideal to appear in the form of approaching a problem and not the direct involvement of the actors in the organization. The types of conflict that can occur in any organization include: ambiguities in defining responsibilities, conflict of interest, lack of resources, lack of interpersonal relationships at work.

At the organizational level, it is important that the attention be focused on the causes of conflicts with the aim of improving labor relations, but also performance. In the organizational context, conflict can occur both at the interpersonal level and at the group level (Winardi, M.A., 2021, p.1).

In this paper we aimed to identify the alternative methods of conflict management (ADR) with applicability in organizations and to analyze them by referring to the study of literature in the field.

2. Theoretical background

Throughout evolution, man has constantly learned about conflict in various ways: obtaining food, conquering territories, leading states, interindividual relations, and family relations. The use of the ability to manage human conflicts is based on transgenerational heritage, but also on adaptation to the environment, being known that "humans learn better how to interact with minimal cost" (Bartos, O. et al, 2002, p.1).

The strong wave of social conflict has made its presence even more stronger in recent centuries, taking into account the intense changes brought by industrialization, the ability of states to efficiently manage their resources, population growth, Bartos et al (2002, p. 2) mentions that one of the causes of the increase in the number of conflicts is the pressure of the population, taking into consideration the increase of individual needs.

However, despite the fact that the manifestation of conflicts has intensified, the movement to manage them has acquired new valences.

Conflict develops in a social structure and can be defined as "purposeful struggles between collective actors who use social power to defeat or remove opponents and to gain status, power, resources and other scarce values" (Himes, JS, 2008, p. 14)

The specialized literature mentions a series of causes / elements of the conflict type behavior:

Table no. 1 Causes of conflict behavior

Author	Potential causes of conflict behavior
Bartos. 0.J. et al (2002, p.10)	Incompatible goals;
	Solidarity;
	Organization;
	Mobilization;
	Hostility;
	Resources.
Turner S.P. et al (1983)	Struggle for power
	Organizational demands
	Self-esteem
Thakore D. (2013, p. 10)	Role conflict;
	• Structural conflict;
	Resource conflict.

Source: Bartos, (2002, p.10), Turner, (1983), Thakore, (2013, p.10).

When thinking about the conflict that may arise at the organizational level, it is important to consider the need to analyze the problem, not the people. The types of conflict that can occur in any organization include: ambiguities in defining responsibilities, conflict of interest, lack of resources, lack of interpersonal relationships at work.

When it is not clear who is responsible for a particular aspect of a project or task, a conflict can occur. Difficulties related to the division of tasks arise when decisions are taken that do not take into account the level of responsibility. To prevent this, it is absolutely necessary that the roles and responsibilities of all actors are clearly specified and accepted by all those involved, before the start of the project.

Understanding how personal interests and goals fit into the structure of the organization will alleviate the conflict of interest. When an individual's personal goals are at odds with the organization's goals, the individual may be tempted to fight for his or her personal goals, creating a conflict situation that will hinder the success of the activity.

Both within the organization and at the individual level, conflicts are inevitable. Naturally, these facilitate the appearance of some actions, of some measures that can be taken:

- Avoidance action that consists in preventing a conflict from becoming public;
- Negotiation voluntary process by which the parties reach an agreement by consensus;
- Mediation action that consists in appealing to third parties to facilitate the negotiation process;
- Arbitration action consisting in presenting the conflict to third parties to make a decision;
- Legal approach action that consists in presenting the conflict before a judge or before an administrative authority that takes a decision that must be imposed.
- Coercion an action consisting in making threats or resorting to force to impose a decision, According to Thakore D. (2013, p 8-9) there are a number of forms in which conflict can occur in the organizational framework:
- Interpersonal conflict can arise based on individual differences;

- Intrapersonal conflict is internal to the individual, a conflict between two incompatible tendencies;
- Intergroup conflict a conflict between teams/groups;
- Intragroup conflict a conflict inside a team or a group;
- Interorganizational conflict conflict between two or more organizations.

Alternative dispute resolution or ADR is a term that has its origins in the United States and describes a series of practices used in conflict management, practices that can be useful as an alternative to lawsuits or appeals to government control institutions. The main differentiation between ADR and the conventional approach is that the emphasis is on solving the problem, rather than on establishing the "winner", but also on the involvement of employees in the design and monitoring of procedures.

The term ADR has also been used to describe the innovation that has characterized group conflict management, so new terms have emerged such as "assisted negotiations", "fact finding", "interest-based bargaining" and mediation-arbitration.

ADR is concerned with resolving individual and group conflicts. In the context of the emergence of innovative ADR practices, conflict management in organizations has undergone profound changes lately in terms of increasing the number of experts, but also of companies specializing in consulting.

According to some researchers in the field (Roche, et.al., 2014, p.2), the development of ADR practices in resolving conflicts in organizations has as sources: increasing employee rights, declining unions, reducing the incidence of organizational conflict, high legal costs, high levels of competitiveness.

Within the organizational framework, we identified a series of ADR practices used in individual and collective conflicts, practices that are summarized in the table below, in contrast to the conventional approach (Roche et. Al., 2012, p. 449).

Table no. 2 Non-judicial workplace conflict resolution practices

	Conventional	Alternative dispute resolution
Individual disputes	 Multi-step grievance & disciplinary procedures with provision for outside arbitration (grievances) following an impasse; Resort to Employment Tribunals & litigation in courts 	 Open-door policies 'Speak-up' & related systems External and internal mediators Review panels of managers or peers Arbitration ADR-led conflict management systems
Collective disputes	- Multi-step disputes and grievances procedures, usually with provision for external conciliation and arbitration or adjudication following an impasse	 'Assisted bargaining/mediation within procedure to avoid impasse 'Brainstorming' & related techniques 'Interest-based bargaining' with facilitation Fact-finding Arbitration, 'mini-trials' & 'med-arb' Intensive communications surrounding change management ADR-led conflict management systems

Source: Roche et al, (2012, p 449)

Next we will focus on two of the most common types of ADR, namely mediation and arbitration.

Mediation has a central pillar role in the "win-win" dynamics, which can easily be used both to increase productivity in the organization, but also to motivate and support employees. Mediation stands out as a method that aims to create a relational dynamic in the organization, based on mutual respect. The intrinsic value of this approach consists in the fact that in the context of conflict resolution is based on relationships created at the workplace, but also on the involvement of employees. Mediation also offers new working tools for the management of all levels, in order to

improve communication and negotiation. Among the qualities of a mediator we mention: active listening, synthesis, relationship building, facilitation, impartiality, problem solving, conflict management (Doherty et al., 2008, p.8).

On the other hand, arbitration is an adjudication process in which the parties to the dispute choose a person designated to make a decision on the matter. Arbitration is distinct from mediation in that the latter appeals to a neutral, neutral third party who facilitates negotiation but does not make a final decision (Menkel-Meadow, 2001, p. 949).

3. Research methodology

In the elaboration of the paper we opted for an in-depth analysis on the concept of conflict in the organization and ADR. The research methodology in the case of our article focused on studying the resources consisting of books and articles in the field. We opted for bibliographic research in order to analyze a relatively new concept, more precisely ADR and to highlight its applicability in the organizational environment.

4. Findings

An important involvement of ADR in the life of the organization refers to the direct involvement of middle managers in a proactive manner and increasing the degree of responsibility in managing conflicts in the organization, all these aspects being done after that, previously, specialized training was provided.

It is also important to mention that an effective conflict management system at the organizational level needs to consider interconnected practices in several areas (legal, economic, psychological). Thus, it is desired to prioritize the use of specific ADR methods that focus on meeting the needs of the actors involved (by identifying the real causes underlying the conflict), rather than on a classical dichotomous approach (evaluation of rules, norms, social customs).

Hence an important advantage of ADR practices, namely that the actors taking part in the conflict are not restricted in the direction to be followed to resolve the dispute, as is the case with conventional linear practices.

5. Conclusions

Conflict at the organizational level can wear many masks, which entails the emergence of new approaches, this being the case of ADR. It is essential to consider that they are being used more and more often as an alternative to the linear, classic and rigid version of conflict management.

A limitation in the use of ADR refers to the area in which it is used: it is preferred to use ADR in individual conflicts, while in conflicts involving a large number of people one opts for the classical approach. Longitudinal research into the effectiveness of these methods has been conducted in the U.S. and revealed that an integrated conflict management system can have good results (Rowe et al, 2014, p.2), an aspect that invites and encourages a more thorough research in this field.

6. References

- Bartos, O. J., Wehr, P., 2002, *Using conflict theory*. Cambridge University Press.
- Doherty, N., Guyler, M., 2008. The essential guide to workplace mediation & conflict resolution: Rebuilding working relationships. Kogan Page Publishers.
- Himes, J. S., 2008, Conflict and conflict management. University of Georgia Press.
- Menkel-Meadow, C., 2001. Ethics Issues in Arbitration and Related Dispute Resolution Processes: What's Happening and What's Not. *U. Miami L. Rev.*, 56, p. 949.
- Pastor, P., Bréard, R., 2007, Gestion des conflits: la communication à l'épreuve, Editions Liaisons.
- Roche, W. K., Teague, P., Colvin, A. J., 2014, *The Oxford handbook of conflict management in organizations*. Oxford University Press.
- Rowe, M., Gadlin, H., 2014, The organizational ombudsman. *The Oxford handbook of conflict management in organizations*, pp. 210-232.

- Rubin, J. Z., 1994. Models of conflict management. *Journal of social issues*, 50(1), pp. 33-45.
- Thakore, D., 2013. Conflict and conflict management. *IOSR Journal of Business and Management (IOSR-JBM)*, 8(6), pp. 07-16.
- Turner, S. P., Weed, F., 1983. Conflict in organizations: practical solutions any manager can use. Prentice-Hall.
- Winardi, M. A., Prentice, C., Weaven, S., 2021. Systematic literature review on emotional intelligence and conflict management. *Journal of Global Scholars of Marketing Science*, pp.1-26.

Employees' Perceptions Concerning the Influences of Training and Personal Development Programs on Performance, Productivity, and Profit

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Abstract

While many organizations acknowledge the skills shortage in the labor market, there is a reluctance to engage in Training and Personal Development Programs (TPDPs), although they are aware that the results are significantly positive. This is because organizations, particularly in the private area, want financial gain and an increase in the organization's value in the shortest possible time. However, much empirical research has found several positive correlations between TPDPs and several outcome indicators at the organizational level: productivity, performance, and profitability. The aim of our research starts from these correlations found in the literature, which we propose to test at the level of some Romanian public institutions. The results show strong influences of TPDPs on direct productivity growth and significant indirect influences on performance and profitability.

Key words: training, personal development, productivity, performance, profit

J.E.L. classification: M53

1. Introduction

In recent years, line managers have assumed the roles of facilitators and coaches. Many managers need TPDPs to stay current in their rapidly changing positions (Rue et al., 2015). The training should focus on a proactive long-term strategy, which considers TPDPs to be a remedy for the rapidly changing business environment. Some organizations use TPDPs to retain the talents of in-house experts that they use when needed.

Programs designed to help grow an organization should be related to the needs of the organization. Otherwise, organizations lose skills that cause them to lose productivity and performance (Beardwell and Claydon, 2010).

Edralin (2011) shows that companies carry out TPDPs because they are considered to have a beneficial influence on performance. Hansson (2007), in his study, relates the rate of return to workers who have been included in a training and personal development program. Moreover, Valentine et al. (2019) show that TPDPs can be considered a reward based on past performance. The purpose of training programs is to improve performance and increase profits through increased productivity. Those organizations with a high employee turnover rate will not invest in training because the investments will not return to the organization (Hansson, 2007).

In order to quantify the influences of TPDPs on the three result indicators (productivity, profit performance), we conducted empirical research on the employees of some public institutions in Romania. The structure of the paper is organized into five sections. In the first three sections, we made an introduction, described the theoretical framework, and presented the methodological framework. The last two sections present the results and the conclusions.

2. Theoretical background

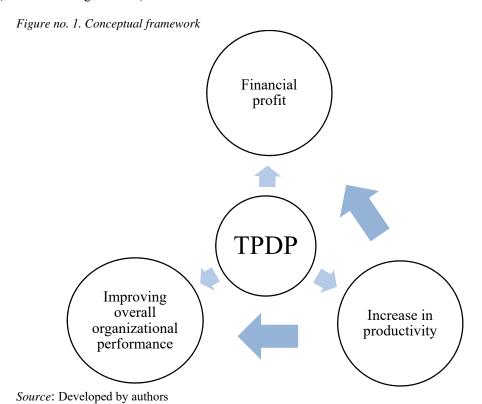
Like all organizational strategic options, the activities of TPDPs face many encounters. Some managers and employees do not want to be tangled in TPDPs (Beardwell and Claydon, 2010). They see TPDPs as an unwanted interruption of work (Mathis et al., 2016).

Although it has been widely recognized that training improves productivity, retention, performance, some companies do not provide sufficient support for TPDP. In contrast, others offer programs without a clear strategy with well-defined objectives and mechanisms for evaluating the effectiveness of such programs (Varzaru et al., 2012; Vărzaru and Vărzaru, 2015a; Bocean and Sitnikov, 2015; Sitnikov and Bocean, 2015). Therefore, the aim of TPDPs should be to improve the acquisition of knowledge, skills, and competencies and the capacity for constant innovation of knowledge. Retention and motivation of employees are essential for organizations that want to improve productivity, and implicitly performance and profitability (Bocean, 2007; Bocean, 2015; Vărzaru and Vărzaru, 2015b; Vărzaru and Vărzaru, 2016). TPDPs improve the capability of organizations to achieve a high level of performance and promotes better performance results.

Better performing organizations are always associated with lower costs and increased profitability. Superior performance can only be achieved through effectively trained employees. Barbu and Barbu (2012) confirmed that organizations involving employees in TPDPs, get improved productivity and profits per employee.

3. Research methodology

Following the literature review, we found several positive correlations between TPDP and a number of indicators at the organizational level: productivity, performance, and profitability (illustrated in figure no .1).



The aim of our research starts from these correlations found in the literature, which we propose to test at the level of Romanian public institutions. The hypothesis we start from is that all these positive influences of TPDPs on productivity, organizational performance, and profitability are also

valid in the case of public institutions, not only in the case of private organizations. For the profit indicator, we used the surplus of the public institution. In order to investigate and explore these correlations, we conducted a qualitative survey based on a sample of 127 employees who work in four public organizations from Argeş County. In the questionnaire used in the research, we included 13 items related to TPDPs, two items related to performance (individual and organizational), and one item for productivity and profitability.

For the research of influences, we used structural equation modeling. The theoretical model applied to the data collected from the sample is presented in figure no. 2.

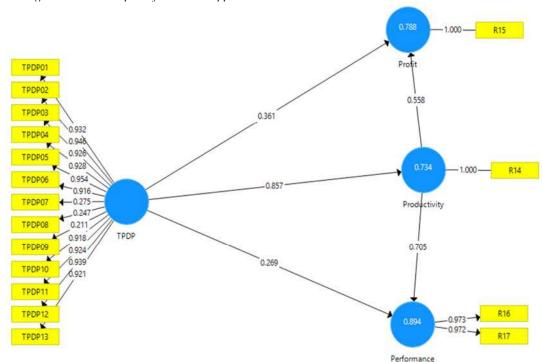


Figure no. 2. Conceptual framework applied

Source: Developed by the authors using SmartPLS v3.0

In order to increase the relevance, we eliminated items having a load below 0.7, resulting in a model with a higher degree of significance. The items removed were TPDP06, TPDP07, and TPDP08.

4. Findings

SMSR is 0.032 (lower than 0.08), NFI is 0,941 (above 0.9). The reliability and validity analysis indicates a relevant and significant research model (table no. 1).

Table no. 1. Reliability and validity analysis

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Productivity	1.000	1.000	1.000	1.000
Profit	1.000	1.000	1.000	1.000
TPDP	0.984	0.984	0.986	0.873
Performance	0.943	0.943	0.972	0.946

Developed by the authors using SmartPLS v3.0

T Statistics (|O/STDEV|)

6.974

3.827

30,324

20.599

20.541

P Values

0.000

0.000

0.000

0.000

0.000

After eliminating the items that reduced the degree of significance, the model corrected is presented in figure no. 3.

0.617 TPDP01 0.294 TPDP02 0.945 0.931 0.940 -0.955 -0.9240.920 0.925 TPDP 0.937 0.717 TPDP11 0.255 TPDP12 TPDP13 Performance

Figure no. 3. Empirical model

Source: Developed by the authors using SmartPLS v3.0

Paths coefficients, indirect and total effects calculated in a bootstrapping procedure can be found in table no. 2.

Paths coefficients Original Sample (O) Sample Mean (M) Standard Deviation (STDEV) T Statistics (|O/STDEV|) P Values TPDP -> Profit 0.294 0.273 0.063 0.158 1.863 TPDP -> Produ... 0.854 0.851 0.041 20.599 0.000 TPDP -> Perfor... 0.239 0.255 0.106 2.404 0.017 0.637 Productivity -> ... 0.617 0.161 3.827 0.000 0.732 Productivity -> ... 0.717 0.103 6.974 0.000 **Indirect effects** Original Sample (O) Sample Mean (M) Standard Deviation (STDEV) T Statistics (JO/STDEVJ) P Values Productivity -> Performance Productivity -> Profit TPDP -> Performance 0.612 0.625 0.106 5.760 0.000 TPDP -> Productivity TPDP -> Profit 0.527 0.545 0.151 0.001 3,494

Total effects

0.732

0.637

0.864

0.851

0.818

Standard Deviation (STDEV)

0.103

0.161

0.029

0.041

0.040

Sample Mean (M)

Table no. 1. Paths coefficients, direct and indirect effects

Developed by the authors using SmartPLS v3.0

Productivity -> Performance

Productivity -> Profit

TPDP -> Performance

TPDP -> Productivity

TPDP -> Profit

Original Sample (O)

0.717

0.617

0.868

0.854

It can be seen from the analysis of the results obtained that TPDPs significantly and directly influence employee productivity, the direct influences on profitability and performance being lower. Despite all these indirect influences, mediated by the evolution of productivity, of TPDPS on profitability and performance are significant, which leads us to say that our research hypothesis is validated. Similar results were obtained by other researchers (Bottazzi et al., 2008). TPDPS significantly influences the three result indicators (productivity, profitability, and performance) within public institutions.

5. Conclusions

Following the research carried out on the employees of some public institutions in Romania, we concluded that TPDPs increase productivity, improve individual and organizational performance, and finally, the organization's profitability. Increasing the skills of civil servants through training programs leads to better productivity and increased efficiency of their work. Therefore, TPDPs have a significant impact on organizational performance. TPDPs can contribute to any organizations overall success and profitability by meeting organizational goals by the workforce with improved skills. As human resources are the most critical resource of an organization, any intervention through training and personal development programs leads to an improvement that translates into increased productivity, improved performance, and higher profit.

6. References

- Barbu, R.M.C. and Barbu M.C. 2012. Training of personnel in leadership positions in sport organizations. *Studia Universitatis Babes-Bolyai, Educatio Artis Gymnasticae*, 57(3), 41-51.
- Beardwell, J. and Claydon, T., 2010. *Human Resource Management: A Contemporary Approach*. 6th Edition. Prentice-Hall, Englewood Cliffs.
- Bocean, C.G., 2007. The Impact of Active Labour Market Policies in Romania. Available at: https://mpra.ub.uni-muenchen.de/10397/ [Accessed date: 29.10.2021].
- Bocean, C. G. 2015. Managementul resurselor umane. Universitaria, Craiova.
- Bocean, C.G. and Sitnikov C.S., 2015. Setting international standards in human resources. *Management & Marketing Journal*, 13(1), 16-22.
- Bottazzi, G., Secchi, A. and Tamagni, F., 2008. Productivity, Profitability, and Financial Performance. Industrial and Corporate Change, 17, pp.711-751.
- Edralin, D. M., 2011. Training and Development Practices of Large Philippines Companies. *Asia Pacific Business Review*, 17(2), pp. 225-239.
- Hansson, B., 2007. Company-Based Determinants of Training and the Impact of Training on Company Performance: Results from an International HRM Survey. *Personnel Review*, 36(2), p. 311-331.
- Mathis, R., Jackson, J. and Valentine, S.R., 2016. Human Resource Management. 15th edition. Cengage Learning.
- Rue, L., Byars, L. and Ibrahim, N., 2015. Human Resource Management. 11th edition. McGraw-Hill Education.
- Sitnikov, C. S. and Bocean, C. G., 2015. *The role of risk management in ISO 9001: 2015*. In 9th International Management Conference: Management and Innovation for Competitive Advantage.
- Valentine, S.R., Meglich, P., Mathis, R. and Jackson, J., 2019. *Human Resource Management*. 16th edition. Cengage Learning.
- Varzaru, M., Varzaru, A.A. and Albu, C.C. 2012. Knowledge Management and Organisational Structure: Mutual Influences, Proceedings of the 13th European Conference on Knowledge Management, 2, 1255-1261.
- Varzaru, M. and Varzaru, A.A., 2015a. Design and implementation of a management control system. Finance: Challenges of the Future, 17, pp.195-200.
- Varzaru, D.C. and Vărzaru A.A., 2015b. Adjusting the human resources information system to the requirements of using the balanced scorecard, *Annals of the University of Craiova, Economic Sciences* Series, 2, pp.222-238.

• Vărzaru D.C. and Vărzaru A.A. 2016. The Contribution of the Human Resources Information System to Human Capital Performance Management within the Organization, *Ovidius University Annals, Economic Sciences Series*, XVI(1), 2016, pp.429-434.

Study on Employees' Perception of the Characteristics of the Activity Improved through Training and Personal Development

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Abstract

While some organizations operate in a stable business environment, others operate in sectors facing changing technologies. The latter must train and retrain their employees continuously. Moreover, changes in the production process influence the rate of formation and development. These changes require not only highly trained employees but also constant learning to adapt to the processes. The paper aims to identify the most critical areas of activity in which employees consider that TPDPs had a significant influence. Following the research of the specialized literature, we identified specific areas: knowledge about the workplace, skills, confidence at work, morale, general performance.

Key words: employees' perception, TPDPs, skills, knowledge, morale, confidence, performance **J.E.L. classification:** M53

1. Introduction

In the contemporary world, organizations use TPDPs for various reasons (Lynton and Pareek, 2000). For example, the approach to the organizational development of the TPDP process is based on the needs of departments, while the systematic approach to training needs is based on the identification of training needs of organizations (Mondy and Martocchio, 2015). On the other hand, the political approach of the TPDPs process favors the privileged workers and is faithful to the authoritarian figures in the organization (Olaniyan and Ojo, 2008).

Successful business in the global economy requires new knowledge and skills. Therefore, a concerted effort must be made to identify the needs of TPDPs (Armstrong, 2014). As companies evolve through various technological and environmental changes, employees and managers need to keep up with these changes to adapt. This can be done through TPDPs programs. That is, as structural changes in the economy occur, management must respond to such changes. Constant changes in production technology and work practices require continuous interventions by TPDPs.

The paper's purpose was to determine the most critical areas of activity in which employees consider that TPDPs had a significant effect. For this purpose, following the research of the specialized literature, we identified the following fields: knowledge about the workplace, skills, confidence at work, morale, general performance. The structure of the paper consists of five sections. First, after an introduction and a presentation of the research context, we presented the research methodology and its results. Finally, the paper ends with the conclusions of the research.

2. Theoretical background

TPDPs programs can also improve critical skills and knowledge to help employees stay motivated and build an organization's competency pool. This is important in today's business environment, where jobs and work processes constantly change (Armstrong, 2014). The average age of the workforce is rising, and most are unskilled workers. This creates a need for TPDPs of new and young employees to replace the older ones who will eventually retire (Blanchard and Thacker, 2010). The threat of layoffs also motivates organizations to engage in training initiatives to retain qualified and loyal employees.

Several environmental factors can affect the content of TPDP programs. Organizations are complex and are influenced by many environmental factors (Varzaru et al., 2012; Vărzaru and Vărzaru, 2015a; Bocean and Sitnikov, 2015; Sitnikov and Bocean, 2015). Therefore, it is necessary to measure these factors before adopting the decision on the training and development (Rue et al., 2015).

Some organizations adopt TPDP programs to comply with the organization's policy. That is why we can say that a company's attitude towards TPDPs programs is reflected in its policy (Valentine et al., 2019), and such a policy stipulates the importance, standards, and scope of TPDPs programs. Other organizations use TPDPs because they allow human resources departments to train future managers and develop the potential of employees for their future and current career prospects (Bocean, 2007; Bocean, 2015; Vărzaru and Vărzaru, 2015b; Vărzaru and Vărzaru, 2016).

Like all organizational strategic options, the activities of TPDPs face many challenges. One of the major problems is the lack of support from top management and an organizational culture that can prevent any predicted change (Beardwell and Claydon, 2010). Huang (2001) found that strong support from senior management is positively associated with the effectiveness of TPDP activities. Therefore, the successful implementation of TPDP activities depends on the sincerity and commitment of top management (Mathis et al., 2016). When top management and the organizational climate oppose the intent and efforts of TPDP programs, the exercise can be fruitless and challenging to implement. Some managers and employees do not want to take the time to be involved in TPDP programs. They see TPDP programs as an unwanted interruption of work.

3. Research methodology

Starting from the purpose of the research on identifying the areas of influence of TPDPs, we also defined the organizational levels within which employees consider that TPDPs have a more significant influence. These are set as follows: organizational level, job level, personal level, at all the levels. In order to investigate and explore these correlations, we conducted a qualitative survey based on a sample of 127 employees who work in four public organizations from Argeş County. The research variables were: evaluation of TPDPs by employees, areas, and levels of influence of TPDPs. The research hypotheses were formulated taking into account the areas and levels of influence of TPDPs:

- H1. Within Romanian public organizations, employees believe that TPDPs significantly influence employees' knowledge and performance.
- H2. Within Romanian public organizations, employees consider that TPDPs have a more significant influence at all levels of the organization.

For the research, testing, and validating the hypotheses, we used the analysis of the artificial neural networks analysis within SPSS v20.

4. Findings

Before analyzing the influences of TPDPs on knowledge, skills, confidence, morals, performance, we calculated the Pearson correlation coefficients, which characterize the relationships between the variables TPDPs, knowledge, skills, confidence at work, morals, performance (table no.1).

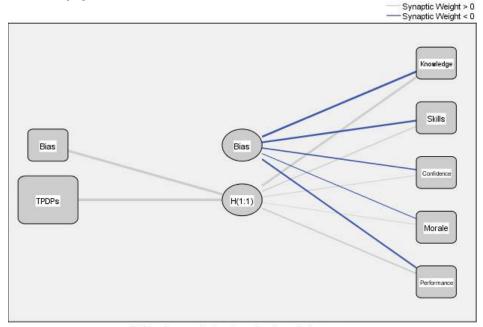
Table no. 1. Correlations among variables TPDPs, knowledge, skills, confidence, morale, performance

		TPDPs	Knowledge	Skills	Confidence	Morale	Performance
TPDPs	Pearson Correlation	1	0.398**	0.161	0.123	0.134	0.253*
IFDES	Sig. (2-tailed)		0.000	0.111	0.223	0.185	0.012
Vnovdodao	Pearson Correlation	0.398**	1	0.772**	0.744**	0.627**	0.749**
Knowledge	Sig. (2-tailed)	0.000		0.000	0.000	0.000	0.000
Skills	Pearson Correlation	0.161	0.772**	1	0.844**	0.790^{**}	0.795**
SKIIIS	Sig. (2-tailed)	0.111	0.000		0.000	0.000	0.000
Confidence	Pearson Correlation	0.123	0.744**	0.844^{**}	1	0.757^{**}	0.768**
Confidence	Sig. (2-tailed)	0.223	0.000	0.000		0.000	0.000
Morale	Pearson Correlation	0.134	0.627**	0.790^{**}	0.757**	1	0.813**
Moraie	Sig. (2-tailed)	0.185	0.000	0.000	0.000		0.000
Dorformanao	Pearson Correlation	0.253*	0.749**	0.795**	0.768**	0.813**	1
i ei ioi mance	Pearson Correlation Sig. (2-tailed)	0.012	0.000	0.000	0.000	0.000	

Source: Developed by the authors using SPSS v.20

It can be seen from Table 1 that there is a strong correlation between TPDPs and knowledge and an average correlation between TPDPs and performance. To deepen the investigation, we performed an analysis of artificial neural networks (ANN) established between the investigated variables. TPDPs represent the independent variable while knowledge, skills, confidence at work, morale, performance represent the independent variables. The influences of TPDPs on the five variables are shown in Figure 1.

Figure no. 1. Analysis of artificial neural networks among variables TPDPs, knowledge, skills, confidence, morale, performance



Hidden layer activation function: Hyperbolic tangent

Output layer activation function: Hyperbolic tangent

Source: Developed by the authors using SPSS v.20

We used the hyperbolic tangent function to activate the hidden layer (efficiency of TPDPs) and the output layer. The values calculated in the analysis of artificial neural networks are given in Table 2.

Table no. 2. Parameters estimation for ANN among variables TPDPs, knowledge, skills, confidence, morale, performance

Predictor		Predicted					
		Hidden	Output				
		Layer 1	Layer				
		H(1:1)	Knowledge	Skills	Confidence	Morale	Performance
Input Layer	(Bias)	2.122					
	TPDPs	3.570					
Hidden Layer 1	(Bias)		-1.103	-1.007	-0.811	-0.633	-0.934
	H(1:1)		1.173	0.735	0.599	0.571	0.933

Source: Developed by the authors using SPSS v.20

From the analysis of correlations and artificial neural networks, the H1 hypothesis is validated. Within Romanian public organizations, employees believe that TPDPs have a more significant influence on employees' knowledge and performance.

Before analyzing the level at which the influences of TPDPs act more powerfully, we calculated the Pearson correlation coefficients, which characterize the relationships between TPDPs variables and the levels of influence - organizational level, job level, personal level, at all the levels (table no. 3).

Table no. 3. Correlations among variables TPDPs and levels of influences

			Organizational			All_levels
TPDPs	Pearson Correlation	1	0.241*	0.218*	0.190	0.201*
	Sig. (2-tailed)		0.016	0.030	0.059	0.046
Organizational	Pearson Correlation	0.241*	1	0.911**	0.733**	0.624**
	Sig. (2-tailed)	0.016		0.000	0.000	0.000
Workplace	Pearson Correlation	0.218*	0.911**	1	0.705**	0.733**
	Sig. (2-tailed)	0.030	0.000		0.000	0.000
Personal	Pearson Correlation	0.190	0.733**	0.705**	1	0.874**
	Sig. (2-tailed)	0.059	0.000	0.000		0.000
All_levels	Pearson Correlation	0.201*	0.624**	0.733**	0.874**	1
	Sig. (2-tailed)	0.046	0.000	0.000	0.000	

Source: Developed by the authors using SPSS v.20

It can be seen from Table 3 that there is an average correlation between TPDPs and organizational levels related to the job and all levels simultaneously. To deepen the investigation, we performed an analysis of artificial neural networks (ANN) established between the investigated variables. TPDPs represents the independent variable, while influence levels represent the independent variables. The influences of TPDPs on the four variables are shown in Figure 2.

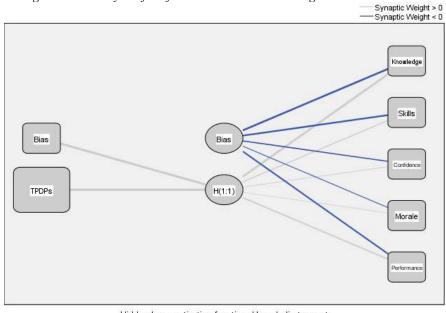


Figure no. 2. Analysis of artificial neural networks among variables TPDPs and levels of influences

Hidden layer activation function: Hyperbolic tangent

Output layer activation function: Hyperbolic tangent

Source: Developed by the authors using SPSS v.20

We used the hyperbolic tangent function to activate the hidden layer (efficiency of TPDPs) and the output layer. The values calculated in the analysis of artificial neural networks are given in Table 4.

Table no. 4. Parameters estimation for ANN among variables TPDPs and levels of influences

Predictor		Predicted						
		Hidden Layer 1	Output Layer					
		H(1:1)	Organizational	All_levels				
Input Layer	(Bias)	1.756						
	TPDPs	3.018						
Hidden Layer 1	(Bias)		-0.937	-0.943	-0.614	-0.526		
	H(1:1)		0.783	0.789	0.631	0.694		

Source: Developed by the authors using SPSS v.20

From the analysis of correlations and artificial neural networks, the H2 hypothesis is partially validated. Furthermore, within Romanian public organizations, employees consider that TPDPs have a more significant influence at all levels of the organization, less on a personal level.

5. Conclusions

Bates (2008) states that TPDPs is a core component in many organizations' work due to the need for technical skills, management skills and customer expectations, level of education, and global competition. Therefore, companies must run investment programs in their human resources to ensure that they have the appropriate knowledge, skills, and capabilities.

Traditionally, TPDPs aimed to learn those skills needed to perform tasks effectively. Currently, the purpose of TPDPs has been extended from fulfilling tasks to achieving objectives and meeting customer needs by changing attitudes and improving the level of competence to improve overall organizational performance.

In addition to improving skills and increasing knowledge, TPDPs need to provide greater satisfaction and esteem resulting from performing tasks in good conditions and achieving goals by improving job performance and improving careers. For example, Velada et al. (2007) note that when employees perceive the organizational climate to be favorable, they are more likely to apply their new knowledge to the workplace. In addition, performance feedback, particularly feedback on acquired knowledge and skills, is vital to the effectiveness of training and personal development programs.

The activities of TPDPs face many challenges, including a lack of support from top management and an organizational culture that can effectively prevent any anticipated change. Support from top management can positively affect the effectiveness of TPDPs. However, some organizations implement TPDPs programs only to meet legal requirements. The literature analysis revealed that the characteristics of new employees and motivation, work environment, and organizational culture encourage the transfer of knowledge and skills in organizations.

6. References

- Armstrong, M., 2014. Armstrong's handbook of Human Resource Management Practice. 13th edition. London: Kogan Page Limited.
- Bates, R., Holton, E. F. III, and Hatala, J. P. 2012. A revised Learning Transfer System Inventory: Factorial replication and validation. Human Resource Development International, 15(5), pp.549-569.
- Barbu, R.M.C. and Barbu M.C. 2012. Training of personnel in leadership positions in sport organizations. *Studia Universitatis Babes-Bolyai, Educatio Artis Gymnasticae*, 57(3), 41-51.
- Beardwell, J. and Claydon, T., 2010. Human Resource Management: A Contemporary Approach. 6th Edition. Prentice-Hall, Englewood Cliffs.
- Bocean, C. G. 2007. Echilibre și dezechilibre pe piața muncii din România: managementul pieței muncii. Universitaria, Craiova.
- Bocean, C. G. 2015. Managementul resurselor umane. Universitaria, Craiova.
- Bocean, C.G. and Sitnikov C.S., 2015. Setting international standards in human resources. *Management & Marketing Journal*, 13(1), 16-22.
- Blanchard, P. N., Thacker, J. W. (2010). Effective Training: Systematic, Strategic, and Practices. Fourth Edition, Pearson. United State.
- Bottazzi, G., Secchi, A. and Tamagni, F., 2008. Productivity, Profitability, and Financial Performance. *Industrial and Corporate Change*, 17, pp.711-751.
- Edralin, D. M., 2011. Training and Development Practices of Large Philippines Companies. Asia Pacific Business Review, 17(2), pp. 225-239.
- Hansson, B., 2007. Company-Based Determinants of Training and the Impact of Training on Company Performance: Results from an International HRM Survey. *Personnel Review*, 36(2), p. 311-331.
- Huang, T. (2001). The Relation of Training Practices and Organizational Performance in Small and Medium Size Enterprises. *Education, training*, 43(8), pp. 437-444.
- Lynton, R. and Pareek, U. 1967. Training for Development, Richard D. Irwin, Illinois: Inc. and Dorsey Press.
- Mathis, R., Jackson, J. and Valentine, S.R., 2016. Human Resource Management. 15th edition. Cengage Learning.
- Mondy, R.W.D. and Martocchio, J.J. 2015. Human Resource Management. 14th edition. Prentice-Hall, Pearson Education.
- Olaniyan, A. D. and Ojo, B. L., 2008. Staff Training and Development: A Vital Tool for Organisational Effectiveness. European Journal of Scientific Research, 24 (3), pp. 326-331.
- Rue, L., Byars, L. and Ibrahim, N., 2015. Human Resource Management. 11th edition. McGraw-Hill Education.
- Sitnikov, C. S. and Bocean, C. G., 2015. *The role of risk management in ISO 9001: 2015*. In 9th International Management Conference: Management and Innovation for Competitive Advantage.
- Valentine, S.R., Meglich, P., Mathis, R. and Jackson, J., 2019. *Human Resource Management*. 16th edition. Cengage Learning.
- Varzaru, M., Varzaru, A.A. and Albu, C.C. 2012. Knowledge Management and Organisational Structure: Mutual Influences, Proceedings of the 13th European Conference on Knowledge Management, 2, 1255-1261.

- Varzaru, M. and Varzaru, A.A., 2015. Design and implementation of a management control system. *Finance: Challenges of the Future*, 17, pp.195-200.
- Varzaru, D.C. and Vărzaru A.A., 2015. Adjusting the human resources information system to the requirements of using the balanced scorecard, *Annals of the University of Craiova, Economic Sciences Series*, 2, pp.222-238.
- Vărzaru D.C. and Vărzaru A.A. 2016. The Contribution of the Human Resources Information System to Human Capital Performance Management within the Organization, *Ovidius University Annals, Economic Sciences Series*, XVI(1), 2016, pp.429-434.
- Velada, R., Caetano, A., Michel, J., Lyons, B., and Kavanagh, M., 2007. The Effects of Training Design, Individual Characteristics and Work Environment on Transfer of Training, *International Journal of Training and Development*, 11(4), pp.1360-3736.

The Role of Marketing in Luxury Tourism: A Case Study on the Structures of Tourist Reception in Romania

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Abstract

Tourism is a pleasant and relaxing activity for people who choose to disconnect from daily activities to relax, visit other places and discover different cultures. As in the case of other types of goods or services, in the case of tourist services, some differences make them accessible to the general public or luxury, depending on the quality and experience offered. In the case of luxury tourism, however, things are different due to the types of beneficiaries and their perception. In this article, we aim to make a theoretical approach to the concepts of tourism, marketing in tourism and luxury tourism, followed by a case study conducted on official statistics in Romania on the types of accommodation available and the number of beneficiaries depending on the conditions offered. This will highlight the differences in demand on the Romanian market for luxury and medium tourist services and highlight the differences between Romanian tourists and foreign tourists who choose to spend their nights in Romania.

Key words: marketing tourism, luxury tourism, tourism services

J.E.L. Classification: M31

1. Introduction

Consumers are constantly changing in today's world of rapidly evolving technology and economic digitalization. Tourists are the first to arrive. This needs a continuous examination of marketing communication tools as well as a more efficient method of reaching out to customers. As media consumption has expanded in recent decades, the rate of change has accelerated. The change of applied communication techniques is influenced by public behavior, media consumption, level of engagement, and expectations (Gorlevskaya, 2016, pp.252-253). As tourism is part of a dynamic service sector that faces global competition and is characterized by continuous change, innovation has become crucial in creating and maintaining a competitive advantage. The ability to innovate is the potential to adapt and use new technologies for increased productivity and management. The innovations offer the possibility to extend the maturity stage of the life cycle of the tourist product. Therefore, they help maintain the competitiveness of the tourism product and gain a long-term competitive advantage. However, new tourism products that offer unique value to customers are more successful than innovations, without rewarding customers and their involvement (Labanauskaitė, Fiore and Stašys, 2020, pp.1-6). They help maintain the competitiveness of the tourism product and gain a long-term competitive advantage. However, new tourism products that offer unique value to customers are more successful than innovations, without rewarding customers and their involvement (Labanauskaitė, Fiore and Stašys, 2020, pp.1-6). They help maintain the competitiveness of the tourism product and gain a long-term competitive advantage. However, new tourism products that offer unique value to customers are more successful than innovations, without rewarding customers and their involvement (Labanauskaite, Fiore and Stašys, 2020, pp.1-6).

2. Theoretical background

2.1. Marketing communication in tourism

Tourism marketing opens a virtual communication channel between companies and those interested in them, regardless of whether they are part of the internal or external audience. Thus, starting with the marketing philosophy and marketing decisions adopted, tourism companies can define their product, the location in which they will operate, their specific audience, and their products' price, among other aspects. The concepts of marketing and market are linked because the exchanges that characterize marketing take place on the market: meet demand and supply. Although the market concept refers to a geographical location where sellers display their products and consumers negotiate and decide whether to buy, a more complex and detailed analysis based on economic concepts understands that the tourism market does not exist in a specific location. Lohmann and Panosso Netto, 2017, p.122).

Marketing communication is a vital aspect of the provision of tourism and hospitality services, as this sector largely depends on marketing due to the particular characteristics of the industry as a service (McCabe, 2009, p.2). Marketing communication nowadays entails more than simply "showing the brand" through advertising. It may be connected to other sorts of data and expanded to take into account marketing's larger strategic role in firms. Marketing communications may be defined as taking a "strategic approach" to all information that enters and exits a business - whether it comes from potential or present consumers, suppliers, shareholders, the general public, the media, or anybody else (McCabe, 2009, pp. 6-7). Rossiter, Percy and Bergkvist (2018) define marketing communication as represented by the messages placed by organizations in various transmission media to show, sell and position the brand in the minds of the target audience. In modern marketing communication, all the methods you can get in touch with potential and current customers are opportunities to communicate about your organization and brand.

Modern marketing activities carried out by tourism and hospitality companies show the dominance of the concept of integrated marketing communications. This concept provides for the planning of marketing communications based on the need to assess the strategic role played by each of its components (advertising, sales promotion, PR, individual sales, exhibitions, direct marketing) in the promotion strategy, as well as the search for the best a combination of them, ensuring the practical impact of communication programs for the promotion of a tourism and hotel brand (Hristoforova et al., 2019, p.830). However, due to its complexity, communicating the elements of a tourism product to the target audience is difficult. This allows for the practice of most types of tourism, implicitly addressing a large number of market segments with varying needs and degrees of sophistication in desires and preferences. Thus, based on a complicated purchase decision process, the aspects of the tourist product must be communicated through a huge number of promotional tools, all of which must be relevant to consumers and with whom they should be able to communicate at any time. For instance, to visit a location to the conclusion of the consumer act, which may include the purchase of souvenirs and promotional products, which might serve as an incentive to repeat the tourist experience (Stăncioiu et al., 2013, p.9).

Defining the target audience is essential for designing effective marketing communications (Gorlevskaya, 2016, p.253). Because it is impossible to reach the entire audience willing to consume a tourism product, travel companies use market segmentation to reach potential consumers more reliably and efficiently. Segmentation is a marketing strategy that divides consumers into segments and sub-segments, according to pre-established criteria, to optimize the resources available between demand and supply (Lohmann and Panosso Netto, 2017, p.122). Tourists, as final consumers, are the primary target audience. Their socio-demographic profile, needs, behaviour, expectations, media consumption, are the subject of regular marketing research to define future trends and perspectives. Behavioural segmentation is more important because not only can it define narrow segments, but it can also send accurate marketing communications. In addition, targeting digital devices has become more sophisticated.

The implementation of different types of targeting, including behavioural targeting in digital devices, the integration of information in digital devices, has taken an essential step to cover the target audience and have increased the effectiveness of marketing communications (Gorlevskaya,

2016, pp.253-258). However, in order to further improve the efficiency of marketing communications in the tourism and hospitality industry, it is necessary to invest in new digital channels of communication with current and potential customers, build new types of relationships to discover new possibilities, and offer generous bonuses, for consumer attraction and to create autonomous and network communities to solidify the brand. The dynamic development of digital technologies and the Internet and the higher level of importance of high-quality information for the successful development of tourism and hotel activities make it possible to expand the range of information services and make them more efficient to build new types of relationships to discover new possibilities, to offer generous bonuses for attracting consumers and to create autonomous and network communities to solidify the brand. The dynamic development of digital technologies and the Internet and the higher level of importance of high-quality information for the successful development of tourism and hotel activities make it possible to expand the range of information services and make them more efficient. Furthermore, to build new types of relationships to discover new possibilities, offer generous bonuses for attracting consumers, and create autonomous and network communities to solidify the brand. The dynamic development of digital technologies and the Internet and the higher level of importance of high-quality information for the successful development of tourism and hotel activities make it possible to expand the range of information services and make them more efficient (Hristoforova et al., 2019, p.833).

According to McCabe (2009, p.4), the most important difficulty in marketing communication is that tourism is the archetypal "experience" consumer product, and this experiential service necessitates emphasizing the messaging in marketing that appeal to customers' emotions. Consumers are exposed to destinations through media coverage of news about places and events, which can be favorable or bad, and provides individuals an impression of the area and culture. Tourists are sometimes motivated by a desire to "see the globe" and discover new locations, thus there's a chance they won't be loyal to a destination or country, however this notion of tourist motivation is debatable. Tourist behavior patterns vary rapidly, and analyzing these patterns might reveal deeper societal morality and patterns of behavior or attitudes. Tourists' behavior is characterized by their desire to share their experiences with others; this is known as "word of mouth" communication, and it has long been acknowledged as the most widely utilized and trusted source of information that impacts tourist selections and consumer behavior.

As now shown in Figure 1, specialists can influence potential consumers through various communication tools. The Internet, mobile devices, wearable devices and other digital technologies meet the needs of consumers in terms of real-time information and communication. Consumers are always connected, using digital devices during the decision-making process and experience with the tourism product. Therefore, digital communication tools must always be considered during all stages (Gorlevskaya, 2016, pp.258-259).

Tourist's making-decision Communication tools process Awareness Mass media, social activities, direct marketing, PR Need/ Consideration Information search Website, SEA, social media, mobile marketina Choice Sales promotion, personal selling, remarketing, SEA, website, point-of-sales Purchase Experience Apps, direct marketing, coupons and discounts for Evaluation additional services

Figure no. 1. The decision-making process and communication tools in tourism

Source: Gorlevskaya, 2016, p.258

Digital apps for the mobile, laptop, or computer user will increase the user's accessibility anywhere and at any time in today's digital era. Along with digital progress, apps provide a plethora of benefits. By combining numerous services with tour operators, tourism attraction managers, a range of services, and other tourism goods, information technology may also boost the productivity of a firm involved in the tourism sector. Each destination has a marketing communication plan to communicate its offerings to customers through marketing channels. Social media has evolved into a powerful tool for creating positive impressions and connections between businesses and their customers. Individuals' processes for gathering information in the decision-making process have been altered by information technology. The Internet and social media networks give information on a variety of tourist sites, including the tourist experience and images of the areas visited. Consumers develop application content, as opposed to the content of products and services prior to the information technology age, when products and services were mostly created by manufacturers (Nugroho, 2017, pp.387-390).

According to Gorlevskaya (2016, pp.260-263), the tourism industry uses existing communication tools, focusing on innovative ones, but the value of each tool differs in a mix of marketing communications. It is highly relevant to the tourism industry because tourists are always connected with devices, communication tools should all work together to promote tourism products. The most vital points of contact are the Internet, social networks, mobile and television. Therefore, innovative environments such as social networks, mobile, viral and augmented reality, portable devices, interactive videos play an essential role in the tourism industry.

Communication tools differ depending on the stages of the decision-making process and should accompany the target audience at each stage to stimulate progress. The effective combination of communication tools should be based on the company's objectives, target audience and competitive environment. To be successful players in the tourism industry, they should gain a competitive advantage through differentiation, using strong ideas, keeping abreast of new technologies. Therefore, solid ideas for the target audience, which accompanies and facilitate the decision-making process through relevant communication tools, are the right way to build effective marketing communication in tourism (Gorlevskaya, 2016, p.263).

So, as Hristoforova claims et al. (2019), the tourism and hospitality industry is a relevant sector that fulfils one of the leading functions in the global economy, ensuring the generation of a substantial share of the global gross product. This industry is expanding rapidly, and shortly, it will become one of the largest industries. Digital technologies in the marketing communications of tourism and hospitality companies will design new types of interactions with the public. Collective marketing methods in integrated marketing communications could be helpful, helping to solve problems comprehensively. A tourist and hotel product should be original and stand out, have a reasonable price and, most importantly, have positive reviews.

2.2. Introduction to luxury tourism: an approach to specialized literature

Luxury tourism is a distinct segment of the tourist business in terms of supply and, more importantly, demand. When it comes to places, the luxury vacation packages offered by the firms are rather consistent. However, there is a constant concern to satisfy the desires of tourists who want to spend their exclusive vacations in places that are usually only visited by celebrities, such as cosmopolitan cities, exotic islands, distant lands on other continents, or, on the other end of the spectrum, places untouched by people, such as desert islands, secluded beaches, lesser-known cities, unpolluted or with a unique history, such as desert islands, secluded beaches, lesser-known cities, unpolluted Even though people's economic circumstances have been severe in recent years, they have been put to the test owing to job losses.

Luxury tourism opens a new field in which exclusivity and uniqueness will mean what is unexplored, untouched, which not everyone can reach, far from the masses and with the ability to share unique experiences. This tourist will search for trips and emotional, experimental destinations and, if possible, outside of Google search, moving away from what everyone wants and taking advantage of new trends that allow them to have little space to enjoy it (Alfredo Ledezma, 2017).

Luxury consumption has shifted from traditional luxury consumption based on status and product to a new experiential type of luxury that focuses on enriching the quality of life. In the contemporary world, it has been recognized that luxury experiences are superior to luxury products. (Yeoman and McHahon-Beattie, 2011. pp. 72-85).

The increase in consumption in general towards the consumption of experiences derives from the argument that, compared to material possessions, experiences are probably more closely linked to themself and cannot be produced from person to person. Moreover, experiences improve well-being and create more lasting memories and hedonic values (Carter and Gilovch, 2010).

With the rise of luxury experiences, luxury has become more subjective and less visible, which means that, from a consumer perspective, a luxury no longer includes only extravagant products or experiences. Instead, luxury experiences can include experiences of time, space, authenticity, community, individuality, and well-being. Therefore, luxury has shifted from pure materialism to include experiences and aspirations and serves its interests more than status (Yeoman and McMahon-Beattie, 2018).

Luxury is ultimately associated with the joy of living, referring to pleasant feelings such as warmth, joy, fun and happiness. Therefore, luxury experiences are an opportunity to live different selves, reflected through symbolic consumption and indulgence in particular moments and through activities that can also be moments of harmony, self-enhancement and self-ascension (Hemetsberger et al., 2012, pp. 483-489).

Experiential luxuries include luxury travel, good dining and pampering services, which are common in tourist experiences. The basis of the growing luxury market is in luxury travel and is strongly driven by tourism spending. Even though luxury travel products, such as five-star resorts and cruises, attract a large number of tourists, luxury tourism is an under-researched segment. In addition, it is recognized that luxury is firmly attached to tourism because travel itself is seen as a luxury product, and tourism is allied to luxury (Correia, Kozak and Reis, 2014).

Correia, Kozak and Reis (2014) say that most of the meanings attached to luxury tourism are related to social status, which means that the higher a person's status, the less the status as a value will affect their holiday choices. In a study they conducted, the stars defined the luxury of tourism as being with their families in quiet, private resorts, where hedonic values predominate. However, ordinary people perceived it as a different, refined and exciting experience. This study provides an insight into how consumers view luxury tourism in the current democratized market.

From my point of view, luxury tourism represents, as in the case study stated above, a different experience at an expensive hotel with quality services and many facilities, activities and refined places that offer a different experience, thanks to the image created by the category of luxury that makes you think of expensive things that you are not used to frequenting. Although luxury brands nowadays also address the masses, offering more and more affordable products from a luxury brand, this cannot be applied to experiences. I find it harder to offer a more affordable luxury experience compared to a luxury brand garment. On the other hand, I also understand the approach of celebrities who have income and are used to luxury, but in the case of tourism for them, luxury is peace,

Luxury tourism is often defined by various hospitality products and services, from unusual landscapes, stunning cuisine and scenery to an integrated travel experience, possibly characterized by intimacy, space and experiences included in services from a foreign culture (Fox, 2011). It is traditionally associated with resorts with interiors and high-quality service structures. However, Uriely (2005) notes that the luxury travel segment is heterogeneous, and luxury tourism should be based on personalized services rather than ready-made packages represented by resorts.

Moreover, accommodation in luxury tourism may no longer have to be a five-star standard; instead, removing the location and personalizing the trip can make it a luxury vacation. The essence of a luxury vacation is about realizing a passion and escaping everyday life (Bakker, 2005).

Luxury contemporary travellers prefer real, unique, authentic experiences in new destinations, stimulating them physically and intellectually, adding notes to their lives. As luxury in tourism approaches a more discreet form of consumption, authenticity is a desirable value, meaning more profound and meaningful experiences. Therefore, luxury in tourism means enrichment, personal development and self-actualization (Yeoman, 2008).

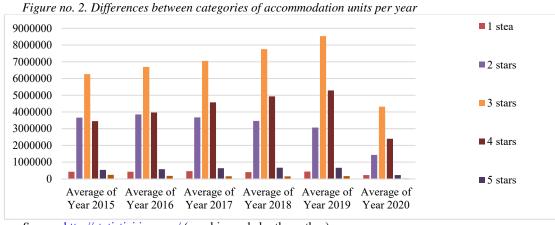
Travel-related factors such as the purpose of the trip, the travel party and the ongoing experience influence the experience of consumers of luxury services. From the perspective of service providers, to successfully provide the best preconditions for a good customer experience, service providers need to understand customer needs and expectations. Companies can create circumstances only for the customer experience because the experience is felt inside the individual, and the result depends on how that individual, in a specific mood, reacts to the interaction in an organized event. With experiential luxury, the ultimate challenge for the luxury retailer is to maximize the luxury experience of consumers by designing products with features and attributes that create expectations of a luxury experience. A sense of luxury in luxury tourism comes from the cost of experience and time, which means a convenient and hassle-free experience that is unique and offers prestige or social status. In addition, quality and speciality that is not available to the masses are appreciated (Danziger, 2005).

Previous studies have described signs or cues that evoke luxury primarily from a consumer perspective. Although, for example, in luxury restaurants, there has been a sense of luxury in price, the quality of food, services, the physical environment and the emotions it evoked, in the context of a luxury hotel, the physical environment and human interaction should be congruent for to evoke luxury expectations (Walls et al., 2011).

Thus, at the market level of tourism, there is a group of rich clients with adequate financial resources who are prepared to pay exorbitant sums of money for a vacation in order to outdo others in their social circle and spend their hard-earned money on relaxation and pampering. These people are typically between the ages of 25 and 55, have a high school diploma or higher, own a business or work in management positions in large corporations, earn an average monthly income of 1500-2000 euros, frequent exclusive locations, and are only interested in high-quality services for a very high standard of living. Given that they spend the most of their time at work and are responsible for both the company's and its workers' well-being, excellent partnerships are essential. Tourists who choose luxury tour packages believe that their hard work should be rewarded with expensive vacations during which they can spend the money they earned, receive celebrity treatment, receive high-quality services, and, most importantly, demonstrate their social status and demonstrate that they are successful and can enjoy all the benefits that come with it (Popescu and Olteanu, 2014, p. 320).

3. Research methodology and findings

In this article, a study was conducted on the official statistical data available in Romania on the number of Romanian and foreign tourists who choose accommodation units in the country. The analysis highlights (the purpose of the research) the occupancy rate of luxury accommodation units compared to affordable units. Among the objectives were also the identification of the number of tourists and their annual evolution and the determination of the differences between the Romanian tourists and the foreign tourists.



Source: http://statistici.insse.ro/ (graphic made by the author)

The figure with number 2 shows the distribution of accommodation categories by years and by the number of stars (quality indicator). It can be seen that the most used categories of accommodation were the average (accessible) 3 stars, on the 2nd place being still the four stars (high quality) and five stars (luxury/premium accommodation - superior quality). One of the conclusions drawn from this chart is that, as expected, there is a low demand for luxury tourism services in the Romanian market.

For this reason, we considered it interesting to compare the types of clients (Romanian and foreign) who benefited from tourist services in Romania.

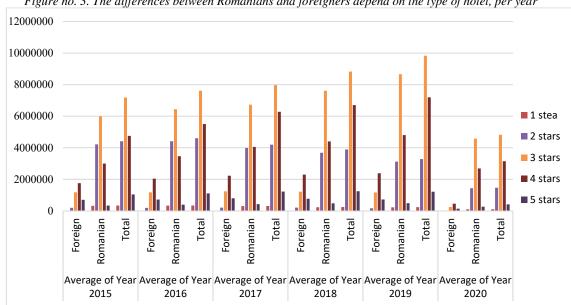


Figure no. 3. The differences between Romanians and foreigners depend on the type of hotel, per year

Source: http://statistici.insse.ro/ (graphic made by the author)

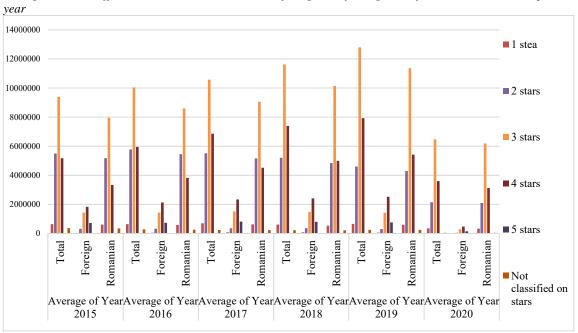


Figure no. 4. Differences between Romanians and foreigners by categories of accommodation units per

Source: http://statistici.insse.ro/ (graphic made by the author)

For this reason, we considered it interesting to compare the types of clients (Romanian and foreign) who have benefited from tourist services in Romania. Thus, the accommodation distributions were initially analyzed only for hotels (of 1,2,3,4 and 5 stars) (figure 3), and later all the accommodation units (hotels, motels, boarding houses, chalets and others) were included in the analysis. accommodation spaces) (figure 4).

It can be seen that analyzing only in terms of hotel quality, Romanians choose on average more nights of accommodation than foreigners in accommodation units in Romania. However, it is interesting that foreigners choose more luxury accommodation units (superior, 5-star hotels) than Romanians.

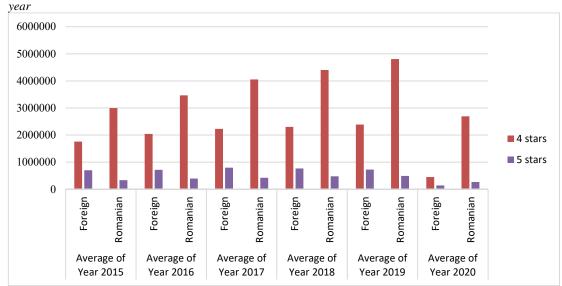


Figure no. 5. Differences between Romanians and foreigners by categories of accommodation units per

Source: http://statistici.insse.ro/ (graphic made by the author)

Because of the differences between the choices made by Romanian tourists and those made by foreign tourists in terms of luxury accommodation units (5 stars), we made a chart for those categories of accommodation units (Figure 5). Within the end with no. 5, it can be observed how foreign tourists choose in much larger numbers the accommodation units that offer luxury or high-quality services, compared to Romanian tourists.

4. Conclusions

Therefore, people in luxury tourism are looking for exclusivity, exotic or very remote places, less accessible to the general public. In this sense, travel agencies have specially prepared offers for people with higher incomes. Hotels and restaurants offer the most pleasant and exclusive experiences and services and create the most relaxing atmosphere and allow them to feel important.

We can thus conclude by saying that the demand on the Romanian market for luxury tourist services is not as high as on the international markets, the Romanians being more attracted by the accessible services (average costs). However, there is low demand from Romanian tourists for this type of service, but there is also a demand from foreign tourists, contributing significantly to improving the overall quality offered in accommodation units in Romania. Therefore, this study finds its utility in highlighting the types of demand of tourists, and secondly in creating an overall table on the tourist services in Romania, depending on their quality categories.

5. References

- Alfredo L., 2017. What does luxury tourism mean [online] Available at https://interfacetourism.es/en/2017/01/31/what-luxury-tourism-means/ (accessed on March 31, 2021)
- Bakker, M., 2005. Luxury and tailor-made holidays. Travel & Tourism Analyst, (20), 1-47 [online], available at 10.13140 / RG.2.1.2358.6968 (accessed March 30, 2021)
- Baron, S., Warnaby, G. and Hunter-Jones, P., 2014. Service (s) marketing research: Developments and directions. *International Journal of Management Reviews*, 16 (2), [online], available athttps://doi.org/10.1111/ijmr.12014 (accessed March 30, 2021)
- Carter, TJ, & Gilovich, T., 2010. The relative relativity of material and experiential purchases. *Journal of Personality and Social Psychology*, 98 (1), 146.
- Correia, A., Kozak, M., & Reis, H., 2014. Luxury tourists: Celebrities'perspective. Tourists' perceptions and assessment, Emerald Group Publishing Limited.
- Danziger, P., 2005. Let them eat cake. Marketing luxury to the masses as well as the classes. Chicago: Dearborn Trade Publishing.
- Fox, J., 2011. Central travel agent. *The evolution of luxury travel* [online] available at:http://www.travelagentcentral.com/trends-research/the-evolutionluxury-travel (accessed March 30, 2021)
- Gorlevskaya, L., 2016. Building Effective Marketing Communications in Tourism. Studia Commercialia Bratislavensia[specialized magazine in electronic format]9(35): 252-265. Available through ProQuest Central (database) https://search-proquest-com.am.e-nformation.ro/docview/1876567350/6CB9D962938943D4PQ/1?accountid=136549 [Accessed March 28, 2021].
- Hemetsberger, A., von Wallpach, S., & Bauer, M., 2012. "Because I am worth it" luxury and the construction of Consumers' selves. *Advances in Consumer Research*, 40, pp. 483–489.
- Hristoforova, IV, Silcheva, LV, Arkhipova, TN, Demenkova, AB and Nikolskaya, EY, 2019. Improvement of Digital Technologies in Marketing Communications of Tourism and Hospitality Enterprises. *Journal of Environmental Management & Tourism*[specialized magazine in electronic format] 10 (4): 829-834. Available through ProQuest Central (database) https://search-proquest-com.am.e-nformation.ro/docview/2475532313/207CFF2109E6415BPQ/1?accountid=136549 [Accessed March 28, 2021].
- Labanauskaitė, D., Fiore, M. and Stašys, R., 2020. Use of E-marketing tools as communication management in the tourism industry. *Tourism Management Perspectives* [specialized journal in electronic format] 34: 1-8. Available via ScienceDirect (database) https://doi.org/10.1016/j.tmp.2020.100652 [Accessed March 28, 2021].
- Lohmann, G. and Panosso Netto, A., 2017. *Tourism Theory: Concepts, Models and Systems* (3rd Edition). Wallingford: CABI.
- McCabe, S., 2009. Marketing Communications in Tourism and Hospitality: Concepts, Strategies and Cases. Oxford: Butterworth-Heinemann.
- Nugroho, A., 2017. ASEAN Tourism Marketing Communication Attribute: An Exploratory Research at Goaseantv. *European Research Studies*[specialized magazine in electronic format]20(3): 383-395.Available through ProQuest Central (database) https://search-proquest-com.am.enformation.ro/docview/1945557429/1F4164BFD5F74A64PQ/1?accountid=136549 [Accessed March 29, 2021].
- Popescu, I., & Olteanu, V., 2014. Luxury tourism: characteristics and trends of the behaviour of purchase. SEA: Practical Application of Science, pp. 319-324 [online], available athttps://EconPapers.repec.org/RePEc:cmj:seapas:y:2014:i:4:p:319-324 (accessed March 30, 2021)
- Rossiter, JR, Percy, L. and Bergkvist, L., 2018. *Marketing Communications: Objectives, Strategy, Tactics*. London: SAGE Publications.
- Stăncioiu, AF, Botoş, A., Orzan, M., Pârgaru, I. and Arsene, O., 2013. Integrated marketing communication in tourism an analysis. Case study: Muntenia and Oltenia. *Theoretical and Applied Economics*[specialized magazine in electronic format]20 (6): 7-34. Available through Google Scholar (database) http://store.ectap.ro/articole/868.pdf> [Accessed March 28, 2021].
- Uriely, N., 2005. The tourist experience: Conceptual developments. *Annals of Tourism Research* [online], available athttps://doi.org/10.1016/j.annals.2004.07.008 (accessed March 30, 2021)
- Walls, A., Okumus, F., Wang, YR., & Kwun, DJ-W., 2011. Understanding the consumer experience: An exploratory study of luxury hotels. *Journal of Hospitality Marketing & Management*, 20 (2), pp. 166–197 [online], available at10.1080 / 19368623.2011.536074 (accessed March 30, 2021)
- Yeoman, I., 2008. *Tomorrow's tourist*. Oxford: Elsevier.

- Yeoman, I., & McMahon-Beattie, U., 2011. *The changing meaning of luxury. Revenue management a practical pricing perspective* (pp. 72–85). Hampshire: Palgrave Mcmillian.
- Yeoman, I., & McMahon-Beattie, U., 2018. The future of luxury: Mega drivers, new faces and scenarios. *Journal of Revenue and Pricing Management* [online], available at:https://doi.org/10.1057/s41272-018-0140-6 (accessed March 30, 2021).

Marketing Through Social Networks - Analysis of the Presence in Social Media of Romanian Consumers

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Abstract

Social networks have become an indispensable communication tool, both in terms of communication between people and when we refer to marketing communication (between suppliers of goods and services and potential customers). The tools used for online communication through social networks have developed so much in recent years that companies can now select the categories of people they address based on several socio-demographic characteristics to make the communication process more efficient. However, there are many questions about the effectiveness of promotional messages transmitted through social networks when we think about the time spent by people on social networks, the devices from which they access the networks and especially the age groups that use the most, many such social networks. In this article, a study was conducted based on technical information and national statistics from official sources to complete a picture of marketing efficiency through social networks.

Keywords: social media marketing; consumer behavior; social media users;

J.E.L. classification: M31

1. Introduction

This article outlines the evolution of the Internet in online marketing, along with how companies ensure the relationship between seller and buyer through various methods that analyze consumer behaviour and needs. The increased development of the Internet has brought new challenges and benefits for producers, retailers and nonprofit organizations, opening the door to a new method of rapid promotion, with low costs, having the advantage of being able to access a broad or specific audience, which defines this new concept in the history of marketing previously. Nowadays, a message can reach an impressive number of people in seconds or minutes. Social media sites are this great advantage through interactivity, where the proximity between the brand and the consumer is formed, through specific social systems, with costs modelled on the promotion needs of the seller, for choosing the category of consumers targeted.

A way to sell and promote the products of a company or a brand much faster and easier was born after the rapid development of technology and the formation of the basis of online marketing. Promotion through social networks has become a real trend, and to understand this phenomenon, we must first understand what social networks are and how we can integrate them into our promotion strategy. "Marketing is a well-developed methodical discipline with rules that are always changing in response to the requirements and evolutions that occur inside and around it" (Saravanakumar and SuganthaLakshmi, 2012, p.4444).

"At this time, marketing should not be interpreted in the traditional sense of "speaking and selling." "- but in the new meaning of addressing the demands of customers. Customers will buy swiftly if the marketer knows their demands, produces items that provide greater value and pricing, and distributes and advertises them efficiently." (Kotler and Armstrong, 2010, p.29).

2. Theoretical background - Social Media Marketing

Online marketing is the form of marketing used on the Internet to promote various advertising messages to different consumers (including email marketing, social media, graphic advertising and mobile advertising). Online promotion involves a publisher, who integrates campaigns into the online environment, as well as an advertiser (Genunche, 2018, p.19). In the mid-1990s, the Internet underwent a surprising evolution in most industrialized countries. It began to be used by a growing number of people, even with the technical difficulties of that time. According to statistics, the number of Internet users has risen sharply from 90,000 to 304 million. As of July 2001, there were 137 million users in the United States alone, 83 million in Europe, and the remaining 72 million in the rest of the world. In 2007, Internet surfers reached 315 million in Europe, 233 million in the United States, and in Asia, in China alone, 700 million (Sinescu, 2007, pp.1-2). In 2021, the most significant companies worldwide are present on the Internet, especially on social media.

According to Ratchford (2019, p.38), the Internet itself has produced an explosion in terms of the analysis made by companies on consumer behaviour. Product reviews, blogs, social media data, video data, purchase history, and many other methods. These details are essential in terms of analyzing the marketing mix, their personalization and security. Advanced computing techniques, efficient algorithms, and a variety of data storage and highlighting solutions are required. According to Roy, Datta and Basu (2016, p. 4), the rapid development of the technology behind the Internet has brought new challenges and opportunities for applying new online marketing concepts. Numerous topics related to the Internet are studied at the level of academic research.

As Tuten and Solomon (2014, pp.19-20) show, online commerce has started to appear as an alternative to radio and television, with consumers starting to buy and learn about products through the online environment due to accessibility. This "boom" was beneficial for manufacturers, retailers, and nonprofits because it was able to provide speed, cost efficiency, and access to a smaller audience so that a small company with limited inventory was able to be discovered around the globe, the Internet was able to provide access to these markets, which led to the emergence of niche products available to a small and specific audience. Specific advertising messages were easier to communicate through different ads that appear on different sites, in front of the potential consumer, who provides access to the company's website. Search advertising has increased during this time, making it possible to capture the niche market and the main one. Email marketing has also been adopted, which is an alternative to telemarketing. Micu et al. (2017, p.1094) find that for marketers, technology has managed to facilitate and cheapen the process of promoting products through Facebook or other applications. They take advantage of the Internet to personalize their offers, be more convenient, and access new categories and new landmarks. Companies need to gather information about the consumers they are targeting as they guide consumer behaviour. The analysis of feelings and opinions related to a particular brand or service is vital to understanding the attitude imposed by the consumer.

According to Tuten (2020, p.3), social networks are the online means of communication, transport, collaboration and cultivation between interconnected and interdependent networks of people, communities and organizations enhanced by technological capabilities and mobility.

Within demographic groups, several trends appear in the analysis of the use of social networks:

- Age differences: Young adults (aged 18 to 29) are ubiquitous on social media, while older adults (65+) still discover the secrets of the Internet.
- Gender differences: Women and men use social networks to the same extent.
- Socio-economic differences: People with a higher level of education and income open the way to social networks.
- Differences of race and ethnicity: No differences.
- Environmental differences: People living in rural areas use social networks at a lower rate than those in urban and suburban areas (Perrin, 2015, p.3)

Social media marketing, according to Felix, Rauschnabel, and Hinsch (2017, p.124), is an interdisciplinary and cross-functional concept that leverages social networks (typically in conjunction with other communication channels) to achieve organizational goals through providing value for stakeholders. Social media marketing covers an organization's strategic decisions regarding its goal (from defenders to explorers), culture (from conservatism to modernity), structure (from hierarchies to networks), and governance (from hierarchies to networks) (from autocracy to anarchy).

"Almost everyone with access to the Internet can easily read a blog, send a tweet, write a review, leave a comment, or update their Facebook status." Social media material has exploded as a result of these communication technologies. In September 2010, Facebook was listed as the most popular web site, with 39.2 percent of Internet users visiting it; YouTube came in second with 31.8 percent. More significantly, traffic to these sites continues to rise, putting the most popular media sites against one other while growing their daily unique visitor count" (Sigala, Christou and Gretzel, 2012, p. 74).

A significant advantage of social media sites, compared to traditional media, is the interactivity resulting from this new environment. There is a general theory in the academic literature that the involvement and closeness between consumer and brand must be observed beyond this interaction to form an advantage in contact with the brand (Schultz and Peltier, 2013). As stated by SI (2016, pp.1-2), the concept of promotion on social media is attributed only to organizations or companies that deserve the attention of a community, where specific social systems are used. Over the years, the costs of such a type of promotion continue to rise.

Factors such as monthly income, gender, types of products consumed, promotional offers or types of products can affect future consumer preferences in the context of online shopping, so this category of sites has become an extremely accessible tool for a wide range of products. However, through the available mechanisms to attract consumers and the massive level of data processed and recorded daily to the detriment of these platforms, making it much easier for a company to boost its profit and production, regardless of the field in which it operates (Varma, Dhakane and Pawar, 2020).

"Social media benefits include: Brand reach and awareness, consumer interactions through transactions, notifications and reputation management." (Neti, 2011, p.165)

Some other benefits of using social media in your marketing strategy are explained by Lad-Khairnar (2021, p.174-175) in his study as follows:

- 1. Raising brand awareness By 2020, there will be more than 3.2 billion individuals using social media worldwide. Due to the large number of people who use social media, it is becoming increasingly important for businesses to share their content, products, and perspectives via one or more platforms that can help increase brand awareness. By increasing involvement, social networks have been demonstrated to add to brand exposure. Remarks, preferences, acts, and replays are all examples of social interaction. Furthermore, social media assists businesses in increasing brand recognition by directing visitors to the company's website.
- 2. Lead generation and drive conversion Promoting and sharing products on social media is a fundamental way to improve leadership, change support, and increase awareness, as companies advertise only to people interested in the product.
- 3. Cultivating client connections By interacting with and recruiting social media followers, the business will be able to establish long-term ties with them. Interacting with consumers based on posts, replying to their questions and comments, and aiding them are all ways to do so.
- 4. Beating opponents Social media is an excellent tool for keeping track of competitors, whether it's their social media strategy, the items they advertise, the missions they carry out, or their level of customer connection.

The following indices of social networks are also included in this study:

- Participation: This includes things like clicks, comments, likes, and reactions to social media posts. There are additional sites that have clear categories of engagement, such as Instagram posts that are "saved" and Pinterest pins that are "fixed."
- REACH: The number of individuals who have seen any of the page's or profile's content.
- Followers: This is the total number of people who have clicked the "follow" button and can view your page's material in their news feeds.
- Impressions: These are the times when you see a post on your profile or feed page and decide whether or not you want to click on it.

- Views: This is the number of views on Facebook, Snapchat, Instagram, or any social media platform with video capabilities.
- Visits to the profile: The number of persons who have visited the social media page.
- Mentions: This displays the times that users cited the profile in their posts.
- RePosts: When someone reposts a piece of material on their profile, it is known as a repost.
- Shares: These are the posts that other users and followers share with their organization.

"Companies may have dialogues and interactions with people who follow them on social media platforms. Followers and potential consumers may develop a sense of loyalty as a result of this intimate engagement. Furthermore, by selecting which sites you follow on social platforms, the items may reach a highly specific target demographic" (Bajpai, Pandey and Shriwas, 2012, p. 215); these interactions represent the first role of social networks in the growth of the brand or company.

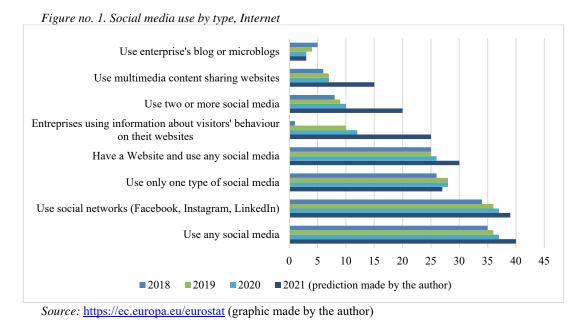
As Mangold and Faulds (2009, p.359) point out, social media's dual function in promotion is unique: customers may utilize it to engage with one another. Companies' control over the content and transmission of information is limited by customers' capacity to communicate with one another. This shift in information ownership has a significant impact on how consumers receive and respond to market information.

3. Research methodology and findings

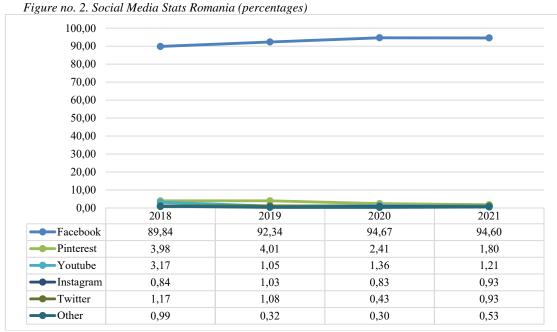
In this article, a study was made on the official statistical information available in Romania regarding the degree of use of social networks, both by consumers and by companies. The purpose of the research was to update the information on social media marketing, and among the objectives were: measuring the use of social media by consumers, measuring the use of social media by companies (used for social media communication marketing), identifying the most used devices for accessing social networks and identifying the most used social networks by consumers.

Among the results and information identified, we can highlight the following:

Regarding the use of social networks (for promotion and communication) by companies, in Romania, the data show that most companies use means of communication through all social networks, while a very low percentage use only blogs or posts in microblogs.

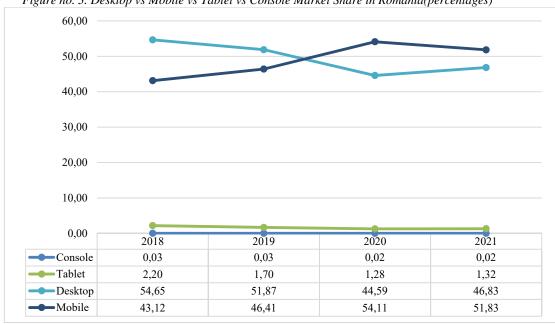


Regarding the use of social networks by consumers, the identified data shows us that Facebook remains the most used social network, while the mobile phone is still the most used device.



Source: https://gs.statcounter.com/ (graphic made by the author)

In figure 2, we can see that Facebook was and remains the most used social network by consumers. It is evident that, in this case, it is the most interesting for companies that want to impact Facebook users with their promotional messages. Moreover, Facebook allows accurate targeting based on socio-demographic characteristics for any promotional ad or communication initiative.



Source: https://gs.statcounter.com/ (graphic made by the author)

In figure 3, we can see how the mobile phone as the primary device for accessing social networks underwent an evolution between 2019 and 2020, becoming today the most used device. Thus, companies that want to send promotional messages through social networks must consider the device used by consumers (respectively mobile phone) to adapt the content so that it is accessible and adaptable to any mobile device.

5. Conclusion

In conclusion, the rapid growth of the Internet has forced marketers to adapt their marketing strategies to keep up with the weather trends. Therefore, social media or online marketing is booming, and companies should pay more and more attention to it and even integrate it into the marketing mix as technology continues evolving. The analysis of the various indicators taken from the activity on social media can indicate the effectiveness of the marketing strategy used at present and can help improve it in the future. However, it is tricky to promote products or services because you cannot control how information is spread.

It can be seen that there must be a high degree of involvement from companies for social media marketing due to the evolution of the Internet, and implicitly of this concept, through the presence of companies and the intention to influence online. With the help of these tools, the seller quickly finds out the potential buyer's behaviour, landmarks, and influences through different algorithms and specific solutions necessary to maintain the data, implicitly bringing new challenges and opportunities in this regard. However, the advantages are commensurate with this phenomenon, offering a reasonable alternative for producers, retailers, and nonprofit organizations through social media and beyond.

6. References

- Bajpai, V., Pandey, S., Shriwas, S., 2012. Social Media Marketing: Strategies & Its Impact, International Journal of Social Science & Interdisciplinary Research IRJC [online] vol. 1 Issue, July 7, 2012, p. 215. Available at: Https://www.academia.edu/24507437/SOCIAL_MEDIA_MARKETING_STRATEGIES_and_ITS_I MPACT_VIVEK_BAJPAI_DR_SANJAY_PANDEY_MRS_SHWETA_SHRIWAS (accessed December 9, 2020)
- Felix, R., Rauschnabel, PA, Hinsch, C., 2017. Elements of strategic social media marketing: A holistic framework, *Journal of Business Research*, vol 70, pp.118-126
- Genunche, E., 2018. The Internet and Its Role in Promotion Policy, *Ecostudent*, 12, pp.19-22. Available at: https://www.utgjiu.ro/ecostudent/ecostudent/pdf/2018-12/05_Genunche.pdf (accessed May 7, 2021)
- Kotler, P., Armstrong, G., 2010. Principles of Marketing, thirteenth edition, Upper Saddle River: Pearson Education
- Lad-Khairnar, MD, 2021. Social Media Marketing: An Overview, Vidyabharati International Interdisciplinary Research Journal, [online], vol.12, no.1, March 2021, pp. 172-175. Available at:http://www.viirj.org/vol12issue1/27.pdf (accessed May 6, 2021)
- Magnold, WG, Faulds, DJ, 2009. Social media: The new hybrid element of the promotion mix, *The Journal of the Kelley School of Business*, vol 52, no. 4, pp. 357-365
- Micu, A., Micu, A., Geru, M. and Lixandroiu, R., 2017. Analyzing user sentiment in social media: Implications for online marketing strategy. *Psychology & Marketing*, 34 (12), pp.1094-1095. Available at: https://onlinelibrary.wiley.com/doi/abs/10.1002/mar.21049 (accessed May 7, 2021)
- Neti, S., 2011. Social Media and Its Role in Marketing, *International Journal of Enterprise Computing and Business Systems* [online], vol. 1 Issue, July 2, 2011, p. 165. Available at:https://www.ijecbs.com/July2011/13.pdf(accessed December 8, 2020)
- Perrin, A., 2015. Social Networking Usage: 2005-2015, Pew Research Center [online], October 2015, p.3 Available at:https://www.secretintelligenceservice.org/wp-content/uploads/2016/02/PI_2015-10-08_Social-Networking-Usage-2005-2015_FINAL.pdf (accessed December 8, 2020)
- Ratchford, B., 2019. The Impact Of Digital Innovations On Marketing And Consumers. 16th ed. *Emerald Publishing Limited*, pp.35-61. Available at: https://www.emerald.com/insight/content/doi/10.1108/S1548-643520190000016005/full/html (accessed May 7, 2021)

- Roy, G., Datta, B. and Basu, R., 2016. Trends and Future Directions in Online Marketing Research.
 Journal of Internet Commerce, 16 (1), pp.1-22. Available at:
 https://www.tandfonline.com/doi/full/10.1080/15332861.2016.1258929 (accessed May 7, 2021)
- Sajid, S.I., 2016. Social Media and Its Role in Marketing. *Business and Economics Journal*, 7 (1), pp.1-2. Available at: researchgate.net/publication/298337380_Social_Media_and_Its_Role_in_Marketing (accessed May 7, 2021)
- Saravanakumar, M. and SuganthaLakshmi, T., 2012. Social Media Marketing. *Life Science Journal* 2012, No. 4, pp.4444-4451
- Schultz, D. E. and Peltier, J., 2013. Social media's slippery slope: challenges, opportunities and future research directions. *Journal of Research in Interactive Marketing*, 7, pp.86-99. Available at: https://www.emerald.com/insight/content/doi/10.1108/JRIM-12-2012-0054/full/html (accessed May 7, 2021)
- Sigala, M., Christou, E., Gretzel, U., 2012. Social Media in Travel, Tourism and Hospitality: Theory, Practice and Cases, MPG Books Group UK, Great Britain
- Sinescu, C., 2007. Internet and Political Communication, *Cogito: Multidisciplinary Res.* J., 1, 77. "Dimitrie Cantemir" Christian University, pp. 1-15. Available at: https://heinonline.org/HOL/LandingPage?handle=hein.journals/cogito1&div=12&id=&page= (accessed May 7, 2021)
- Tuten, T., 2012. Social Media Marketing, 2nd edition, SAGE Publications, London, Great Britain
- Tuten, T. and Solomon, M., 2014. Social Media Marketing. Milan: Pearson,
- Varma, M., Dhakane, N. and Pawar, A., 2020. Evaluation Of Impact Of Instagram On Customer Preferences: The Significance Of Online Marketing. *International Journal of Scientific & Technology Research*, 9 (02), p.553. Available at: https://www.researchgate.net/profile/Avinash-Pawar-6/publication/339310919_Evaluation_of_Impact_of_Instagram_on_Customer_Preferences_The_Signi ficance_of_Online_Marketing/links/5e4aa5f2299bf-ffId-Im -Online-Marketing.pdf (accessed May 8, 2021).
- https://gs.statcounter.com/browser-version-market-share/all/romania/#monthly-202009-202009-bar
- https://ec.europa.eu/eurostat

Entrepreneurship for Sustainable Development

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Abstract

Entrepreneurship for sustainable development promotes sustainable development by contributing to job creation, promoting growth and innovation, improving social conditions and efforts to address social and environmental issues in the context of the 2030 Agenda for Sustainable Development. Entrepreneurship in a global perspective and integrated, provides for long-term cross-cutting policies and strategies.

This article aims to examine how the promotion of entrepreneurship and micro, small and medium-sized enterprises has evolved in recent times, in order to assess progress and make recommendations on the measures to be taken with regard to strengthening the role played by these sectors in social and economic recovery.

Entrepreneurs' motivations contribute to the achievement of sustainable development goals, especially in inefficient sectors, as well as in the area of social recovery. Entrepreneurship now plays a more crucial role than ever in social and economic development and will, as such, be treated as a priority.

Key words: sustainable development, social entrepreneurship, organizations, business

J.E.L. classification: M10, M19, M29

1. Introduction

Ongoing developments since the late 1970s related to the globalization of economies have contributed to the destabilization of ecosystems, giving rise to problems in emerging and developing countries. In the face of these profound changes, governments have been active in finding solutions to these various problems in order to revive economic growth. Several organizations then adopted defensive behavior consisting of a simple reaction to environmental pressures. However, it turns out that their responses were disparate and poorly coordinated (Davis, 1992). Other organizations, aware of the need to adopt sustainable development approaches, wanted to embark on the path of sustainability through strong, ambitious, aggressive, but especially long-term entrepreneurial projects. Sustainable development remains a complex concept, with unclear outlines, and suffering from a severe lack of consensus on its conceptualizations, dimensions and ways of operationalizing it (Mathieu, 2005).

This paper presents in a conceptual framework the theoretical links between sustainable development and social entrepreneurship. We understand the concept of social entrepreneurship, positioning the actor as the forerunner of any commitment to sustainability. Finally, it is about exploring the different business models that enable social entrepreneurs to contribute to sustainable development, especially in the European context. Social entrepreneurship is geared towards sustainable development. The aim of this paper is to show to what extent social entrepreneurship could fully contribute to responding to the challenges posed by sustainable development.

2. Literature review

2.1. Sustainable Development

The concept of sustainable development is at the heart of current concerns and arouses real enthusiasm among researchers, practitioners and public authorities. Contrary to popular belief, it seems possible to situate contemporary debates in the extension of a set of reflections that have developed since the period of declining economic growth in industrialized countries. More specifically, sustainable development dates back to the 1970s and its dissemination process took place in three main chronological stages (Gabriel, 2007). In the first phase, many international institutions have made a significant contribution to the overall growth of sustainable development, aiming to confront the environmental problem with the global solutions envisaged. The first Stockholm Summit in 1972 brought the first awareness of sustainable development. Since 1980, this term has been introduced by the World Conservation Union to designate environmental, economic and social development. In 1987, the concept of sustainable development became famous and institutionalized following its appearance in the Brutland Report of the World Commission on Environment and Development (WCED).

The second stage of disseminating sustainable development refers to the development of an institutional interpretative framework that aims to involve a larger number of actors. This involves the involvement, among others, of representative groups such as professional associations, regulatory agencies, trade unions to help disseminate the process (Greenwood and Hinings, 1996). These institutions began to carry out the project effectively in the second half of the 1990s.

The third stage concerns the implementation of procedures and standards of action, the main purpose of which is the pragmatic involvement of different economic actors, especially companies, so that they are on the path of sustainability, always pursuing reconciliation between growth, respect for environment and social equity (Boutillier, 2008). Thus, it would be useful to mention that this third phase is the most important step in the concrete dissemination of sustainable development practices. Indeed, at this stage, the contribution and involvement of various players, including companies, which are on the path to sustainability become effective. This translates into what the European Union describes as corporate social responsibility or CSR, for which the term "social" includes an environmental and a societal aspect. A socially responsible business is one that acts responsibly respecting the interests and expectations of all stakeholders (Campbell, 2007). In this research, we subscribe to this proactive approach that highlights the interdependence that exists between companies and society.

Social entrepreneurship has become more and more widespread, some of its actions being dedicated to solving society's problems,

Working to address the negative externalities of progress and globalization, social entrepreneurship actively contributes to sustainable development through business models developed to meet social needs not yet explored by the state and the market. Given the young age of research and the scale of social entrepreneurship, it would be wise to start with a synthesis of the literature around this concept in order to better enlighten it, understand it, and identify its various theoretical perspectives.

2.2. Social entrepreneurship, a lever for sustainable development

While research in entrepreneurship is not yet consistent enough to be unanimous about its conceptualization, studies of social entrepreneurship as a theme of entrepreneurship also highlight the proliferation of definitions and concepts and corroborate the absence of a unifying paradigm in this regard, field of research.

Social entrepreneurship remains in an emerging stage, as "few managers and even fewer researchers in entrepreneurship are interested in this phenomenon" (Boncler and Hlady-Rispal, 2004, p.21). First appeared in Italy in the late 1980s, social entrepreneurship began to spread to the rest of Europe in the second half of the 1990s. In the United States, this phenomenon dates back to the late 1990s.

2.3. Social entrepreneurship

Its main vocation, in addition to business creation, is to respond to social needs that have not yet been met by the state and / or the commercial sector (Alvord and al, 2004). Unlike a market and capitalist economy that advocates the achievement of strictly financial goals, social entrepreneurship is part of a logic of solidarity, giving priority to social cohesion. Mort and al (2002) argue that social entrepreneurship is a multidimensional construct that includes the expression of entrepreneurial behavior in order to fulfill a social mission.

According to Martin and Osberg (2007), social entrepreneurship includes three fundamental elements:

- identifying a stable but inequitable balance that excludes, marginalizes or causes suffering to a group that does not have the means to transform the balance,
- identifying an opportunity and developing a new social value proposed in order to challenge the balance and finally,
- developing a new stable balance to alleviate the suffering of the target group through imitation and creating a stable ecosystem around a new balance to ensure a better future for the group and society.

The contributions of Zahra and al (2008, p.5) adds and summarizes a review of the literature on social entrepreneurship, stating that it "encompasses activities and processes undertaken to discover, define and exploit opportunities for growth, social wealth through the creation of new businesses or the management of organizations. existing in an innovative way". After presenting these different definitions and concepts of social entrepreneurship, we can therefore highlight the fact that this concept refers to the existence of two fundamental elements:

- 1- discovering and exploiting business opportunities, by reviewing new issues, still unexplored or addressed by traditional ones. organizations;
 - 2- creating social value for people in difficulty.

Social entrepreneurship is a form of entrepreneurship whose main concern is neither profit, nor money, nor fame, nor wealth, but simply the general interest, society or even the environment. A social business does not mean making a profit, unlike a traditional business. Its main purpose is to carry out projects of great social utility, so that it can be asked to implement projects of low economic benefit, but very beneficial for society or the environment, for example.

If sustainable development is presented as a goal of social entrepreneurship, its realization inevitably involves people, especially entrepreneurs, who facilitate through their behavior, motivations and initiatives, the transformation of a dream, taking into account a problem or opportunity in one or more viable organizations. To this end, we aim to look first at the understanding of the entrepreneur as a precursor to a socially responsible activity.

The notion of entrepreneurship was popularized in the early ninth century. A century later, Schumpeter (1935) defined the entrepreneur as the creative agent necessary for great economic progress. Attributing the role of innovation to the entrepreneur, Schumpeter emphasizes that he, the main actor of economic development, is the fundamental element of the newly created organization.

In the etymological sense, the entrepreneur is the one who takes over "a project or an activity. In a value-centered logic, Say (1767-1832) argues that the entrepreneur refers to any individual who "moves economic resources from a state of low productivity to a state of higher productivity and yield.

Paradas (2007) emphasized the role played by the individual's beliefs, especially related to his emotional component, in the development of a socially responsible entrepreneur, able to take the risk.

For his part, Hlady-Rispal (2002, pp. 280-281) introduces the notion of "social commitment" and adds that this is a crucial reason in creating non-profit organizations.

Moreover, Kirzner (1973, 1979) introduced the concept of "entrepreneurial vigilance" to understand how the entrepreneur detects business opportunities in his environment. It addresses the question of how to anticipate and respond to society's needs. Indeed, the opportunity being conceived as an imperfection or a socio-economic imbalance existing in a market and ignored by the actors who are there, only the social entrepreneur endowed with a "vigilance" is able to identify it. This requires the entrepreneur to have a good knowledge of the society in which he lives in order to identify these

imbalances. In these circumstances, the motivation to satisfy the collective welfare is fully justified. Thus, it follows that social entrepreneurs can fully fulfill their mission and can satisfy genuine requirements not yet respected by the state or unexplored by the market only if and only if they are motivated and possess the entrepreneurial qualities and skills necessary to establish the community-oriented social projects.

Zahra and al (2008) suggested that we could classify social entrepreneurs not only according to their socio-moral motivations, but also according to the way they approach and recognize social problems. Zahra and al (2008) identify three types of social entrepreneurs: workers who focus their efforts on discovering and meeting social needs in relation to a well-defined environment, builders who exploit market opportunities and gaps to understand customers and to introduce reforms and innovations in the social system existing and finally experts who recognize the existing problems in the structures of social problems and try to solve them by bringing about revolutionary changes. Compared to traditional entrepreneurs who perceive problems from a purely economic point of view, social entrepreneurs draw more of their potential from personal experience and learn to deal with social problems through their strong beliefs, openness to others and their ability to cope with others. which gives them the ability to innovate in an institutional environment conducive to collective learning.

3. Research methodology

This research used qualitative methods.

Qualitative research aims at the in-depth study of a given phenomenon. It mobilizes open, creative and flexible data collection and analysis tools. For interpretive purposes, they describe, decode, question the significance of facts, actions, decisions, representations of actors that have taken place in the past and / or present (Miles and Huberman, 1994).

We consider that the qualitative methods have the potential to enrich the knowledge in entrepreneurship insofar as the tools used adapt to the specifics of the studied field.

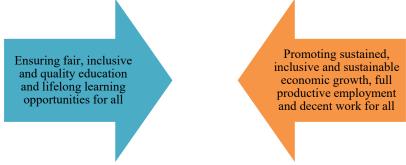
4. Findings

The adoption of the 17 Sustainable Development Goals of the 2030 Agenda involved actions by governments and other partners, including recognizing the contribution of entrepreneurship to achieving the goals. Governments and their partners, including businesses and international development organizations, are working to reformulate their policies, programs and services in line with these goals. The private sector is increasingly seen as a partner and a key player in their implementation and success.

A. Entrepreneurship and sustainable development goals

Two sustainable development objectives refer specifically to entrepreneurship: (figure no.1)

Figure no. 1: Representation of sustainable development objectives that refer to entrepreneurship



Source: Own source

- Ensuring fair, inclusive and quality education and lifelong learning opportunities for all
- Promoting sustained, inclusive and sustainable economic growth, full productive employment and decent work for all.

These goals clearly point the way for business leaders and the private sector in general to better help promote inclusion and sustainable development. However, several other goals and targets are also related to entrepreneurship.

Objective 2 encourages the growth of agricultural labor productivity and the incomes of small-scale food producers by 2030, especially women, indigenous peoples, farmers, pastoralists and fishermen. **Objective 2** aims to eradicate hunger, ensure food security and improve nutrition by 2030. (Figure 2) In particular, identify women as a target group. Thus, supporting female entrepreneurship is a major strategy for achieving the appropriate goals and targets.

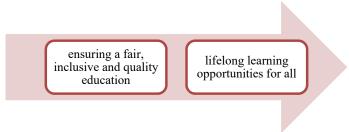
Figure no. 2: Objective 2 of the 2030 Agenda for Sustainable Development



Source: Own source

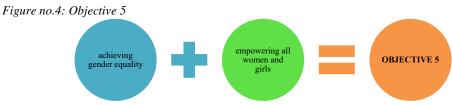
Objective 4 mentions the need to ensure a timely education for all people, including through the participation of young people and adults with special talents needed for employment. (figure no.3)

Figure no. 3: Objective 4



Source: Own source

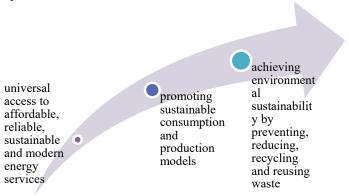
Objective 5 aims to achieve gender equality and to encourage all women and girls to participate in activities that involve the use of economic resources to achieve personal or societal goals. (figure no.4)



Source: Own source

Objective 7 aims to ensure access to accessible, reliable, sustainable and modern energy services and resources. (Figure no. 5) This involves the use of renewable energy to improve energy efficiency by 2030.

Figure no.5: Objective 7

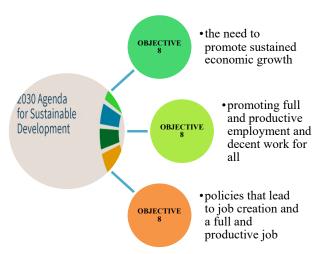


Source: Own source

The promotion of sustainable consumption and production models (objective 12) aims to achieve environmental sustainability by preventing, reducing, recycling and reusing waste.

Objective 8 aims to promote sustained economic growth through employment and employee involvement so as to achieve work efficiency. We opt for new methods that will result in the creation of new jobs, more productive for all categories of employees: women, men, young people. (figure no.6)

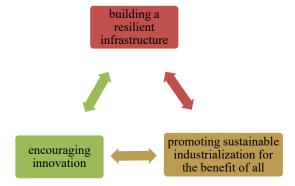
Figure no.6: Objective 8



Source: Own source

Objective 9 aims to promote innovation, achieve optimal infrastructure and increase industrialization, which will benefit society. (Figure no.7) All this is directly related to entrepreneurship, as well as the need to implement integrated entrepreneurship policies.

Figure no.7: Objective 9

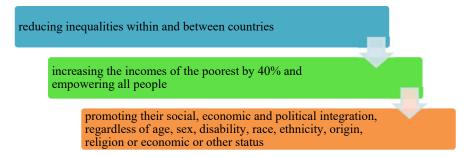


Source: Own source

To this end, the World Development Program aims to maintain an annual growth rate of gross domestic product of at least 7% in the least developed countries and to achieve a high level of economic productivity through diversification, technological modernization and innovation.

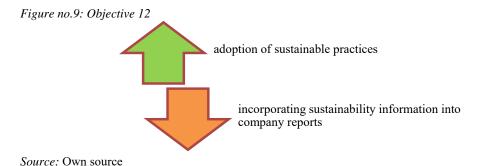
Objective 10 aims to reduce inequalities within and between countries, increase the incomes of the poorest by 40% and empower all people and promote their social, economic and political integration. (figure no.8)

Figure no.8: Objective 10



Source: Own source

Objective 12 encourages companies to use sustainable techniques and to include sustainability information in their reports. (figure no.9)



Business leaders can market new technologies and processes to mitigate the effects of climate change and influence society's consumption patterns. The Sustainable Development Goals also aim to develop specific energy sectors, including tourism and the green economy.

Objective 16 promotes peaceful and inclusive societies, ensuring access to justice for all and building efficient, determined and inclusive institutions. Thus, the promotion of entrepreneurship among vulnerable and often excluded social groups will greatly contribute to the achievement of the global sustainable development agenda. (figure no.10)

Figure no.10: Objective 16



Source: Own source

The impetus given by the Sustainable Development Goals in favor of economic and financial inclusion also refers to the emancipation of women. However, specific measures have also been designed to help.

Objective 17 calls for the revitalization of the Global Partnership for Sustainable Development on the premise that complex issues require integrated responses. Thus, new challenges are being posed to governments that need to consider far-reaching reforms to involve the private sector. The 2015 UNCTAD Action Plan on Private Investment in Support of Sustainable Development Goals calls for a sharp increase in private investment and proposes six main areas for action. He advocates new forms of partnership to develop innovative business models.

In implementing the 2030 Agenda, policy makers design mechanisms for partners to work together for sustainable economic and industrial growth, job creation and progress towards a model open to all social and environmentally friendly groups.

B. Support for socially disadvantaged groups, women and young people

Inclusive entrepreneurship policies and programs are a key element of the sustainable development agenda, which may include initiatives related to education, training and access, funding, and business information. Many institutions provide socially disadvantaged groups with business knowledge, as well as information and counseling through mentoring and networking, giving these groups the support they need to do business effectively.

There is also a need to better address the needs of special target groups by using specific entrepreneurship strategies, such as strategies to enable women and young people to start businesses and find employment opportunities.

Self-employment is a major source of income for many women in developing countries. Initiatives that encourage business creation among women include: The International Labor Organization's Women's Entrepreneurship Development Program, which trains entrepreneurship and helps with monitoring by combining education with traditional business management.

The steady decline in youth employment rates in many EU Member States has led to a profound shift towards combating unemployment and promoting job creation through entrepreneurship, which is a key objective of the Europe 2020 strategy.

C. Improving entrepreneurship and vocational training

An increasing number of countries and regions are developing entrepreneurship training strategies by integrating entrepreneurship into formal education. These strategies are implemented through a number of programs and activities funded in informal and formal educational settings, for example: all high school students in certain countries are now required to take an entrepreneurship course in the form of activities in particular. Pre-prepared learning, technical laboratories and student business clubs where teams of students work on creating and managing businesses in schools.

Educational programs are adapted to the acquisition of skills in line with the needs of competitive markets through the adoption of new teaching methods and participation with the private sector.

D. Facilitating technological exchange and innovation

Investments in science, technology and innovation are essential for economic development and social progress. The 2030 Agenda for Sustainable Development has recognized the ability of this investment to contribute to the achievement of development goals. Research and development can promote sustainable development by building greener and more open societies and by reducing many aspects of the digital divide.

Online business-to-business and online business-to-consumer platforms have grown significantly. New national policies and strategies are helping business leaders benefit from e-commerce, while more e-mentoring platforms have emerged. Information and communication technologies (ICT) facilitate access to finance through technological innovations such as blockchain and mobile money transfers. Crowdsourcing and crowdfunding facilitated by ICT, as well as awards for innovation, are new collaborative approaches to the development and financing of innovation. Modern information and communication technologies have been used to improve the network between diasporic populations.

5. Conclusions

Entrepreneurship for sustainable development aims to increase the number of poor or indigenous women or men employed in micro, small and medium-sized enterprises, improved access for vulnerable groups to land ownership and financing, and access to new and developing markets and improved access for micro enterprises. small and medium-sized agricultural and non-agricultural enterprises in rural areas in terms of financing and technology, restoring the efficiency of agricultural work and low-income producers, Improving the productivity of micro, small and medium-sized non-agricultural enterprises in rural areas

At the same time, it aims to improve social stability, increase the presence of women among owners of micro, small and medium-sized enterprises, boards of directors and management, develop financial services for women entrepreneurs, especially green finance initiatives for women, increase number of jobs for women (full-time equivalent) in the private sector, improved ability of women to build sustainable livelihoods

In terms of sustainable development, entrepreneurship must contribute to environmental sustainability, to improvements in the rational use of energy, including the use of renewable energy among small and medium enterprises, to the reduction of waste produced by micro, small and medium enterprises, to the growth of managed ecosystems. sustainable development and the improvement of renewable energy produced and used by small and medium-sized micro-enterprises.

6. References

- Alvord, S.H., Brown, L.D., et Letts, C.W., 2004. Social entrepreneurship and societal transformation: An exploratory study, *The Journal of Applied Behavioral Science*, Vol.40, No.3, pp.260-283.
- Bacq, S., et Janssen, F., 2008. Définition de l'entrepreneuriat social: revue de la littérature selon les critères géographique et thématique, Association Internationale de Recherche en Entrepreneuriat et PME, 9ème

- Boncler, J., 2002. L'économie solidaire: une nouvelle forme d'entrepreneuriat, *Actes du deuxième congrès de l'Académie de l'Entrepreneuriat*, Bordeaux, Novembre 2002, p.77-95.
- Boncler, J., et Hlady-Rispal, M., 2003. Caractérisation de l'entrepreneuriat en économie Solidaire, Editions de l'ADREG.
- Boutillier, S., 2008, Entrepreneuriat social et développement durable: quelles perspectives, *8èmes rencontres internationales du réseau interuniversitaire de l'économie sociale et solidaire*, Economie sociale et solidaire, développement, mobilité et relocalisations, Barcelone, Spain.
- Brinkerhoff, P., 2001. Why you need to be more entrepreneurial an how to get started, Nonprofit World, Vol 19 (6), pp. 12–15.
- Campbell, J., 2007, Why would corporations behave in socially responsible ways? An institutional theory of corporate social responsibility, *Academy of Management Review*, Vol.32, No.3.
- Davis, J., 1992. Ethics and Environmental Marketing, Journal of Business Ethics, Vol.11, No.2, p.81-87
- Gabriel, P., 2007. Les enjeux stratégiques du développement durable, XVIème Conférence Internationale de Management Stratégique, Montréal.
- Greenwood, R., et Hinings, C.R., 1996. Understanding radical organizational change: Gringing together the old and the new institutionalism, *Academy of Management Review*, Vol.21, No.4, pp.122-154.
- Husted, B.W., 2000. A contingency theory of corporate social performance, Business and Society, Vol.13, No.3, pp.286-294.
- Kirzner, I.M., 1973. Competition and entrepreneurship, Chicago, University of Chicago Press.
- Kirzner, I.M., 1979. Perception, opportunity and profit, Chicago, University of Chicago Press.
- Martin, R.J., et Osberg, S., 2007. Social Entrepreneurship: The Case for a Definition, *Stanford Social Innovation Review*, pp. 29–39.
- Mathieu, A., 2005. Développement durable et entreprises : du concept à la typologie, XIVème Conférence Internationale de Management Stratégique, Pays de la Loire.
- Mort, G., Weerawardena, J., et Carnegie, K., 2002. Social entrepreneurship: towards conceptualization and measurement, *American Marketing Association Conference Proceedings*, Vol.13, No.5.
- Martin, R.J., et Osberg, S., 2007. Social Entrepreneurship: The Case for a Definition, Stanford Social Innovation Review, pp.29–39.
- Mathieu, A., 2005. Développement durable et entreprises: du concept à la typologie, XIVème Conférence Internationale de Management Stratégique, Pays de la Loire.
- Miles, M.B., Huberman, A.M., 1994. Qualitative Data Analysis. *An Expanded Sourcebook*. 2nd ed. Beverly Hills, CA, Sage.
- Mort, G., Weerawardena, J., et Carnegie, K., 2002. Social entrepreneurship: towards conceptualization and measurement, *American Marketing Association Conference Proceedings*, Vol.13, No.5.
- Paradas, A., 2007. Le dirigeant comme levier de la RSE en TPE. Approche exploratoire basée sur l'utilisation de récits et d'une cartographie cognitive, *Revue Internationale PME*, vol. 20, no.3-4, pp.43-67.
- Say, J.B., 1803. traité d'économie politique ou simple exposition de la manière dont se forment, se distribuent et se composent les richesses, *Ire Editions*. Crapelet.
- Schumpeter, J.A., 1935. Théorie de l'évolution économique, *Editions Dalloz*.
- Swanson, D.L., 1995. Addressing a theoretical problem by reorienting the Corporate Social Performance model, *The Academy of Management Review*, Vol.20, No.1, pp.43-64.
- Thompson, J., 2002. The world of the social entrepreneur, *The International Journal of Public Sector Management*, Vol.15, No.4-5, pp.412-431.
- Utting, P., 2015. Realizing the 2030 Development Agenda through Social and Solidarity Economy
- Weerawardena, J., et Mort, G.S., 2006. Investigating social entrepreneurship: A multidimensional model, *Journal of World Business*, Vol. 41, No.1, pp.21-35.
- Zahra, S.A., Gedajlovic, E., Neubaum, D.O., and Shulman, J.M., 2008. A typology of social entrepreneurs: motives, search processes, and ethical challenges, *Journal of Business Venturing*, Décembre 2008

Statistical Approaches in Railway Transport

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Abstract

The analysis of the human resources performance in the railway transport, which is the main goal of this project, aims to identify the performance indicators of the wage earner on one hand, and on the other hand, the presentation of the relations and correlations between the wage level, seniority, labor conditions and requirements of the workplaces for the employee at the Constanta CFR railway station. The global economic reality over the last years allows the stressing of some indubitable defining features: the diversification and the renewal of the goods offer, the progress in the technology area, the globalization process, the increase in exigencies of clients and society. In this context, the goal of the development project is to offer managers quantitative and qualitative patterns, methods and work instruments for the estimate of human resources management systems performance in the railway transport.

Key words: human resources, railway transport, frequency curve

J.E.L. classification: M12, L92

1. Introduction

It can be stated that human resources management is the "backbone" of a modern company, directly related to productivity, performance, and success. That is why it must be viewed as a direct consequence of a double tendency, both related to obtaining superior performance and, in modern organizations, to the resizing, of the perspective on the individual as a distinct entity, (in terms of a social and economic philosophy focused on the human being) stressed by the human resources related issues, which are becoming increasingly complex and diversified.

The evaluation of the company's performance stands at the basis of excellence models allowing organizations to identify strengths, opportunities for improvement, and systematic monitoring. A proposed research direction is the development of its own system of quantitative indicators capable to finely register the company's performance upon each change dictated by the different stages of the HR management systems implementation, respectively their specific practices. This system of quantitative indicators will be built based on the enterprise's quality costs and economic and financial results. Since the indicators relevant for researching the performance of human resources management systems differ from one branch to another, and in such research, it is impossible to address all sectors of activity in an economy, the author aims to address the branch of rail transport.

2. Literature review

An important aspect of human resource management is the evaluation of performance in the organization, because through evaluation we can better understand the dynamic nature of professional development, as noted by some authors (Guskey, 2000). The evaluation helps us see professional development as a continuous process, and not as a common "event" produced in the employee's life. In addition to this characteristic of continuity, however, the evaluation process also has the attribute of complexity, so we must imagine that anything can be evaluated - even evaluation can be evaluated. From the perspective of human resources management, customers and shareholders are considered the dominant stakeholders (Daneci-Patrau, 2019).

The application of evaluation methods must be supported by the entire management body in order to obtain the highest possible efficiency. The lack of this support does nothing but distort the objective results without sufficient involvement in the project, diminishing or delaying the emergence of enhancing elements following the process. Yet, not all research, which investigated the effects of implementing HR management systems, speaks about the company's performance increase.

On the contrary, some researchers argue that the overall effects of this process are costly and time-consuming (Mallak et al., 2017) or lead to increased bureaucracy (Seddon, 2012).) In this context, one of the proposed research directions is the quantitative and qualitative view of the relationship between the different practices (methods, techniques and tools) of the quality management systems and company performance.

The aim of this research project was to provide managers with quantitative and qualitative work models, methods and tools for evaluating the HR management system performance. The research problem is timely and current (Hutu, 2013; Stancu, 2017) because during its transition to a market economy, Romania's efforts to join the structures of the European Union, its organizations must become more efficient to cope with the new competitive environment. Or, considering the implementation of different quality management systems as a way to streamline the enterprise, can be an additional chance for organizations in Romania to cope with the new conditions.

3. Research methodology

The research problem is related to a practical problem as it will provide managers with quantitative models, methods, and work tools for evaluating the performance of quality-related programs and making the most appropriate decisions. The research problem covers a field little researched both in the Romanian specialty literature and internationally. To date, very little on the effects of different practices of HR quality management systems has been covered in specialty literature. Most studies conducted in this regard consist of qualitative investigations of managers' perceptions on quality improvement.

The analysis of human resources performance in railway transport, which is the general objective of this project, aims to identify the performance indicators of employees on the one hand and on the other hand, to present the links and correlations between wage level, seniority, labor conditions and the requirements of the positions for the employees at the CFR Constanța station. In addition, it is desired to determine the elements that would lead to the increase of the HR performance level in the railway transport activity. The creation of the data file is based on the information provided by the Human Resources department within the C.N.CFR Regional Infrastructure Constanta Company, applied to 45 people, employees of Constanta station. Initially, 14 variables were introduced (3 nominal and 11 numerical), namely: name, surname, gender, nationality, wage, age, background, level of education, position, age categories, salary categories, locality, marital status and seniority at work. Subsequently, 3 more numerical variables were introduced, namely: seniority increase, gross salary and tax.

In the *BD7sal* file, the data was entered into the cells of the *Data View* sheet in the *Data Editor* window opened by the *New Data* command from the *File* menu. The result of this approach is presented below:

Figure no. 1 Database of employees of CFR Constanta station

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5	salariu	Numeric	В	2	salariul de inca	None	None	8	Right	Scale		
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9	sex	Numeric	В	D		(1, masculin)	None	8	Right	Scale		
10	nationalitat	Numeric	В	D		{1, romana}	None	8	Right	Scale		
11	mediu	Numeric	7	D		(1, urban)	None	8	Right	Scale		
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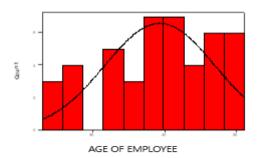
Source: The author

The graphs synthetically show, in visual form, a statistical distribution. With the help of graphs, there is an overview of the data in one image. The choice of the graph for the representation of a distribution is made according to the purpose pursued and depends essentially on the number of variables considered, as well as their type.

The *frequency curve* is obtained by adjusting the histogram and is used to verify the normality of a distribution. The frequency curve can overlap the histogram, representing the corresponding theoretical distribution, with the same mean and variant.

Figure no. 2 Frequency Histogram and Curve for the age variable

AGE OF EMPLOYEES



Source: The author

Following the construction algorithm, we obtained the histogram for the distribution of employees by age, which shows that, overall, the sample has an asymmetric distribution by age on the left, with a predominance in adulthood. Ages ranging from 38-42 and 46-50 have the highest frequencies, totaling about half of the sample volume.

As observed in Figure 3 in terms of type of school graduated, employees with high school education (57.78%) dominate over those with higher education (24.44%).

The Pie Chart and Bar chart are a method to synthesize a set of nominal (categorical) data. Each circle sector of the Pie chart represents a category, its area being proportional to the number of cases in this category of the nominal variable.

The Bar chart is often used to illustrate the categories of a distribution in a convenient way. The bars have the same base, equal to the unit, and the height proportional to the frequency of the category, so that the areas of each bar represent the number of cases of the considered category.

type of school graduated in higher secondary primary

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Figure no. 3 BAR and PIE charts for the variable (EDUCATION) using the GRAPH menu

Source: The author

type of school graduated

The calculation of the indicators for the central tendency, dispersion and form of a univariate statistical distribution with the help of SPSS can be achieved in several ways. The usual is: *Analyze* menu - *Descriptive Statistics* command *Descriptives* option that opens the dialog box with the same title where we will select the variable/variables for which we want to calculate the parameters of a distribution, as well as the indicators to be calculated.

Table no.1 Age of employees and basic salary distribution parameters

Descriptives										
		Statistic	Std. Erro							
age of	Mean	39,24	1,136							
employee	95% Confiden Lower Bound Interval for M Upper Bound	36,96								
,,	Interval for Mr Opper Bound	41,53								
	5% Trimmed Mean	39,49								
	Median	40,00								
	Variance	58,053								
	Std. Deviation	7,619								
	Minimum	23								
	Maximum	51								
	Range	28								
	Interquartile Range	13								
	Skewness	-,491	,354							
	Kurtosis	-,569	,695							

Statistic \$td. Erro 26.1333 basic salary 95% Confidenc Lower Bound 38.2509 Interval for Me: Upper Bound 34.0158 5% Trimmed Mean 29.7654 Median 00.0000 Variance 119,118 Std. Deviation .66322 Minimum 561,00 Maximum 1392 00 Range 831,00 Interquartile Range 329,00 Skewness -.521 .354 Kurtosis -.252 .695

Descriptives

Source: The author

4. Results interpretation

- 1. The asymmetry coefficient (skewness) in the case of the age variable ranges between -1 and 0. This indicates the presence of a negative asymmetric distribution, with deviation to the left. This also emerged from the histogram for the same variable. The same interpretation applies for the distribution according to the basic salary.
- 2. The coefficient of vaulting (kurtosis) is a measure of the spread of each observation around a central value. In our case, for both variables it is negative, so it indicates a weaker grouping around the central value, the frequency curve is flatter and the distribution is called platykurtic distribution.
- 3. For the age variable, the mean is 39.24 years, very close to the median (40 years), and the standard deviation (sigma) is 7.69 years with a low value while the variant can be called close to mean value. In this case the interpretation is as follows: because the differences from the mean are not significant, it results that the mean is representative for the sample chosen as the basis of study.
- 4. For the *basic salary* variable the mean is 2926.1333 RON, the confidence interval for the mean (the interval in which most people are included) is 2868.25 2984.01 RON. The standard deviation (192.66 RON) has a small value compared to the mean, so the coefficient of variation has a value below 35%, which means that the population is approximately homogeneous. There is a weak concentration of values around the mean, so the mean is approximately representative. On the

other hand, the negative asymmetry coefficient indicates the presence of a negative asymmetric distribution, with a deviation to the left, while the negative kurtosis suggests that the frequencies have a more flattened curve and the distribution is platykurtic, as well as the distribution by age.

The frequency distribution "wage categories* age categories" expresses the distribution of the sample of people observed simultaneously after two variables were considered, showing how many people in a certain age category have a certain level of wage. The example presented in figure 5 shows that no person aged between 31-35 has a salary lower than 2800 RON, while the group over 45 years is comprised of the most (8) with salaries lower than 2800 RON.

Table no.2. Frequency distribution "wage categories"

		Age categories							
	< 25	26-30	31-35	36-40	41-45	>45			
Wage categories	yrs	yrs	yrs	yrs	yrs	yrs	Total		
< 2800 ron	1	1	0	4	2	8	16		
2801-3000 ron	1	0	2	3	4	3	13		
3001-3200 ron	1	3	3	5	2	1	15		
>3201 ron	0	0	0	1	0	0	1		
Total	3	4	5	13	8	12	45		

Source: The author

5. Testing the equality of means for two independent samples (Indep-Sample T test)

In SPSS program, the testing of two means can target either two independent populations or 2 dependent populations (groups). *Independent-Sample T Test* is a procedure that is applied to independent samples. This procedure tests whether the means of 2 groups are equal. Two tests will be performed: one regarding the basic salary by employees' origin, in which per the null hypothesis we will assume that the wage mean of the 2 groups (urban, rural) do not differ significantly and a second test regarding the basic salary by employees' gender, in which we will assume by the null hypothesis that there are no large pay gaps between males and females.

After applying the *Independent-Sample T Test* procedure for the first case, we obtained the *t test* equal to 1.139, with 43 degrees of freedom and a Sig probability of 0.228 (higher than 0.05), which shows us that for the means of the two groups (urban - 2946.90 RON and rural - 2875 RON), it cannot be concluded that it differs significantly, the null hypothesis being accepted. We reach the same finding by observing the confidence interval for the difference between the 2 values. The interval contains the value zero, therefore it cannot be concluded that the difference between the mean values of the two groups differs significantly (table 3).

Table no.3 Output from the Independent-Sample T Test for "basic salary - mean"

		_		
origin	N	Mean	Standard deviation	Std. Error Mean
Basic wage				
urban	32	29,469,063	186.89869	33.03933
rural	13	28,750,000	204.64970	56.75961

Independent Samples Test

		Levene's Test for Equality of Variances				t-test fo	r Equality of M	eans		
							Mean	Std. Error	Interva	nfidence of the rence
		F	Sig.	t	df	Sig. (2-tailed)	Difference	Difference	Lower	Upper
basic wage	Equal variances assumed	1,498	,228	1,139	43	,261	71,90625	63,15397	-55,45586	199,26836
	Equal variances not assumed			1,095	20,594	,286	71,90625	65,67535	-64,83709	208,64959

Source: The author

After applying the *Independent-Sample T Test* procedure for case 2, we obtained the *t test* equal to 2.321, with 43 degrees of freedom and a Sig. probability of 0.007 (lower than 0.05), which shows that for the means of the two groups - male - 3007.70 RON and female - 2876.60 RON) it can be concluded that it differs significantly, the null hypothesis, which assumed equality of means, being rejected. We reach the same finding by observing the confidence interval for the difference between the 2 values. The interval does not contain the value zero. As a result, it can be concluded that the difference between the mean values of the two groups differs significantly (table no. 4).

Table no.4 Output in the Independent-Sample T Test for "basic salary - gender"

sex		N	Mean	Standard deviation	Std. Error Mean
Basic salary					
	male	17	3,007.70590	142.20222	34.4891
	female	28	2,876.60710	204.64970	38.6255

Independent Samples Test

Levene's Test for quality of Variance				t-test for Equality of Means						
							Mean	Std. Error	95% Cor Interva Differ	lofthe
		F	Sig.	t	df	ig. (2-tailed	Difference	Difference	Lower	Upper
basic salary	Equal variand assumed	7,883	,007	2,321	43	,025	1,09874	6,48959	7,17662	5,02086
	Equal variand not assumed			2,532	42,079	,015	1,09874	1,78250	5,60322	5,59426

Source: The author

Testing the significance of the correlation coefficient *value* starts from the hypothesis that there is no correlation between variables. Verification of hypothesis H0 is done using the t test for the simple correlation coefficient. The calculated value of t is compared with the theoretical value obtained in table t (Student), for n-2 degrees of freedom and the established level of significance. If *t calc.* > *t table*, then Ho is rejected, and it is concluded, with a considered risk (usually 5%), that the value of the correlation coefficient does not equal 0; respectively, that there is a significant connection between the investigated variables, ergo the correlation coefficient is statistically significant. In order to perform the correlation analysis, we will consider two distinct cases, namely: we will study the correlation between tax and employee's age, on the one hand and on the other hand the correlation between tax and gross salary (which we know are highly dependent, because the tax results from the gross salary to which the 16% quota is applied. The approach for each case is applied in SPSS as follows: *Analyze* menu - *Correlate* command - *Bivariate* option.

For the analysis of the correlation between the **age** and **tax** variables, by the Ho hypothesis, we assume that there is no connection between the tax paid by each employee and their age. Following the previous approach, the output in table 5 is obtained:

Table no.5 SPSS output for correlation analysis (case 1)

		age of employee	tax .
age of employee	Pearson Correlation Sig. (2-tailed)	1	-,365* ,014
_	N	45	45
t-	Pearson Correlation	-,365	1
tax	Sig. (2-tailed)	,014	
	N	45	45

*- Correlation is significant at the 0.05 level (2-tailed).

Source: The author

Interpretation. For the considered example, a Pearson correlation coefficient equal to -0.365 was obtained, which suggests that there is an inverse, weak correlation between the variables, the value of the coefficient being negative and closer to zero than to 1. The correlation coefficient is tested by use of test t. The corresponding Sig. value equal to 0.014, is lower than 0.05, the null hypothesis is accepted, that is, there is no significant correlation between the two variables (tax and age).

To highlight such correlation, I chose a second case to analyze the correlation between tax and gross salary. By the Ho hypothesis, I assumed that there is no link between the tax paid by each employee and the related gross salary. Following the approach as in the previous case, the output in figure 9 is obtained:

Table no.6 SPSS output for correlation analysis (case 2)

Correlations

		IMPOZIT	SAL_BRUT
1	Pearson Correlation	1	1,000**
tax	Sig. (2-tailed)		,000
	N	45	45
	Pearson Correlation	1,000**	1
gross wage	Sig. (2-tailed)	,000	
	N	45	45

^{**.} Correlation is significant at the 0.01 level (2-tailed)

Source: The author

Interpretation. For the considered example, a Pearson correlation coefficient equal to 1 was obtained, which suggests that there is a direct, perfect connection between the variables, the value of the coefficient being positive and exactly 1.

6. Conclusions

The aim of this research project was to provide managers with quantitative and qualitative work models, methods and tools for evaluating the quality management system performance.

Among the main contributions of the research to the development of knowledge in the field, we can list:

- The development of a coherent research conceptual framework and methodology, which would allow the quantitative and qualitative study of the quality management systems performance.
- Application of the research methodology within complex field research carried out in Romanian enterprises.
- Clarification and systematization of the basic terminology for the quality management systems performance assessment.
- Broadening knowledge and developing the existing volume of information in the field of quality management systems performance assessment.
- Defining and systematizing quality costs.
- Discussing some models and methods to assess the existing performance in the specialized literature.
- Developing an own model for the assessment of quality management systems performance.
- Building relevant performance indicators for evaluating the quality management systems performance.
- Identifying the effects of implementing quality management systems (ISO 9000: 2015).

As a future direction of research, the author aims to develop and implement software that will allow permanent monitoring of the HR management systems performance with specific quantitative indicators. Basically, this IT system will be able to gather, classify, summarize, and report that information that will underpin the decision-making process and quality-related activities planning in an organization.

The creation of an information system will eliminate the manual processing of the collected data, and the information user will be able to "shift" from analytical to synthetic, and vice versa, an essential condition for the good perception of the real situation in a company.

7. References

- Daneci-Patrau, D., 2019. *Comportament organizational* [Organizational conduct]. Craiova: Sitech Publishing House
- Guskey, T.R., 2000. Evaluating Professional Development. Thousand Oaks: Cirwin Press, Inc.
- Hutu, C.A., 2013. *Cultura, schimbare competitie* [Culture, Change, Competition]. Bucharest: Economica Publishing House
- Mallak, L.S., Larry A. Bringelson, D.M. Lynth, 2017. A cultural study of ISO 9000 certification. *International Journal of Quality & Reliability Management.*
- Seddon, H.R., DeLone, W.H. McLean, E.R., 2012. *Information systems success revisited*. Kogod Coll. of Bus., American Univ., Washington, DC, USA
- Stancu, I., 2017. Finance: financial market theory, enterprise finance, analysis and financial management. Bucharest: Economica Publishing House.

Implementation Assessment Approach for Market-Driven Projects

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Abstract

This work in progress study presents a retrospective causal link between implementation assessment and project financing decision, in the corporate context. We focus on market driven projects and their implementation challenges. This strategic corporate approach has led to numerous benefits and boosts the firms' performance. The main objective of this research is to investigate how companies manage: (i) financing a market-driven project and, (ii) implementation when introducing the projects results on the markets. Further, it may propose models which companies can utilize in order to successfully introduce the projects results in specific business sectors. Research methodology is an investigating survey based on a questioner emerged from literature review of project implementation. The research question is: What are the key factors of success for market-driven projects? Conclusion is that only profitable projects are selected for financing and this depends upon calculating or estimating the key factors of a successful project implementation.

Key words: market-driven projects, business case, project financing, successful implementation

J.E.L. classification: M16

1. Introduction

The past five decades have been marked by innovations and commercialization of innovations as transfer knowledge to economy. In the international corporate context, implementation of market-driven projects has become in the latest decades one of the most important factors in developing innovation, increasing profitability, and creating a competitive advantage for companies to stand out for their customers. The aim of this paper is to present some considerations about project financing and implementation in the corporate context focusing on market driven projects. A simple way to define this term is producing a new product in response to market needs. In international context, market-driven projects, as Information Technology (IT) projects have become a strategic corporate approach that has led to numerous benefits and boosts the firms' performance. This work in progress study is about challenges of market-driven projects in its implementation processes.

This paper is structured as follows (1) Introduction; (2) Literature review on market-driven projects; 4) Research methodology; (5) Findings: The key factors of a successful implementation and the governance responsibility for market-driven projects; (6) conclusions.

2. Literature review

2.1. Contemporary organizations and market-driven projects

Knowledge economy is a reality today, not only a frequently stated goal. The fact is demonstrated by innovative activities at any level and in any public or private sector. Nowadays, where innovations trigger new projects and new organizational mechanisms, it became a common culture to be oriented on projects. Technological advancement and market needs are the two major

forces fuelling the introduction of products and services in a wide range of business sectors. Discussing about innovation and technology transfer, we can observe that many product and service providers have utilized the so-called technology-push and market-pull (Saidi, 2011, p.33). This is the case of IT projects as market-driven projects as well as crisis or change driven projects.

It might help to categorize projects into one three types upon their features (Richman, 2002, p.61):

- a) *Market-driven* producing a new product in response to market needs. A software company sells product and maintains market-share by creating quality programs that meet consumer needs.
- b) Crisis-driven finding a fast solution to a specific problem. In response to complaints about defective automobile tires, a manufacturer may quickly organize a project to manage the recall and replacement, as well as a public relations campaign.
- c) Change-driven- the need to change operations to match the current environment or to be effective. A retail sales company may approve a project to create an e-commerce site to maintain its share of the market.

Projects are powerful tools that improve an organization's ability to plan, to implement and control both project activities and also current activities after implementation. By their general targets (performance, cost, time) projects are ways to utilizes people and other resources of an organization. Projects in contemporary organizations become a veritable engine of research and development and there seems to be a new approach to observe and preserve accrual experience in project management (Meredith &Mantel, 2000, pp.1-21). By its results from educational facilities, medical technologies to power plants, production technologic capacities, warehouse facilities etc., projects provides increasing standard quality of life, growing productivity and so on.

The society is demanding more and more new projects. Also, demanding new methods of project management. Meredith & Mantel (2000, p.1) notes there are many forces involved but three are paramount:(i) Knowledge based society and economy and human knowledge (mental attitude, skills, abilities); (ii) Demand increasing for more and more sophisticated and customized products and services; (iii) Competitive markets evolution linked on the production and consumption..

Nowadays, project management should be analyzed in the corporate context as the *management of project management* (Nicholas & Steyn, 2008, p. 575). The most popular question remains: What is the process for successful projects in the corporate context where projects are market-driven and only profitable projects are selected for financing? The answer is: successful projects depend upon two things: doing the *right projects* and doing those *projects right* (Nicholas & Steyn, 2008, p. 605).

Some explanations might be useful for each stage of this process because of the specificity emerging in corporate context in a *management of project management* approach, as following:

- (i) Common themes for strategic initiatives are to be the low cost leader or technology leader, to be innovative or imitative, or to pursue mass markets or niche markets. Objectives should be clearly articulated and not changed too frequently;
- (ii) Specific criteria from proposals are generated internally, requested by customers, or resulting from ad hoc problems or obligations;
- (iii) Implementation methodology should feed right projects with resources or remove wrong projects. Managers assess each project as it moves through gates of effective project management.

They compare project performance to selected criteria and make decisions: important but struggling projects are allocated more resources; poorly performing or mediocre projects are put on hold or canceled;

(iv) Project management should manage the projects in a right way. Projects should manage using sound principles and practice of project management. In this point the key factor for successful project is cycle planning & controlling.

In the corporate context, project management implies only profitable and sustainable projects. Project managers and managers of parent organization oriented towards projects could make happen right *projects & projects right* in the following ways described below.

assessment. Corporate planning Focus the organization Organization mission and goals Internal Proposed *Projects* from **Business Units** with internal Strategic planning & Strategies and objectives at the financing business units level both for internally and External (profit selffinancing) externally generated projects or External Proposed Proposed Projects from Projects with Customers with external external source financing of financing (equity or credit) (equity or credits) PROJECT FINANCING SELECTION based on performance criteria estimated in business case of projects **Selected Projects Portfolio:** Only relevant, only profitable and only sustainable projects Select the "right projects" Feeding, removing or cancelling projects Feeding of profitable and sustainable projects with specific resources (removing or even cancelling unprofitable and unsustainable) Planning and Focus the "projects right" controlling Selection of only strong relevant projects in terms of profitability and sustainability Process steps for cycle life projects Sustainable commercial exploitation, including commercial inputs-outputs Succesful completed projects

Figure no. 1 Management of project management. Project financing based on successful implementation

Source: adapted from John M. Nicholas, Herman Steyn, 2008, p.606

2.2. The project controlling as an essential process of project implementation

The corporate world is concerned with the use of technology (even more so with information technology), this is already widely recognized. Similarly, there is focus also on the feasibility of projects and implementation according to business plan guidance. In this sense, a common solution for successful implementation of projects is the control process during the life cycle of projects. Project control (or *controlling* because it is ongoing and permanent during the life cycle of a project) deals with performance cost and time.

Process of controlling a project (or any system) is far more complex than simply waiting to see something goes wrong and, if is possible, fixing it (Dobre, 2007 p. 329). Beyond the purpose of controlling which is linked to planning, there are three basic types of control mechanisms: (i) cyber control; (ii) go/no-go control; (iii) post control. The last mechanism is less efficient than two firsts but is absolutely necessary to apply a post control mechanism when something goes wrong after implementation. A frequent situation is raising costs of operation caused by the undersized activity of a direct technical resource, translated in small volume of production (and small productivity per time unit or per number of employees). This means increasing the rate of constant costs (i.e. utilities) per unit of activity in detriment of variable costs which is in reducing trend. The accounting result is unjustified expenses in terms of money which means loss from costs of under activity. To calculate the amount of this cost is enough to know the rate of activity reporting at optimal level of activity from project plan and business plan. Dobre (2007c, p.327) notes the importance of implementation cycle *planning-monitoring-controlling*.

For a better representation and realistic processes view, this cycle should be seen *planning-execution-controlling-monitoring-re-planning-re-execution* and so on, if is necessary. As a conclusion related to controlling, it is important to keep in mind: setting up a planning and control system (Richman, 2006, p.49). Planning and control go hand in hand, only with a solid plan can a project manager can exercise proper control. Without a control plan, there is nothing to compare progress against. So, we can keep in mind: you cannot control project progress better than you plan it.

2.3. Frequent causes of project failure in project management practice

Project management practice and organizational executive management reveal different cases of projects failure. The Chaos Report (The Standish Group International,1995) find that only 16.2% of investigated IT projects was successful. Challenged projects accounted for 52.7% and the difference represented failures (31.1% impaired or cancelled projects). Another well known case of failure of an IT project took place in 1999. Hershey Food Corporation suffered a major failure in implementing Enterprise Risk Projects (ERP) methodology. That failure led to decreases in profits in the last quarter of year. Company's share price fell by 27% from peak in that year, the result felt very weak, especially in the context of the stock market boom period (Hershey Food, Financial Annual Report, 2005). Government organizations show different causes of project failure aimed at those managing or otherwise involved in the delivery of governmental projects.

The UK Office of Government Commerce (2005) mention different causes of project failure. We observe that identified failure causes are focus on corporate orientation at least on tree directions: profitability and sustainability (even in about government projects); governance responsibility about projects sustainability; efficiency responsibility of corporate management and project management. Our conclusion is the evaluation of a failure in project implementation should be business driven.

3. Research methodology

This research aims to investigate how companies manage (i) financing a market-driven project and, (ii) implementation when introducing the projects results (as IT products and services) on the markets. Progressing, the second step of this study will be an investigation based on a questionnaire which in turn is built on literature review results. The goal of the survey and personal interviews is

to enter in the creative entrepreneurial intimacy, look for and find the innovation motivation and key factors for successful projects. For proposes of study, identified innovative projects will be classified into several resolution types upon their features. Further, we can proposes models which companies can utilize in order to successfully introduce the product/service offering in specific business sectors of economy. Our methodology tries to find a set of criteria for success assessment based on common or frequent causes of projects failure. The third step envisioned for this study leads to a model proposal which companies can use to successfully introduce the market-driven projects in specific business sectors.

From this perspective the analysis of business case of projects become indispensable as well as the implication of top management structure. The approval of project plan (including business plan) and implementation methodology became relevant preliminary actions of management of project management. This is motivated by the necessity of a common perspective of project manager and senior management regarding implementation processes risks and after implementation risks. The main aspects are: investment cost, risks, success key factors - and alignment of the project with the overall business strategy. Not only project managers should be responsible of project implementation but also chief executive officer (CEO) as the person with the most senior position in a parent organization. For a better responsibility for market-driven projects, the approval of senior management or Board of Directors gives more responsibility to the project team, project manager and CEO. We analyzed and discussed existing literature regarding a success assessment of market-driven projects and common causes of failure. As findings, this in-progress working study provides some considerations regarding opportunities to select for financing only relevant and profitable projects portfolios. This selection is obviously based on success or failure assessment approach of project implementation and the documentation available is the business case of projects.

The findings of this study are the success key factors of implementation that, in general, are the same reasons for financing a project. The source of identification is the business case of projects, a document proving feasibility of projects and sustainability of results (operational and financial results in the corporate context). The conclusion is that project financing depends upon calculation and/or estimation of the key factors of a successful project. In the corporate context, the management of project management begins with project financing selection. The selected projects are assessed through a success or failure assessment approach. Project financing should take into account only performance implementation criteria, because the results should be useful for a specific market.

4. Findings: Key factors of a successful project implementation and governance responsibility for market-driven projects

Obviously, IT projects can be characterized in equal measure as *market-driven*, *crisis-driven* and *change-driven*. It is reasonable to say that profitable projects are born only in competitive markets and do not take forever and that people and organizations are constantly looking for new profitable projects. This phenomenon has roots in an IT firm's knowledge capability for innovations and commercialization of innovations. There are studies which discuss the dimensions of IT firm innovations and the aspects of commercialization of innovations. There are three dimensions of IT firm innovations: (a) knowledge capability, which include absorptive capacity; (b) knowledge networks and (c) commercialization capability (Datta, 2011, p.50). On the other hand, three aspects were identified for defining commercialization of innovations: (a) recognizes a market for an innovation; (b) develops and manufacture it into a product and (c) sell the product through distribution channels. The same author presents commercialization of innovations as an act or activities required for introducing an innovation to market. From the perspective of financing and implementation assessment based on success or failure key factors, the IT projects and IT product and services are most relevant to study, due to their market-driven feature.

4.1 Implementation methodology as a major factor for a successful project implementation

IT projects field is defined by explaining reality of interdependencies between software partners as Vendor Company and Customer Company. Practical software solutions are provided as a product; it is even a project in itself (https://www.practicalsoftwaresolutions.com). When companies are looking to purchase and implement large-scale software, such as an Enterprise Resource Management (ERP) system, the process is going to be more involved than installing a program in a computer. Reputable software companies will have an implementation methodology, which is the process that maps out a plan for both the company they're working with and themselves so that the project stays on schedule and budget. A company may spend a lot of money implementing this type of software system. Costs run from updating hardware, to the labor of the implementation team, and the price of the software itself. The project may also take weeks to months of time invested from both the company and its software partner to complete the project. In this context, is very important to access a software partner. To define success of implementation and everyone has a different definition of what success is, especially when it comes to software implementation. One company may see a successful implementation when the software is physically installed. Another company may find their success when all of their users are fluent in the new software. Others may not call an implementation successful until the software has been in use for a month after the implementation team has left. The most weighted factors for a successful implementation methodology are:

Customers: If all of these different definitions of success are valid, whose definition should be chosen? Your company's team leaders must be the people who define your own successful implementation on each and every project. This is possibly the most important step in the entire process, because it allows your software partner to work toward your company's ultimate goal for each unique project. It's important to establish success for every implementation project. Even if your company and your software partner (the company you've hired to purchase and/or implement your software) have worked together in the past, your definition of success may change because of your past experiences or current situation (such as new employees).

Clear Objectives: Planning and establish clear objectives can lay the foundation of mutual understanding that can help smooth out issues as they arrive. Although they seem similar, defining success and defining clear objectives are two different parts of an implementation methodology. Success is company's ultimate goal for the project and defining clear objectives allows your company to develop a solid plan en route to success. By establishing objectives to work toward, these same unexpected delays can be worked around en route to accomplishing each individual goal.

Senior Management Support: Support of Senior Management by formal approval is a key element of a software implementation because when senior management has support for the entire project, they will have a greater understanding of the process as a whole. On the other side, if a member of senior management isn't on board with the project, it could cause friction within the implementation team. An implementation with an outsourcing team can cause the whole project to delay or even collapse.

Have Dedicated Resources: One of the biggest factors of success for a smooth implementation is to have dedicated resources from company participating in the project. While the implementation process goes on, the show must go on for your company as well. Every time one of employees working on the implementation team has to stop to manage other employees, put out fires, or work on other projects, it throws a wrench into the mechanics of the implementation methodology. Company and software partner will come together to form a team during this project, with each member performing a vital part of the process. The more time the team can work together as a cohesive unit, the better the process and the end-result will be. That means having dedicated resources can help to alleviate any problem.

Coordinate with Third-Party Vendors: If software partner should have a plan to deal with the various third-party vendors as part of their implementation methodology, Customer Company should think of software partner as your general contractor at this point, giving them the flexibility to coordinate with the third-party vendors to budget their time and expenses into the overall project. Software partner most likely will have worked with these third-party vendors in the past. Partner's

relationships with these vendors can help guide to the best products for your company's needs during the planning stages of implementation, and will bring the knowledge of how their solutions will fit within the overall project.

Proper Training and Education: Training and education are important parts throughout a successful implementation methodology because customer company's employees are important parts of an implementation methodology. In the beginning stages of a project, employees should be trained on the process itself, with your software partner teaching them their responsibilities during the project. This is a vital step, because employees will need to manipulate vital data in your software system to produce the desired results. As the implementation process winds down, your system users will need training classes to learn the functionality of the software itself. Software partner should be able to provide these employees with intensive classroom education and tools for follow-up training if necessary. There comes a point in the implementation process when software partner's employees will leave offices and start a support role for your organization. The analyzing conclusion of these factors aimed to assessment of implementation methodology is that implementation methodology is an important part of a successful relationship between customer company and software partner. After project implementation, they come together in a "common picture" because software partner should also have a support team relating with customer.

4.2 Governance responsibility in project financing and estimated key factors of project implementation

In the corporate context of the knowledge economy where projects are putting into motion the engine of the economy, the senior management of companies increased responsibilities incumbent on line project management oversight. The governance responsibility for market-driven projects (as IT projects) resides in understanding the purpose of the project, as it is essential to comprehending the underlying needs so we can appropriate tradeoffs in time, cost, and scope as we manage the project.

In this field of interest, a set of questions was proposed by Canadian Institute of Chartered Accountants (CICA, 2007). This summary of questions includes following panels: Business Case; Project Planning; Risk Management; Structure and Management; Performance Mentoring; Implementation; Post-Implementation. Even this practice was implemented for IT projects, in the context of corporate concerning about the feasibility of any other project fields and risky implementation, this set of questions become a guide for Board members of any company in identifying and evaluating problems may arise as organizations which prepare and implement projects.

These questions can become a potential model for directors to oversight the whole cycle life of project, from financing to planning, from project controlling and monitoring to project implementation and past implementation. In a corporate sense, the major question can be: What should directors know about projects? We consider it a beginning point for assessments, appraisals or valuations to do in the process of approval the source and the level of financing large projects and the budget structure in line with its cycle life. CICA summary questions can provide key factors for a model of projects success assessment and appraisal and would be completed by factors aimed to assess implementation methodology, discussed above. These can be considered as genuine results of case studies met in the corporate environment, becoming relevant learning sources for project management fields. We can use these as research method in a teaching-learning approach (Remenyi, 2012 pp.1-20) and this is our reason to choose it to research the key factors for a successful implementation of projects. Key factors and conditions extracted from the sources discussed above can be grouped by each stage of life cycle and they could be considered fields of interest for Board of Directors in position of stakeholders. By teaching -learning approach, any person with or without corporate management position or project team position can use this model to identify the key factors of a successful project. We mention implementation assessment is happen before governance involvement to approve proposals for financing. Therefore, the causal link become retrospective, by moving estimated success key factors proven by business case to reasons for financing.

Table no. 1 Project Financing Based on Success or Failure Implementation Assessment Approach

Necessary questions for identifying possible causes of project failure and project success key factors

Business Case Questions: Does the business case provide information sufficient to make an informed investment decision? If NO, causes may be: (i) weakness of clear focus the organization's key strategic priorities, including agreed measures of success; (ii) the critical factors for the project implementation are undefined. Does the organization resources and skills described in the business case? If NO, causes may be: (i) weakness agreements on the critical success factors for the project with suppliers, clients and key stakeholders. Has there been appropriate stakeholder consultation regarding the requirements and deliverables of the project? If NO, causes may be: (i) the engagements with stakeholders are ineffective.

Planning Questions: Does the project planning process adequately identify risks, resources or skills needed to complete the project? If NO, causes may be: (i) weakness or lack of experience in project and risk management. Does the project planning process consider whether project participants are adequately trained in project development and management methodologies? If NO, causes may be: (i) weakness or lack of experience in project and risk management. Has management provided for adequate and timely training for business users and specialized personnel in the ongoing operation and use of the system? If NO, causes may be: (i) weakness or lack of experience in project and risk management.

Risk Management Questions: Is there an effective process in place to enable project risks to be identified, monitored and reported for management decision making purposes? If NO, causes may be: (i) weakness or lack of experience in project and risk management. Has an effective process been implemented to handle changes to planned deliverables and to manage scope creep (in sense of team project moving slowly, quietly, and carefully in order to avoid delay discovery)? If NO, causes may be: (i) lack of control plan and skills for implementing a procedure based on planning-execution-controlling-monitoring-re-planning-re-execution. Has an effective process been implemented to identify and resolve project conflicts that may arise during the project life cycle? If NO, causes may be: (i) poor experience in project and risk management.

Structure and Management Questions: Are there processes to ensure that all appropriate project roles have been identified and the roles and responsibilities of all project participants have been effectively assigned, communicated and monitored? If NO, causes may be: (i) too poor attention to planning cycle life project details. Are there outsourced operational, regulatory and internal control deliverables and schedules are factored into the plan and communicated and agreed upon by the service provider? If NO, causes may be: (i) lack of setting up a planning and control system and adequate controlling procedures.

Performance Monitoring Questions: How is the organization ensuring that the needed competencies, experience, project management tools and timely information are in place to manage and measure the quality of the project? If is no answer, causes may be: (i) lack better planning than controlling. How will senior management and the board be advised of project status, progress against plan, changing risk profiles and emerging issues on a timely basis? If is no answer, causes may be: (i) planning weakness of communications processes.

Implementation Questions: Has management identified critical milestones and developed an effective formal process, including clear criteria, to provide implementation decisions at the completion of each milestone? If NO, causes may be:(i) weakness of skills and lack of experience in breakdown activities and risk management; What contingency and fall-back strategies have been developed to mitigate the risk of decreased service levels to customers and stakeholders due to a failed implementation? If is no answer, causes may be: (i) lack of experience in legal clauses and ineffective engagement with stakeholders;

Post-implementation Questions: Is there a clear definition of the completion of the project to ensure the project team is disbanded at the right time? If is no answer, causes may be:(i) lack of understanding skills on project management; (ii) lack of setting up a planning and control system with adequate financial controlling procedures; (iii) lack of evaluation of proposals driven by long-term value for money to guarantee certain level of efficiency and cost economy.

Source: adapted from CICA (2007); UK Office of Government Commerce (2005)

Findings in this stage of research that give unsatisfactory answers will lead to a non-financing decision. When key factors of a successful implementation are not revealed, we observe the retrospective causal link between identification of key factors and financing decision. This written assessment happens before any financing or operational approvals. If the key factors of a success implementation are not revealed, the cycle *questions-answers* will reloaded. For improving the process, the question would be further detailed and related with identified possible causes of failure, considering their relevance by the rationale primary questions: the *why*, the *what*, the *who*, the *where*, the *when* and the *how?*

As we already observe in above section, project failure causes are business driven, at least on tree directions: (i) *Profitability and sustainability*; (ii) *Governance responsibility on projects sustainability*; (iii) *Efficiency responsibility of corporate management and project management.* Then, final conclusion is that project implementation assessment approach should be business driven and should anticipate success key factors based on failure causes.

5. Conclusions

Our work in progress paper outlines how different context market-driven projects would be analyzed. Among them we mention organizational context referring to governance responsibility for market-driven projects. Senior management can offer support to project management by oversight and by the Board of Directors implication. In fact, project approval by management is the first key factor for the success of projects financing and implementation. Generalizing content of research we consider that governance responsibility may be considered itself a major key factor for financing and successful implementation. The validity of project financing & implementation theme is proven by its relevance in the corporate context where the management of project management begins with project financing selection. Based on estimation and/or calculation in a success or failure assessment approach, financing of market driven projects should take into account the performance criteria. The credibility of data arises from literature review and the findings of research linked on key factors of a successful project implementation. These criteria and questions are gathered and outlined as veritable results of case studies met in the corporate environment and can become representative learning sources for project management fields. We use these in a teaching-learning approach to research the key factors for a successful implementation of projects.

An important and relevant success key factor of project implementation remains controlling based on setting up proper planning and a control system (we cannot control project progress better than we have planned it.). Project documentation of this set up should be observed in early analyses for project financing selection. Remembering the objective of this research (to investigate how companies manage financing, implementation and after implementation of market-driven project), the limits of the work in progress study are linked to designing an investigation built on questioning the practice of companies who innovate and generate market - driven projects. The final step of this study will lead to a proposed model which companies can utilize in order to successfully introduce to the economy the product and service offering through market-driven projects as IT projects.

6. References

- Dobre, E., 2007. *Controlul și Auditul Proiectelor [Projects Auditing and Controlling]*. Bucharest: Economica Publishing House
- Dobre, E., 2007. Finanțarea proiectelor economice [Economic Projects Financing]. Constanta: Ovidius University Press.
- Dobre, E., 2007. Control of Projects- a Cybernetic Control. *Journal of Applied Quantitative Methods*, 2(3), pp. 320-327.
- Datta, A., 2011. Information Technology and Firm Innovation: A Review of Extension Explicating the Role of Networks, Capabilities, and Commercialization of Innovation. *International Journal of the Digital Economy*, 2(4), pp.45-63.
- Meredith, J. R., Mantel, Jr. S.J., 2000. PROJECT MANAGEMENT-A MANAGERIAL APPROACH, New York, JOHN WILEY&SONS Inc.
- Remenyi, D., 2012. Case Study Research-The Quick Guide Series, Reading, United Kingdom: Academic Publishing International Limited.
- Nicholas J. M., Steyn, H., 2008. Project Management for Business, Engineering and Technology. Principle and Practice, 3rd edition, Oxford -Burlington: BH Elsevier.
- Richman, L., 2002. PROJECT MANAGEMENT STEP BY STEP, New York, AMACOM American Management Association.
- Saidi, E., 2011. Technology-Push or Market-Pull? A Model for Managing the Innovation Process in Malawian Firms. *International Journal of the Digital Economy*, 2(4), pp.33-34.

- Canadian Institute of Chartered Accountants, 2007. 20 Questions- Directors Should Ask about IT
 Projects. https://www.yumpu.com/en/document/read/51511423/20-questions-canadian-institute-of-chartered-accountants [15.12.2021].
- Hershey Food, 2005. Financial Annual Report. chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/viewer.
 html?pdfurl=https%3A%2F%2Fwww.annualreports.com%2FHostedData%2FAnnualReportArchive %2Fh%2FNYSE HSY 2005.pdf&clen=356488&chunk=true [15.01.2022].
- The Standish Group International, Inc., 1995. *THE CHAOS REPORT*. https://www.csus.edu/indiv/v/velianitis/161/chaosreport.pdf [15.01.2022].
- UK Office of Government Commerce, 2005. Common Causes of Project Failure. www.ogc.gov.uk [15.12.2021].
- https://www.practicalsoftwaresolutions.com/downloads/7 Things You Should Look for in an Implementation Methodology.pdf [15.12.2021].

Facial Coding as a Neuromarketing Technique: An Overview

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Abstract

The author's interest for the subject of facial coding and micro expression analysis within the neuromarketing field lies into the advantages this tool has in applied neuromarketing research for identifying and understanding customer behaviour. Facial Coding remains the only inexpensive tool that provides real-time and accurate data due to micro expressions' characteristics – which are spontaneous and, therefore, uncontrollable.

The aim of the current article is to provide an overview regarding the facial coding tool which is, along with biometrics, a less explored technique with application within the neuromarketing field. The process and some of the challenges imposed by the automatic micro-expression analysis were approached, together with an overview of facial coding applied within neuromarketing research. The findings of the current paper suggest that, particularizing on facial coding, there is an imperious requirement for researchers to develop a more reliable and standardized research frame for micro expression collection, evaluation and analysis.

Key words: neuromarketing, facial coding, facial expression, micro expression, consumer behavior **J.E.L. classification:** D83, D87, D90, M30, M31, M39

1. Introduction

Neuroeconomics and neuromarketing represent novel disciplines inspired by a mixture of ancient knowledge and contemporary discoveries regarding how the human brain works. Mass-media (and not only) constantly promotes news on specific areas of the brain where particular thoughts, emotions or feelings occur, thus making the general public believe than we can straightforwardly observe the brain at work. But is it truly so?

Facial measurement procedures are used as a way of interpreting behaviours through facial expressions. Within the economic field, these expressions are primarily considered to be independent variables, and authors research their effects on other variables that are under study (Ekman and Rosenberg, 2005, p. 41). The importance of neuromarketing lies in the common feature of all neurodisciplines – the fact that the mind itself resumes its existence to what the brain does: considering that emotions (and emotional behaviour) are created by the brain and, at the same time, these conduct individuals toward action, decoding and correctly interpreting them represents the leverage that ensures long-term success.

The focus of the current article is literature research involving measurement of the facial behaviour itself, with an emphasis on its application within the marketing field. This subject was chosen due to increased interest shown nowadays for neuromarketing research techniques, thus a gap in the literature was identified: while the majority of the research focuses on fMRI (functional magnetic resonance imaging), EEG (electro-encephalogram) and eye-tracking (according to Alsharif et al., 2021, p. 346), there is difficult to find relevant information on the less explored techniques, such as biometrics and facial coding.

2. Literature review

Through a Scopus database analysis, 479 publications that approach neuromarketing were identified from 2004 to 2020 (Alsharif et al., 2021). Based on the neuromarketing tools approached within the articles, Lewinski remains the only author that used a face reader device and thus the facial

coding system in his research. He used FaceReader to code the facial recordings belonging to the speakers who took part in the main social media campaigns (developed and distributed on YouTube) organized by two different commercial banks (Lewinski, 2015, p. 241), aiming to predict the popularity of YouTube videos on social media platforms based on facial expressions. According to his findings, non-emotional non-verbal expressions is what viewers fund most compelling, while the disengaging facial emotions expressed by the speakers did not prove to be an indicator of the social media content performance on the long-run (Lewinski, 2015, p. 241).

Studies on micro expression spotting usually focus on posed videos, rather than on spontaneous ones. In terms of micro expression recognition, research studies have a low performance. Li et al. (2018) propose a method for spotting spontaneous micro expressions in long videos, based on feature difference contrast exploration.

Micro expression research studies with application within the neuromarketing field focus on a single person's reactions while watching a movie trailer or an ad. More than that, the research environment is usually a highly controlled one (video taken from frontal view only, while the entire individual's face is visible and where there is bright light. This is mainly due to the early stage development of the AI tools used – yet the general direction is to overcome challenges imposed by nowadays limitations. More sooner than later it will be possible to analyse multiple individuals interaction and reaction. Instinctive and innate interactions will generate emotional responses that are more natural and spontaneous when it comes to facial expressions and micro-expressions, yet the scenario remains problematic and complicated. It would be stimulating to examine the interpersonal co-occurrence (like imitation, transmission, contagion), not only the changes that occur at individual level; more than that, appears appealing to investigate the affective dynamics of an entire group (Zhao and Li, 2019, p. 3).

Facial Expression Analysis was used by Mauri et al. (2021) in researching website user experience, showing how the perception and assessment of user experience (UX) may be enhanced by the use of neuromarketing, where traditional and modern techniques are used altogether (Mauri et al., 2021). Zhongshan et al. approached the subject of facial landmark detection using artificial intelligence (Zhongshan et al., 2021). Even if the focus of their article addresses facial identity detection, their findings may be perceived as a starting point in developing a facial expression analysis software.

Verma et al. (2021, pp. 17) introduce a software that transforms into a single analysed response all the data collected from rapid and brief data representing micro expressions. More than that, they focus on capturing micro-expressions through an AffectiveNet: a piece of artificial intelligence that captures all the exquisite changes and learns the subtle dynamic facial features in order to differentiate, categorize and describe classes of emotions (Verma et al., 2021, pp. 17); the novelty of their research is based on capturing both crass and minuscule disparities shown by facial emotional features

Tejada et al. (2021) approach the subject of building and validating facial expressions from a transcultural perspective, sustaining that two of the main challenges faced by obtaining objective measurements of the emotional state of research subjects are represented by 1) the adjustment to cultural and social context and 2) the recognition and perception of those expressions, feelings and emotions that are more complex.

3. Research methodology

The research methodology used for writing the present article is a multidimensional (each of the steps involved in the research process had various dimensions) and interactive (each step utilized within the research was dependent on all the other actions taken in this regard) one. Both quantitative and qualitative studies were explored, together with journal articles, specialized websites and conference papers. The information found within the literature was explored, organized, analyzed and synthetized, with an emphasis on the inter-relationship between facial coding and other neuromarketing techniques.

On one hand, the author tried to underline and delimitate a conceptual framework for the fundamental elements related to facial coding; on the other hand, through emphasizing the theoretical framework of the paper, the author offers an overview of the facial coding as one of the techniques

used in neuromarketing field based on the already existing formal theory and case studies. Thus, the literature review methodology used for writing the current article may be perceived as an instrumental case study designed to examine the facial coding process within the neuromarketing field.

Scientific articles, national and international databases and books from different fields such as psychology, physiology, artificial intelligence and marketing were used for collecting, summarizing, and processing information on the approached subject. No primary data was collected and/or analysed for the current article, the aim of the paper being to provide a knowledge base for future research carried out in the field of facial coding used as a neuromarketing technique.

4. Facial coding: micro- and macro- expressions within the neuromarketing field

The facial coding technique represents one of the six neuromarketing research tools (facial coding, facial electromyography, implicit association test, skin conductance, eye tracking, physiological responses' measurement) that do not focus on recording brain activity. It is done usually employing a video recording of the facial expressions – which are spontaneous and provide real time data. These are based on the subjectiveness of the decisional process when assessing if an action that has occurred met the minimal coding requirements or not (Bercea, 2012). In different words, facial coding recognizes, identifies and measures macro- and micro- expressions (that represent non-conscious responses of an individual), based on the movement of the facial muscles.

Micro-expressions were defined as very refined facial movements that are extremely brief (1/25 to half of a second) and barely perceptible by the human eye. Because these are difficult to notice, artificial intelligence -and especially machine learning strategies used for micro-expression analysis-becomes more than useful, as Zhao and Li sustain (2019, p. 1). Micro-expressions represent a rich source of data that uncovers genuine feelings of an individual. Their origin is based on high-stake circumstances, meanwhile somebody intends to inhibit their honest sentiments or sentiments inside the context of their manifested expressions (also known as macro-expressions). Considering this, the importance of micro expressions' identification and correct analysis within the neuromarketing field lies in the fact that an individual's facial expressions never lie – so human faces become the main source of details, data and information needed to be integrated into marketing strategies.

Even if micro expressions are defined by a peculiar temporal evolution, their manifestation can be summarized into five steps, according to Bruni and Vitulano (2021, p. 2): 1) neutral phase, when ME is still absent; 2) onset phase, when ME starts; 3) apex phase, when ME reaches its maximum expression, 4) offset phase - when ME begins to dissipate and 5) neutral phase, when ME disappears.

Macro expressions are dynamic and differentiate themselves from micro-expression through being active for 4-5 seconds on an individual's face, thus being perceived easier (Figure no. 1).



Figure no. 1. Micro expressions(top) and macro expressions (bottom) - visible differences

Source: Zhang, L.; Arandjelovic, O., 2021, p. 414;

Face coding as a neuromarketing tool is generally used for testing advertisements and movie trailers, measuring non-conscious reactions through analysing the activity of 43 facial muscles; it allows the researcher to note and recognize in real-time 6 core emotions (happiness, sadness, surprise,

dislike, fear and anger) and it is mostly used for improving ad content, being a relatively inexpensive neuromarketing tool – see Table no. 1.

Table no. 1 Facial coding: an overview

Facial coding: an overview				
How it works	1 1			
Why is it used	To test advertisements			
	To test movie trailers			
What does it measure	 6 (six) core emotions: happiness, sadness, surprise, dislike, fear and anger 43 facial muscles 23 action units Non-conscious reactions 			
Scope • To reveal the general emotional response regarding an ad or a movie trae order to improve their content • To gain insight into one's preferences, which can help inform or advertising and content development • To learn which features elicit the most excitement and engagement in us • To identify how specific content is observed, recognized and analyze regards to competitors • To determine what should suffer alterations in order to improve the content increase its effectiveness				
Strengths	 Provide real-time data Facial (micro)expressions are spontaneous and, therefore, sincere Is relatively inexpensive 			
Weaknesses	 Subjectivity in deciding when a (micro)expression meets the minimal requirement for being coded Because of the subjective nature of emotions, emotional AI is especially prone to bias 			
Software	For spontaneous facial reactions were created adaptative software; for cases when the software doesn't adapt its behavior, usability evaluation needs to be reassessed;			
Analysis flow	Face acquisition (whole face and facial features)			
through specific software	 Facial feature extraction (deformation extraction and motion extraction) Facial expression classification (recognition and interpretation) 			

Source: elaborated by the author based on Fasel and Luettin (2003), Bercea, M. (2012) and Harell, E. (2019)

5. Findings on measuring facial behavior: process, software, limitations

Within the multitude of articles that approach micro expression research, three study directions have evolved: researchers aim to either clearly differentiate between micro- and macro- expressions within the identification phase of their research, or 2) aim to identify specific micro expressions over a specific period of observed facial movement within the detection phase of their study, or 3) analyse the inference of emotions somehow expressed through micro expressions. The later refers to the recognition phase and proves to be a very challenging process, mainly due to due micro expressions' short duration and low intensity

Since micro expressions are fleeting, being hardly perceptible while analysed in the context of a video recording, it is very challenging to identify, perceive and decipher them accurately; their nature makes them profoundly challenging to be distinguished and categorized automatically. As Feng et al. (2007, p. 254) mention in their paper, the traditional methods used for facial recognition are inadequate for approaching faint facial movements – which are specific and more often than not present when micro expressions occur.

The first researchers who aimed at developing a spontaneous micro expression recognition system through AI were Pfister et al., in 2011. With the aim of collecting new data through the use of performant cameras, they planned and created an induced emotion suppression experiment. Nowadays, automatic facial micro expression analysis through Artificial Intelligence remains a focus point for research due to its multiple advantages and promising potential applications, receiving

increased attention from specialists that belong to different fields: psychology, computer science, marketing and not only. Research on recognizing and correctly interpreting micro expression are diverse and progress continuously. Here are three of the tools used in facial coding and micro expression analysis within the neuromarketing field:

- FACS (Facial Action Coding System) represents an artificial intelligence system that was built to measure facial movements based on human anatomy (Ekman and Friesen, 1978), which is used to illustrate, based on multiple and different action units, visually distinctive facial movements (Zhao and Li, 2019, p. 2); it is also being described as an infallible technique to evaluate reactions and responses from the emotional point of view, as human grin, facial movement and expressions never lie (Baldocchi, 2021). Dr. Paul Ekman's findings on facial expressions inspired the development of FACS, the first and only comprehensive tool for objectively measuring facial movement (first developed in 1978 and reviewed in 2003).
- FACEit System a facial expression analysis tool developed to support the research on the study of facial expressions, created in C-programming language. Its main limitation is to evaluate facial movements when part of the face is hidden or when the entire face is not visible (when the individual covers his mouth, for example (Branco, 2006, p. 97).
- Facial Dynamics Map represents a novel method proposed by Feng et al. (2007) in order decipher a micro expression's development based on different granularities. They developed a new way of classification and identification of micro expressions; the findings of their study proving increased efficiency and efficacity in recognizing and interpreting facial behaviour.
- MESR an advanced matrix for micro expression' recognition and an automatic analysis system (known as Micro expression System Recognition) for spotting and recognizing micro expressions from spontaneous video data was developed by Li et al. in 2018.

In 2018, Rhue demonstrated that facial recognition software interprets emotions differently based on the person's race by using a comparative analysis of a data set of professional basketball players' pictures. The software she used (Face and Microsoft Face API) interpret black players as having more negative emotions than white players.

In 2019, a study revealed that emotional analysis technology assigns more negative emotions to people of certain ethnicities than to others. According to Purdy et al. (2019), artificial intelligence is not evolved enough to discern between social and cultural differences in perceiving and decipher emotions, thus making it difficult to conclude accurately when it comes to facial coding within cultural context.

In the last decade, research on micro expression recognition has increased considerably, yet it is still in its initial phases. Thus, not alarmingly, there still are many hesitations and provocations, as Zhang and Arandjelovic (2021) mention in their paper:

- availability, condition, predictability, standardization and uniformity of data used by researchers, considering the spontaneity involved in generating micro expression;
- the encoding of raw research data process that is very laborious and extremely time consuming;
- the major computational challenge that AI need to overcome in recognizing micro expressions in real-time due to their characteristics;
- non-standardized performance metrics that are used to evaluate the research methods available and/or developed recently.

6. Conclusion

Even if the investigation of genuine feelings and emotions from video recordings has a wide range of applications (medical diagnosis and/or diagnostic analysis, police cross examination and law enforcement, interactive media analysis etc.), neuromarketing remains the most controversial one, being always in the sportlight: on one hand, the generic public has reservations towards this discipline, associating it with intentional misleading and manipulation; on the other hand, marketing specialists and researchers consider that neuromarketing offers the framework we need to deeply understand the decision making process, emphasizing that humans are not totally rational (as we

prefer to think) and proving that emotions and feelings positively influence our choices while heuristics and cognitive inclinations determine us to take less rational decisions (Bitbrain, 2019).

The main goal of neuromarketing remains to better understand the neural correlates of emotion, attention, memory, and decision-making (Alsharif et al., 2021) within the marketing context. Each of the techniques used in neuromarketing research have specific strengths and weaknesses, which make them more or less appropriate for different research situations. Certain combinations between techniques seem more appropriate to develop more accurate and thus effective neuromarketing studies (Bercea, 2012). Even so, particularizing on facial coding, there is an imperious requirement for researchers to develop a more reliable and standardized research frame for microexpression collection, evaluation and analysis. This will only be possible through interdisciplinary and collaborative efforts, considering the complexity of skill set needed for this process: psychology, physiology, artificial intelligence.

7. References

- Alsharif, A., Salleh, N., Baharun, R., Hashem, E., 2021. Neuromarketing research in the last five years:

 bibliometric
 nalysis
 [online]
 Available
 from:
 https://www.tandfonline.com/doi/full/10.1080/23311975.2021.1978620?af=R>
 [Accessed
 November 2021];
- Baldocchi, M., 2021. Facial coding in neuromarketing? [online] Available at https://www.linkedin.com/pulse/facial-coding-neuromarketing-marco-baldocchi/ [Accessed 22 November 2021];
- Bercea, M. D., 2012. Anatomy of methodologies for measuring consumer behavior in neuromarketing research. Proceedings of the Lupcon Center for Business Research (LCBR) European Marketing Conference [online] Available at: < https://www.researchgate.net/profile/Monica-Diana-Olteanubercea/publication/260058154_Anatomy_of_methodologies_for_measuring_consumer_behavior_in_n euromarketing_research/links/0deec52f3abdb88ac1000000/Anatomy-of-methodologies-for-measuring-consumer-behavior-in-neuromarketing-research.pdf> [Accessed 25 November 2021]
- Bitbrain, 2019. Ethics and neuromarketing implications for market research and business practice [online] Available at https://www.bitbrain.com/blog/ethics-neuromarketing [Accessed 26 November 2021]:
- Branco, P., 2006. Computer-based Facial Expression Analysis for assessing user experience, Braga: Universidade do Minho;
- Bruni, V., Vitulano, D., 2021. A Fast Preprocessing Method for Micro-Expression Spotting via Perceptual Detection of Frozen Frames, *Journal of Imaging*, vol. 7, issue 68 [online] Available from: https://www.mdpi.com/2313-433X/7/4/68/htm [Accessed 20 November 2021];
- Dragolea, L.; Cotirlea, D., (2011). Neuromarketing between influence and manipulation. *Polish Journal of Management Studies*, vol. 3, pp. 79-89;
- Ekman, P., Friesen, W. (1978). Facial Action Coding System: A Technique forthe Measurement of Facial Movement Consulting. Palo Alto: Consulting Psychologists Press;
- Fasel, B., Luettin J., 2003. Automatic Facial Expression Analysis: A Survey. *Pattern Recognition* 36 (1), pp. 259–275;
- Feng, X.; Zhang, J.; Wang, J., 2017. Microexpression identification and categorization using a facial dynamics map, *IEEE Transactions on Affective Computing*, vol. 8, issue 2, pp/254 267);
- Kable, J. W., 2011. The cognitive neuroscience toolkit for the neuroeconomist: A functional overview. *Journal of Neuroscience, Psychology, and Economics*, 4(2), pp. 63-84.
- Lewinski, P., 2015. Don't look blank, happy, or sad: Patterns of facial expressions of speakers in banks' YouTube videos predict video's popularity over time, *Journal of Neuroscience, Psychology, and Economics*, 8(4), pp. 241–250;
- Mauri, M.; Rancati, G.; Gaggioli, A.; Riva, G., 2021. Applying Implicit Association Test Techniques and Facial Expression Analyses in the Comparative Evaluation of Website User Experience. Front. Psychol [online] Available at: https://www.frontiersin.org/articles/10.3389/fpsyg.2021.674159/full?fbclid=IwAR3IhAjKTaB99FG uMJg-jxxF-khlZS6nZSijHIYDmu1qjxSefnOGI7FUVHE> [Accessed 25 November 2021]
- Purdi, M.; Zealley, J.; Maseli, O., (2019). The risks of using AI to interpret human emotions [online]
 Available at https://hbr.org/2019/11/the-risks-of-using-ai-to-interpret-human-emotions [Accessed 21
 November 2021]

- Rhue, L., 2018. Racial influence on automated perceptions of emotions [online] Available from: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3281765> [Accessed 23 November 2021];
- Rhue, L., 2019. Emotion-reading tech fails the racial bias test [online] Available from: https://theconversation.com/emotion-reading-tech-fails-the-racial-bias-test-108404 [Accessed 22 November 2021];
- Tejada, J., Freitag, R.M.K., Pinheiro, B.F.M. *et al.*, 2021. Building and validation of a set of facial expression images to detect emotions: a transcultural study. *Psychological Research* [online] Available from https://link.springer.com/article/10.1007/s00426-021-01605-3?fbclid=IwAR1dA-b2ZpQKoF_WbAimGxiPA-yvIUJwD_GyDoMh5n_NhT180979s1-b61c#citeas [Accessed 23 November 2021]:
- Tejada, J., Freitag, R.M.K., Pinheiro, B.F.M. et al., 2021. Building and validation of a set of facial expression images to detect emotions: a transcultural study. Psychological Research [online] Available from https://link.springer.com/article/10.1007/s00426-021-01605-3?fbclid=IwAR1dA-b2ZpQKoF_WbAimGxiPA-yvIUJwD_GyDoMh5n_NhT180979s1-b61c#citeas [Accessed 23 November 2021];
- Verma, M.; Vipparth S.; Singh, G, 2021. AffectiveNet: Affective-Motion Feature Learning for Microexpression Recognition, *IEEE MultiMedia*, vol. 28, no. 1, pp. 17-27;
- Zhang, L.; Arandjelovic, O., 2021. Review of Automatic Microexpression Recognition in the Past Decade. *MDPI*, vol. 3, pp. 414–434 [online] Available from: < https://www.mdpi.com/2504-4990/3/2/21/htm> [Accessed 21 November 2021];
- Zhao, G.; Li, X., (2019). Automatic micro-expression analysis: open challenges, *Frontiers in Psychology*, vol. 10, art. 1833, pp. 1-4;
- Zhongshan, C., Xinning, F., Manickam, A. 2021. Facial landmark detection using artificial intelligence techniques. *Annals of Operations Research* [online] Available from: https://link.springer.com/article/10.1007/s10479-021-04355-y?fbclid=IwAR2qUjPG5tMukhfO-ayrrJ16mOErCEnc9u1EtM JUIJIWzJbrq7LykMKX08#citeas [accessed 22 November 2021];
- Shen, X.; Chen, W., Zhao, G., Hu, P., 2019. Editorial: Recognizing microexpressions: an interdisciplinary perspective, *Front. Psychol* [online] Available from: < https://www.frontiersin.org/articles/10.3389/fpsyg.2019.01318/full> [Accessed 23 November 2021];
- Pfister, T., Li, X., Zhao, G., Pietikäinen, M., 2011. *Recognising Spontaneous Facial Micro-expressions*. Proceeding International Conference on Computer Vision, Barcelona;

Methods, Instruments and Scales Used for Country Image Measurement: A Literature Review

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Abstract

The current paper addresses country image from the evaluation and/or assessment perspective. The literature offers a plethora of definitions and conceptualizations of country image - thus the lack of consensus regarding the best way in approaching the most relevant tools and scales in measuring it. This subject was chosen due to the importance and increased impact that a county's image has on all its functional sectors (tourism, immigration, foreign investment etc.), thus influencing people's quality of life. The aim of the paper is to offer an overwiev of the methods, tools and scales used in measuring country image as a basis for a further, newer and improved scale and research model to be built - encompassing wider dimensions of the country image itself.

Key words: country image, scale, measurement, country image evaluation, country image assessment

J.E.L. classification: M31, M39, Z32

1. Introduction

The approached topic represents an essential one in the field of country image research - mainly due to the importance given to the image of a country within the globalization context.

The importance of properly assessing the image of a country both inside and outside its borders, perceived as a first step in the nation branding process, lies in understanding the need to adapt to international standards by capitalizing on the vast heritage that the country has: national wealth, cultural heritage and human resources. Considering this, the current paper represents a result of the author's scientific concerns regardin country image evaluation from an interdisciplinary approach (marketing, management and tourism).

The scientific literature proves the increased interest researchers show to the evaluation of countries since the first decades of the last century (the first articles on the subject: Katz and Baley, 1933; Klingberg, 1941); even so, the subject became of real interest only later, in 1960, once with the emergence of the "country of origin" concept. Dichter (1962) was the one who anticipated the need to focus on the differences and similarities between consumers in different parts of the globe.

Although the country image does not have a standard definition, the authors agree that each country has its own image. Interpreting the existing definitions, it is easy to notice that some of the researchers give the terms a narrow, customized meaning, while others cover a wider area, describing the image as an umbrella concept.

2. Literature review: qualitative and quantitative approaches in country image evaluation - methods and tools

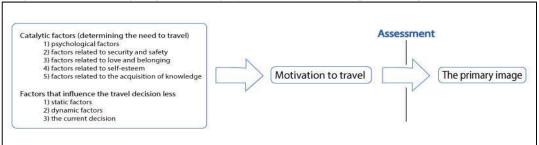
Most studies that address the assessment of the country image consider the image of a nation as a consequence of many factors that form a hierarchical structure that leads to the formed image (Elliot et al., 2011; Nejad and Winsler, 2000 cited in Jenes, 2012). Given the literature, there are three structural levels that address the assessment of the country image: one that addresses the image of the country in a broad sense, taking into account the dimensions of the country image and its elements, a second that takes into account strictly the factors that influence the perception of the country image and a third, which evaluates the effect of the country image on consumer behavior.

Most research aimed at assessing the country's image has been carried out, especially in the early stages, by quantitative methods. Baloglu and McCleary (1999) proposed studying the dimensions of the country image and evaluating them through a model that could not typically be based on quantitative research methods - given the premise that the image of destinations is a specific set of attitudes, emotional, cognitive and global impressions regarding the analyzed destination.

Thus, the cognitive evaluation of places, countries, destinations represents the intellectual processing of the knowledge and information held by the individual about the destination, while the affective evaluation refers to the processing, through the emotional filter, of all feelings that an individual has related to the destination in question (Setyowardhani and Khairani, 2009).

Chon (1990) developed the theory of favorable factors ("Push factors)" and those that slow down ("pull factors") the process of evaluation and analysis of organic and induced images relative to a country. Favoring factors, in his opinion, are associated with the theory of needs developed by Maslow, while the other factors refer to the attractiveness of the destination. These factors are evaluated based on empirical data collected from respondents - respectively visitors, strictly through semi-structured interviews. The relationship between the factors identified by it and the construction and evaluation of the country image is expressed in Figure no. 1.

Figure no. 1. Evaluating the primary image of a country in terms of "push" and "pull" factors



Source: adapted by the author after Lubbe, 1998

In contrast to his theory, it has become common to use Likert-type scales or differentiated scales to measure and evaluate the image of countries. Studies based on structured methods usually measure attributes characteristic of the analyzed destinations and thus produce measurements of the scores obtained by each attribute. Examples of evaluating the image of a destination in terms of structured research methods include the studies of Hunt (1975) - involves researching the image of four US states -, Andreu et al. (2000) - concerning Spain - or the study by Sonmez and Sirakaya (2002), on Turkey. Many of the scales developed by them are the result of an exploratory qualitative analysis that had the role of identifying the important attributes and determinants of the image perceived by individuals in relation to a particular country/destination (Beerli and Martin, 2004).

Even so, these methods have certain limitations, like any other research model: sometimes respondents may have to express opinions on certain attributes that are not part of the image they formed in relation to a specific country or destination (Tapacchai and Waryszak, 2000).

From the research conducted until 1993, the only author who used open-ended questions in the study of the image of a destination was Reilly (1990). Later, Echtner and Ritchie (1991 and later 1993) suggested that the image of a destination is composed of three dimensions: 1) characteristic - holistic, 2) functional - psychological and 3) common - unique. They developed a measurement system using qualitative and quantitative research methods, respectively a set of scales for measuring the common attributes of destinations, along with functional and psychological dimensions, and aimed, in parallel, to evaluate the elements that give uniqueness to the evaluated destination. In particular, their reported study of image components provides a list of 35 attributes measured via scales. The list was generated through two methods - by reviewing the literature and by focus group and represents a complete set of attributes characteristic of a destination.

Murphy (1999), asking members of the target group to name ten countries visited and using the diagram developed by Echtner and Ritchie (1991) to identify the main features of the country, he developed a distinct system on which they subsequently focused their studies. Moreover, there are papers that have mainly used qualitative research methods to study the evaluation of the country

destination image (for example, the analysis of the content of brochures) (Pike, 2002). For example, several recent studies have used for the evaluation of the image destinations destinations taken by tourists during their trips or the words used by respondents when completing the questionnaires (Ryan and Cave, 2005). By applying three different methods, Prebensen (2007) explored tourists' perceptions of the image of lesser-known destinations. They used 1) word combinations, 2) photo combinations and other images 3) exploratory techniques in colleges and universities.

This type of methodology can be criticized, since it offers limited possibilities for statistical analysis and provides subjective results. A new methodology, based on the qualitative and quantitative analysis of images (illustrations, pictures, etc.) contained in a tourist guide was brought to the fore by Espelt and Benito (2005). The main studies identified in the literature on country image assessment address quantitative research methods. Table no. 1 indicates a number of authors who study the image of the country and its related concepts, as well as the number of items and the type of scale used to complete the studies undertaken by them.

Table no. 1. Scales used in the study of the country image

Variabile	Source	Number of items, type of scale
The country image	Nadeau et al. (2008) Papadopoulos (1990, 1993) Martin – Eroglu (1993)	10 items, Likert scale, 7 points
The image of people	Nadeau et al. (2008) Papadopoulos (1990, 1993) Martin – Eroglu (1993)	10 items,Likert scale, 7 points
Awareness, sensitization about the country	Papadopoulos (1990, 1993) Pappu – Quester (2010)	60 items, Likert scale, 7 points
Associations regarding the country	Pappu – Quester (2010)	3 items, Likert scale, 7 points
Loyalty to the country	Pappu – Quester (2010)	4 items, Likert scale, 7 points
Evaluating the country as a destination	Nadeau et al. (2008)	6 items, Likert scale, 7 points
The dimensions of the country image	Papadopoulos (1990, 1993) Martin – Eroglu (1993)	5 items, Likert scale, 7 points

Source: developed by the author based on bibliographic references

That being said, we believe that the complementary use of qualitative and quantitative methods in assessing the image of the country is the most effective way to study the image of destinations. Moreover, most specialists in the field consider that they are complementary and necessary in this regard. Table no. 2 indicates the existing approaches in the literature regarding the methodology followed in the studies assessing the country image.

Table no. 2. Methodologies used in the study of the country image in the literature

Authors	Approach
Wang and Lamb, 1980; Wang and Lamb, 1983; Papadopoulos, 1986; Yaprak	Revision of the literature
et al., 1986; Moeller, 1997; Allred et al., 1999; Verlegh, 2001; Brijs, 2006;	for the development of
Lala et al., 2007; Jenes, 2012;	measurement scales
Papadopoulos, 1986; Parameswaran and Yaprak, 1987; Papadopoulos et al., 1990; Pisharodi and Parameswaran, 1992; Heslop and Papadopoulos, 1993; Parameswaran and Pisharodi, 1994; Haubl, 1996; Li et al., 1997; Lee and Ganesh, 1999; Knight and Calantone, 2000; Papadopoulos et al., 2000; Parameswaran and Pisharodi, 2002; Knight et al., 2003; Nebenzahl et al., 2003; Heslop et al., 2004; Laroche et al., 2005; Pereira et al., 2005; D'Astous and Boujbel, 2007; Pappu et al., 2007	Use of existing country image evaluation scales in the literature
Martin and Eroglu, 1993; Li et al., 1997; Allred et al., 1999; Verlegh, 2001;	Qualitative studies -
Ittersum et al., 2003; Lala et al., 2007; Jenes, 2012;	focus groups

Desborde, 1990; Martin and Eroglu, 1993; Li et al., 1997; Ittersum et al., 2003;	Qualitative studies -	
Lala et al., 2007; Jenes, 2012;	interviews with experts	
Laid et al., 2007, Jelies, 2012,	in the field, deductions	
Papadopoulos – Heslop, 2002; Kleppe-Mossberg, 2005; Hanna – Rowley, 2008	Qualitative studies -	
(country branding)	content analysis	
Ittersum et al., 2003; Puaschunder et al., 2004 (in: Roth – Diamantopoulos,	Qualitative studies - in-	
2009)	depth interviews	
Schweiger, 1988, 1990, 1992; Weber and Grundhöfer, 1991; Kühn, 1993; Chao	Other exploratory	
and Rajendran, 1993; Martin and Eroglu, 1993; Schewiger and Kurz, 1997;	methods (tests,	
Verlegh, 2001; Mittelstaedt et al., 2004; Brijs, 2006; D'Astous and Boujbel,	interviews, image	
2007; Roth and Diamantopoulos, 2009;	associations)	

Source: elaborated by the author on the basis of works written by Roth and Diamantopoulos (2009), Echtner and Richie (2003) and Jenes (2012)

3. Research methodology

The research methodology used for writing the current article resumes to analysing quantitative and qualitative studies published in the field of country image until 2021. The most representative findings were summarized for providing an insight into the methods, instruments and scales used for country image measurement – thus collective case studies were approached for emphasizing this phenomenon. Within this context, fundamental targeted research was used for collecting and processing (through observation, soting, correlation-making, comparison etc.) empirical information to address the country image measurement subject.

The informational base of the current article lies in scientific articles published within dedicated international journals, book chapters and websites, among with periodicals and conference presentations.

The approached research methodology was chosen due to the purpose of the paper – to provide a research starting point for those researchers interested in the subject. The literature in the field was synthetized, while no primary data was collected, nor analyzed.

4. Findings: scales of country image evaluation in the literature

Despite the appreciable number of researches on the country image, a relatively small number of works from the last decades have been identified as aiming at the development of country image measurement scales – Table no. 3.

Table no. 3. Research undertaken to develop scales for measuring the country's image

No crt	Authors, year	Dimensions / Items to consider	Main sources used	Evaluated country
1	Parames- waran and Yaprak, 1987	Country of origin 1. General attitudes towards the country 2. General attitudes towards the product 3. Product specific attributes	Boddewyn (1981) Nagashima (1970) Bilkey and Nes (1982)	Germany Japan Italy
2	Pisharodi and Parames- waran, 1992	The image of the country of origin 1. General attitudes towards the country (divided according to the type of image to which it forms: conative, cognitive and affective) 2. General attributes regarding the product (divided into positive and negative characteristics of the product and into attributes that contribute to the formation of the positive image of the products concerned) 3. Product specific attributes		Germany

3	Martin and Eroglu, 1993	The country image 1. The economic component 2. Political component 3. Technological component	The first authors identified as using open-ended questions in their research	Japan USA Germany India
4	Parames- waran and Pisharodi, 1994	Image of the country of origin 1. General attitudes towards the country (divided according to the respondents' interactions with 1) the country concerned and with 2) the people of that country) 2. General attributes regarding the product (divided into positive and negative characteristics of the product and into attributes that contribute to the formation of the positive image of the products concerned) 3. Specific attributes of the product (divided into positive and negative characteristics of the product	Parameswaran and Yaprak (1986, 1987) Pisharodi and Parameswaran (1992) Papadopoulos et al. (1990)	Germany Korea
5	Knight et al., 2003	The Image of the country of origin - assessments of: 1. People 2. Compromises made by the country 3. Promotional activities initiated 4. Distribution 5. Price 6. The political situation specific to the country of origin of the products	Parameswaran and Yaprak (1986, 1987)	Germany
6	Nebenzah l et al., 2003	The personification of the country image through the prism: 1. Quality and satisfaction seeker 2. Value seeker (economic) 3. The nationalist	Use of open-ended questions in the research undertaken.	Japan Germany South Korea
7	Anholt, 2005a	Nation Brand Index 1. Tourism 2. Exports 3. governor 4. Investment and immigration 5. Culture and heritage 6. People	Unknown	25 countries – no name mentioned
8	Laroche et al., 2005	The country image 1. Opinions about the country 2. Feelings about the country 3. Desired interaction / Targeted behavior	Papadopoulos et al. (1990) Li et al. (1997)	Japan Switzerland
9	Pereira et al., 2005	The image of the country of origin 1. General attitudes towards the country 2. General attitudes towards the product 3. Product specific attributes	Parameswaran and Pisharodi (1994)	USA Germany
10	D'Astous and Boujbel, 2007	The personality of the country 1. Agreeableness 2. Malice 3. Snobbery 4. Assiduity 5. Conformity 6. Inopportune character	Use of open-ended questions in the research undertaken. Personality scales (Goldberg, 1990; Aaker, 1997; D'Astous and Levesque, 2003)	Canada
11	Lala et al., 2009	The country image 1. Economic conditions	1. Wang and Lamb, 1983; Han and Tarpstra, 1988; Heslop	China Mexico

		2. Conflict	and Papadopoulos, 1993;	Russia
		3. Political structure	Parameswaran and Pisharodi,	Scotland
		4. Vocational training	1994; Haubl, 1996;	Singapore
		5. Work culture	2. Jones and Ashmore, 1973;	South Africa
		6. Environment	Haubl, 1996; Lee and	
		7. Work	Ganesh, 1999;	
			3. Wang and Lamb, 1983; Han	
			and Terpstra, 1988; Han,	
			1989; Heslop and	
			Papadopoulos, 1993;	
			Parameswaran and Pisharodi,	
			1994; Haubl, 1996;	
			4. Wang and Lamb, 1983;	
			Parameswaran and Yaprak,	
			1987; Han and Terpstra,	
			1988; Heslop and	
			Papadopoulos, 1993;	
			Parameswaran and Pisharodi,	
			1994; Agarwai and Sikiri,	
			1996; Lee and Ganesh, 1999;	
			5. Wang and Lamb, 1983;	
			Parameswaran and Yaprak,	
			1987; Heslop and	
			Papadopoulos, 1993;	
			Parameswaran and Pisharodi,	
			1994; Lee and Ganesh, 1999; 6. Focus grup	
			6. Focus grup 7. Focus grup	
		The country image	7. 1 ocus grup	
		Opinions about the country	Nagashima (1970, 1977)	
12	Jenes	2. Feelings about the country	Martin and Eroglu (1993)	Hungary
1		3. Desired interaction/Targeted		Germany
		behavior	Tapadepositos et al. (1990)	
		11 4 4 4 1 1 1 111	1' C 1 1 D T	1 11 1

Source: developed by the author on the basis of bibliographic references, adapted after Lu and Heslop (2008, p. 293)

Although they have a common goal (that of developing a country image assessment scale), other authors have identified several limitations in this regard, according to Lu and Heslop (2008, p. 291): 1) the use of deductive or established measures by the author, without taking into account the measures that could be established by consumers - many measurement scales borrow items from previously developed scales that have not been formally validated or use items that the authors consider to be in close connection with the image of the country; however, it must be borne in mind that consumer opinions may differ from the authors' opinions, and items should be developed in collaboration with them; 2) the works aimed at elaborating the scales for measuring the country's image have limited - from a territorial point of view - its research area - especially on the countries of North America; 3) samples used by students were most often used and 4) research focused strictly on certain categories of products or brands (from a certain country); 5) orientation and focus on the opinions of the respondents, seen as actual consumers - the unrepresentativeness of the samples and the perception of the respondents as tourists, immigrants or investors, etc., depending on the desired target group; 6) limited examination of the psychometric properties characteristic of the elaborated scales; 7) the impossibility of demonstrating the equivalence of the measurements performed interculturally, using the same scale (from the point of view of the conceptual equivalence of the construct, of the factors and items considered, of the metric, factorial and scalar invariance, etc.).

Various methodologies have been approached in the study of the image of countries over time: on the one hand, there are studies that address the qualitative analysis of media appearances related to the image of a country - thus being useful in sketching the created image over time. , through the media, both inside and outside the borders. At the same time, the content analysis of the presentation pages of the country in specialized magazines, tourist guides, brochures, etc.

In 2003, Grahlow and Passow developed a tool for measuring a country's reputation, entitled Reputation Quotient - Country Reputation Index (Passow et al., 2005) while, a year later, The brand science guide for destination research and RFPs appeared - a document developed by Brand Strategy, which proposes tools aimed at evaluating destinations - perceived as brands.

Related to the country –perceived as a tourist destination-, Pikkemaat (2004) proposes the evaluation of the image of Austria through the prism of an instrument destined to evaluate some series of attributes specific to the country; Konecnik and Go (2008) approach the analysis of Slovenia's image, in parallel with the analysis of the quality offered to consumers, of the country's notoriety - as a brand - and of consumers' loyalty to the country, seen as a travel destination. Focusing on Australia, Jenkins (1999) and later Dolnicar and Huybers (2007) propose other tools for assessing and measuring the image of the destination; Prebensen (2004) explores different techniques for identifying respondents' perceptions of distinct tourist destinations, while Tasci and Holecek (2007) address methods of analyzing changes in the image of countries over time. The authors also paid attention to the online presence of countries, proposing methodologies for evaluating their image according to the information content of travel websites - and not only (Govers et al., 2007).

Scales that treat the country image as a global entity measure country characteristics -the scale developed by Martin and Eroglu, for example-, while scales on which the country image is analyzed as a summary construct is based on exploring the characteristics of products from that country.

We will address, in the following, three of the reference scales used in the evaluation of the country image.

The country of origin scale, developed by Parameswaran and Pisharodi (1992)

According to Parameswaran and Pisharodi (1992), the country of origin is a structure that demonstrates that people attach to products stereotypical perceptions depending on the country in which they are manufactured, which influences consumer behavior. Moreover, the construct itself includes perceptions regarding the economic, political and cultural characteristics of the country of origin, but also perceptions regarding the product itself.

The final version of the scale developed by the two authors in 1992 consists of 24 items that can be awarded a score of up to 10 points; the scale is structured according to six distinct factors, which concern the general attitudes towards the product, the general attitudes towards the country of origin of the product and the particular attitudes nurtured for it and the particular attitudes towards the product concerned. The scale used is considered to be multidimensional, but the items found inside the factor structures reflect one-dimensional measurements.

The development of the scale consisted of 40 items, initially generated to reflect three factor structures. The responses of a large sample were used and processed to identify relevant items in order to ensure the internal consistency of the data. Through the confirmatory analysis performed through LISREL and through the ITAN package (Gerbing and Hunter, 1988), an iterative process of examining the interrelationships, factor loads and resulting dimensions took place. The final form revealed the existence of three factorial structures related to the general attributes of the products: two of them highlighted positive attributes, while one highlighted negative attributes. A total of 678 respondents participated in the study undertaken - both for the research conducted in 1992 and for the research undertaken in 1994.

The scale has changed and in 1994 another 11 items were added. Depending on the product category taken into account and their country of origin, the scale differed slightly from one assessment to another. Of course, the scores could be summed on each category of factors, in order to obtain factorial indices, but still, each item reflected a one-dimensional measurement.

Compared to the validity of the model, for the study undertaken in 1992 - which aimed at a model composed of 6 factors, the unidimensionality of each of them was demonstrated. The Alpha coefficient estimated for them had the values of 0.872 (series I of general attributes on the country), 0.849 (series II of general attributes on the country), 0.918 (series I of general attributes on products), 0.735 (series II of general product attributes), 0.796 (series III of general product attributes) and 0.819 (product-specific attributes).

The country image scale developed by Martin and Eroglu (1993)

Although initially four dimensions of the country image were conceptualized (political, economic, technological and social), the final form of the scale designed by Martin and Eroglu (1993) focuses on three dimensions, composed of 5 items that analyze the political factor, 5 items concerning the economic factor and 4 items concerning the technological factor, considering that the social dimension is reflected in the other three dimensions analyzed. All items are evaluated using a seven-point differential semantic scale. The scores obtained can be summarized within the approached dimension to result in characteristic indices for each factor (economic, political, technological) or the scores of all the fourteen items can be summed to indicate the general composite related to the country image.

The development of this scale took place through two distinct procedures; 60 items were initially generated, reflecting the four dimensions of the country image. In the first phase, students and faculty members were involved in generating the items, while in the second phase the knowledge of eight PhD students with extensive international training was used. The totality of the items was subsequently reduced to 29 items by focusing on the representativeness of each item for the construct under consideration. The final scale was validated by analyzing the main components and other techniques aimed at analyzing the correlations between items. In the final study, Japan, the United States, India and Germany represented the pole of interest in which the scale obtained by the two researchers was used.

The pre-test was carried out on a sample of 200 people, and subsequently, for the adjustment of fineness elements, on samples of 230 and 80 students, respectively. Compared to the validity of the scale, for the sample of two hundred people, the reported Alpha coefficient was 0.950 for all the fourteen items that make up the country image scale. The same coefficient, estimated for the economic, political and technological dimensions, ranged from 0.56 to 0.71. On the sample of 230 people, the Alpha coefficient for the whole scale (of 14 items) was 0.925. A discriminant validity test indicated correlations between the three dimensions of the country image taken into account between 0.18 and 0.51, with p> 0.19 for each of them.

The scale developed by Lala, Allred and Chakraborty (2009)

As mentioned earlier, it is certain that the authors of the marketing literature did not agree on the number and type of factors that make up the size of the country. However, following an analysis of the interdisciplinary literature, Lala et el. (2009) identified the most widespread 7 dimensions of the country image, included in the studied works. These include: 1) economic conditions, 2) conflicts, 3) political structure, 4) vocational training, 5) work culture, 6) environment and 7) work. The first five dimensions were obtained following the review of the literature both in the field of marketing and in other fields. At the same time, the analysis of the interviews and the results of the focus groups revealed and confirmed their importance. The last two dimensions were taken into account following the emphasis on their particularities and importance by the respondents of the qualitative research.

This scale was developed using four steps. In the first phase, all the items of the already existing scales and previously used for the evaluation of the country image were reunited. Additional items were developed and added to the list formed by qualitative analysis; thus, focus groups took place and, implicitly, the analysis of the results obtained from the interviews conducted with 148 students. Their answers served to generate other items that completed the previous list. The qualitative analysis resulted in information on the environment of the activity (labor laws, living standards, working conditions, etc.), work culture (education, training, trust, safety, ethics), elements related to the environment. environment (pollution, safety, environmental safety awareness, etc.), politics (democracy, stability, etc.) and economic environment (technological advancement and global distribution). In the next phase, three international professionals and a professor whose merits are recognized internationally tested the validity of the model created; some of the items were removed, leaving a total of 39 items, divided into 7 categories.

The data were collected using a 39-question questionnaire, the answers to which were structured on a Likert scale from 1 to 7. Six distinct countries were analyzed - in terms of geographical location and economic development (China, Mexico, Russia, Scotland, Singapore and South Africa). The validity of the model and the scale prepared by the three authors was demonstrated in "A multidimensional scale for measuring country image", article published in 2009.

5. Conclusions

It is clear that over time, the authors who approached the assessment of the country image and, respectively, the creation of scales to measure the image of countries and/or destinations did not agree on the size of the country image and the necessary items to be taken into account in the evaluation process. However, reference works in the field (Parameswaran and Pisharodi, 1992; Martin and Eroglu, 1993; Papadopoulos, 1990 and 1993), in which measurement scales were developed and subsequently taken over by other authors, have appeared more than two decades ago. Some of them approach the evaluation of a country's image in terms of products and brands that come from it, others in terms of the country perceived as a tourist destination, and others in terms of characteristics and attributes specific to the country as a whole.

Scales for assessing the image of the country based on the image of the products of the country concerned could be perceived as redundant, as there is a bilateral relationship of influence between the image of the country and the image of the products derived from it. Moreover, given the definition of the image of a country, according to which it represents "[...] the total of informational, descriptive and inferential opinions regarding a certain country" (Martin and Eroglu, 1993), the evaluation of the image of a country through the perspective of scales built on the principle of evaluating the products and brands that come from it contradict the very definition of the country image. Moreover, the assessment of the country image should be strictly addressed to those respondents who know well enough the products of the country whose image is being analyzed.

Considering all these, an improved research model that encompasses wider dimensions of the country image construct is desirable to be built.

6. References

- Andreu, L. et al. (2000). Projected and perceived image of Spain as a tourist destination for British travellers, *Journal of Travel and Tourist Marketing*, 9(4), pp. 47-67;
- Baloglu, S.; McCleary K. W., (1999). U.S. International travellers' images of four Mediterranean destinations: a comparison of visitors and non visitors. *Journal of Travel Research*, vol. 38(2), pp. 144-152.
- Beerli, A.; Martin J., (2004). Factors influencing destination image. *Annals of tourism research*, vol. 31(3), pp. 657-681;
- Chon, K. (1990). The role of destination image in tourism: a review and discussion. *The Tourist Review*, vol. 2, pp. 2–9;
- Dolnicar S.; Huybers T. (2007). Different tourists different perceptions of different places: accounting for tourists' perceptual heterogeneity in destination image measurement [online] Available from: http://ro.uow.edu.au/cgi/viewcontent.cgi?article=1264&context=commpapers [Accessed 12 november 2021];
- Echtner, C.; Ritchie, J., (1991). The meaning and measurement of destination image. *Journal of Tourism Studies*, vol. 2(2), pp. 2–12;
- Echtner, C.; Ritchie, J., (1993). The measurement of destination image: an empirical assessment. *Journal of Travel Research*, vol. 31(4), pp. 3–13;
- Echtner, C.; Ritchie, J., (2003). The meaning and measurement of destination image. *The Journal of Tourism Studies*, vol. 14(1), pp. 37–48;
- Elliot, S.; Papadopoulos, N.; Kim, S., (2011). An integrative model of place image: exploring relationships between destination, product and country images. *Journal of Travel Research*, vol. 50, nr. 5. pp. 520-534;
- Espelt, N.; Benito J., (2005). The social construction of the image of Girona: a methodological approach. *Tourism Management*, vol. 26, pp. 777-785;
- Govers, R.; Go, F.; Kumar K., (2007). Virtual destination image. A new measurement approach. *Annals of Tourism Research*, vol. 34, nr. 4, pp. 977-997;
- Hunt, J. (1975). Image as a factor in tourism development. *Journal of Travel Research*, vol. 13(3), nr. 1-17;
- Jenes, B (2007). Connection between the ecologically oriented consumer behaviour and country image. *Marketing and Management*, vol. 6, pp. 34-43;
- Jenes, B., (2005). Possibilities of shaping country image. *Marketing and Management*, vol. 2. pp. 18-29;

- Jenes, B.; Malota, E.; Simon, J., (2008). Measurement possibilities of country image a field research among university students. *Marketing and Management*, vol. 2008, nr. 5-6, pp. 81-93;
- Konecnik, M.; Go, F., (2008). Tourism destination brand identity: the case of Slovenia. *Journal of Brand Management*, vol. 15 nr. 3, pp. 177-189;
- Lala, V.; Allred, A.; Chakraborty, G., (2009). A multidimensional scale for measuring country image. *Journal of International Consumer Marketing*, vol. 21, pp. 51-66;
- Lu, I.; Heslop, L., (2008). *Measuring country image: a research proposal* [online] Available from: https://www.researchgate.net/publication/277757840_MEASURING_COUNTRY_IMAGE_A_RESEARCH_PROPOSAL [Accessed 22 November 2021];
- Lubbe, B. (1998). Primary image as a dimension of destination image: an empirical assessment. *Journal of Travel and Tourism Marketing*, vol. 7, nr. 4, pp. 21-43;
- Martin, I.; Eroglu, S., (1993). Measuring a multi-dimensional construct: country image. *Journal of Business Research*, vol. 28(3), pp. 191-210;
- Murphy, L., (1999). Australia's image as a holiday destination. Perception of backpackers visitors. *Journal of Travel and Tourism Marketing*, vol. 8(3), pp. 21-46;
- Nadeau, J.; Heslop, L.; O'Reilly, N.; Luk, P., (2008). Destination in a country image context. Annals of Tourism Research, vol. 35, pp. 84-106;
- Papadopoulos, N., (2004). Place branding: evolution, meaning and implications. *Place Branding*, vol. 1, pp. 36–49;
- Papadopoulos, N.; Heslop L. (2000). A cross-national and longitudinal study of product-country images with a focus on the U.S. and Japan. Working paper. Cambridge: Marketing Science Institute;
- Papadopoulos, N.; Heslop L.; Beracs J., (1990). National stereotypes and product evaluations in a socialist country. *International Marketing Review*, vol. 7, pp. 32–47;
- Papadopoulos, N.; Heslop, L. (1993). Product and country images: impact and role in international marketing. New York: Haworth Press
- Papadopoulos, N.; Heslop, L., (2002). Country equity and country branding: problems and prospects. *The Journal of Brand Management*, vol. 9, nr. 4-5;
- Papadopoulos, N.; Marshall, J.; Heslop, L., (1987). Strategic implications of product and country images: a modeling approach. *Proceedings of Marketing Productivity*, 41st Research Congress, Lisbon, pp. 69-90;
- Pappu, R.; Quester P.; Cooksey R., (2007). Consumer-based brand equity: improving the measurement empirical evidence. *Journal of Product and Brand Management*, vol. 14(2/3), pp. 143-54;
- Pappu, R.; Quester, P., (2010). Country Equity: Conceptualization and Empirical Evidence. *International Business Review*, vol. 19, pp. 276 291;
- Parameswaran R., Pisharodi R., (1992). Confirmatory factor analysis of a country-oforigin scale: initial results. *Journal of Advertising Consumer Research*, vol. 19 (2), pp. 706-714;
- Parameswaran, R., Pisharodi, R., (2002). Assimilation effects in country image research. *International Marketing Review*, vol.19, pp. 259–78;
- Parameswaran, R.; Pisharodi, R., (1994). Facets of country of origin image: an empirical assessment. *Journal of Advertising*, vol. 23(1), p. 43;
- Parameswaran, R.; Yaprak, A., (1987). A cross-national comparison consumer research measures. *Journal of International Business Studies*, vol. 18(1), pp. 35-49;
- Passow, T.; Fehlmann, R.; Grahlow, H. (2005). Country reputation from measurement to management. *Corporate Reputation Review*, vol 7, nr. 4, 2005, pp. 309-326;
- Passow, T.; Fehlmann, R.; Grahlow, H. (2005). Country reputation from measurement to management. *Corporate Reputation Review*, vol 7, nr. 4, 2005, pp. 309-326;
- Pike, S. (2002). Destination image analysis a review of 142 papers from 1973 to 2000. *Tourism management*, vol. 23, pp. 541-549;
- Pikkemaat, B., (2004). The measurement of destination image: the case of Austria. The Poznan´ University of Economics Review, vol. 4 nr. 1, pp. 87-102;
- Prebensen, N., (2004). Exploring tourists' images of a distant destination. *Tourism Management*, vol. 28, pp. 747-756;
- Reilly, M.,(1990). Free elicitation of descriptive adjectives for tourism image assessment. *Journal of travel research*, vol. 28(4), pp. 21-26;
- Roth K.; Diamantopoulos A., (2009). Advancing the country image construct. *Journal of Business Research*, vol. 62, pp. 726-740;
- Roth M.; Romeo J., (1992). Matching product category and country image perceptions: a framework for managing country-of-origin effects, behavioral intentions model. *Journal of International Business Studies*, trimestrul al III-lea, p. 480;

- Roth, Z. K.; Diamantopoulos, A. (2010). Advancing the country image construct: Reply to Samiee's (2009) commentary. *Journal of Business Research*, vol. 63(4), pp. 446-449;
- Ryan, C.; Cave J., (2005). Structuring destination image. A qualitative approach. *Journal of travel research*, vol. 44(2), pp. 143-150;
- Setyowardhani, H.; Khairani, (2009). Analysis on variables affecting the creation of tourist destination image: case study on domestic tourists visiting Yogyakarta between 2007 to 2009. *Asean Marketing Journal*, vol. 2, nr. 1, pp. 43 54;
- Sonmez, S.; Sirakaya E., (2002). A distorted destination image? The case of Turkey. *Journal of Travel Research*, vol. 41(2), pp. 185-196;
- Tapacchai, N.; Waryszak, R., (2000). An examination of the role of beneficial image in tourist destination selection. *Journal of Travel Research*, vol. 39, nr. 1, pp. 37-44;
- Tasci A.; Holecek, (2007). Assessment of image change over time: the case of Michigan, *Journal of Vacation Marketing*, vol. 13(4), pp. 359-369;
- Walmsley, D.; Jenkins, J., (1993). Appraisive images of tourist areas: application of personal construct. *Australian Geographer*, vol. 24(2), pp. 1-13.

Evolution of Stress at Work During Pandemic Context for Romanian Employees

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Abstract

The effects of the pandemic caused by the SARS COV-2 virus were felt on all industries, which had to adapt their activities to meet the new challenges. The human factor is the one that most intensely felt the implications of the pandemic, the professional activities being significantly influenced. This article aims to summarize the definitions in the literature on stress at work and to analyze the results of research obtained from surveys conducted one year and 2 years after the onset of the pandemic in order to analyze the evolution of stress and burnout concepts at work in Romanian companies.

Key words: stress, burnout, job insecurity, pandemic context, COVID-19

J.E.L. classification: M10, M12, M54

1. Introduction

Since the end of 2019, the Covid-19 pandemic has gradually been felt around the globe, affecting the professional activity of most employees and employers. Measures to prevent and control the spread of the Covid-19 virus have imposed restrictions so as to avoid crowded places and large groups of people in the same rooms. The consequences of these changes have affected the quality of work and the interaction and the social relations established between the members of the communities. An example of these changes is work from home, the option to carry out professional activity in the family environment that has impacted both professional relationships and coexistence with family members. Another factor of causing stress was the job insecurity that affect a lot of businesses, some of them dealing with job restructuring, restriction of activity or technological unemployment.

2. Literature review

2.1. Work stress

Stress refers to the reaction of individual in front of different circumstances (Fang-Li Kuo,Pei-Hsuan Yang, 2020). Stress includes those changes in the physiology or perception of individuals in relation with certain situations in the external environment that take them out of their comfort zone, having an impact on their mental and/or physical well-being. (Lazarus RS, Folkman S, 1984). The stress generated by the professional activity is represented by the accumulation of negative emotions appeared in the interaction process between the employee and the professional environment. (Kristensen TS, Christensen KB, Borritz M, Villadsen E, 2005). Negative emotions manifested over a considerable period of time lead to the generation of continuous stress, which involves an impact on the physical and mental health of employees. Specifically, people exposed to continuous stress may experience several adverse symptoms, including insomnia, headaches, fatigue, anxiety, gastrointestinal discomfort, and low immunity. Also, social relations suffer, family conflicts occur, the quality of work decreases and other effects. (Reardon M, Abrahams R, Thyer L, Simpson P.,

2020). Stress determined by work activities is a condition that affects emotions, thought processes, and the thinking process. The gap between the demands of work with existing resources will cause work stress and make people feel more negative and dissatisfied (Irawanto, Dodi Wirawan, Khusnul Rofida Novianti, and Kenny Roz, 2021).

2.2. Job insecurity

Job insecurity concept was first defined in the eighties as lack of stability felt in continuing the activity in threatening conditions (Greenhalgh, L., Rosenblatt, Z., 1984). Job Insecurity was also defined as employee expectations for the continuity of work that cannot be separated from attention to uncertainty about the continuation of work and uncertain situations resulting from changes in the organization such as downsizing. Merger and reorganization and the absence of systematic research conducted to describe the role of uncertainty in influencing individual reactions to organizational changes (R. Widodo, 2010).

2.3. Burnout

Burnout is a fatigue syndrome, both physically and mentally which includes developing a negative self-concept, lack of concentration and negative work behavior (M.P. Leiter, C. Maslach and K. Frame, 2014). This phenomenon determine the professional environment to be rigid, cold, the involvement and commitment of the employees to be reduced, the professional performances not to be the ones expected by the employer, which leads to the degradation of social relations and non-involvement in professional activities. Burnout is also influenced by the relationship between business specifics and work. Through this phenomenon, the psychological and physical energy of the employees is reduced, being caused by the activity in which the employee is involved and which are not in accordance with his needs and expectations. (Mochamad Soelton, Preti Amaelia, Heru Prasetyo, 2019)

2.4. Work from home

In pandemic context, since March 2020, people around the world started to carry out their professional activity at home, from a location independent of the companies' headquarters, but without changing the specifics of their activity. In most cases, the tasks, objectives, responsibilities were not changed, but only the place where the activities were carried out with the aim of achieving them. In order to offer support for employers and employees to manage better with the new challenge of working from home and considering this unpredictable circumstances, The International Labor Organization published a guideline. Based on this guidelines and taking into consideration that the demand of work from home in pandemic context are different, "both employers and workers may be unprepared physically, mentally or infrastructure-wise to meet all challenges posed by work from home" (International Labor Organization, 2020). Even if the concept of work from home was analyzed before, the pandemic context influenced a lot remote working because, according to Sandoval-Reyes, J.; Idrovo-Carlier, S.; Duque-Oliva, E.J, (2021), in this context there are several factors that are specific:

- ✓ This time the action was not requested by the employer, nor by the employee, but was imposed by the pandemic context in order to limit the spread of the Covid-19 virus;
- ✓ the need to adopt the work system at home did not take into account the individual characteristics or the culture of the organization;
- ✓ was general, at the level of the entire organization and was not represented by periods in which work from office can be alternated with work from home
- ✓ it was at the level of several organizations at the same time, so that the members of the same family shared the houses to carry out their professional activities.

3. Research methodology

In order to identify the stress level and to analyze the factors that determine the stress at work, were performed surveys on Romanian employees. The first survey was conducted between November 20th - December 5th by BestJobs on a sample of 1.421 internet and the second one was performed between November 1st -18th, 2021, on a sample of 958 internet users.

4. Findings

4.1 Stress at work during 2020

Following the survey, it was found that the stress level doubled during the coronavirus pandemic for one in four Romanian employees, most reaching already burnout.

Abrihan Raluca, in the article published in 2020 in Agerpres, processed the survey results as following:

Over 70% of Romanian employees who participated in a survey conducted by the recruitment platform BestJobs say that the level of stress at work has increased since the onset of the coronavirus pandemic, and more than a quarter of them estimate that the level of stress even it doubled.

After 10 months of pandemic, overwhelmed by tasks at work, fear, uncertainty and social isolation, almost 30% of respondents admit that they have already reached burnout. The fatigue felt after a demanding program makes almost 20% of other employees believe that in no more than half a year they will reach burnout, if the stress will remain at the same level, while almost 16% estimate that they will reach at exhaustion within one year.

Disorganized and chaotic work environment (31.6%), overload (26.6%) and new responsibilities that fall outside their area of competence (24.6%) are the three main stressors cited by employees who responded to the BestJobs survey (Figure no. 1).

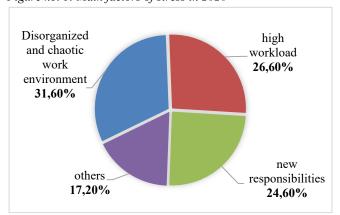


Figure no. 1: Main factors of stress in 2020

Source: own representation, based on BestJobs research results

Another 23.8% of respondents explain the high stress by the fact that they do not find a balance between personal and professional life, and 21% are stressed because they have to take over the responsibilities of colleagues.

Other important stressors for more than half of the respondents to the BestJobs survey are the procrastination of important decisions by direct superiors (15.6%), the possibility of losing a job (14.8%), the lack of direct interaction with colleagues and the direct manager (13,7%) or too much time allocated to online meetings (8.6%).

The pandemic has brought about a huge change in the way we work. Some employees quickly adapted to working from home (24%), others less so. What is certain is that most employees would prefer to return to the office (35%), while others over 30% would opt for a hybrid program - in which they can work up to 5 days a month from home.

In the most complicated period since the financial crisis of 2009, employees not only need to return to their offices, but also want to feel that their work is appreciated and that the employer is investing in their development. Romanian employees say that they now need more than ever courses for new specializations in their field of activity (53.5%), professional training courses (34.8%) or change management courses (26.6%).

An unexpected result in the context of the current crisis is the stated intention of more than half (56.3%) of the respondents of the BestJobs study to consider a job change in the next 6 months.

4.2. Stress at work during 2021

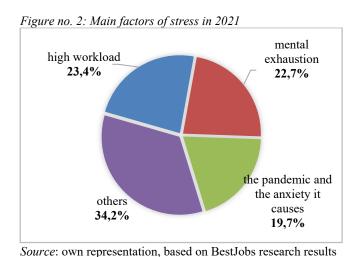
Based on the survey results, the main conclusion was that 1 in 2 Romanian employees say they have reached exhaustion this year, double compared to last year.

Pirv Cosmin exposes the data obtained from the survey in an article published in November 2021 in Ziarul Financiar, as follows:

Forced to work from home for a long time, almost half (47%) of Romanians who participated in the survey failed to balance their personal lives with work and believe that they suffered or are suffering from burnout, unlike last year, when the percentage of employees who admitted to going through the exhaustion of occupational exhaustion was below 30%.

According to the Best Jobs statement, 22% of respondents say they had to renegotiate their workload in order to maintain a good mental state and reduce burnout. At the same time, 21% of them consider that more leisure activities help to maintain well-being, and 16% consider that a much clearer delimitation between family and professional life, as well as more days off would be beneficial for getting rid of burnout.

The high workload (23.4%), mental exhaustion (22.7%), the pandemic and the anxiety it causes (19.7%) are the three main factors of stress cited by employees who responded to the BestJobs survey, who led to the acceleration of searches for a new job, especially among specialists with 2 to 5 years of experience (Figure no. 2).



More than 45% of the interviewees perceived the work tasks as extremely stressful and difficult during all this period, while for 18% the activity took place normally, without feeling pressured or stressed now more than in normal working conditions.

According to the press release, anxiety and stress in relation to the pandemic, their health and those in love with the uncertain situation at work lead more and more companies to seek solutions to support employees and provide life & business coaching services, counseling or psychotherapy, as extra-salary benefits.

In the last year, 14.4% of employees who responded to the BestJobs survey asked for the help of a specialist to maintain their mental health. Another 24.2% intend to turn to specialized therapy or professional coaching in the next period, in order to help them better manage stress, define their career path and make better decisions for them.

The authors of the survey says that the year 2021, for most of Romanian employees, can be described with following words: adaptation, fatigue, opinions about vaccination, hope, restrictions and burnout.

4.3. Evolution of stress at work in pandemic context

Comparing the both results of surveys mentioned above, it can be observed that the stress level was increasing with 57% during one year, the percent of employees that have reached the burnout growing from almost 30% in 2020 to 47% in 2021. This evolution of stress level is determined by the anxiety caused by pandemic, by mental exhaustion, the lack of direct interaction with colleagues and the direct manager, the work from home challenges (including here also too much time allocated to online meetings), the job insecurity and other challenges appeared. Also, the cumulative stress influence the personal life of employees, their life style and also their productivity. Therefore, some companies propose for employees some activities and programs in order to reduce work stress and to sustain productivity and engagement of employees.

5. Conclusions

The international health crisis has significantly affected all sectors of activity. The present analysis highlighted how this was felt at the level of employees in Romania from the point of view of the factors that determined the increase of the stress level and the appearance of burnout. Being an unforeseen situation, which generated many challenges, the response of companies and employees to the new changes had to be done quickly, but not affecting the human side. Employees had also to deal with work-life balance, challenges of working from home and having all the meetings online, with no face-to-face interaction. Given the long period of time in which the professional activity of employees was changed as a result of the pandemic, the level of stress felt accumulated, reaching almost double within a year.

6. References

- Abrihan Raluca, 2020, Nivelul de stres s-a dublat în timpul pandemiei de coronavirus pentru unul din patru angajați români, iar 30% dintre ei au ajuns deja la epuizare [The level of stress doubled during the coronavirus pandemic for one in four Romanian employees, and 30% of them have already reached exhaustion], AGERPRES, Bucuresti, , Available at https://www.agerpres.ro/economic-intern/2020/12/17/nivelul-de-stres-s-a-dublat-in-timpul-pandemiei-iar-30-dintre-angajatii-romani-au-aiuns-la-epuizare--629321 (accessed on 24.11.2021)
- Fang-Li Kuo, Pei-Hsuan Yang, 2020, Survey on perceived work stress and its influencing factors among hospital staff during the COVID-19 pandemic in Taiwan, Kaohsiung Journals of Medical Science, Volume 36, Issue 11, p. 944-952. Available online: https://onlinelibrary.wiley.com/doi/epdf/10.1002/kjm2.12294 (accessed on 23.11.2021)
- Greenhalgh, L., Rosenblatt, Z., 1984, Job insecurity: toward conceptual clarity. Acad. Manage., Rev. 9, p. 438–448.
- International Labor Organization, 2020, An Employers' Guide on Working from Home in Response to the Outbreak of COVID-19. Genève, Switzerland, p. 15. Available online: https://www.ilo.org/wcmsp5/groups/public/---ed_dialogue/--- act emp/documents/publication/wcms 745024.pdf (accessed on 27.11.2021).
- Irawanto, Dodi Wirawan, Khusnul Rofida Novianti, and Kenny Roz. 2021, Work from Home: Measuring Satisfaction between Work-Life Balance and Work Stress during the COVID-19 Pandemic in Indonesia. Economies 9: 96. Available at: https://doi.org/10.3390/economies9030096 (accessed on 19.11.2021)
- Kristensen TS, Borritz M, Villadsen E, Christensen KB., 2005, The Copenhagen burnout inventory: A new tool for the assessment of burnout. Work Stress. 19(3):192–207, Available at: https://doi.org/10.1080/02678370500297720 (accessed on 20.11.2021)
- Lazarus RS, Folkman S., 1984, *Stress, appraisal, and coping*. New York: Springer publishing company, Available at https://is.gd/g84ta4. (accessed on 26.11.2021)
- M.P. Leiter, C. Maslach and K. Frame, 2014, "Burnout", The encyclopedia of clinical psychology, pp. 1-7.
- Mochamad Soelton, Preti Amaelia, Heru Prasetyo, 2020, Dealing with Job Insecurity, Work Stress, and Family Conflict of Employees, Atlantis Press, Advances in Economics, Business and Management Research, volume 120, p. 170, Available at: https://doi.org/10.2991/aebmr.k.200205.031 (accessed on 20.11.2021)

- Pirv Cosmin, BestJobs: 1 din 2 angajaţi români spun ca au ajunsla epuizare anul acesta, dublu faţă de anul trecut [BestJobs: 1 of 2 Romanian employees say they have reached exhaustion this year, double compared to last year], Ziarul FInanciar, 2021, Available at: https://www.zf.ro/profesii/bestjobs-1-din-2-angajati-romani-spun-ca-au-ajuns-la-epuizare-anul-20364281 (accessed on 21.11.2021)
- R. Widodo, 2010, Analysis of the Effect of Job Security and Organizational Commitment on Turnover Intention and Its Impact on Outsourcing Employee Performance (Studi pada PT. PLN Persero APJ Yogyakarta). Semarang: Diponegoro University,
- Reardon M, Abrahams R, Thyer L, Simpson P. 2020, Prevalence of burnout in paramedics: A systematic review of prevalence studies. Emerg Med Australas. 32(2):182–189, Available at: https://doi.org/10.1111/1742-6723.13478 (accessed on 20.11.2021)
- Sandoval-Reyes, J.; Idrovo-Carlier, S.; Duque-Oliva, E.J., 2021, *Remote Work, Work Stress, and Work–Life during Pandemic Times: A Latin America Situation*. International Journal of Environmental Research and Public Health 18, 7069, p. 1, Available online: https://doi.org/10.3390/ijerph18137069 (accessed on 17.11.2021)

The Impact of COVID 19 on Tourism Services

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Abstract

In this paper we aim at showing the impact of the Covid-19 pandemic on the tourism both nationally and internationally. The paper begins with a presentation of the importance of the tourist services in the economic context, and then presents various definitions of the notions of tourism and tourist. From the point of view of the Covid-19 impact on tourism, we can notice during this period a decrease in the number of foreign tourists, as well as a significant decrease in the contribution of the tourism to GDP, a contribution analyzed at the global level. Romania, respectively Constanta County is not an exception to international developments, registering a decrease in arrivals, and in overnight, in the January 2019 - October 2021 period. The paper ends with conclusions which highlight the challenges tourism is faced with in the current context, but also with the hope that the markets will finally find their balance when the virus stabilizes.

Key words: tourism, industry, arrivals, pandemic crisis, impact

J.E.L. classification: L80, L83, Z30, Z32

1. Introduction

Through its subject matter, functions and role, tourism is a distinct field of activity, a major component of economic and social life for an increasing number of countries in the world. Tourism is evolving under the impact of the achievements of contemporary civilization, its dynamics being integrated into the general development process. Tourism is a stimulating factor of progress and development, through its positive effects on the areas it comes across.

The continuous advance of tourism, materialized in its development rhythms, has made tourism become, along with the scientific revolution, one of the most important elements of the twentieth century (Snack et al, 2001). Tourism, as a distinct economic and social activity, is experiencing a unique grow, encompassing resources from a large number of countries and organizations (Bran et al, 1998).

People, the contemporary consumers, are very receptive to what is new, to the quality of products and services, they are concerned with spending their free/leisure time under certain circumstances and at a certain level, depending on their education, culture, previous experiences, material possibilities.

Tourism is an important means of using one's free time. Increasing the dimension of the free time raises problems related to its organization and efficient use (Angelescu and Jula, 1997). Tourism contributes to broadening the tourist's horizon in terms of knowledge and information, it contributes to the development of individuals, with positive implications for economic and social development in general (Ioncica et al, 1977).

2. Literature review

The specialized literature that studies the tourism phenomenon abounds in approaches, concepts, and definitions regarding the notions related to tourism and its implications for the level of development of a country and region.

Tourism is an activity that aims to rest, to admire nature, as a result of the development of other branches of the economy. (Guyer Freuler, 1963).

Tourism is understood as the set of bodies and their functions, seen both from the point of view of the person who is traveling, of the traveler himself/herself, but also of those who are benefiting from the expenses incurred by him/her (Snak, 1976). Tourism designates leisure trips, the set of measures implemented for the organization and development of this type of trips, as well as the industry that competes in order to meet the tourists' needs (DTI, 1969).

The tourism industry is the part of the economy formed by a sum of activities or several branches whose common function is to satisfy the tourists' needs (Minciu, 2001). The client of the tourist services is the tourist, that fantastic and volatile being, is a person who enters a country without settling in that country, and spends the money earned elsewhere. (Norval, 1931).

The domestic tourist, similarly to the international tourist, is the person who visits a place other than where he usually resides, within his country of residence, for any reason other than engaging in a remunerated activity, staying for at least 24 hours.

Tourism has a major influence on people's well-being, on national culture, on all economic sectors, on the overall development of a country (Py, 2007).

The strategy of a country, through its objectives, synergistically gathers the economic interests of the actors in the society. The balance in the economy depends on the results obtained in each economic branch. In this context, tourism has a great influence on the balance of payments, on inflation, on unemployment. (Baretje and Defert, 1972).

The effects of tourism can be grouped into three categories – the global effects on a country's development strategy, partial effects on the various economic sectors and effects induced by the advantages of the tourist activity on the socio-cultural fields and of the human resource in general.

3. Research methodology

In this paper we have set out to show the effects of the Covid-19 pandemic on tourism, both nationally and internationally. From the point of view of the studied issue, it is a theoretical-fundamental kind of research, with a pronounced theoretical character and without immediate applicability, based on observational research, with a descriptive character, providing statistically processed data in the form of graphs that draw a clear picture of the topic tackled in the paper.

By means of the observation method, we have objectively described the data found in various domestic and international sources on the studied phenomenon, we have captured the phenomenon from different angles, and we have completed the observation by explaining the data and formulating conclusions and proposals.

By analyzing the existing data, in this paper we have shown once again a harsh reality - the negative effects of Covid-19 on the tourism and travel industry have been and continue to be significant, effects that can be measured up to the present day; however, the negative impact will be felt for years due to its penetration into the entire socio-economic system of each country and, implicitly, the world economy.

4. Findings

Since the beginning of the COVID-19 crisis in China, the impact of the pandemic on the tourism sector has been significantly underestimated. Even nowadays, political decision-makers and tourism practitioners do not have a full understanding of the scenarios and effects of the COVID-19 crisis, which have had and will continue to have an unprecedented impact on the tourism sector.

In this context, it is very possible that if the COVID-19 pandemic remains a problem for a longer period of time, it will continue to have a negative impact on the tourism sector, thus being likely to also change the tourists' habits, especially the habits regarding domestic trips, exploring areas closer to where they live, buying cheaper holidays, using promotions to book their holidays, reducing their travels for many years to come.

The following figure shows the negative effect of Covid-19 on the number of tourists globally in the first quarter of 2020. The figure shows, by percentage, the evolution of the number of tourists in the mentioned areas.

10 6 6 Middle Eas WORLD Europe Africa acific -10 -9 -20-30-40-37 -41 -44 -50-46 -60 -57 -60 -64 -70 ■Jan. ■Feb. ■Mar.

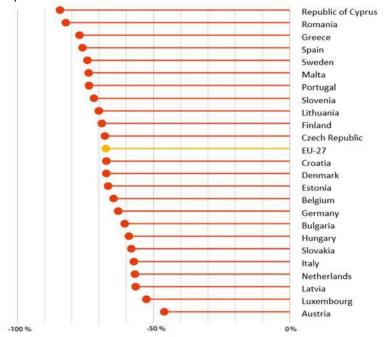
Graph no. 1. The evolution of the number of tourists in the first quarter of the pandemic year 2020, at global level.

Source: https://www.statista.com/markets/420/travel-tourism-hospitality/ (STATISTA, 2022).

As can be seen, the significant impact has been recorded worldwide since March 2020.

The COVID-19 pandemic has had a dramatic and unprecedented impact on the tourism sector worldwide, drastically reducing tourism flows and therefore the revenues of businesses in this sector.

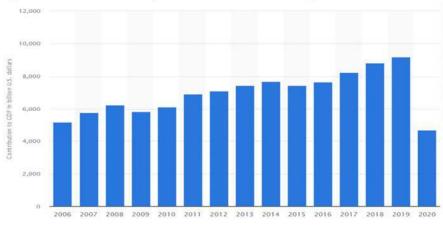
In the first three quarters of the year 2020, the number of foreign tourists in the EU was 67.5% lower than the one recorded during the same period of the year 2019. The decrease ranged from 46% to 84%, depending on the Member State concerned (SR, 2022).



Graph no. 2. Number of foreign tourists in the EU, January-September 2019, compared to January-September 2020.

Source: The European Court of Auditors, based on the UNWTO World Tourism Barometer, December 2020 (SR, 2022).

The contribution of tourism to the GDP of each country has been significant over time. The Covid-19 pandemic has had a negative impact on these statistics, as one can notice in the following graph.

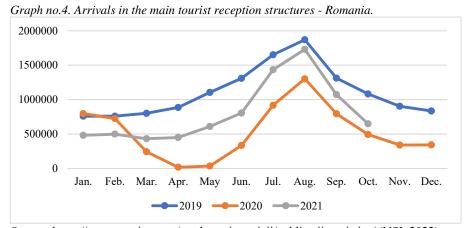


Graph no. 3. The contribution of the tourism and travel industry to GDP.

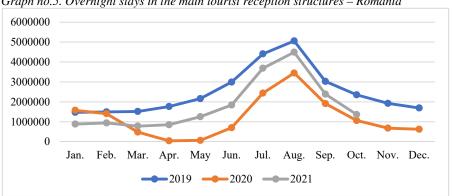
Source: https://www.statista.com/markets/420/travel-tourism-hospitality/ (STATISTA, 2022).

From the graph, we can see a continuous increase in the contribution of tourism to GDP at the international level, with the exception of 2020, a year in which, under the influence of the pandemic conditions, the contribution of tourism to GDP decreased significantly.

In order to justify this statement, we have graphically presented below two significant indicators that characterize tourism, namely - the number of arrivals and the number of overnights in Romania and in Constanta County during January 2019- October 2021 period.



Source: https://constanta.insse.ro/produse-si-servicii/publicatii-statistice/ (NSI, 2022).



Graph no.5. Overnight stays in the main tourist reception structures – Romania

Source: https://constanta.insse.ro/produse-si-servicii/publicatii-statistice/ (NSI, 2022).

At the level of Romania, these indicators registered a decrease in the years 2020 and 2021 compared to 2019, the year 2020 being the most affected, and in 2021 there would be an increase compared to the first pandemic year, 2020, but not reaching the level of 2019.

600000

500000

400000

200000

100000

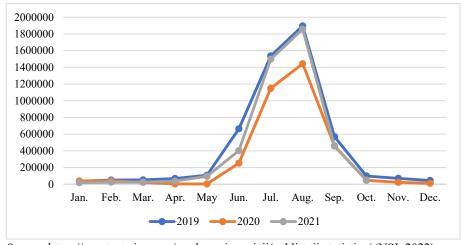
Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec.

2019 2020 2021

Graph no.6. Arrivals in the main tourist reception structures - Constanta county.

Source: https://constanta.insse.ro/produse-si-servicii/publicatii-statistice/ (NSI, 2022).

At the level of Constanta County, arrivals in the year 2020 registered a decrease compared to 2019, but in 2021 in the summer months the number of arrivals exceeded the level of the year 2019. All the statistics show that during the pandemic Romanian tourists did not go abroad anymore, rather they spent their holidays in Romania, and moreover the coastal area of the Black Sea was the most sought after at the level of the whole country.



Graph no. 7. Overnight stays in the main tourist reception structures - Constanta county.

Source: https://constanta.insse.ro/produse-si-servicii/publicatii-statistice/ (NSI, 2022).

The number of overnight stays in Constanta County registered a significant decrease in the year 2020 compared to 2019; however, in 2021 in the summer months it was at the level of the year 2019, which proves once again that tourists have chosen the Romanian seaside for their holidays and their vacation.

5. Conclusions

Tourism involves the act or process of spending time away from home, for purposes such as: recreation, relaxation, or pleasure, while using the commercial products and services offered by the suppliers available in the chosen destination.

In terms of economic activity, tourism influences several variables, such as: employment, inflation, the foreign exchange supply and currency circulation speed, production, balance of payments, investment, especially in setting up physical infrastructure, which makes tourism possible and, finally, the state budget by increasing public spending due to public services, but also by increasing government revenue due to direct and indirect tax collection.

In the European Union, tourism is a major economic activity, which has a fairly big impact on economic growth, employment, and social development at EU level. It can be a powerful tool in fighting economic downturn and unemployment. However, in the 2020 - 2021 period, the tourism sector has faced and continues to face a number of challenges due to the COVID-19 pandemic.

Initially, at the beginning of the pandemic, in April 2020, it was estimated that the tourism sector in the European Union, which had around 13 million employees, would lose revenue of around € 1 billion per month as a result of the COVID-19 outbreak.

Globally, since the beginning of the COVID-19 crisis in China, the impact of the pandemic on the tourism sector has been significantly underestimated. Even nowadays, political decision-makers and tourism practitioners do not have a full understanding of the scenarios and effects of the COVID-19 crisis, which have had and will continue to have an unprecedented impact on the tourism sector and the management of tourism services.

Travel restrictions have affected hotels, campsites, or other types of accommodation, as well as restaurants, museums and other activities attended by both local and international tourists. These facts have generated a series of challenges that the management of tourist services has had to cope with in order to overcome these moments of crisis.

The pandemic generated by the new coronavirus has affected, at the European Union and global level, both the health and the social and economic sectors, in a spontaneous and significant way.

Tourism is certainly one of the most affected sectors of activity due to the closure of airports, the suspension of activities in the hotel industry, travel restrictions and so on.

The COVID-19 pandemic affected the world economies significantly in 2020, the world GDP fell by 3.3% in 2020 compared to 2019. At EU level, the European Union recorded a decrease by 6.1% of its GDP in the pandemic year 2020, compared to 2019. Europe ranks second internationally in terms of the decline in international arrivals in the year 2020, reaching -60% in March.

Certainly, all tourism companies around the world will be affected to a greater or lesser extent by the pandemic, but airlines will no doubt face greater challenges; therefore, by virtue of their role in stimulating other tourism activities, they will need extraordinary support from governments and financial institutions.

Nevertheless, leading world economy experts agree that no matter how serious the impact may seem at the moment, the markets will eventually find their balance when the virus stabilizes, given the monetary and fiscal incentives implemented by the major countries of the world.

6. References

- Angelescu, C., Jula, D., 1997, Timpul Liber. Conditionari si implicatii economice [Free time. Economic conditions and implications], Bucharest, Economica Publishing House.
- Baretje, R., Defert, P., 1972, Aspects economique du tourisme [*Economic aspects of tourism*], Paris, Berger-Levrault Publishing House.
- Bran, FL., Marin, D., Simon, T., 1998, Economia Turismului si mediul inconjurator [*Tourism Economics and the Environment*], Bucharest, Economica Publishing House.
- DTI, 1969, Dictionnaire touristique international [International tourist dictionary], Suisse, French edition, 3 edition, Academie Internationale de Tourisme.
- Guyer Freuler, E., 1963, Contributions a une statistique du tourisme [Contributions to tourism statistics], CHET, Aix- en - Provence.
- Ioncica, M., Minciu, R., Stanciulescu, G., 1977, Economia serviciilor [*The Economics of Services*]—, Bucharest, Uranus Publishing House.

- Minciu, R., 2001, Economia Turismului [*The Economics of Tourism*], Bucharest, Uranus Publishing House
- Norval, JA, 1931, The Tourist Industry, London, Pitman Publishing House.
- Py, P., 2007, Le Tourisme. Un phenomene economique [Tourism. An economic phenomenon]. The French Documentation, Paris.
- Snak, O., 1976, Economia si organizarea turismului [*Economy and organization of tourism*], Bucharest, Sport-Tourism Publishing House.
- Snack, O., Baron, P., Neacsu, N., 2001, Economia Turismului [Tourism Economics], , Bucharest House Expert Publishing House.
- SR, 2022. The European Court of Auditors Special Report 27/2021 EU support to tourism: need for a fresh strategic orientation and a better funding approach [online] https://www.eca.europa.eu/en/Pages/DocItem.aspx?did=60287 [Accessed 5 January 2022]
- STATISTA, 2022. Travel, Tourism & Hospitality [online] < https://www.statista.com/markets/420/travel-tourism-hospitality/> [Accessed 5 January 2022]
- NSI, 2022. National Institute of Statistics [online] https://constanta.insse.ro/produse-si-servicii/publicatii-statistice/ [Accessed 5 Juanury 2022]

Some Peculiarities of the Japanese Management's Model

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Abstract

The Japanese management is to a significant extent, a reflection of the country's cultural peculiarities. The article intents to review some of the specific elements of the Japanese management system, which, on the one hand, underlie the performance Japanese companies, and on the other hand, differentiate it from the management systems practiced in other countries.

Key words: culture, team, kaizen, Japan, management **J.E.L. classification**: M10, M14

1. Introduction

The so-called "Japanese miracle" manifested in the early 1970's, aroused a real and widespread interest in the management of Japanese enterprises. Thus, regarding the fast development, the economic success that Japan has achieved, the specialists highlight three points of view, each of them being solidly argued (Burduş, 2017, p.233):

- the first point of view is based on the "cultural argument" and it supports the idea of the country's uniqueness and the fact that the same managerial practices used in other parts of the world will not lead to similar results. Japanese culture it is homogenous and the cultural peculiarities influence significantly influence the managerial practices;
- the second point of view is based on the "the super-human's theory" in Japan. He created some important values, based on his desire to excel, to surpass himself, to be, simply, the best:
- in the context of the third point of view, which is the most widespread, it is considered that the application of the management's principles it is characterized by a flawless adaptability to this country's cultural, economic and social realities.

2. Theoretical background

The Japanese management it is characterized by a set of behaviors, of which the following elements stand out (Zait, p.263):

- an efficient manager, in Japan mostly relies on the ability to understand its subordinates, employees. The manager is aware that he is not working with robots, but with unique people, with different abilities, skills and needs;
- the manager must be interested in reducing the number of conflict situations and of the tension among the employees, even if, it is well known that every time people work in a group there are or could emerge certain conflicts;
- the managers must allow to their subordinates perceived as a fundamental part of the enterprise, to show and express their loyalty.

A specific aspect of the Japanese' enterprise management it is represented by the fact that "the human resources are the enterprise's most important resources" (Toma, 2004, p.66). The soul and the organization's performance is built by people, which are loyal to the company's performance, to its future and for whom, the efficiency and the work excellency is a desideratum. The aversion that Japan has developed toward the idea of "failure" it is due to the lack of natural resources and space. Under these circumstances, the efficiency and the work excellency represent an objective necessity

(Moldoveanu, 2015, p.429), and the "quality" of workers represent the main concern in the Japanese companies. Thus, Japanese managers main concerne is bringing into the company with the best employees and also continuous training of the employees (Iamandi, 2020, p.69). It is known that the employees should be treated as a major strategic investment, that the human capital it is considered to be an investment chapter for the organization's further development. But, at the same time, the human resources' investments are also with a high level of risk and any resignation from the organization by the employee's own choice, it represents an lost investment. However (Burduş, 2017b, p.286), unlike the western organizations, in Japanese organizations the staff mobility is low. However, many experts believe that mobility will increase.

The Japanese consider that the teamwork it is more importance than the individual. The spirit of cooperation and collaboration it is rooted in the history of many Japanese companies. In fact, the Japanese work and play in groups, being focused on the group and it seems that the group is a source of happiness. The family is the origin of this feeling of collective behavior and as P. Varley shows "any rejection or non-compliance phenomenon to it raises for the Japanese the most serious problems related to its role in society as a whole." (Varley, 2017, p.382). Psychologically, the vast majority of Japanese do not have a single family, but two. To the classic family it is attached the other one, the one represented by the community created inside the organization and in which the employees integrate. For the Japanese, both families are of great importance and describe a balanced universe, in which their lives unfold (Herciu, 2007, p.118). The team has become today, due to increasing complexity and change, the functional unity of many organizations around the world. Instead of employees to be responsible for segregate tasks, were set groups in which individuals combine their efforts, knowledge and skills to achieve the common goals. In order for organizations to be innovative also the teams must have this quality, being easily adaptable and especially creative. Among the many advantages of this forms of association, we emphasize the following:

- the global result of the teamwork exceeds the amount of individual contributions;
- increasing the decisions' performance through the results of cooperation;
- continuous improvement of the activity, but also the motivation as a result of the team work performance;
- decrease the working time;
- better adaptation to the customers' requirements and the effects of change;
- in many situations, innovation and creativity in general, occurs more easily inside the teams;
- specialists are trained faster and better inside the teams etc.

One of the most important Japanese management's concepts it is Kaizen. The Kaizen concept explains why, in Japan, nothing can remain static for too long. Kaizen is a process and in the same time, an aspect of everyday life, and its complex purpose exceeds the limits of simple improvement of productivity. (Butnaru, 2014, p.75) Therefore, positive change must be approached as a continuous process and any progress matters, no matter how small.

It is considered that (Harley, 2020, p.14) the Kaizen philosophy can be perceived as a result of the confluence between East and West, to which is owed, to a great extent, the success achieved by Japanese companies, starting with the second half of the XX- th century. Thus, the method has its origins in the United States of America, during the Second World War, when occurred and were recorded some problems with the innovation and support of the effort of war which the organizations faced. A very strong accent (Harley, 2020, p.16) "was placed on the already existing workforce, which observed the work practices and suggested the improvement methods and means instead of being led by the supervisors." And while many American companies no longer needed to rely on continuous improvement programs once the war ended, they were adopted by the Japanese. Kaizen was the name that the Japanese gave to the new managerial technique of continuous improvement and that the Japanese companies adopted with great enthusiasm.

In the work "Kaizen: The Key to Japan's Competitive Success", Masaaki Imai highlights the idea that the kaizen method is the equivalent of the progressive attitude towards Japanese change and an extension of the Japanese cultural value system. He concludes that "the key difference between the way Americans understand change, on the one hand, and the Japanese, on the other, lies in the kaizen concept — a concept that is so natural and obvious for so many Japanese managers that many of

them do not realize that they applying it. So, kaizen is a way of life for the Japanese, at work, but also in the family.

Today, the Kaizen method is extremely popular all over the world and is an effective way to achieve success. The Kaizen philosophy "takes into consideration the improvement opportunities in all the organization's areas:

- costs;
- compliance with delivery deadlines;
- work safety;
- developing employees' skills;
- relationships with suppliers;
- development of new products;
- productivity;
- etc." (Ciobanu, 2009, p.14).

It should be noted that the vast majority of improvements come from the employees' knowledge and experience and are not made in big leaps. (Ciobanu, 2009, p.14).

We can say that managerial practices in Japan are overwhelmingly influenced by cultural peculiarities. Among Japan's main cultural values are amae, ie and oyabun-kobun.

Amae is one of the values that influences the behavior of Japanese managers.

It refers to the desire to be able to count on the goodwill of others, to depend on the love and patience of others. Due to amae behavior, Japanese managers develop warm relationships with employees, with less authority and less control (Zaiţ, 2002, p.263). Thus, by generating a harmonious climate and consensus there is obtained a solid devotion of the group members.

Another Japanese cultural value is ie. According to this, the group interest it is a priority, and the individual should sacrifice his personal interest for the group's interest to which he belongs.

At the level of Japanese organizations, it stands out "Specific way in which the leader of a company tries to determine the employees to meet certain objectives". (Isac *et al*, 2020, p.84).

Closely related to amae, on the vertical of Japanese organizations, there is an interpersonal relationship specific to the Japanese culture called oyabun-kobun. The person high in the hierarchy is an oyabun. To this person are subordinated several kobuni, which he must treat them in the same way, without making any differences between them. The relationship also includes joint leisure activities. Due to this system of oyabun-kobun relations, but also due to tradition and social norms, the authority it is not questioned and therefore it is strongly respected in Japanese organizations.

We mention few features of the Japanese enterprises (Burdus, 2017a, p.1008):

- stress the importance of long-term results and low weight on short-term results;
- significant investments in order to obtain a long-term competitive position;
- the predominant selection criterion is survival and sustainable growth and only to a small extent, the profit.

As noted by some specialists (Firkola, 2006, p.128), "Japanese companies demonstrate that they can make necessary changes to deal with a changing economic environment while maintaining the stronger aspects of the traditional management system."

3. Research methodology

The article's research methodology has an analytical character mainly focused on the research of the specific and specialized literature concerning international comparative management, human resource management and management. The accomplishment of this work involved a bibliographic research consisting of books and articles, taking into account certain references of interest that were accessed and analyzed.

4. Findings

Japan is dominated by the culture of the community, and the attitude of the Japanese towards change is a progressive one.

Japanese companies value more the long-term success than the short-term pride, value the spirit of collaboration, and the Japanese's habit of saving the resources proved to be a good one.

The Japanese concept of the company is based on the community spirit. The Japanese perceive the company as a union of people, each person being a member of it.As Kenichi Ohmae points out in his work "The Strategist Intelligence: The Art of Business in Japan" (p.194), if asked which are their main responsibilities, many executives in Japan would answer that their work is about the employee's well-being. The Japanese company starts with people and has confidence in the employees' abilities and potential and the Japanese managers never stop reminding executors that they need to be an inexhaustible source of improvement and innovation. In fact, for the typical Japanese, the company is the equivalent to the environment in which he spends most of his time, with the place where he meets his colleagues and even more than that, it means his second family.

Harmonizing the interests of each element of the company with its interests as a whole, through the management practices it is a common problem to all companies in the world, a problem which the Japanese companies were able to solve. The management practices have led to the conflicts of interest's reduction, practically succeeding in converging all interests. Anyway, such a concordance is essential in order to achieve success.

5. Conclusions

The Japanese management model is, without any doubt, a source of education, a management model that has crystallized under the influence of culture and has demonstrated its success over time. The Japanese, on the other hand, have exported from their own culture, as their opinions and management style became known everywhere, and on the other hand, they took care to keep a solid set of local values, to which foreign loans were adapted and shaped.

6. References

- Burduş, E., 2017a, Management treaty. 3rd Edition. Bucharest: Pro Universitaria.
- Burdus, E., 2017b, International comparative management. 5th Edition.Bucharest: Pro Universitaria.
- Butnaru, V., 2014.Japanese Kaizen thinking key to the success of organizational development, *Public Administration*, [online]. Available at:
 https://ibn.idsi.md/sites/default/files/imag_file/Gandirea%20japoneza%20Kaizen%20%E2%80%93%20cheie%20privind%20succesul%20dezvoltarii%20organizationale.pdf.pdf. [Accessed 07 September 2021].
- Ciobanu, V., 2009, How to improve quality: a practical guide. Bucharest: Economic Publishing House.
- Firkola, P., 2006. Japanese Management Practices Past and Present. Econ. J. of Hokkaido Univ., [online]. Available at:
 https://www.researchgate.net/publication/37553976_Japanese_Management_Practices_Past_and_Present [Accessed 05 October 2021].
- Herciu, M., 2007, Comparative management. Sibiu: The Publishing House of "Lucian Blaga" University.
- Iamandi, I., E., 2020, Human resources management in the international context, Bucharest: ASE Publishing House.
- Isac, F. and Remeş, E.,2020.Tradition vs. modernity in Japanese management, *Studia Universitatis* "*Vasile Goldis*" *Arad*, [online]. Available at:
 Managemet [Accessed 10 October 2021].
- Kenichi, O., 1998, *The strategist's intelligence: The art of business in Japan (translation)*. Bucharest: Teora Publishing House.
- Moldoveanu, G. and Dobrin, C., 2015. Operational management. 3rd Edition. Bucharest: Pro Universitaria.
- Toma, S., G., 2004. Peculiarities of Japanese enterprise management, *Economic Amphitheater*, [online]. Available at:
 https://www.researchgate.net/publication/4981957_Characteristics_of_the_Japanese_Enterprise_M anagemen> [Accessed 17 September 2021].
- Varley, P., 2017, *Japanese culture* (translation). Bucharest: Humanitas Publishing House.

• Zaiţ, D., 2002, *Intercultural management: valorization of cultural differences*. Bucharest: Economic Publishing House.

Study on the Students' Opinion on the Educational Offer of a Bachelor's Degree Program in Business Administration

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Abstract

The main purpose of the study is to identify students' opinion on the educational offer provided by a bachelor's degree program in business administration, in order to improve the quality of the services provided. The study underlines the importance of university personnel in preparing students for the bachelor's degree in business administration, the importance of theoretical notions on the educational offer, method, hypotheses, research results and study conclusions. The study is based on direct research, respectively occasional survey-type enquiry, using as a tool the questionnaire, applied to students in the Economics of Commerce, Tourism and Services undergraduate program (from Resita). The results of the study show the students' degree of satisfaction with the educational offer of the business administration undergraduate program.

Key words: opinion, offer, satisfaction, administration, business

J.E.L. classification: M31, M39

1. Introduction

In this paper we aim to present the students' opinion regarding the educational offer of a bachelor's degree program in business administration. For this reason, the degree of satisfaction was first identified, with reference to the conditions necessary for the development of educational activities, respectively the specific technical-material base, resources and services provided.

It is known from practice that "the quality of the educational service offered in the university environment is largely conditioned by the quality of human resources, by the professional quality of didactic staff" (Bălan C., 2014, p. 16).

In order to improve the university educational offer, in addition to the management structures of universities and faculties, both didactic staff and students must contribute through active participation in the development of educational activities.

2. Theoretical consideration

During the last years, at national and international levels, universities aimed at an education focused on active participation of students. Students must be appreciated by didactic staff as partners who participate in the implementation of instructional-educational and assessment activities, and their absence leads to the impossibility of carrying out the activity.

In student-centred education, "teaching combines education with training and learning and assessment in accordance with the established goals" (Bălan, 2014, p. 15), emphasizing the building of students' competencies on a certain segment of the university course, competencies which are convergent with the set of acquisitions that are proposed for the graduation of a certain specialty" (Singer et all, 2006, p. 9). "Weinert considered competency to be: the performance behaviour such as knowledge, feelings and skills required to undertake and complete a job. Competencies can be categorised into general and professional" (Yeh et al, 2010, Chen and Kuo, 2010, p. 432).

In business, "supply is the quantity of a product or service that the company is willing to sell, depending on the calculated prices, so as to cover expenses and make a profit" (Gherghian, 2018, p. 7). "Entrepreneurship is undeniably an important source of income, an important strategy for creating new jobs and hastening the economic recovery and growth of the nation" (Laguador, 2013, p. 61).

Specialty studies refer to the fact that the offer of services is a "package of basic services, complementary services and additional services" (Gherghian, 2009, p. 55).

When referring to educational services, one can state that the offer of educational services consists of the *specific technical-material base* (land, buildings, equipment: learning spaces - course, seminar, laboratory, gyms, library and reading rooms; accommodation spaces for students, employees and guests; recreation spaces, etc.), *the employed workforce* (human resources) which by number, structure and level of training determines the value of service production; *national and international agreements* (ensure mobility for students, master students, doctoral students and secondments of employees) with an important role in the development of services; *services provided* (basic services - educational process; complementary services - internet, online platforms; *additional services* - granting bonuses to performing students; *auxiliary services* (support) - secretariat, website, computer system, all of which must exist and function both at the main university headquarters and at the level of university extensions.

3. Research methodology

In order to find out the students' opinion regarding the educational offer of a study program in business administration, we chose the undergraduate study program the Economics of Commerce, Tourism and Services (from Resita) - ECTS (from Resita) within the Faculty of Economics and Business Administration, the "Babeş-Bolyai" University Centre of Cluj-Napoca –with an extension established in Resita. An opinion survey was applied to students, using as a tool an online questionnaire, uploaded on Google forms, which was completed by students during the period 31.05.2021-03.06.2021.

For the students' opinion, the Opinion scale was used, which "measures preferences, motivations, attitudes, degree of satisfaction, the impact of some stimuli (price advertising, group membership) on potential consumers" (Gherghina, 2014, p. 33).

The main objective of the study is to identify the degree of satisfaction, appreciation and content of students regarding the educational offer of the Economics of Commerce, Tourism and Services study program (from Resita). A direct research method was used, an occasional survey based on a questionnaire, to obtain the information needed and the measurement was performed using the ordinal scale –the Likert scale and the interval scale - the semantic differential, as well as the percentage method. The questionnaire designed contains 10 questions, of which: 3 were identification questions and 7 were closed questions, with binary and multiple variables. The total number of students from the ECTS study program (from Resita) was 63, and the distribution of students by years of studies and respondents who completed the questionnaire is presented in the table below:

Table no.1 Number of students and respondents by years of study at the ECTS program (from Resita)

Program and year of study	No. of students	Percentage students	No. of respondents	Percentage respondents
ECTS I	25	39.68%	12	41.38%
ECTS II	22	34.92%	14	48.28%
ECTS III	16	25.40%	3	10.34%
Total	63	100%	29	100%

Source: realized by the author

Out of the total of 63 students, only 29 (46.03%) filed in the questionnaire, the survey rate being higher than 1/7 (14.29%). Thus one can say that the survey is exhaustive and takes into account the sample size. When designing the questionnaire the following were used: nominal scale with bifurcated and multiple alternatives for questions Q01, Q02, Q03; the ordinal scale, the scaling

method being Likert's scale for questions Q04, Q5, Q7, Q8; the interval scale, the scaling method being the semantic differential for questions Q06, Q9, Q10.

Research hypotheses aimed at the students' degree of satisfaction regarding the educational offer of the Economics of Commerce, Tourism and Services study program (from Resita), respectively:

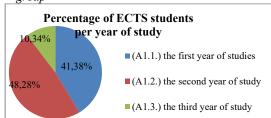
- the need for specialists in the field of business administration on the labour market;
- the provision of theoretical knowledge, the development of practical skills and competencies acquired by students during the study program;
- the extent to which the subjects of the study program ensure practical utility, in correlation with the graduates' training and labour market requirements;
- the degree of satisfaction regarding the didactic process carried out as well as the learning spaces, schedule, resources and services provided for the study program.

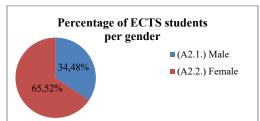
4. Results

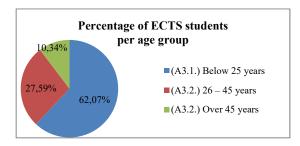
The following information includes the results of the students' survey regarding the degree of satisfaction with the educational offer of the Economics of Commerce, Tourism and Services (from Resita).

➤ Identification of student respondents registered with the Economics of Commerce, Tourism and Services study program (from Resita)

Figure no. 1, no. 2, no.3. Identification of student respondents – per year of study, per gender, per age group







Source: realized by the author

According to the graphs, the majority of respondents are students from (A1.2.) the second year of study - 48.28% (14 respondents) and (A1.1.) from the first year of studies - 41.38% (12 respondents) (A2.2.) and 65.52% (19 respondents) are female, 62.07% (18 respondents) are part of the age group (A3.1.) below 25 years and (A3.2.) 27.59% (8 respondents) from the age category 26-45 years.

> The need for specialists in the field of business administration on the labour market Most student respondents consider that the labour market needs specialists in the field of business administration, 62.07% (18 respondents) totally agreeing with the statement and 27.59% (8 respondents) agreeing, the score being of 1.38. The trend is towards full agreement.

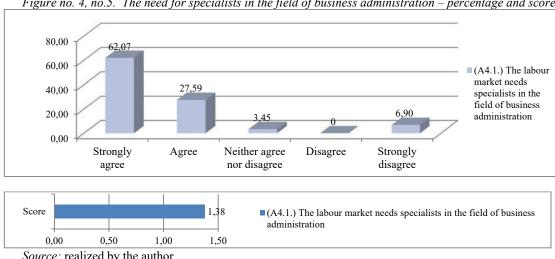
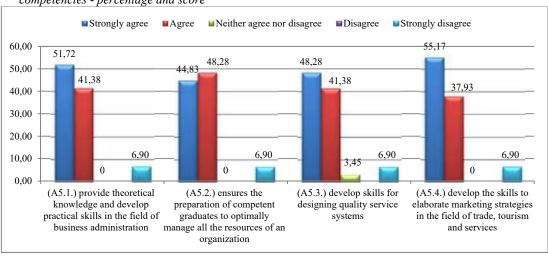


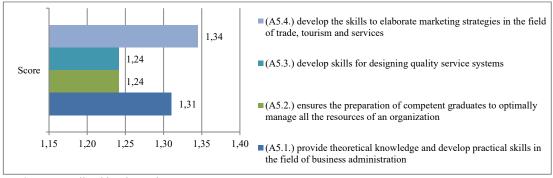
Figure no. 4, no.5. The need for specialists in the field of business administration – percentage and score

Source: realized by the author

The provision of theoretical knowledge, the development of practical skills and competencies acquired by students during the ECTS study program (from Resita)

Figure no. 6, no. 7. The provision of theoretical knowledge, the development of practical skills and competencies - percentage and score





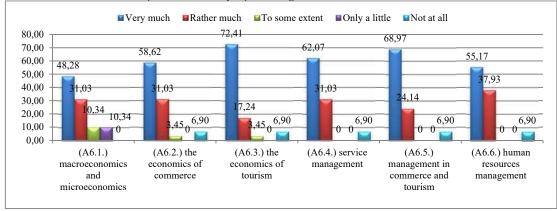
Source: realized by the author

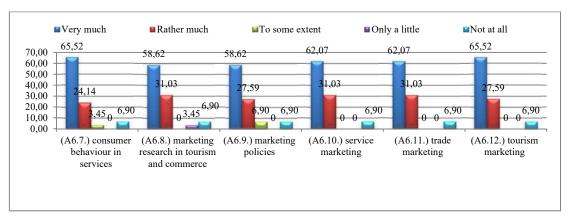
The respondent students *agree* with the tendency towards strong agreement *on the provision of theoretical knowledge, the development of practical skills and competencies* provided by the Economics of Commerce, Tourism and Services program (from Resita), as evidenced by the total score of 1.28.

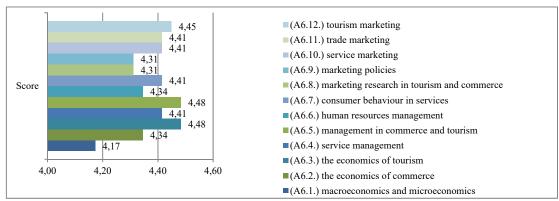
Respondents *strongly agree* that the ECTS program (from Resita):

- (A5.4.) develop the skills to elaborate marketing strategies in the field of trade, tourism and services
- 55.17% (16 respondents), score of 1.34;
- (A5.1.) provide theoretical knowledge and develop practical skills in the field of business administration 51.72% (15 respondents), score of 1.31;
- (A5.3.) develop skills for designing quality service systems 48.8% (14 respondents), score of 1.24. The respondent students agree that the ECTS study program (from Resita) (A5.2.) ensures the preparation of competent graduates to optimally manage all the resources of an organization 48.28% (14 respondents), score of 1.24.
- The extent to which some of the existing or new subjects introduced in the curriculum of the Economics of Commerce, Tourism and Services study program (from Resita) ensure practical utility, in correlation with the training requirements of graduates needed on the labour market.

Figure no. 8, no. 9, no. 10. The extent to which some of the existing or new subjects introduced in the curriculum ensure practical utility - percentage and score







Source: realized by the author

Most of the respondents appreciate that the subjects of the Economics of Commerce, Tourism and Services study program(from Resita) provide practical utility, in correlation with the training requirements of graduates needed on the labour market, largely choosing a very large extent, as evidenced by the total score of 4.38.

The respondents appreciate that the disciplines of the ECTS program (from Resita) ensure practical utility to a very large extent, the order of the percentages obtained being: (A6.3.) the economics of tourism (score of 4.48) - 72.41% (21 respondents), (A6.5.) management in commerce and tourism (score of 4.48) - 68.97% (20 respondents), (A6.6.) human resources management (score of 4.48) - 55.17% (16 respondents), (A6.7.) consumer behaviour in services (score of 4.41) and (A6.12.) tourism marketing (score of 4.45) - 65.52% (19 respondents / discipline), (A6.4.) service management (score of 4.41), (A6.10.) service marketing (score of 4.41) and (A6.11.) trade marketing (score of 4.41) - 62.07% (18 respondents / discipline), (A6.2.) the economics of commerce (score of 4.34), (A6. 8.) marketing research in tourism and commerce (score of 4.31), (A6.9.) marketing policies (score of 4.31) - 58.62% (17 respondents / discipline), (A6.1.) macroeconomics and microeconomics (score of 4.17) - 48.28% (14 respondents / discipline).

Competences acquired by students through the Economics of Commerce, Tourism and Services study program(from Resita)

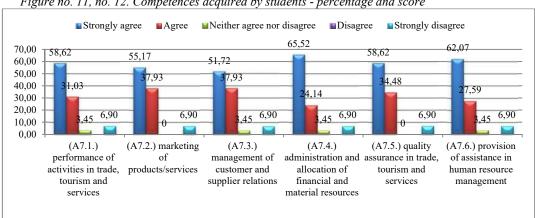
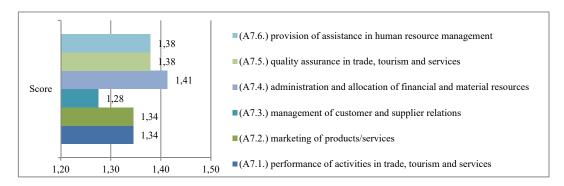


Figure no. 11, no. 12. Competences acquired by students - percentage and score



Source: realized by the author

Most respondents *agree* with a tendency towards *strong agreement* that, through the Economics of Commerce, Tourism and Services study program (from Resita) they *will acquire skills specific to the field*, as evidenced by the score of 1.36.

Respondents stongly agree that through the ECTS program (from Resita) they will acquire skills for:

- (A7.4.) administration and allocation of financial and material resources 62.52% (19 respondents), score of 1.41;
- (A7.6.) provision of assistance in human resource management 62.07% (18 respondents), score of 1.38;
- (A7.1.) performance of activities in trade, tourism and services (score of 1.34), as well as (A7.5.) quality assurance in trade, tourism and services 58.62% (17 respondents / statement), score of 1.38;
- (A7.2.) marketing of products/services 55.17% (16 respondents), score of 1.34;
- (A7.3.) management of customer and supplier relations 51.72% (15 respondents), score of 1.28.

> Critical and innovative thinking, as well as various skills, provided to students from Economy of Commerce, Tourism and Services study program (from Resita), respectively:

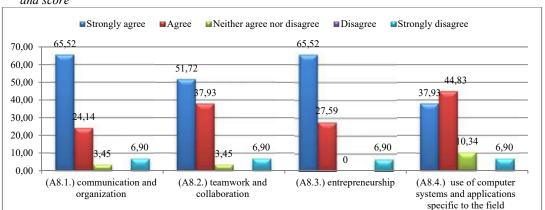
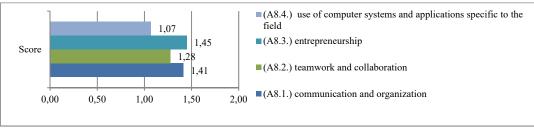


Figure no. 13, no. 14. Critical and innovative thinking and various skills, provided to students - percentage and score

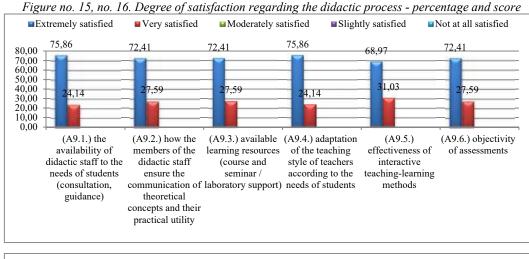


Source: realized by the author

From the graphs presented, one can observe that most respondents *agree* with a tendency towards *strong agreement* on *critical and innovative thinking, as well as various skills*, provided to students of the Economics of Commerce, Tourism and Services study program (from Resita), as evidenced by the total score of 1.30.

Respondents *strongly agree* that the ECTS program (from Resita) provides critical and innovative thinking, as well as various skills to:

- (A8.3.) entrepreneurship (score of 1.45) and (A8.1.) communication and organization (score of 1.41) 65.52% (19 respondents / statement);
- (A8.2.) teamwork and collaboration (score of 1.28) 51.72% (19 respondents);
- (A8.4.) use of computer systems and applications specific to the field (score of 1.07) 37.93% (11 respondents).
- ➤ Degree of satisfaction regarding the didactic process carried out at the Economics of Commerce, Tourism and Services study program (from Resita)



■ (A9.6.) objectivity of assessments ■ (A9.5.) effectiveness of interactive teaching-learning methods 4,69 4.76 ■ (A9.4.) adaptation of the teaching style of teachers according to the Score 4,72 needs of students 4,72 ■ (A9.3.) available learning resources (course and seminar / laboratory support) 4.76 ■ (A9.2.) how the members of the didactic staff ensure the communication of theoretical concepts and their practical utility 4,65 4,70 4,75 4,80 ■ (A9.1.) the availability of didactic staff to the needs of students (consultation, guidance)

Source: realized by the author

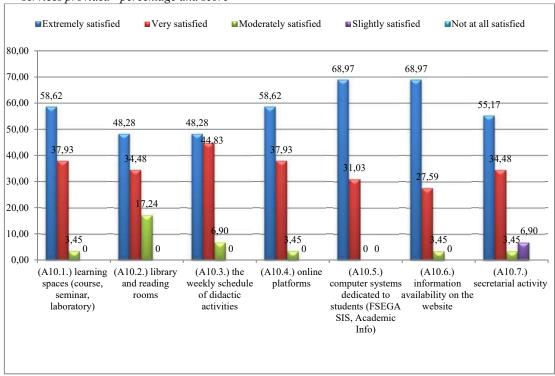
Most respondents appreciate that they are *very satisfied with the didactic process* carried out in the Economics of Commerce, Tourism and Services study program (from Resita), as evidenced by the total score of 4.73.

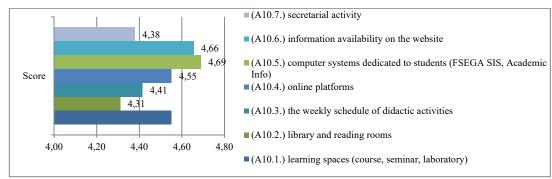
Student respondents are very satisfied with:

- (A9.1.) the availability of didactic staff to the needs of students (consultation, guidance) and (A9.4.) adaptation of the teaching style of teachers according to the needs of students (score / statement of 4.76) 75.86% (22 respondents /statement);
- (A9.2.) how the members of the didactic staff ensure the communication of theoretical concepts and their practical utility, the (A9.3.) available learning resources (course and seminar / laboratory support) and the (A9.6.) objectivity of assessments (score / statement of 4.72) 72.41% (21 respondents / statement);

- (A9.5.) effectiveness of interactive teaching-learning methods (score of 4.69) 68.97% (20 respondents).
- > Degree of satisfaction regarding the learning spaces, schedule, resources and services provided for the Economics of Commerce, Tourism and Services program (from Resita)

Figure no. 17, no. 18. Degree of satisfaction regarding the learning spaces, schedule, resources and services provided - percentage and score





Source: realized by the author

Most respondents appreciate that they are very satisfied with the learning spaces, schedule, resources and services provided for the Economics of Commerce, Tourism and Services study program (from Resita), as evidenced by the total score of 4.51.

Respondent students are very satisfied with:

- (A10.5.) computer systems dedicated to students (FSEGA SIS, Academic Info) (score of 4.69) and (A10.6.) information availability on the website (score of 4.66) 68.97% (20 respondents / statement);
- (A10.1.) learning spaces (course, seminar, laboratory) and (A10.4.) online platforms (score / statement of 4.55) 58.62% (17 respondents);

- (A10.2.) library and reading rooms (score of 4.31) and (A10.3.) the weekly schedule of didactic activities (score of 4.41) 48.28% (14 respondents);
- (A10.7.) secretarial activity (score of 3.25) 55.17% (16 respondents).

6. Conclusions

To summarise the results of this study, we found that there is a high degree of satisfaction underlined by the answers of student respondents to the educational offer of the Economics of Commerce, Tourism and Services study program (from Resita), most of themagreeing to complete this study program, being motivated by the need for specialists in the field of business administration on the labour market.

The respondents agree with a tendency towards strong agreement that through the educational offer of the Economics of Commerce, Tourism and Services study program(from Resita), during the studies:

- Students are provided with theoretical knowledge, they develops practical skills to: develop marketing strategies in the field of commerce, tourism and services and they are able optimally manage all the resources of an organization and design quality service systems;
- Students will acquire skills in administration and allocation of financial and material resources, provision of assistance in human resource management, performance of activities in trade, tourism and services, quality assurance in trade, tourism and services, marketing of products/services and management of customer and supplier relations.
- Students will acquire skills in entrepreneurship, communication and organization, teamwork and collaboration, in the use of computer systems and applications specific to the field.

The respondent students appreciate that both the new disciplines introduced in the curriculum and the existing ones, provide practical utility to a great extent. In order of preference being: the economics of tourism, management in commerce and tourism, human resources management, consumer behaviour in services, tourism marketing, service management, service marketing, trade marketing, the economics of commerce, marketing research in tourism and commerce, marketing policies, macroeconomics and microeconomics.

When analysing the degree of satisfaction regarding the didactic process, learning spaces, schedule, resources and services provided, the respondents are satisfied with a tendency to be very satisfied with:

- The didactic staff availability to students' needs (consultation, guidance), the adaptation of theteaching style to students' needs, how teachers ensure communication of theoretical concepts and their practical utility, the available learning resources, the objectivity of assessment, the effectiveness of teaching methods and interactive teaching-learning;
- The computer system dedicated to students, the availability of information on the website, learning spaces, online platforms, library and reading rooms, the weekly schedule of teaching activities and the secretarial activity.

Due to the evolution of COVID-19 pandemics in recent years, in universities didactic activities have taken place on online platforms and not face to face with students, which led to increased dropout. In this regard, universities must make additional efforts to improve or maintain the quality of their educational offer, through students' access to various educational resources, training didactic personnel and students for the optimal use of online platforms and information systems, providing educational spaces for the development in optimal conditions of additional didactic activities face to face with students within the universities, the schedule of the didactic activities to be to the advantage of the students, the provision of course and seminar / laboratory support from the teachers. A number of improvements can be proposed to the provision of educational services.

This research is the starting point for in-depth research or comparisons with other research in the field that I intend to conduct in the coming years.

7. References

- Gherghina L., 2009. Marketingul serviciilor-sinteze, teste și aplicații. [Services marketing syntheses, tests and applications]. Resita: Eftimie Murgu Publishing House.
- Gherghina L., 2014. Cercetări de marketing sinteze și studiu de caz. [Marketing research syntheses and case studies] Resita: Eftimie Murgu Publishing House.
- Gherghina L., 2018. Marketingul firmei de turism [Tourism company marketing], University course, Publishing Centre of the "Eftimie Murgu" University of Resita
- Singer M., Sarivan L., Novak, C., Bercu N., Velea S., 2006. *Procesul Bologna în România: o radiografie de etapă. [The Bologna Process in Romania: a stage radiograph]*. Bucharest: Socrates National Agency
- Bălan C., 2014. Competența didactică şi succesul academic din perspective învățării centrate pe student [Didactic competence and academic success from the perspective of student-centred learning], p. 15-16, National Conference on Education (CNEFSE-USV), Incursiuni didactice în dinamica educațională, [Didactic incursions into educational dynamics] 3rdedition, Suceava, 17 May 2014,[online] Available at:https://books.google.ro/books/about/INCURSIUNI_DIDACTICE_%C3%8EN_DINAMICA_EDUCA.html?id=zJ3ArQEACAAJ&redir esc=y">https://books.google.ro/books/about/INCURSIUNI_DIDACTICE_%C3%8EN_DINAMICA_EDUCA.html?id=zJ3ArQEACAAJ&redir esc=y">https://books.google.ro/books/about/INCURSIUNI_DIDACTICE_%C3%8EN_DINAMICA_EDUCA.html?id=zJ3ArQEACAAJ&redir esc=y">https://books.google.ro/books/about/INCURSIUNI_DIDACTICE_%C3%8EN_DINAMICA_EDUCA.html?id=zJ3ArQEACAAJ&redir esc=y">https://diacate.html?id=zJ3ArQEACAAJ&redir esc=y [Accessed 20 August 2021].
- Laguador Jake M., 2013. A Correlation Study of Personal Entrepreneurial Competency and the Academic Performance in Operations Management of Business Administration Students, International Journal of Academic Research in Business and Social Sciences May 2013, Vol. 3, No. 5, pp. 61-70, ISSN: 2222-6990, [online] Available at:http://research.lpubatangas.edu.ph/wp-content/uploads/2014/04/IJARBSS-A-Correlation-Study-of-Personal-Entrepreneurial.pdf [Accessed 16 August 2021].
- Yeh Ron Chuen, Chen Yi-Cheng and Kuo Sheng-Huang, 2010. Industry-oriented competency requirements of business administration-majored technological university students in Taiwan, World Transactions on Engineering and Technology Education, Vol.8, No.4, pp. 431-435. [online] Available at: http://www.wiete.com.au/journals/WTE&TE/Pages/Vol.8,%20No.4%20(2010)/5-10-Yeh-org.pdf [Accessed 12 August 2021].
- Planuri de învățământ [Curriculums] [online] Available
 at:https://econ.ubbcluj.ro/planuri_invatamant/licenta/zi_2021_2022/ECTS Res%20Economia%20comertului,%20turismului%20si%20serviciilor%202021-2022.pdf> [Accessed 19Mai 2021].
- Broşură admitere program de studii ECTS [Study program admitance broshure] [online] Available at: https://econ.ubbcluj.ro/admitere/programe/ECTS-Res.pdf [Accessed 28 Aprilie 2021].

The Opinion of Business Administration Graduates on the Skills Acquired During Undergraduate Studies

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Abstract

The main objective of the study presented is to identify the opinion of graduates on the skills acquired during a bachelor's degree program in business administration, in order to enter the labour market more easily. The role of universities in the training and qualification of specialists in business administration is underlined, together with theoretical considerations on skills, method, hypotheses, research results and conclusions. The data necessary for this study was obtained through direct research, an occasional survey-type survey based on a questionnaire, administered to graduates of the Economics of Commerce, Tourism and Services study program (from Resita). The results of the study confirm the satisfaction of the graduates of the study program regarding the professional training provided in the field of business administration.

Key words: knowledge, skills, competencies, insertion, labour market

J.E.L. classification: M31, M39

1. Introduction

Currently, at a global level, the labour market is looking for qualified staff in various fields of activity. Universities have an important role in training graduates, who can hold positions of execution and management in both public and private systems. In this sense, it is important to know the opinion of the graduates regarding the degree of satisfaction they have after graduating a bachelor's degree program, respectively the appreciation regarding the acquisition of skills in order to obtain a job in the field of graduated studies.

The strategic management of higher education must necessarily take into account major changes in the knowledge society and adapt to a dynamic accelerated lifecycle of information to correlate with the attitude of lifelong learning skills (Minică and Gherghina, 2014, p. 211).

In order to get a qualification for a study program, universities must conduct documentary and field research on the importance of the program in the local, regional, national economy, evolutionary trends, training requirements and the need for specialists in the field.

2. Theoretical consideration

Studies underline the fact professional development can be achieved throughout life, through initial training that ensures the minimum professional skills needed to get a job, as well as through continuous professional development that ensures the development of previously acquired professional skills or the acquisition of new ones.

"The concept of action competence systematically combines constructs of the cognitive and motivational approach related to the goals, demands and tasks of a particular action context (e.g., a profession)" (Weinert, F.E., 1999, p. 14). "Lifelong learning and development of management skills attuned to the needs of the current millennium is a virtual reality. The need is quite strong from both the domestic and international fronts as the field of global management continues to change" (Gempes G., 2015, p. 15).

Beheshtifar M. appreciated that "in career planning, it is needed to identify competencies in different levels, and determine movement paths in different levels. In addition, it is necessary to individual be aware of their skills, talents, and abilities to move toward a satisfactory job" (Beheshtifar M., 2011, p. 6). Azevedo A. et al. add: "indeed, pressure from employers with regards to the expectation that undergraduate-level education should reflect labour market requirements has pushed the issue of labour market linkage to the forefront of recent debates about quality in higher education" (Azevedo A. et al, 2012, p. 25).

Field-specific professional skills are represented set of knowledge (knowledge, understanding, use, explanation, interpretation) and skills (application, transfer, creativity, innovation, reflection) that allow a person to adapt to change and solve problems in an efficient manner.

We appreciate that it is necessary to adapt the professional skills of graduates in the field of business administration to employers' requirements. Otherwise said, universities must hold regular meetings with employers in the field to identify the need for qualified human resources.

3. Research methodology

In order to identify the opinion of undergraduates in the field of business administration compared to the skills acquired for an insertion in the labour market, we conducted an opinion survey applied to graduates of the Economics of Commerce, Tourism and Services study program (from Resita) - ECTS (from Resita), "Babes-Bolyai" University Centre of Cluj-Napoca - Extension in Resita, Faculty of Economics and Business Administration.

"The survey is a method of collecting primary data, based on a questionnaire applied to a representative sample of respondents" (Gherghina L., 2014, p. 20). "In designing and applying a questionnaire, the questionnaire must be first tested before being used, being an inseparable stage, prior to the actual research" (Gherghina L., 2010, p. 98).

I used an online questionnaire on Google forms as a tool. The questionnaire was applied during the month of June: 02.06.2021-04.06.2021 by to ECTS graduates (from Resita) from previous years, currently students in the master's program of Business Administration in Tourism, Commerce and Services - BATCS (from Resita).

The main objective of the study aims to improve the professional training offered in the field of business administration to the graduates of the Economics of Commerce, Tourism and Services (from Resita), in order to enter the labour market. The data used in this study was obtained by a direct research method, the occasional survey, the measurement being performed with Likert's scale, the semantic differential and the percentage method. The questionnaire was designed with 9 closed questions: 4 being identification questions and the remaining 5 on the study topic.

Out of the total of 50 (100%) students in the BATCS study program (from Resita), only 32 (64%) students - ECTS graduates (from Resita), completed the online questionnaire. One can state that the survey is exhaustive and takes into account the sample size because the survey rate is higher than 1/7 (14.29%). The distribution of students by years of study and as respondents is presented in the following table:

Table no. 1 Number of students and respondents by years of study at the BATCS program (from Resita)

Program and year of study	No. of students	Percentage students	No. of respondents	Percentage respondents
BATCS I	22	44%	15	46.88%
BATCS II	28	56%	17	53.12%
Total	50	100%	32	100%

Source: Processed by the author

When designing the questionnaire the following were used: a nominal scale with bifurcated and multiple alternatives for questions Q01, Q02, Q03, Q04; the ordinal scale, the Likert's scale for questions Q7, Q9; the interval scale, the scaling method being the semantic differential for questions Q5, Q06, Q8.

The research hypotheses aimed at the insertion on the labour market of the graduates of the Economics of Commerce, Tourism and Services study program (from Resita), who after graduation stated that:

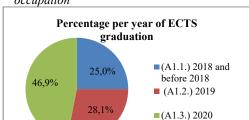
- there is a need for specialists in the field of business administration in commerce, tourism and labour market services;
- they are satisfied with the professional training provided during the study program, according to the requirements of the labour market;
- they agree that the theoretical knowledge and practical skills acquired through the curriculum ensure their usefulness at the workplace, as an entrepreneur or administrator within an organization;
- through the specific competencies acquired during the faculty, graduates can largely perform analyzes and evaluations of the activity, quality services and other activities of organizations.

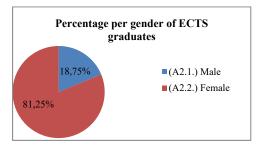
4. Results

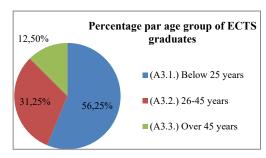
The results of the survey applied to graduates in the field of business administration, the Economics of Commerce, Tourism and Services study program (from Resita) are presented in the following rows, underling the opinion of graduates on the skills provided for insertion on the labour market

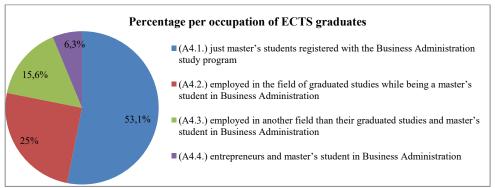
Results regarding the *identification of the respondents*, graduates of the ECTS program (from Resita)

Figure no. 1, no. 2, no.3, no. 4. Identification of respondents graduates -year, gender, age group, occupation









Source: realized by the author

From the graphs one can observe that most respondents graduated in (A1.3.) 2020 - 46.9% (15 respondents) and in the year (A1.2.) 2019 - 28.1% (9 respondents), 81.25% (26 respondents) are females (A2.2.) and 56.25% are part of the under 25 years age group (A2.1.) - (18 respondents) and (A2.2.)31.25% (10 respondents) from the age group between 26-45 years. When speaking about their occupation, (A4.1.) 53.1% (17 respondents) are just master's students registered with the Business Administration study program and (A4.2.) 25% (8 respondents) are employed in the field of graduated studies while being a master's student in Business Administration, respectively (A4.3.) 15.6% (5 respondents) are employed in another field than their graduated studies and master's student in Business Administration and (A4.4.) 6.3% (2 respondents) are entrepreneurs and master's student in Business Administration. At the same time, we identified that 25% (8 respondents) graduated in (A1.1.) the 2018 and before 2018, 18.75% (6 respondents) are males and 12.50% (4 respondents) are part of the group of age (A2.3.) over 45 years.

- (A4.1.) just master's students registered with the Business Administration study program
- (A4.2.) employed in the field of graduated studies while being a master's student in Business Administration
- (A4.3.) employed in another field than their graduated studies and master's student in Business Administration
- (A4.4.) entrepreneurs and master's student in Business Administration
- Results regarding the extent of the need for specialists in the field of business administration in commerce, tourism and services on the labour market

37.50 60,00 40,00 20,00 0,00 Only a Very much Rather To some Not at all much extent little (A5.1.) The need for specialists in the field of business administration in commerce, tourism and services (A5.1.) The need for specialists

Figure no. 5, no. 6. The need for specialists in the field of business administration in commerce, tourism and services – percentage and score

Source: realized by the author

1,00

2,00

3,00

4,00

5,00

Score

0,00

Most respondents believe that the labour market needs specialists in the field of business management in commerce, tourism and services, very much - 56.25% (18 respondents) and to a large extent - 37.50% (12 respondents), the results being supported by the score of 4.50. The trend is towards *very much*.

in the field of business administration in commerce, tourism and services

➤ The results of the degree of satisfaction regarding the professional training provided by the Economics of Commerce, Tourism and Services study program (from Resita)

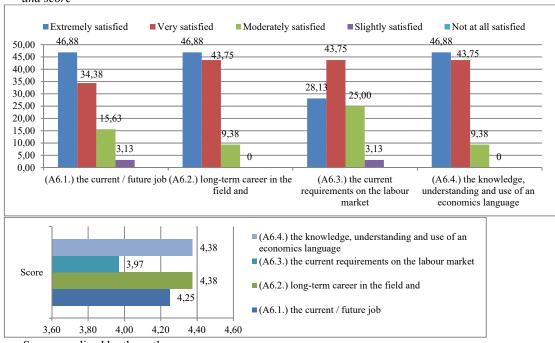


Figure no. 7, no. 8. The degree of satisfaction regarding the professional training provided – percentage and score

Source: realized by the author

From the graphs on can observe that most respondents consider that they are satisfied with a tendency to be very satisfied with the professional training provided by the Economics of Commerce, Tourism and Services study program (from Resita), as evidenced by the total score of 4.24.

Respondents are very satisfied with the training provided by the ECTS program (from Resita) for a (A6.2.) long-term career in the field and (A6.4.) the knowledge, understanding and use of an economics language - 46.88% (15 respondents) with a score of 4.38, as well as for (A6.1.) the current / future job - 46.88% (15 respondents) and with a score of 4.25.

They are satisfied with the training provided by the ECTS program (from Resita) for (A6.3.)the current requirements on the labour market - 43.75% (14 respondents) and a score of 3.97.

Results regarding the skills provided by the Economics of Commerce, Tourism and Services study program (in Resita) for their usefulness in a job.

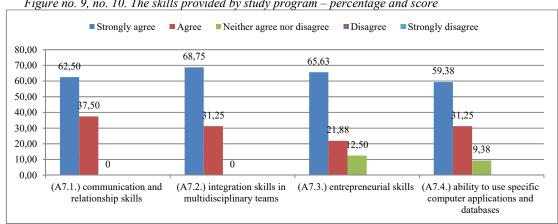
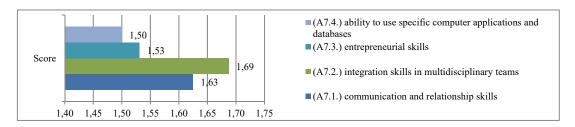


Figure no. 9, no. 10. The skills provided by study program – percentage and score



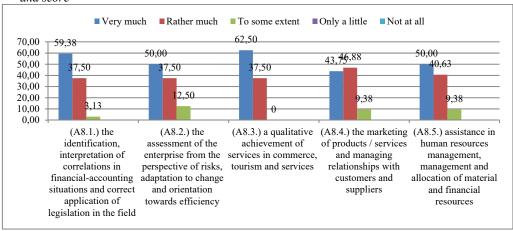
Source: realized by the author

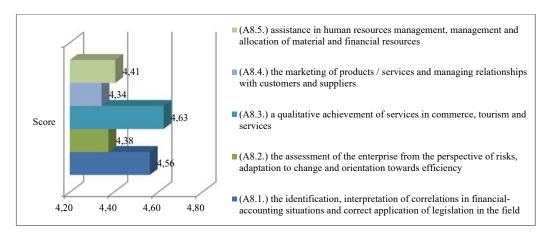
From the graphs one can observe that most respondents *agree* with a tendency towards total *agreement* on the skills provided by the Economics of Commerce, Tourism and Services study program (from Resita) and for *their usefulness in a job*, as evidenced by the total score of 1.21.

Respondents fully agree that the ECTS program (in Resita) provides for a job:

- (A7.2.) Integration skills in multidisciplinary teams 68.75% (22 respondents), score of 1.69;
- (A7.3.) Entrepreneurial skills 65.63% (21 respondents), score of 1.63;
- (A7.1.) Communication and relationship skills 62.5% (20 respondents), score of 1.53;
- (A7.4.) Ability to use specific computer applications and databases 59.38% (19 respondents) score of 1.50.
- ➤ Results regarding *the extent* to which the Economics of Commerce, Tourism and Services study program (from Resita) *provides specific competencies* to graduates regarding:

Figure no. 11, no. 12. The extent to which the study program provides specific competencies – percentage and score





Source: realized by the author

From the graphs one can observe that most respondents appreciate that the Economics of Commerce, Tourism and Services study program (from Resita) *provides specific skills to graduates* moving towards to *a very large extent*, *very much* as evidenced by the total score of 4.46.

Respondents appreciate that the ECTS program (from Resita) provides to a large extent *specific* competencies for graduates referring to:

- (A8.3.) a qualitative achievement of services in commerce, tourism and services 62.5% (20 respondents) and a score of 4.63;
- (A8.1.) the identification, interpretation of correlations in financial-accounting situations and correct application of legislation in the field 59.38% (19 respondents) and a score of 4.56.
- (A8.2.) the assessment of the enterprise from the perspective of risks, adaptation to change and orientation towards efficiency -50% (16 respondents), as well as (A8.5.) assistance in human resources management, management and allocation of material and financial resources 50% (16 respondents) and a score of 4.38.

The ECTS program (from Resita) provides specific skills to graduates in a large extent for (A8.4.) the marketing of products / services and managing relationships with customers and suppliers - 46.88% (15 respondents) and a score of 4.34.

Results regarding the *agreement* of the statements through which the Economics of Commerce, Tourism and Services study program (from Resita) provides graduates with sufficient theoretical knowledge and practical skills

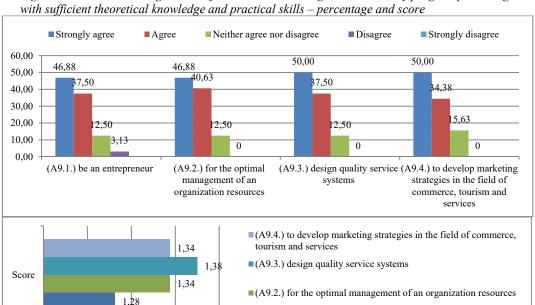


Figure no. 13, no. 14. The agreement of the statements through which the study program provides graduates with sufficient theoretical knowledge and practical skills – percentage and score

Source: realized by the author

1,30

1,25

From the graphs one can observe that most respondents *agree* with a tendency towards *strong* agreement that the Economics of Commerce, Tourism and Services study program (from Resita) provides *graduates with sufficient theoretical knowledge and practical skills*, as evidenced by the total score of 1.34.

1,40

■(A9.1.) be an entrepreneur

Respondents *fully agree* that the ECTS program (in Resita) will provide sufficient theoretical knowledge and practical skills to:

- (A9.3.) design quality service systems 50% (16 respondents) and (A9.4.) to develop marketing strategies in the field of commerce, tourism and services 50% (16 respondents);
- (A9.1.) be an entrepreneur 46.88% (15 respondents) and (A9.2.) for the optimal management of an organization resources 46.88% (15 respondents).

6. Conclusions

Through the study realized we found that the graduates of the Economics of Commerce, Tourism and Services bachelor study program (from Resita), appreciate that after graduating they will find a job in the field of business administration more easily.

Although 53.1% of the respondents graduating from the ECTS study program (from Resita) are only students in business administration, there are also 40.6% master students who are also employed in the field of graduate studies or in a field other than graduate studies, as well as 6.3 % who are entrepreneurs.

Out of the total respondents, 93.75% consider that on the labour market there is a need for specialists in the field of business management in commerce, tourism and services, largely tending to a very large extent. They are very satisfied with the professional training provided by the ECTS study program (from Resita) for a long-term career in the field, for the knowledge, understanding and use of an economic language, as well as for the current / future job, and only satisfied with the training provided for the current requirements of the labour market.

Respondents agree with a tendency towards full agreement on the skills provided by the ECTS program (from Resita) for their usefulness in a job, respectively integration in multidisciplinary, entrepreneurial, communication and networking teams, as well as the use of IT applications and of specific databases.

Most of the respondent graduates appreciate that the ECTS study program (from Resita) provides to a large extent specific competencies regarding: the qualitative realization of services in commerce, tourism and services; identification, interpretation of correlations in financial-accounting statements and correct application of legislation in the field; assessing the enterprise from a risk perspective, adapting to change and focusing on efficiency; assistance in human resources management, management and allocation of material and financial resources. At the same time, the graduates consider that the study program largely provides skills for marketing products / services and managing relationships with customers and suppliers.

Respondent graduates agree with a tendency towards full agreement that the ECTS study program (from Resita) provides sufficient theoretical knowledge and practical skills to: design quality service systems and develop marketing strategies in the field of commerce, tourism and services; to be an entrepreneur and to optimally manage the resources of an organization.

Taking into account the pandemic situation induced by COVID-19 in the last two years and the restriction of the free movement of people worldwide, Romanian entrepreneurs are developing their business at local, regional and national level which will lead to an increase in the number of jobs in the business administration domain. In this sense, graduates in the field of business administration appreciate that they are ready for insertion on the labour market due to the skills provided in the ECTS undergraduate study program (from Resita).

This research may form the basis of in-depth research or comparisons with other research in the field.

7. References

- Gherghina L., 2014. Cercetări de marketing-sinteze și studiu de caz. [Marketing research syntheses and case studies] Resita: Eftimie Murgu Publishing House.
- Gherghina L. 2010. *Proiecte economice studii de caz. [Economic projects case studies]* Resita: Eftimie Murgu Publishing House.
- Minica M. and Gherghina L., 2014. Methodology of the study "correlation of competences of economists with the offer on labour market", Annals of the "Constantin Brâncuşi" University of Târgu Jiu, Economy Series, Issue 2, pp.211-219, "Academica Brâncuşi" Publisher, ISSN 2344-3685 / ISSN-L 1844-7007, [online] Available at: https://www.utgjiu.ro/revista/ec/pdf/2014-02/31_Minica%20Mirela.pdf [Accessed 02 August 2021].

- Beheshtifar M., 2011. Role of Career Competencies in Organizations, European Journal of Economics, Finance and Administrative Sciences, ISSN 1450-2275 Issue 42, pp. 6-12, [online] Available at: https://www.researchgate.net/profile/Malikeh-Beheshtifar/publication/266487518 Role of Career Competencies in Organizations/links/55d86fcb08 ae9d65948f8f2c/Role-of-Career-Competencies-in-Organizations.pdf> [Accessed 10 August 2021].
- Gempes G., 2015. Perceived Global Trends Cognition and Management Competencies of Master in Business Administration Students, *International Forum* Vol. 18, No. 1 April 2015 pp. 14-26, [online] Available at: https://journals.aiias.edu/info/article/view/118/107> [Accessed 12 August 2021].
- Azevedo A., Omerzel Gomezelj D., Andrews J., Higson H., Caballero A. and Frech B., 2012. Satisfaction with Knowledge and Competencies: A Multi-Country Study of Employers and Business Graduates, American Journal of Economics and Business Administration 4 (1), pp. 23-39, 2012 ISSN 1945-5488, [online] Available at: https://thescipub.com/pdf/ajebasp.2012.23.39.pdf [Accessed 8 August 2021].
- Weinert, F.E., 1999. Definition and selection of competencies: Concepts of Competence. Organization for Economic Cooperation and Development, Max Planck Institute for Psychological Research, Munich, Germany, pp. 1-35[online] Available at: [Accessed 14 August 2021].
- Broşură admitere program de studii ECTS [Study program admitance broshure] [online] Available at: https://econ.ubbcluj.ro/admitere/programe/ECTS-Res.pdf [Accessed 28 Aprilie 2021].

Marketing Simulations in Education: A Brief Overview for the Markstrat Simulator

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Abstract

Worldwide, there is a strong need to extend the multiple layers of learning techniques in order to improve the entire educational system, the experiences of the stakeholders involved in the process in order to be able to generate competent knowledge workers and to have a healthy and competitive knowledge environment. Experiential learning is one of the important methods used by educational units and companies as it provides an immersive, hands-on approach to the process. Since marketing is a vital pillar for institutional and business success, marketing simulations are often used to (eventually) contribute to gaining a competitive edge over others. Used in education, a marketing simulation assists the transition from student, to employee and to employer in the current digitalized knowledge society. The aim of the paper is to provide a brief overview on an international and well-recognized marketing simulation entitled Markstrat (by StratX). The used methodology is quantitative and based on sources of secondary data such as books and articles. The findings of the paper show the structure of the online marketing simulation Markstrat by StratX, highlighting its key components.

Key words: marketing, marketing simulations, strategic marketing, Markstrat, education **J.E.L. classification:** M30, M31, M39

1. Introduction

Nowadays hypercompetitive and digitalized environment requires any organization, irrespective of its size and field of activity, a rapid adaptation in order to face various challenges (Toma et al., 2013a; Toma et al., 2015a). This is why most of them understood the need to act strategically (Toma et al., 2015b; Toma et al., 2015c), and to use various efficient tools and methods such as lean management and creative thinking (Marinescu et al., 2008; Toma et al., 2013b).

In this respect teachers (educational institutions) and managers (companies) have to go beyond the traditional teaching techniques and learning methods in order to provide a more engaging template for their students and/or employees and to be able to stay "ahead of the learning curve" (StratX Simulations, 2021) and gain substantial competitive advantages (Grădinaru et al, 2016). Education is a critical vein for human development (Grădinaru et al, 2018) and, thus, using various teaching (learning) techniques becomes vital for the competitive knowledge-human-being. Experiential learning roots knowledge on a long-term and has become strongly connected to the use of online simulations. An important part of online simulations is aimed at using marketing simulations, the "interactive, computed-based models of a marketplace" (Tonks, 2002, p.179) in which participants have to analyze data and take decisions using marketing variables. It is not a coincidence that marketing simulations play an important role within simulations as developing marketing abilities is a key factor in achieving prosperity for any business or institution (Catană et al., 2021). Because business simulations can enhance teamwork, boos competitive thinking, promote

analytical thinking, train the decision-making process, get on-the-job experience, engage emotions, increase retention for the concepts learned and boost chances for better employability (StratX Simulations, 2021), they are not only recognized but have now gained global trust.

The aim of the paper is to provide a brief overview on an international and well-recognized marketing simulation entitled Markstrat (by StratX). The remaining sections of the paper are structured as follows: the second section is dedicated to providing a theoretical background; the third section is focused on the methodology used; the fourth section displays the findings of the research; the paper ends with conclusions.

2. Theoretical background

There is a strong focus in the current academic environment to provide students with the most interesting, interactive and skill based learning methods in order to increase their chances to find a suitable job and to be performant in their career. Teachers are trying to motivate and build student engagement (van Esch et al., 2020) in academic activities through gamification (Lee and Hammer, 2001, p.1) and the use of computer-based simulations serves this exact purpose as they have become an integrated part in the educational process (useful for companies and their practitioners). An important argument for this is that simulations have adequate tools to duplicate and solve real world problems (Brown et al., 1989 cited in Farrell, 2020, p.2). According to Vos (2014, pp.68-69) marketing simulation games can be categorized into introductory (created to serve as an introduction to marketing courses), strategic level (designed for higher-level marketing courses) and specialist games (channeled on aspects of the marketing decision-making process). Regardless their category, throughout the years, simulations have spread globally and are frequently used at an international level. A great example of such a marketing simulations is Markstrat developed by StratX. Evidence shows that international marketing simulations offer students a true "authentic assessment of learning" (Farrell, 2020, p.12) leading to a great learning experience.

There are several advantages using marketing simulations that justify their widespread use, such as:

- The active involvement of the participants that has a positive impact over the learning curve (Smart and Cappel, 2006, p. 202);
- The use of the online environment meaning that mobility becomes an important variable as they can be accessed remotely and it represents a solution for creating a great experience even during challenging times such as the current pandemic context;
- Experiencing build-up through business games, incorporating strategic elements, improving the decision-making process, enhancing learning outcomes and improving teamwork abilities and experience (Faria, et al., 2009, p.477);
- Enabling a direct experience component to the learning process used to revitalize the university curriculum (Kolb, 2015, p.xviii, p.4);
- Having "uniquely flexible tools", with elements that challenge students, reproduce real-life situations and provides wide variety. (Cherry, 2000, p.1.);
- The development of interpersonal (management) skills and the capacity to take strategic decisions (Cossé, Ashworth and Weisenberger, 1999, p.98) whilst dealing with "comprehensive, realistic marketing tasks and issues" (Alpert, 1993, p.31).

The simulations subject to the author's analysis, Markstrat, provides strong evidence for the abovementioned criteria.

3. Research methodology

The paper focuses on providing a brief overview of the Markstrat simulation by StratX. To be able to achieve the research objective, the authors deployed a quantitative research method. The information used is specific to sources of secondary data such as books and articles. The literature review was carried on through the use of various electronic databases.

4. Findings

Markstrat is one one of the most widely recognized and used marketing simulation software that enables students and professionals to take strategic marketing decisions by using a virtual platform to operate a simulated world (StratX Simulations, 2021). The Markstrat simulation (for durable goods) is divided into several main sections, such as: prepare, a section dedicated to the decisional making process, company results, market and competitive news, market research, tools and. The last four sections are going to be presented as the prepare section contains a tutorial for users to get familiarized with the software and its instruments and the decide section refers to the decisions taken by the teams by analyzing the previously mentioned four sections; the decisions are as follows: team identity, research and development, brand portfolio, marketing mix, commercial team, market research, marketing plan and decisions review.

Company results (table no. 1) is a section providing useful information that can only be seen by that specific company (and, implicitly, its team members). Other teams can have relevant insights connected to this topic if they consult the industry benchmarking section.

Table no. 1 Company results specific to the Markstrat simulation

Main elements specific to company results	Component elements
Company dashboard	Stock market data, market shares, revenues and contribution
Financial report	Revenues, costs and profit information, market and brand levels
Production report	Number of units produced and in inventory and production costs
R&D report	R&D projects (completed, partially developed and shelved)

Source: (StratX Simulations, 2021)

Market and competitive news (table no. 2) is comprised of open data, available to all teams that compete on the market (within the Markstrat simulated world) and contains general and financial data (for the industry, competing firms and brands).

Table no. 2 Market and competitive news specific to the Markstrat simulation

Main elements specific to market and competitive news	Component elements
Industry dashboard	Stock market indicators, retails sales (by market and industry), market shares and sales (top selling brands).
Industry information	Economic variables, market research costs
Market report	Brand retail sales and their volume and brand characteristics

Source: (StratX Simulations, 2021)

Market research (table no. 3) refers to studies a team can purchase at the start of each period (the process follows taking decisions on a round-basis, one round representing one year) and it shows the market situation.

Table no. 3 Market research specific to the Markstrat simulation

Main elements specific to	Component elements
market research	
Industry benchmarking	Overall company performances and expenditure, company profit and loss statements and company performances and expenditures specific to markets
Consumer survey panel	Brand awareness (per product and by consumer segment), purchase intentions (average and by consumer segment), shopping habits, market shares (units sold and by consumer segment) and the industry volume
Distribution panel	Sales and market shares by channel and distribution coverage
Semantic scales	Brand perceptions, ideal values (and their evolution), importance of characteristics and brand maps (for pairs of product attributes: price relative to features, design, battery, display and processing power)
Multidimensional scaling	Perceptual map (brand positioning relative to the ideal preferences/points of the consumers, using three dimensions:

	economy, performance and convenience) and the influence of product characteristics on the perceptual dimensions
Competitive intelligence	Competitive advertising estimations (by total and consumer segments), estimated communication dimensions and message quality and competitive commercial team size estimates
Experiments	Advertising experiments (expected change in brand awareness and in unit market share) and commercial team experiments (expected change in the number of distributors and in unit market share)
Market forecast	Total market size and market size by consumer segment for upcoming periods
Conjoint analysis	Utility charts for consumer segments

Source: (StratX Simulations, 2021)

Tools (table no. 4) can be used to accelerate and improve the decision-making process, the elements specific to this section serving as support tools.

Table no. 4 Tools specific to the Markstrat simulation

Main elements specific to tools	Component elements
Charts	Charts relevant for market, performance, benchmarking, brand and
	company scorecard
Regression-based charts -	Regression analysis and the predictions for the ideal value trend
semantic	specific to semantic scales
Regression-based tools -	Tools that automate tasks specific to product characteristics, pricing
semantic	and perceptions specific to semantic scales
Regression-based charts - MDS	Regression analysis and the predictions for the ideal value trend
	specific to multidimensional scaling
Regression-based tools - MDS	Tools that automate tasks specific to product characteristics, pricing
	and perceptions specific to multidimensional scaling
Growth-share matrix	Placing products in the specific categories related to the Boston
	Consulting Group's matrix and, thus, relative to market/segment
	growth share and relative market share

Source: (StratX Simulations, 2021)

The simulation's sections are structured in such a logical ways that they speed up the process of familiarization to the interface extremely fast. In order to have a clear idea over the market, the user should go through all of them every single round and to have the best change to become market leader one should make various connections between the elements of the main sections.

5. Conclusions

Marketing simulations provide a relevant set of tools for users in order to refine their general understanding of the field of marketing, to better decode the ways various factors influence each other and, implicitly, to improve the decision making process especially when using a long-term mindset. Markstrat is a great instrument for experiential learning because the concepts portrayed within this marketing simulation, the accurate representation of their use in real-life scenarios, the immersion in a competitive environment provide a beneficial learning experience for the participants.

Further research can be related to a more comprehensive approach of the concepts used within the simulation or to measuring the impact Markstrat had on participants over time.

6. References

- Alpert, F., 1993. Large-Scale Simulation in Marketing Education. *Journal of Marketing Education*, [e-journal] 15(2), pp.30-35. https://doi.org/10.1177/027347539301500205
- Brown, J.S., Collins, A., and Duguid, P., 1989. Situated cognition and the culture of learning. *Educational Researcher*, [e-journal] 18(1), pp.32–42. https://doi.org/10.3102/0013189X018001032.
- Catană, Ş. and Toma, S.-G., 2021. Marketing mix and corporate social responsability in automotive industry - case study: Mazda Motor Corporation. Annals of the "Constantin Brâncuşi" University of

- *Târgu Jiu*, *Economy Series*, 1, pp.205-209, [online]. Available at: https://ideas.repec.org/a/cbu/jrnlec/y2021v1p205-209.html [Accessed 21 November 2021].
- Cherry, J., 2000. Marketing simulations in the academic setting. Marketing Management Association MMA Fall Educators' Conference, pp. 1-2
- Cossé, T.J., Ashworth, D.N. and Weisenberger, T.M., 1999. The Effects of Team Size in a Marketing Simulation, *Journal of Marketing Theory and Practice*, 7(3), pp.98-106. https://doi.org/10.1080/10696679.1999.11501844.
- Farrell, C., 2020. Do international marketing simulations provide an authentic assessment of learning? A student perspective. *The International Journal of Management Education*, [e-journal] 13, pp.1-13. https://doi.org/10.1016/j.ijme.2020.100362.
- Faria A.J., Hutchinson, D., Wellington, W.J., Gold, S., 2009. Developments in Business Gaming: A Review of the Past 40 Years. *Simulation & Gaming*. [e-journal] 40(4), pp.464-487. https://doi.org/10.1177/1046878108327585
- Grădinaru, C., Toma, S.-G. and Marinescu, P., 2016. Marketing Mix in Services. Ovidius University
 Annals Economic Sciences Series, 16(1), pp.311-314, [online]. Available at: < https://stec.univovidius.ro/html/anale/ENG/2016/ANALE%20vol%2016_issue_1_site.pdf> [Accessed 21 november 2021]
- Grădinaru, C., Toma, S.-G. and Marinescu, P., 2018. Entrepreneurial Thinking in the Educational System. In: Risso, M. and Testarmata, S., ed. 2018. *Value Sharing for Sustainable and Inclusive Development*. Hershey: IGI Global. pp. 29-48
- Kolb, D.A., 2015. Experiential learning. Experience as the Source of Learning and Development. 2nd ed. New Jersey: Pearson Education.
- Lee, J. J. and Hammer, J. 2011. Gamification in Education: What, How, Why Bother?. *Academic Exchange Quarterly*, 15(2), pp.1-5, [online] Available at < https://www.researchgate.net/publication/258697764_Gamification_in_Education_What_How_Why Bother> [Accessed 21 November 2021].
- Marinescu, P. and Toma, S.-G., 2008. Implementing Lean Management in the Romanian Industry. In: T. Koch, ed., 2008. Lean Business Systems and Beyond. New York: Springer, New York. pp.269-276.
- Smart, K. and Cappel, J., 2006. Students' Perceptions of Online Learning: A Comparative Study. *Journal of Information Technology Education*, [e-journal] 5, pp. 201-219. https://doi.org/10.28945/243.
- StratX Simulations, 2021. Handbook-SM-B2C-DG. [online] Available at: http://www.stratxsimulations.com/latest_materials_markstrat_web/enu/Handbook-SM-B2C-DG/DocToHelpOutput/NetHelp/default.htm#!WordDocuments/companyresults.htm [Accessed 20 November 2021].
- StratX Simulations, 2021. Tools-SM-ALL. [online] Available at: http://www.stratxsimulations.com/latest_materials_ms7/Markstrat7.help/enu/Tools-SM-ALL/DocToHelpOutput/NetHelp/default.htm#!introductiontomarkstrattools.htm [Accessed 20 November 2021].
- StratX Simulations, 2021. Marketing strategy with the Markstrat Marketing Simulation. [online]
 Available at: < https://web.stratxsimulations.com/simulation/strategic-marketing-simulation>
 [Accessed 21 november 2021].
- StratX Simulations, 2021. Why Use Business Simulations? *Marketing strategy with the Markstrat Marketing Simulation*. [online] Available at: https://web.stratxsimulations.com/about-stratx/why-use-business-simulations> [Accessed 21 november 2021].
- Toma, S.-G. and Marinescu, P., 2013a. Global strategy: the case of Nissan Motor Company. *Procedia Economics and Finance*, 6, pp.418-423, [online]. Available at: https://www.sciencedirect.com/science/article/pii/S2212567113001573 [Accessed 2 November 2021].
- Toma, S.-G., Bratu, A. and Burcea, M., 2013b. When business strategy meets creativity. *Network Intelligence Studies*, 2, pp.148-153, [online]. Available at: https://seaopenresearch.eu/Journals/articles/NIS 2 17.pdf> [Accessed 2 November 2021].
- Toma, S.-G. and Marinescu, P., 2015a. Strategy and change. Manager, 21(1), pp.145-150, [online].
 Available at: http://manager.faa.ro/en/article/Strategy-and-Change~818.html [Accessed 1 November 2021].
- Toma, S.-G., Marinescu, P. and Grădinaru, C., 2015b. Strategic planning and strategic thinking. Revista Economică, 68(5), pp.168-175, [online]. Available at:

- http://economice.ulbsibiu.ro/revista.economica/archive/68515toma&marinescu&gradinaru.pdf [Accessed 1 November 2021].
- Toma, S.-G. and Grădinaru, C., 2015c. From military strategy to business strategy. *Strategii Manageriale*, 31(1), pp.227-233, [online]. Available at: < http://www.strategiimanageriale.ro/papers/160132.pdf> [Accessed 1 November 2021].
- Tonks, D., 2002. Using marketing simulations for teaching and learning. Reflections on an evolution. *Active Learning in Higher Education*. 3(2), pp.177-194. https://doi.org/10.1177/1469787402003002006.
- van Esch, P., von der Heidt, T., Frethey-Bentham, C. and Northey, G., 2020. The effect of marketing simulations on student engagement and academic outcomes. *Marketing Education Review*, [e-journal] 30(1), pp.43-56. https://doi.org/10.1080/10528008.2020.1713003.
- Vos, L., 2014. Marketing simulation games: A review of issues in teaching and learning. *The Marketing Review*, [e-journal] 14(1), pp.67-96. https://doi.org/10.1362/146934714X13948909473220.

Management Based on Data Analysis. Part Two. Artificial Intelligence Data Modeling

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Abstract

The use of the artificial neural networks in management is common. Employing artificial intelligence allows businesses to gain a commercial advantage. The objective of the present paper is to apply an artificial neural network as a modeling and simulation technique, to determine the importance of influences of four input data on the output data in human resources evaluation. The data are organized in 14,999 datasets: satisfaction level of the employee, the average monthly hours worked, the project number that the employee participated in, and time spent by company for employee care. The used neural network is of feed forward type, with three layers (1 input, 1 hidden, 1 output) and with 9 (13) hidden neurons. Several functions for activation and solver were applied for finding the most accurate one. The simulations concluded that the most important influence is that of the average monthly hours followed closely by the employee level of satisfaction.

Key words: management, artificial neural networks, human resources, evaluation

J.E.L. classification: C45

1. Introduction

The present work follows the first part of the research that applied an open-source software (Python 3) for several types of data visualization, to help management understand how to categorize human resources for obtaining the best evaluation scores (the first part can be found in the same volume of the conference).

Starting initially from 10 data sets, after eliminating two data because of their character type, a correlation function was applied and the data with correlation values greater than 0.1 were preserved. This led to 5 data sets, that were further used: satisfaction level, average monthly hours worked, number of the project, time spent by company, and the last evaluation.

In this second part of the research, the first 4 data sets are considered the input data, and the evaluation is the output data in the training of an artificial neural network (ANN). The ANN's simulation will learn to evaluate the influence of each input data on the output data.

The importance of the paper emerges from the creation of a research base for ANN application on large amounts of data, with the objective to determine the importance of features for management decision making.

2. Theoretical background

AI is fueling product recommendations, targeted advertising, essay grading, employee promotion and retention, risk scoring, image labelling, fraud detection, cybersecurity defenses, and a host of other applications. The broad adoption of algorithmic decision-making has encouraged a great amount of attention and generated a variety of reactions (and a considerable amount of "hype")—especially an excitement about how AI capabilities will augment human decision-making and enhance business performance (Gil, 2019, p. 4)

Artificial Intelligence (AI) is growing in importance in management and suggests the massive changes that the corporate management will encounter in the future (Petrin, 2019, p.965). As Kolbjørnsrud et al. (2016) marks up, managers at all levels are forced to adapt to the world of smart machines. AI can carry out the administrative tasks that consume much of managers' time faster, better, and at a lower cost.

3. Research methodology

The method used is ANN in structure of feed forward. For a better understanding and future work, 4 of activation functions were employed:

- 1. ReLU rectified linear unit function returns 0 if it receives any negative input, but for any positive value of x it returns that value back,
- 2. tanh hyperbolic tangent,
- 3. identity linear,
- 4. logistic.

and 2 solver functions:

- 1. adam stochastic gradient descent algorithm based on estimation of 1st and 2nd-order moments (Kingma, 2015, p. 1),
- 2. sgd simple, efficient approach to fitting linear classifiers and regressors under convex loss functions such as (linear) (https://scikit-learn.org/)

Thus, 8 ANN were compared to determine the best one in terms of accuracy and training loss. Also, Random Forest Regressor was used for comparing the simulated results of each ANN. Random Forest Regression is a supervised learning algorithm that uses ensemble learning method for regression (Bakshi, 2020).

For an additional comparison the all the ANNs will use the 5 data established above, but another ANN will use the initial 8 data that were analyzed in first phase of the research (paper – part one), called from now on "8 data ANN". The results of the first 8 ANNs are compared with the result of the 8 data ANN.

The structure for all 8 ANNs consists of 3 layers: 1 input layer -4 neurons, 1 hidden layer -9 neurons, 1 output layer -1 neuron. The 8 data ANN has 13 neurons in the hidden layer following the calculus of 8 (instead of 4) input data.

The authors used 14,999 datasets consisting in data about human resource evaluations. The data was downloaded from www.kaggle.com.

4. Findings

Applying 4 activation functions and 2 solvers resulted in 8 ANN variations with different values for training process, accuracy, and Random Forest Regressor. The results are presented in table 1.

		tanh & adam	tanh & sgd	relu & adam	relu &	logistic & adam	logistic & sgd	identity & adam	identity & sgd	relu & adam all
Training	No. iterations	150	166	282	198	161	113	141	165	162
50	Network loss	0.028	0.029	0.027	0.029	0.029	0.029	0.029	0.029	0.011
After training	Max. network errors	0.530	0.568	0.463	0.535	0.391	0.626	0.494	0.589	0.486
tr	Min. network errors	-0.667	-0.748	-0.506	-0.569	-0.652	-0.484	-0.468	-0.570	-0.494
Accur acy on testing	Mean absolute error	0.202	0.218	0.188	0.185	0.174	0.214	0.181	0.190	0.116
Ac acy test	Mean square error	0.061	0.068	0.051	0.051	0.047	0.064	0.051	0.056	0.021
Random	Model score training	0.885	0.885	0.885	0.885	0.886	0.886	0.885	0.886	0.896

Forest Regressor	Model score testing	0.249	0.216	0.278	0.413	0.279	0.256	0.291	0.322	0.294
Legend		min	1				max			

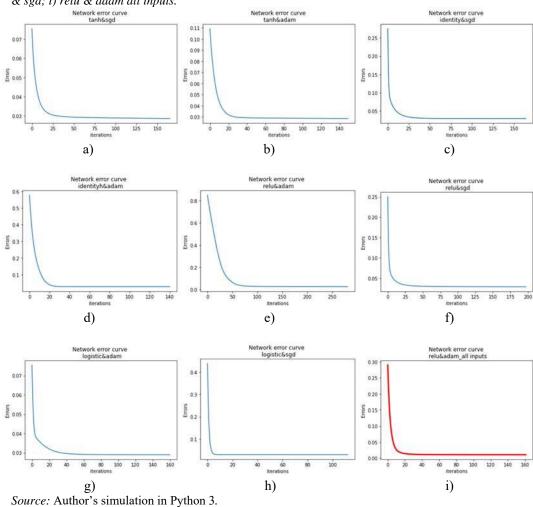
Source: Authors' simulation and representation.

Analyzing Table 1, the conclusions are:

- The greatest numbers of iterations belong to relu&adam (282), the smallest number is of logistic&sgd (113),
- The smallest (the best) network loss after training pertain to relu&adam,
- The lowest mean absolute and square error belong to logistic&adam,
- The best Random Forest Regressor coefficient fits to logistic&adam.

The results of ANN's error loss and their variations are shown in figure 1.

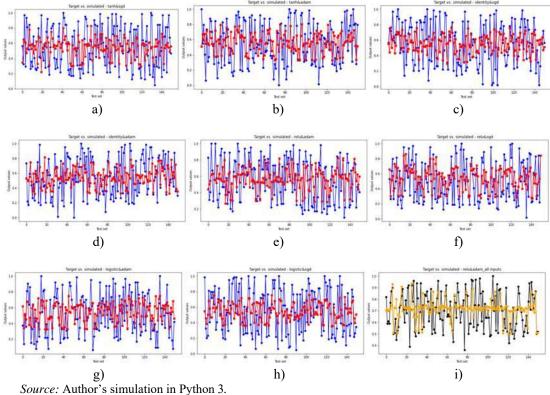
Figure no. 1. Network error curve for activation & weight function respectively: a) tanh & adam; b) tanh & sgd; c) relu & adam; d) relu & sgd; e) logistic & adam; f) logistic & sgd; g) identity & adam; h) identity & sgd; i) relu & adam all inputs.



After evaluating the above values, the best ANN structures are relu&adam and logistic&adam. Considering these values, the authors choose as the best functions to be used in future work: relu and adam. Yet, comparing the ANN with 5 data and the 8 data set ANN, after training and testing with relu and adam functions, the second ANN was better.

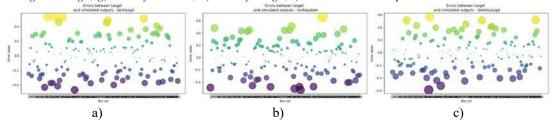
Another possibility to evaluate the training process is to visualize the results of comparing the targeted output (the real data values from database) with the simulated output (data resulted from ANN's simulation, after training process ended). The two data values are presented in figure 2, as the results of testing process, with 150 data sets for all ANNs structures.

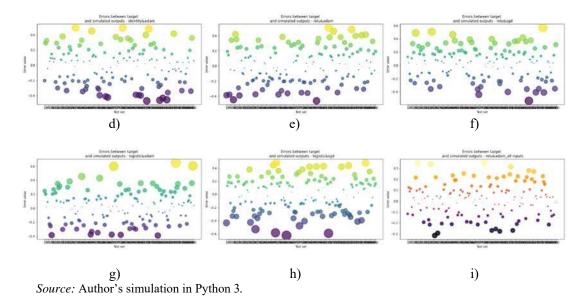
Figure no. 2. Target output (in blue, black) against simulated output (in red, orange) for activation & weight function respectively: a) tanh & adam; b) tanh & sgd; c) relu & adam; d) relu & sgd; e) logistic & adam; f) logistic & sgd; g) identity & adam; h) identity & sgd; i) relu & adam all inputs.



As figure 2 shows, the differences between the target output and the simulated output are significant enough. These differences are supported by the high values in absolute mean and square error and the small values in Random Forest Regressor coefficient. The graphic representation can be successfully used for estimating the ANN training and testing error (Ilie et al., 2017, p. 401) For a better visualization of these differences, in figure 3, there are presented the values.

Figure no. 3. Differences between target output and simulated output for activation & weight function respectively: a) tanh & adam; b) tanh & sgd; c) relu & adam; d) relu & sgd; e) logistic & adam; f) logistic & sgd; g) identity & adam; h) identity & sgd; i) relu & adam all inputs.





The main objective of the research can be best determined in figure 4, which contains the feature importance for each of the data, as the ANN considers the importance in accordance with how it learns the connections and influences during the training process.

Figure no. 4. Simulated feature importance for activation&weight function respectively: a) tanh & adam; b) tanh & sgd; c) relu & adam; d) relu & sgd; e) logistic & adam; f) logistic & sgd; g) identity & adam; h) identity & sgd; i) relu & adam all inputs.

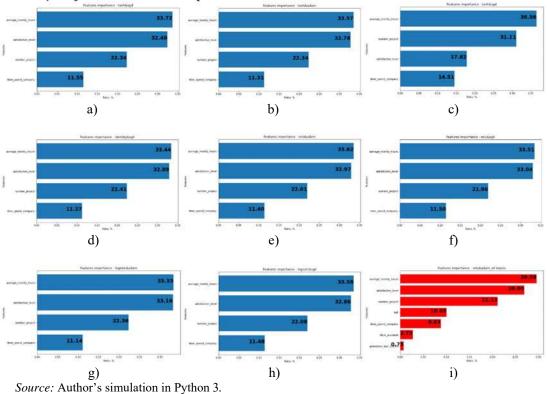


Figure 4 shows that all the ANNs determined the same hierarchy, with the data limits, as follows:

- 1. average monthly hours [33.33; 33.72]%, and 29.58 in case of 8 data ANN,
- 2. satisfaction level [31.11; 33.16] %, and 26.90 in case of 8 data ANN,
- 3. project number [17.82; 22.41] %, and 21.13,

- 4. time spent by the company [11.14; 14.51] %, and 8.83, only for 8 data ANN other 4 data are represented:
- 5. employees that left 10.05 %,
- 6. employees implicated in work incidents -2.75 %,
- 7. employees that were promoted in the last 5 years -0.75 %.

There is one major difference only encountered on the 8 data ANN, which places data "employees that left" before "time spent by the company", as the other ANNs' structures do not contain this data set.

5. Conclusions

Uses of the artificial neural network is demonstrated by many applications. In the present research the ANN was used to determine, through AI simulation, which of the four data sets (average monthly hours spent by the employee, employee's satisfaction level, the project number that the employee participated in, time spent by the company for employee) is more important for employee evaluation. The result points to the number of hours worked by the employee followed shortly by employee's satisfaction level.

Also, the research shows the possibility to see how the ANN runs with high amounts of data (14,988 datasets, 8 data each). The results also encourage using all the data available, even though it does not appear to be any direct connections between input and output data, as the ANN will mathematically find these connections.

6. References

- Bakshi, C., 2020, Random Forest Regression, Available at: https://levelup.gitconnected.com/random-forest-regression-209c0f354c84 [Accessed 08 December 2021]
- Gil, D., et al., 2019, AI for Management: An Overview, The Future of Management in an AI World, ISBN: 978-3-030-20680-2, pp. 3-19
- Kingma, D., Lei Ba, J, 2015, ADAM: A Method for Stochastic Optimization, UC Berkeley Computer Vision Review Letters (CVRL), Available at: https://theberkeleyview.wordpress.com/2015/11/19/berkeleyview-for-adam-a-method-for-stochastic-optimization/ [Accessed 08 December 2021]
- KAGGLE: https://www.kaggle.com/giripujar/hr-analytics
- Kolbjørnsrud, V., Amico, R., Thomas, R.J., 2016, *How Artificial Intelligence Will Redefine Management*, Harvard Business Review, Leadership Development, Available at: https://hbr.org/2016/11/how-artificial-intelligence-will-redefine-management [Accessed 08 December 2021]
- Ilie, M., et al., 2017, The Hierarchical Determination of Customer Satisfaction With Banking Services Using an Artificial Neural Network, TRANSFORMATIONS IN BUSINESS & ECONOMICS, Vol. 16, No 2A (41A), pp. 401-420
- Petrin, M., 2019, Corporate Management in the Age of AI, Colum. Bus., p.965
- https://scikit-learn.org/stable/modules/sgd.html

Management Based on Data Analysis. Part One. Data Visualization Analysis

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Abstract

Data visualization is associated with Business Intelligence and acts as the main base of data understanding for the decision making. The techniques and application used to apply the data visualization can be expensive or difficult to understand in accordance with the business targets. In this context, the present paper has the objective to demonstrate the possibility of applying an open source software (Python 3) for several types of data visualization. The method uses different data representation techniques, such as histograms, scatters, correlations, 3D surfaces, etc. Analyzed data refers to human resources evaluation, as the management can analyze and understand how data such as: satisfaction level of the employee, the average monthly hours worked, project number that the employee participated in, and time spent by company for employee care. The results delivered several types of representations that offer conclusions about the positioning of evaluated human resources in conjunction with other data.

Key words: management, data visualization, human resources, evaluation

J.E.L. classification: C15

1. Introduction

Data visualization plays a key role in data exploitation and decision making. Since about 2010, data visualization is enclosed in BI (Business Intelligence) as a tool. Given the influence of visualization, it is only expected to apply the powerful communication methods in the field of BI and analytics. Visualization has become more and more important to BI, where managers need technological support to understand and examine complex data sets and all kinds of information.

Representation of large amount of data (in spreadsheets and large tables) is complicated, difficult to interpret, and brings obstacles in extracting useful data from a database. Using techniques and methods for data visualization will help to solve problems, find how to use visuals in demonstrations and explanations, and make decisions.

Data visualization shows data and information graphically that feature pattern and tendencies and allow audiences to comprehend. Color, intensity, dimension, appearance, and flow of graphical objects are used to represent data, which facilitate analysis that just characters (text) or floats or simple graphs do not. Data visualization grows in importance as data become so large, that it is challenging to understand and apply the importance and consistence.

Different methods of data analysis and representation involve expensive algorithms and applications. Although relatively easy to apply, they must first be understood and customized according to the requirements of the organization. Free variants can be used, but their construction and application takes longer, if those who build the algorithm or application do not have the necessary knowledge.

Present paper shows the second solution. The authors must reveal that the preparation for the applying technique needed about one month for the development and application of algorithm in Google Colab Notebooks Python. The importance of the paper arises from the presentation and demonstration of the possibilities of applying free solutions of representation and visualization of data.

2. Theoretical background

An essential task for senior management today is to acquire decision support from accountants, developers, etc. by being assisted in the analysis of large, complex data sets. Data visualization simplifies this process by granting users permission to navigate, choose, and show data through an easy-to-use interface often used as a module of data analytics (Janvrin, 2014, p. 31).

As Wu et al. (2017) say, one of the most important features of data visualization is the "ubiquity" that makes interactive visualizations an important asset of the visualization process.

A general purpose of data visualization can be considered the delivering of improved technique of appearance and collaboration (Zheng, 2021, p. 11). Also, Zheng adds that more specific purposes (as different categories of data visualization will assist diverse purposes):

- **exhibitory**: displaying or monitoring activities, operations, and events.
- **exploratory**: information searching, browsing, examination, finding.
- explanatory: data analysis and insight generation, decision support.
- **communication** and **presentation**, for impression/persuasion.
- understanding and cognition (comprehension of abstract ideas and processes).
- artistic (attractiveness) expression and appreciation.
- entertaining and for fun.

With data visualization managers identify tendencies and patterns, structures and associations. Also, it helps concentrate on targets and interests.

3. Research methodology

The research methodology applies different functions and algorithms for the representation of 14,999 datasets consisting in data about human resource evaluations. Data was downloaded from www.kaggle.com. Data consist of 10 data sets, also presented in table 1, as the first 5 data rows:

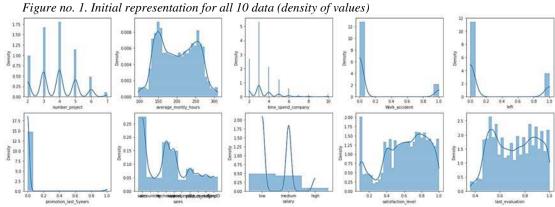
Table no. 1 Database. First 6 rows

number _project	average _montly _hours	time_spent _company	work_ accident	left	promotion_ last_5years	sales	salary	Satisfaction _level	last_ evaluation
2	157	3	0	1	0	sales	low	0.38	0.53
5	262	6	0	1	0	sales	medium	0.8	0.86
7	272	4	0	1	0	sales	medium	0.11	0.88
5	223	5	0	1	0	sales	low	0.72	0.87
2	159	3	0	1	0	sales	low	0.37	0.52

Source: KAGGLE: https://www.kaggle.com/giripujar/hr-analytics

- 1. number _project the number of the project in which the employees participate [no. from 2 to 7].
- 2. average monthly hours the numbers of hours each employee worked [96÷310, hours),
- 3. time spent company time spent by the company for employee [2÷7, hours],
- 4. work accident if the employee had a work accident or not [0 or 1],
- 5. left if the employee left the organization or not [0 or 1],
- 6. promotion last 5 years promotion of the employee in last 5 years [0 or 1],
- 7. sales if the employee is in sales or other department of organization [sales],
- 8. salary the level of salary [low, medium, high],
- 9. satisfaction level the level of employee satisfaction [0.09÷1],
- 10. last evaluation evaluation value of the employee [0.36÷1].

The data are represented in table 1, Also, the data evolution is represented in figure 1 with seaborne function histplot.



Source: Authors' representation in Python 3.

After a simple analysis of the data, the categorical data were eliminated (sales and salary). The results are presented in table 2, after an analysis of the data:

Table no. 2 Database analysis.

	number_ project	average_ monthly_ hours	time_ spent_ company	Work_ accident	left	promotion_ last_5years	satisfaction_ level	last evaluation
count	14999	14999	14999	14999	14999	14999	14999	14999
mean	3.803054	201.0503	3.498233	0.14461	0.238083	0.021268	0.612834	0.716102
std	1.232592	49.9431	1.460136	0.351719	0.425924	0.144281	0.248631	0.171169
min	2	96	2	0	0	0	0.09	0.36
25%	3	156	3	0	0	0	0.44	0.56
50%	4	200	3	0	0	0	0.64	0.72
75%	5	245	4	0	0	0	0.82	0.87
max	7	310	10	1	1	1	1	1

Source: Authors' analysis in Python.

For further analysis and visual representation of data, the following functions were used:

- pandas.DataFrame.corr Compute pairwise correlation of columns, excluding NA/null values,
- sns.heatmap Plot rectangular data as a color-encoded matrix.
- sns.jointplot Draw a plot of two variables with bivariate and univariate graphs.
- plot trisurf creates a surface by first finding a set of triangles formed between adjacent points.
- scatter3D is a mathematical diagram, the most basic version of three-dimensional plotting used to display the properties of data as three variables of a dataset using the cartesian coordinates.
- scatter 3d create a 3D scatter plot.

4. Findings

The research first application of the correlation function is shown in figure 2, with values between [-0.39; 0.42].

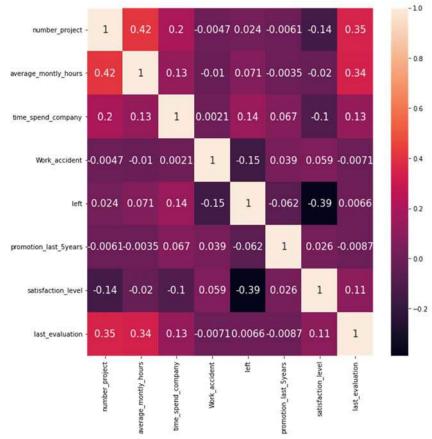


Figure no. 2. Initial correlation between all 10 data.

Source: Authors' representation in Python 3.

Further, the eight data were diminished to five by choosing the data with correlation values bigger than 1 in accordance with last_evaluation. The result to minimizing the correlation is showed in figure 3. Only four data met these criteria: satisfaction level, average monthly hours, number of project, and time spent by company, against the last evaluation.

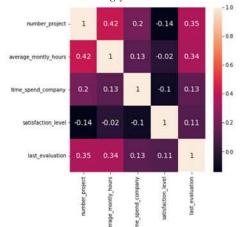


Figure no. 3. Final correlation. Chosen accordingly to correlation values min. 0.1

Source: Authors' representation in Python 3.

From this point only these five data will be used, and, also, the last_evaluation will be considered the target data, against which all the other four data sets will be correlated. The last_evaluation is the target of the management, and it will be used for the next visual representations.

In other to understand how the data are correlated, the last_evaluation was represented in figure 4 against each of the other four data sets.

Figure no. 4. Plot of last evaluation against and each of other 4 variables: a) satisfaction level; b) average monthly hours; c) number of project; d) time spent in company.

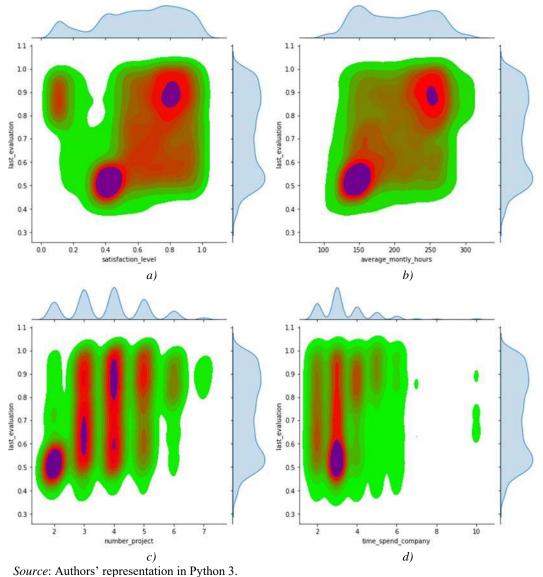


Figure 4.a shows that most employees have a satisfaction level divided in 2 groups, first between [0.3; 0.5], and second [0.75; 0.85]. The group with the highest evaluation is the second one, which reveals that there are two groups of employees: the first has a low satisfaction level, yet does not work for better evaluation, and second that demonstrates that employees with high satisfaction score also high in evaluation.

The graphic in figure 4.b proves that employees with more average monthly hours of work score high on evaluation. Also shows two groups: one that works less than 175 hours monthly and the other group that works more than 250 hours monthly.

Figure 4.c shows that most employee worked at project number 2, followed by project 4 and then 3. From the three projects, project number 4 has the employees with the highest evaluations.

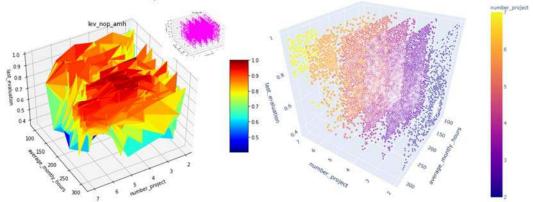
In figure 4.d one can see that the employees that organization spent 3 days on training/tutoring are the most of them. Also, they are most appreciated in the evaluation.

The first conclusion is that the employees with the highest evaluation scores have a satisfaction level between [0.75; 0.85], work 250 hours monthly, worked especially in the 4th project, and were helped by the organization with programs about 3 hours.

After establishing an initial group that scores the highest evaluation points, another visual analysis was made by representing in 3D the values of last_evaluation in accordance with each of the other three data considered 2 by two. This kind of representation is shown in figures 5-10. For a better understanding of the graphics the following information must be followed:

- the 3D surface representation (on the left of the figures) has the highest point marked in red, and those are the areas that we are interesting in, as they represent the highest evaluation scores,
- to the 3D surface were added a smaller image of the scatter plot,
- on the right there is the scatter plot of the data,
- the largest numbers of employees clusters are represented in white areas.

Figure no. 5. Variation of data evaluation accordingly to average monthly hours and number of projects (on the left) and scatter data points for average monthly hours and number of projects in the last evaluation 3D view (on the right).



Source: Authors' representation in Python 3.

Analyzing figure 5 the largest numbers of employees pertain to projects numbers 3 and 4 and works between 250 and 300 hours monthly. The data with the highest evaluation scores belong to values between 3 and 4 on projects and monthly hours between 200 and 250. As a intersection of data the best evaluation score belongs to employees that worked to project 4 and worked 250 hours monthly.

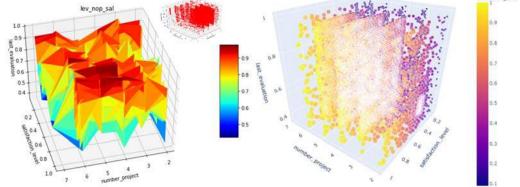
In figure 6 the most employees worked on projects 3 to 5 and have a satisfaction level between 0.5 to 0.8. The best evaluation score belongs to projects number 4 and 5 and a satisfaction level between 0.6 and 0.8.

Figure 7 sets the main employees from 0.6 to 0.9 as satisfaction level, and monthly hours worked from 150 to 275. The highest evaluation score appears in the 200-250 hours worked monthly, for satisfaction levels between 0.8 and 1.00.

The graphic in figure 8 shows that most employees belong to the crowd in limits between 0.5 and 0.9 for satisfaction level and time spent by the organization between 2 and 4 days. The highest score of evaluation belongs to satisfaction level of 0.9 and 4 days of time spent by organization.

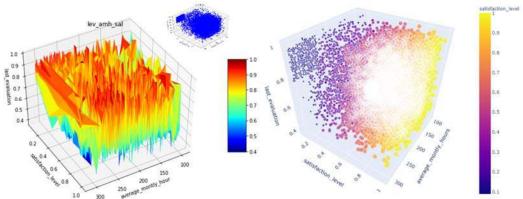
In figure 9, the larger numbers of employees fit in time spent by the company among 2 and 5 as time spent by the company and 150-275 average monthly hours. The highest evaluation scores can be found between time spent from 3 to 5 and average monthly hours between 200 and 250 hours.

Figure no. 6. Variation of data evaluation accordingly to satisfaction level and number of project (on the left) and scatter data points for satisfaction level and number of project in the last evaluation 3D view.



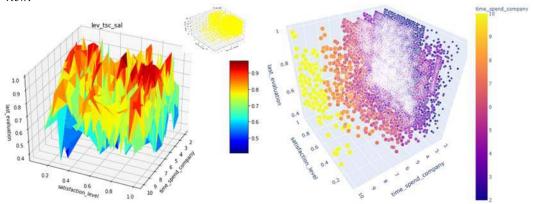
Source: Authors' representation in Python 3.

Figure no. 7. Variation of data evaluation accordingly to satisfaction level and average monthly hours (on the left) and scatter data points for satisfaction level and average monthly hours in the last evaluation 3D view.



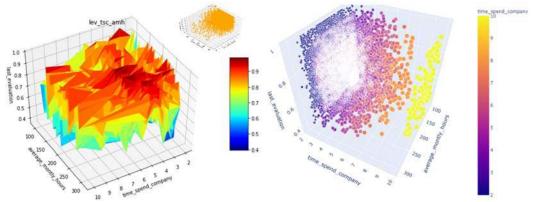
Source: Authors' representation in Python 3.

Figure no. 8. Variation of data evaluation accordingly to satisfaction level and time spent in company (on the left) and scatter data points for satisfaction level and time spent in company in the last evaluation 3D view.



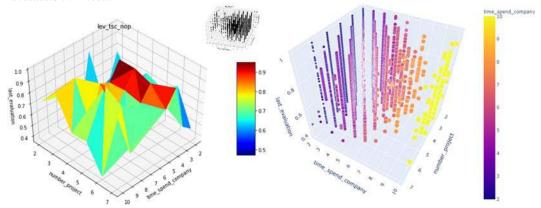
Source: Authors' representation in Python 3.

Figure no. 9. Variation of data evaluation accordingly to average monthly hours and time spent in company (on the left) and scatter data points for average monthly hours and time spent in company in the last evaluation 3D view.



Source: Authors' representation in Python 3.

Figure no. 10. Variation of data evaluation accordingly to number of projects and time spent in company (on the left) and scatter data points for number of projects and time spent in company in the last evaluation 3D view.



Source: Authors' representation in Python 3.

Figure 10 reveals that the project that most employees participated in are 3 to 5, and time spent by the company 4 and 5 days.

5. Conclusions

The data visualization can be used to represent large amount of data to analyze their evolution and make decisions in accordance with the evaluated data. Using open-source software, managers can develop algorithms and tools of representation of data.

In the present paper after applying Google Colab Notebooks Python, the authors developed 2D and 3D figures that show the relations between the number of the project in which employees participated, the numbers of hours each employee worked, time spent by the company for the employee, the level of employee satisfaction, and evaluation value of the employee. The results of the visual analysis showed that the employees with the best evaluation score participated in the projects 3 and 4, worked between 250 and 275 hours monthly, were included in 4 days of company time and have a satisfaction level of 0.5 to 0.8.

Starting from these results the management should concentrate in implementing the above data values and sets to maximize the evaluation values.

6. References

- Janvrin, D., Raschke, R. Dilla, W., 2014, *Making sense of complex data using interactive data visualization*, Journal of Accounting Education, Volume 32, Issue 4, pp. 31-48.
- KAGGLE: https://www.kaggle.com/giripujar/hr-analytics
- Wu, E. et al. 2017, Combining Design and Performance in a Data Visualization Management System, Conference on Innovative Data Systems Research (CIDR), Available at http://www.cs.columbia.edu/~fotis/pubs/papers/dvms-cidr17.pdf [10.12.2021].
- Zheng, J, G, 2021, Data Visualization for Analytics and Business Intelligence: A Comprehensive Overview, Conference: IT 7113, Available at https://www.researchgate.net/publication/327578825 Data Visualization for Analytics and Business Intelligence A Comprehensive Overview [10.12.2021].
- https://matplotlib.org/stable/#.
- https://pandas.pydata.org/docs/index.html.
- https://seaborn.pydata.org/index.html.

Modern Communication Methods in Online Education

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Abstract

The aim of this paper is to compare the traditional methods of teaching as well as the new and modern methods such as: multimedia teaching. The use of internet is integrating the IT technology in the education process in order to help students develop their skills. A SWOT analysis of the multimedia learning method will emphasis the advantages and disadvantages of the multimedia learning process.

Moreover, the paper suggests other useful teaching methods that can be used in sharing knowledge to the students via online methods. In a modern society, with an expansive evolution, characterized by economic, political and cultural mobility, the future in teaching is delivering a dynamic, formative education. For this reason, the need for a reform of the theoretical pedagogical movement and also the educational practices must progress.

Modern methods of education coexist with traditional ones and strive to replace those imposed by the educational needs of the last century, hoping that, in this way, education will succeed in meeting the demands of society.

Key words: online teaching, education, distance learning, multimedia process

J.E.L. classification: A20, I21, D83

1. Introduction

In the field of education, in the last ten years, the use of the Internet has experienced a phenomenal development, a number of factors influencing the adoption of web and multimedia technologies in curricula. Today, teachers who integrate IT technology into the education process help students develop their thinking and learning skills, and in a classroom where a variety of instructional strategies are used, students are deeply involved, challenged and learn more. good. Teachers in such classes are aware of the benefits of using these strategies to make students responsible for their own learning (Keengwe et al., 2010, p.535).

The best way to teach a conceptual way of thinking, necessary for such tasks, is through a system of tests. In this system the student is subjected to concrete situations, of the world and forced to make real decisions. Interactive multimedia, with the ability to train a user, could be perfectly supported for such a process. Today, the use of the Internet and telecommunications brings important changes in the way we learn. Learning must go beyond the classroom and incorporate complex discipline and technology. Therefore, in today's education we move from training to learning, where the act of learning is placed before teaching, and the student is located at the center of the educational process.

In the field of education, in the last ten years, the use of the Internet has experienced a phenomenal development, a number of factors influencing the adoption of web and multimedia technologies in curricula. Today, teachers who integrate IT technology into the education process help students develop their thinking and learning skills, and in a classroom where a variety of

instructional strategies are used, students are deeply involved, challenged and learn more. good. (Anderson, 2008). Teachers in such classes are aware of the benefits of using these strategies to make students responsible for their own learning.

3. Research methodology

The study was conducted based on the modern education literature review. The main sources for analysis are datas provided by the institutuons theat deliver online education, distance learning or teaching, multimedia techniques for education, national and international books and also articles from the international data bases. We compare the traditional methods with the modern ones in delivering a better education, online teaching methods for distance learning programmes and created a SWOT analysis of the multimedia learning process, as well as providing the strategies for online teaching/learning reviewing the specialized literature regarding the experiences of the modern communication methods in education.

4. Findings

4.1. Traditional methods vs. Modern methods

Modern teaching involves the educational process that is intended to be focused on the interactive model, which requires the correlation and interaction of teaching-learning-assessment.

On one hand, the traditional teaching methods are concentrated on the teaching action, where the teacher/professor has the central role, the modern school places the student in the center, who enriches, consolidates, corrects and transforms the cognitive experience, in order to improve, while the teacher's role is to activate the cognitive, affective, motivational, attitudinal its students, thus creating a teaching-learning balance.

Teaching and learning cannot be treated separately, but as a unitary whole to which assessment is added, the three actions being complementary and thus capturing the entire cognitive and formative activity.

Modern didactics insists on perfecting the teaching-learning-assessment relationship because only in this way the relationship objectives-contents-methodology-results-regulation becomes logical, unitary and perfectible.

4.2. Multimedia learning process

In the instructive-educational process, multimedia technologies represent an important tool for the creation of modern instructional courses, virtual libraries and even virtual classrooms, thus forming a new space, the virtual instructive space (Evans et. all, 2007). An important step in defining this educational information space was the appearance on the market of interactive textbooks, developed in electronic format (e-textbooks or e-courses).

The use of multimedia technologies as learning resources is closely linked to constructivist learning theories, according to which in today's ever-changing world, the ability to analyze and solve a variety of problems quickly is far more important than pure application. of stored information (Mayer, 2014).

4.3. SWOT analysis of the multimedia technologies in the educational process

A SWOT analysis (fig. 1) of the influence of Computer Information Technology (CIT) media and multimedia technologies in the educational process can be represented as follows:

STRENGTHS

- through the use of CIT and multimedia technologies an efficiency of the educational process is obtained:
- almost all schools/universities have computer labs, or at least a computer available for teachers;
- in-service teacher training programs include the use of new equipment, computers, familiarization with educational platforms (AEL, Moodle, Teams), which leads to the modernization of the way teachers work;
- the student is no longer limited to the knowledge that the teacher transmits to him; the student

- has the opportunity to find arguments to support his own ideas and opinions;
- knowledge and assimilation of knowledge in a much shorter period, than through ways that do
 not include the use of CIT.

WEAKNESSES

- most teachers and managers in the system do not have sufficient skills to use CIT resources in education;
- lack of motivation of teachers to use CIT in classes;
- the fear of the teachers refusing to replace their own traditional and conservative methods with modern ones, facilitated by CIT media;
- the impossibility of conducting lessons in the best conditions for various reasons (temporary lack of electricity, lack or insufficiency of technical means of training, etc.) –;
- the need to deepen theoretical notions in order to be able to use CIT and multimedia technologies correctly.

OPPORTUNITIES

- the increasing number of young Internet users, which will deliver a new generation initiated in the use of information and communication technologies. A favorable impact, in this sense, has the online training centers, the publication of digital books, the appearance of tablets;
- collaboration with other universities/schools in the country or even in other countries; establishing intercultural partnerships;
- the possibility of carrying out the teaching-learning process between several people from different locations (via Cisco WebEx or Zoom Meetings)
- conducting online courses, preparing the student, future adult, to become an individual who can easily integrate into society (obtaining scholarships after conducting online exams, conducting vocational training courses, training teachers);
- CIT enhances the freedom to be informed.

THREATS

- there are still large discrepancies between urban and rural areas, as well as between different social categories. Therefore, there is no access to information and communication technologies for the entire population of the country equally (especially rural environment);
- the price of these technologies is quite high compared to the salaries of the national economy, which leads to repairs to CIT media on the basis of high costs, which prevents the purchase of new media;
- lack of a computer to use at home (both the student and the teacher), or lack of Internet connection:
- often the funds allocated to the purchase of educational equipment and software necessary for the educational system are insufficient;
- if the same method is used too often, boredom, misunderstanding of notions, will hinder the teaching-learning process;
- poorer assessment results due to students' inability to use CIT properly;
- decreased ability to express orally for students.

Figure no.1 SWOT analysis



Source: Processed by authors

5. Strategies for distance teaching and learning

Distance learning is a modern form of training, which is used in universities for bachelor, master or postgraduate studies. It is used by millions of students around the world and has been present in Romanian universities for several years. This form of organizing the teaching process does not involve the student's daily attendance at classes, but involves participating in tutorial activities and performing control assignments.

The educational activities of distance learning programs are different from those traditional (with frequency) programs. Courses and seminars are replaced by tutorial activities, which are flexible forms of organizing the teaching process and involve active student involvement in deciphering the subject and solving specific problems (Yair, 2014, p.28)

Distance learning involves the full involvement of the student in their own learning process and requires the use of effective strategies for managing available resources (time, space, documentation, etc.) (Moore et. al, 2018, p. 23)

There are more strategies that can be implemented for distance learning coursework. Acording to Reisman et al. (2001), the most important details of the distance teaching/learning strategies are: "course development, course delivery, computer network connectivity, and the degree and quality of student and instructor support".

We propose a set of advices for students enrolled in a distance-learning programme:

- plan the learning time so that it covers the needs in real time in relation to the individual pace of the subject.
- Choose the right time for learning activities according to the day-to-day work so that becoming overly tired can be avoided
- connect the new knowledge real life or professional experiences in order to remember easier and make learning more sustainable
- self-learning is very useful read topics to facilitate the understanding of the subject and encourage applications.

attendance at tutorial activities will first and foremost help the students to find answers to their
questions and clarify issues that are less accessible at first glance. It is important to participate in
all the tutorial activities.

The educational policies developed in the last decade include e-learning among the development directions of education, justified by the need to keep up with the rapid changes regarding the skills required by the labor market and implemented operationally through specific programs and projects developed at university or national level. At the same time, there is a growing need for a solid theoretical foundation for the improvement of ongoing e-learning programs and for the development of others, according to the new challenges of the knowledge-based society and contemporary teaching practice.

6. Conclusions

A central place in the teaching-learning activity is held by didactic communication, because the role of the teacher is not only to have specialized knowledge and psycho-pedagogical knowledge, but also to transmit this knowledge, in a specific language, to the students. Based on language, as a higher mental process, didactic communication aims to transfer information from teacher to student, but also to provide feedback from student to teacher. The Internet is becoming a source of multidirectional communication, influencing social virtualization, the introduction of a new type of social interaction in which the old limits and principles of communication are often transformed or even avoided.

The pandemic era changed to the digital learning process through multimedia methods, but still applying the principles of traditional education. It will continuously enhance due to the development of CIT and the new digital generation of students. The migration to digital, connectivity, virtualization, with more efficiency, quality, and responsibility will be an important subject for researchers but also for and teachers, lecturers or professors.

Researches and studies in the field will help teachers/professors do deliver new methods of online teaching, e-learning and multimedia practices in education.

7. References

- Anderson, T., 2008. The Theory and Practice of Online Learning: Second Edition. Edmonton. AU Press, Athabasca University
- Chen E, Kaczmarek K, Ohyama H., 2020. Student perceptions of distance learning strategies during COVID-19. *Journal Dental Education*
- Evans, C., & Gibbons, N. J., 2007. The interactivity effect in multimedia learning. *Computers & Education*, 49(4), 1147–1160
- Keengwe J., Kidd T., 2010. Towards Best Practices in Online Learning and Teaching in Higher Education, *MERLOT Journal of Online Learning and Teaching*, Vol. 6, No. 2, June 2010, 533-541;
- Mayer, R. E., 2014. Introduction to multimedia learning. In R. E. Mayer (Ed.), The Cambridge handbook of multimedia learning (pp. 1–24). Cambridge University Press. https://doi.org/10.1017/CBO9781139547369.002
- Moore, M.C., and Diehl W.C, 2018. Handbook of Distance Education, Routledge Handbooks Online.
- Reisman, S., Dear, R.G. and Edge, D., 2001. Evolution of Web-based distance learning strategies.
 International Journal of Educational Management, Vol. 15 No. 5, pp. 245-251.
 https://doi.org/10.1108/09513540110396913
- Yair, Y., 2014. Distance learning: Print vs. digital books in distance education. ACM Inroads. 5. 28-29. 10.1145/2568195.2568204.

Practices of Corporate Social Responsibility Reporting for Semiconductor and Chip Manufacturing Industry – A Multicriterial Analysis on INTEL and AMD

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Abstract

The current research paper contains the multicriterial analysis of the Corporate Social Responsibility Reports in the semiconductor and chip manufacturing industry for Intel Corp. and AMD Inc. In the interest of a fair analysis, we chose a multicriterial analysis with a structure consisting of data points found in the CSR reports of both companies. The first part of our paper servers an introductory purpose, in which we described the reasoning behind choosing CSR reporting as a theme for our research paper as well as why we chose Intel and AMD as a case study. Furthermore, we have a brief description of the two companies, with similarities and key differences for any readers that are not familiar with the business affairs of Intel and AMD. Subsequently, we have the literature review, and the research methodology with the multicriterial analysis for the CSR reporting at Intel and AMD, and their financial performance. We displayed the same indicators for both companies, focusing on the quantifiable data, as well as the clarity and displaying of the information within the report. Finally, we presented a summary of our findings concerning the financial commitments and the way information was displayed within the reports, as well as establishing future research opportunities.

Key words: CSR Reporting, practices, multicriterial analysis, AMD, Intel

J.E.L. classification: G34, M42

1. Introduction

Our paper aims to present CSR reporting practices for a specific industry, through a multicriteria analysis of the two main competitors. Due to the recent year's development, there has been an unshifting tide of ever-rising stakeholder interest not only towards the value of a product that a company offers but also putting a big emphasis on the social and environmental value that the company creates outside its products. It also helps the stakeholders know the organization's short, medium, and long-term strategies and goals. This type of reporting has been gaining more and more popularity and it has become the mainstream benchmark for assessing investment opportunities.

In this paper, we chose to present CSR reporting practices, for a specific industry, semiconductor chip manufacturing, and design, in a comparative analysis between the two main competitors, tech giants in semiconductor chip manufacturing and design, Intel Corp. and Advanced Micro Devices inc. (AMD).

There are two main reasons for our choice, the first reason is the global impact of the advancements made by those two companies. As the price of crude oil has a global impact and can drive the world's economy up or down, so do the advancements in computing power as it is obvious for the last year with the semi-conductor crisis. Whether we know it or not technology in the modern-day touches every branch of our lives, from social interaction, health and wellness, education,

military, entertainment, and many others, all are changed and driven forward by the increase in computing power. And the greatest thing about this is that technology boosts itself. The increase in computing power and advances in technology drive innovation in the same field at an increased rate for every generation (Good I.J., 1965).

The second reason speaks about economic performance, as they represent two of the best investment opportunities of the last decade. On the short-term review of the Intel and AMD stock, the market seems to be very volatile. But taking a broader view of a few years, we can see a continuous increase in the stock price of both companies. By reviewing the CSR report for them we can have a better understanding of what actions those two companies have taken to add to the value of the company besides the products themselves.

2. Literature review

The decision of voluntary disclosure of data is a critical assessment undertaken by entities; this action provides an all-embracing understanding of why organizations choose to disclose information, ensuing reporting after incidents, and about situations where the organization's actions and disclosures are incongruous.

Several authors argue that organizations engage in CSR reporting mainly due to external pressures and legitimacy reasons (De Villiers C., Maroun W., 2018). They consider that the definition provided in 1995 (Suchman, 1995, p 574) is the cornerstone for constructing the argument: "Legitimacy is a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definition."

We realize that the extent of reporting plays a crucial role. On one hand, if the entities increase the extent of reporting it might lead to difficulties when repairing legitimacy after incidents, on the other hand, a decrease in the extent of reporting, is essential for downplaying adverse events, avoiding criticism, and denying responsibility (De Villiers C., Maroun W., 2018). Different academics discussed the cornerstone role of disclosure in terms of climate change and on a border range of environmental issues, (Ben-Amar and McIlkenny, 2014), but also in terms of increased transparency and liability i.g. BP oil spill - damaging actions (Gray and Milne, 2015), and business scandals such as child labour (Cheng et al., 2016).

It is in an organization's best interest to establish itself as a legitimate part of the society in which it operates or to maintain its legitimacy to ensure support from important stakeholders. Starting with the legitimacy theory, the need to strengthen the link between the stakeholder's necessity for information and of the entity's corporate social responsibility (CSR) performance is obvious, therefore some authors claim that entities cannot afford to be socially irresponsible (Lund-Thomsen et al., 2016) and alongside that, various authors argue that the communication of such information and the commitment involved towards the society increase the company's reputation (Perez, 2015).

Within the relevant literature review, we can consciously identify several research trends based on a multicriterial analysis of chronological delineations and the stakeholders' interests. Early on, the analysis focused on the role of annual reports as the main vector of disclosure for CSR (Idowu and Towler, 2004; Nobanee and Ellili, 2015). We identified another group of researchers that studied intensively the connection between CSR and the entity's reputation (Hogan and Lodhia, 2011; Cho et al., 2012). The third research trend identified is centred on CSR relationship to environmental and economic performance (Perrini and Tencati, 2006; Dragomir, 2010; Vurro and Perrini, 2011; Qiu et al., 2016;).

In recent years, we have witnessed the introduction of CSR reporting in the tech industry, one of the most prominent examples concerns supply chain responsibility. The reasons for these introductions are various and may refer to the genuine adoption of corporate values or quasi-adoption. However, the true benefit of CSR reporting being adopted across the industry is that it inherently leads to more reforms regarding supply chain responsibility.

3. Research methodology

The CSR reports for the two companies can be found online on their website, free to download for any interested party. This approach offers great transparency and ease of obtaining information regarding their CSR activities. In the same manner, we have obtained the yearly financial statements that go into detail about all the financial aspects of the company for the previous years.

A brief overview analysis of the two companies includes a chronological analysis of their evolution and their production. Intel Corporation has been established on 1968, July 18th, by early onsetters in terms of semiconductors, Robert Noyce and Gordon Moore (of Moore's law) and is associated with Andrew Grove, recognized for his tremendous leadership and executive vision.

Advanced Micro Devices was officially incorporated in 1969 on the first of May by Jerry Sanders with several of his peers from the American semiconductor company, Fairchild Semiconductor.

Even though both companies have almost the same product portfolio until 2016 Intel dominated the market in almost all segments reaching an overall peak of 82.5% of that market. That started to change with the launch of the ZEN architecture and Ryzen series in December 2016, but even to this day, intel has a market share of 61.4% overall, 63.7% of the desktop CPU market, and over 82% (preliminary results for 2020) on the server-grade enterprise market. For the year 2019 Intel had a revenue of 72B \$ whilst AMD revenue was 7.33B \$.

We have identified two key differences that make Intel more successful financially. Firstly, better control over its manufacturing and a larger manufacturing capacity. Intel has its own manufacturing plants, its own silicon foundries, and that gives Intel a competitive edge in manufacturing efficiency and better product quality control. AMD processors are designed but not made by them, both GPU and CPU products designed by AMD are made by Taiwan Semiconductor Manufacturing Company (TSMC) and GlobalFoundries (GF), and also have a strategic partnership with Samsung. This manufacturing difference provides Intel with a greater profit margin for its products. Also, because TSMC makes semiconductor chips for many companies, this has led to an availability shortage for AMD products in 2020 and Q1 of 2021.

Secondly *Intel architecture and developers*. Intel architecture has better support and more integrated technologies than AMD and it gives them an untouchable performance edge in some applications. Intel has over 15000 software developers on its payroll to help fix and improve software code to make applications run better for their products.

The *recent developments favour AMD*, which has made great progress in the server and desktop market in recent years. Their new CPU server line called EPYC offers greater performance than Intel's server-grade CPUs (Xeon) at a better price point. An Intel Xeon server-grade chip costs from 8700\$ to 10000\$ whilst the AMD EPYC counterpart is only 4000\$ and in most cases offer better performance. In the desktop market, AMD has taken a similar approach focusing on the value aspects of the product and lower power consumption. Having more energy-efficient chips means they can add more cores and reduce heat and overall power expenses. This in combination with a lower price than the competition, makes AMD the leader in performance per dollar metric which has made their new products very desirable. This new strategy has saved AMD from bankruptcy and has given them in recent years, a growth in revenue and stock value much greater than Intel's.

The second scope to our multicriterial analysis is: describing the strategies and goals both companies had for the previous period regarding CSR, and the results they achieved. The CSR reports for both companies were released in the first half of 2020. As the Covid-19 pandemic was in full effect, both companies' reports started with a letter from the CEO and their ongoing efforts to combat the pandemic on a company level and on a global scale.

Briefly, the Intel response to the COVID-19 pandemic aimed to protect the health of their employees and service partners through an increased financial expense that surpassed 100 million USD. They launched a 50 million \$\\$ program to increase access to technology at the patient care level, accelerate scientific research, and secure accessibility to education for students. Another way Intel chose to fight this pandemic was to join a global coalition focused on finding solutions for COVID-19 as well as future pandemics. By co-founding the Open COVID Pledge, Intel provided access to their intellectual property to researchers and scientists. Intel, the Intel Foundation, as well as its subsidiaries donated more than 10 million \$\\$ to aid local communities. In addition, Intel donated 1 million pieces of protective equipment—masks, gloves, and other pieces of protective gear—to

support workers in the healthcare system. Meanwhile, AMD provided financial support for medical services and humanitarian relief, donating personal protection equipment to medical professionals, and prioritizing and expediting product shipments to medical customers like the AMD embedded processors used in ventilators and respirators, and they contributed with 15 million dollars worth of high-performance computing technology and expertise to accelerate medical research that will enable some of the world's brightest minds to develop therapies and possible vaccines for COVID-19.

Both companies have been increasing their efforts to help combat the *Covid-19 pandemic* in the flowing mouths of 2020, but because we are referring to the CSR report of the previous period, analysing the data from the report we can observe the following: (1) Intel's response was on a bigger scale and their actions are described in more detail. Intel reacted faster to this crisis because it is not the first time, they have encountered such a situation. Intel has experience of over 15 years, ever since the SARS and H1N1 virus. They created a Pandemic Leadership Team with pre-emptive measures and strategies to better overcome future global health crises. This has proven to be a great asset in their company and the rapid response is a direct result of that.

The financial commitment to combat Covid-19. To talk about the invested amounts in combating the pandemic we also have to take into account the company's financial power. As a financial indicator, we will be referring to the 2019 Net Income for both companies. The results are the following:

- ➤ Intel invested 60M \$ out of a 21B \$ Net Income for the year 2019. That amount represents 0.285% of the Net Income for 2019.
- AMD invested 15M \$ out of 341M \$ Net Income for the year 2019. That amount represents 4.398% of the Net Income for 2019.

AMD has made a greater investment in reference to their Net Income for the year 2019.

4. Findings

Going further with the analysis of the indicators found in the latest report, we will be focusing on the following points of interest concerning CSR: (1) Environmental sustainability, (2) Supply chain responsibility, (3) Diversity and inclusion, (4) Improving the world through technology

4.1. The Environmental sustainability

From the reports analysed, it can be proved that Intel and AMD recognized early that being environmentally conscious brings added value to the company and that potential investors pay great attention to environmental stewardship.

4.1.1. Water usage, waste, and effluents can prove a great environmental threat. Both companies have been undergoing great efforts to decrease water usage, water pollution and to increase water recycling.

Intel's water strategy envelopes three prime objectives: reduce water used in their operations, support the water initiative of local communities, and come up with new technologies that change the way we use and conserve water. Since 1998, the amount allocated to water conservation projects amounts to more than 265 million USD. Intel currently treats and returns roughly 75 to 85 percent of their total water withdrawals, the remainder 15 to 25 percent being consumed through their operations (mostly through landscape irrigation and evaporation). For their 2010-2020 goal, their want to reduce water use on a per-unit basis and work towards their goal to restore 100% of their total water use by 2025.

AMD water strategy has three main objectives: reduce water usage, reduce waste, and effluents. In 2019, water use in their own operations decreased by 9% since 2018 and by 10% since 2014. Their data center cooling requirements, as well as related irrigation at their sites, amount to the majority of the water used. AMD sites collect rainwater and reuse greywater at facilities in Austin, Texas, Bengaluru, and Hyderabad, India. Their non-hazardous waste diversion rate, or the amount kept out of the landfill, was 62% in 2019, compared to 65% in 2018. The amount of regulated hazardous waste generated increased from 2.5 metric tons in 2018 to 10 metric tons in 2019 due to a reclassification of e-waste in California. Across all their value chain, the highest use of water and generation of effluents occurs at the contracted wafer manufacturing stage. AMD works closely with

its foundry wafer partners to track and manage water usage. This includes a public goal to maintain water use to 40% below the industry average based on the manufacturing index. In 2019, these foundries were 48% below the industry average.

As one can notice from the above description for water conservation efforts from both companies, there are some differences in goals and results obtained, those being the following: (a) Intel has revealed their efforts regarding water stewardship for a timeline of 10 years (2010-2019), whilst AMD's timeline only covers 6 years (2014-2019); (b) Intel has revealed financial commitments regarding their water strategy, 267M \$ since 1998, whilst we do not have any financial information regarding this subject from AMD. (c) Intel provided a greater description of the amounts of water saved, either through lowering consumption or increasing recycling. Such figures have not been provided in the AMD CSR report. We have to take into account that Intel also has its own silicon foundries, and therefore has greater control over the production and can also measure its results accurately and with greater ease. AMD outsources production to other manufacturing foundries and even though AMD can request certain efficiency requirements for their product manufacturing they do not have the same level of control Intel has.

4.1.2. Electricity usage (manufacturing and product energy efficiency)

Electricity is a key resource used in the semiconductor industry. It cannot operate without it, and it has no substitute. Both companies recognize that reducing electricity usage by increasing efficiency in their operations and the final product is a key component in being environmentally conscious. In the following part, we will be reviewing the energy usage strategies and goals of the two companies.

Intel's 2019 total energy consumption increased by 15% since their reference period of 2018, due to worldwide growth in their manufacturing, whilst for 2019, the normalized energy consumption decreased by 8% since the 2018 reference period, suggesting that the energy required to produce one unit of product is lower, indicating an increase in energy consumption efficiency. Additionally, to further aid their energy conservation efforts, Intel invested in on-site alternative energy production aimed to facilitate power directly to their buildings.

AMD envisions a world where technology minimizes environmental impacts while advancing economic growth. They recognize the need to significantly reduce the energy consumption that results from producing and using technology. They are steadfast in their commitments to environmental stewardship—whether it's by sourcing renewable energy for their offices, demonstrating best-in-class manufacturing with wafer suppliers, or efficiently powering millions of AMD-enabled devices in 2020. In 2019, their foundry partners significantly outperformed industry averages for electricity use by 21%, based on the manufacturing index.

Product efficiency was their biggest focus. AMD exceeded their moon-shot 25x20 energy efficiency goal to improve the energy efficiency of their processors for mobile products 25 times from 2014 to 2020. The new 3rd generation AMD Ryzen Mobile processor (model 4800H) has achieved a 31.7-times improvement from the 2014 baseline metric, providing exemplary performance and efficiency. As a result, the new Ryzen processor consumes 80 percent less power and can accomplish a task in 84 percent less time compared to the equivalent AMD mobile processor from 2014. A company that would upgrade 5,000 laptops from 2014 that use AMD chips to the 2020 model will have five times more computing power, while reducing energy consumption on an average of 140,000 kilowatt-hours during a product life of three years, mitigating 100,000 kilograms of carbon emissions, which is the equivalent of 1,600 trees matured over the span of a decade.

From the previous depiction of the energy efficiency goals and strategy we notice the following: (a) Both companies have achieved their goal regarding decreasing energy consumption and even surpassed them. A key difference here is in the detailing and data provided by the two companies. Intel provided an overall more detailed description of their energy-saving goals, strategies, and the results obtained. (b) Regarding product efficiency, both companies have made great efforts towards meeting their goals, but only AMD was able to accomplish it. This target was met because product efficiency was the number one priority for AMD in designing their new generation chips, and it is what saved them from bankruptcy. The data provided by AMD also illustrates how this new approach brings a tremendous benefit not only to customers but to the environment.

4.1.3. GHG emissions. Reducing greenhouse gas emissions is a key factor in slowing down global climate change, and at the same time reducing air pollution.

For more than 20 years, Intel's approach regarding GHG emissions had the goal to reduce energy consumption and decrease air pollution. Since the reference year of 2000, Scope 1 and Scope 2 emissions have declined by an average of 31 percent on an absolute basis, even when considering the expansion to their manufacturing facilities. For the 2020 period, Intel has set the target of decreasing GHG emissions by a tenth of the 2010 levels on a per unit metric. By the end of 2019, they surpassed their target by 290%.

AMD recognizes that the reduction in GHG emissions is a key weapon against climate change. Their goal for 2020 for reducing GHG emissions by 20% was met in 2019 with a 23% reduction from the 2014 goal baseline and an 11% improvement from 2018. AMD provides precise data for GHG reductions over their facilities, but the strategies used to achieve the results are spread over multiple subchapters.

From the analysis of the report, we can observe that both companies are undergoing efforts to reduce GHG emissions across all their company chain. The difference here arises from the display of the GHG reduction strategies in the report. Intel report provides the data in a more easily accessible format having all the data in one subchapter, while AMD report has the strategies for GHG emissions reductions spread over multiple subchapters. Even though this reporting method has been used extensively for this indicator, it can be noticed for multiple other indicators as well.

4.2. Supply chain responsibility

Supply chain responsibility is a key component in CSR and it shows how a company is advancing accountability and improving performance across all the supply chain whilst creating value for the company and reducing risk for the customer.

Intel's approach to this indicator has three main focus points: obtaining minerals from responsible sourcing, increasing supplier engagement in CSR, and preventing forced and bonded labour in their supplier chain. They provide detailed information about their goal and results for their suppliers for every region, this includes the Americas, Europe, Middle East, Africa, and Asia-Pacific. Their approach in obtaining minerals only from responsible sources has been very successful. From an evaluation of 215 companies, the highest score was achieved by Intel, the singular company with a superior rating for conflict minerals due diligence in the Responsible Sourcing Network's 2019 Mining and Disclosure guide. They also have the same water, energy, and recycling protocols for all their suppliers. They all have to meet Intel's standards regarding eco-friendly policies. Roughly 400 suppliers, constituting over three-quarters of the supply chain expanses in 2019, are required to comply with their dynamic program aimed to boost supplier performance through diligent efforts concerning complaisance, transparency, and capability building.

Intel has a zero-tolerance policy for forced and bonded labour, their current evaluation and efforts extend their grasp in the supply chain, which has reached over 38,000 workers. To ward off forced and bonded labour Intel expects all its suppliers to comply with the principles of equality of opportunity. As a result, they have emended over 15M USD in payments to supplier workers and have discovered another 10M USD to be remitted in 2020.

AMD incorporates corporate responsibility expectations into the same business processes they use for all supplier performance – the supplier business reviews (SBRs). The SBR is the forum where senior leaders from both companies come together regularly to discuss a broad range of topics relevant to their business relationship. Corporate responsibility is an integral part of these relationships and is thus included in the SBR for manufacturing suppliers. AMD is a full-member of the Responsible Business Association (RBA). They have adopted the standards within the RBA Code of Conduct and expect their suppliers to conform to them. AMD also has measures to ensure that no counterfeit semiconductors are used at any point in the supply chain. To safeguard product integrity AMD has established an extensive set of controls to ensure parts are securely manufactured, assembled, tested, uniquely tracked, marked, stored, and transported from manufacture to authorized distribution.

From the reviewing of both disclosures concerning supply chain responsibility, we can notice that the two companies have been implementing various strategies to ensure that their supplies are conducting their business by following CSR guidelines. They provided detailed descriptions of their goals and strategies, but only Intel provided precisely measured data regarding this subject.

4.3. Diversity and inclusion

Diversity and inclusion are, to a greater extent, something additional to policies, programs, or headcounts. Impartial organizations outperform their competitors by acknowledging the distinctive requirements, perceptions, and abilities of all their employees. As a consequence, diverse and inclusive offices gain greater confidence and additional dedication from their employees and their clients.

Intel considers diversity and inclusion as fundamental beliefs and subservient in driving innovation and providing greater business development. They have achieved their goal, providing equal average pay for their employees, regardless of gender. In 2020 they achieved their goal of spending 1B USD per annum with diverse-owned suppliers, spending over 200M USD on womenowned suppliers worldwide. They have been granted more than 20 third-party acknowledgements for their diversity and inclusion efforts in 2019, and the first half of 2020, including a spot on the Bloomberg Gender-Equality Index. Starting with the reference year of 2002, the Human Rights Campaign has listed Intel on its Corporate Equality Index and has awarded the company the top score of 100 for 15 of those years.

AMD describes diversity and inclusion as a very important aspect of its corporate culture. According to internal survey results, 85% of respondents agree with the statement "I am proud of my company's involvement in the community and social causes." AMD had affinity groups for yearsmost notably the AMD Women's forum – they introduced a corporate ERG policy in 2016 to clarify the process and encourage the formation of other groups. Unfortunately, AMD does not provide any quantifiable data regarding this subject.

From the examination of the two reports, we can notice that, although both companies have been involved with having a more inclusive and diverse workplace, AMD's report provides a very vague description of their strategies and included no measurable results. Intel's report provides a detailed description of their goals, strategies and provided measurable results across all their efforts regarding this subject.

4.4. Improving the world through technology

We live in a time where technology can improve our lives unlike ever before. From healthcare to travelling or even farming, technology aids us every day, seamlessly and sometimes without even knowing. Intel states that it is committed to creating a better world through the power of its technology and the passion of its employees.

In 2020 Intel celebrates the twenty-fifth anniversary of Intel Involved, Intel's global corporate volunteer program. Since the program's launch in 1995, Intel employees and retirees clocked in more than 17M hours of community service, 1.2M hours recorded in 2019 alone.

Intel announced grants of 1.25M \$ in the US to encourage middle school-girls interest in technology, engineering, and computer science through the Intel She Will Connect initiative. Intel is also empowering communities through four other programs: (1) Intel Future Skills, (2) Computer Science for JROTC Cadets, (3) Intel She Will Connect, (4) Intel AI for Youth. Until the spring of 2020 when COVID-19 impacted the health and safety of the world, AMD has typically hosted their annual AMD Cares Day of Service with the goal of getting the employees out into their local communities for a company-wide celebration of community service. Since the program launched in 2015, over 9,000 employees worldwide have volunteered more than 15,000 hours.

AMD is focused on instinctive and immersive computing and how that technology can unleash the power of machine learning and other high-performance computing applications to tackle important global challenges including the following: (1) Medical diagnostics already rely heavily on various forms of imaging. (2) Education is ripe for innovation through immersive and instinctive technologies. (3) Scientific research is entering an era of tremendous potential due to new compute

capabilities. (4) Security concerns are an inevitable part of 21st-century life, and AMD works with others in the industry to prevent and address vulnerabilities.

4.5. Comparative analysis of the financial performance of both companies during the last 4 years (2016-2019).

In the next part we will be analysing the financial performance of the two companies through the following indicators: Revenue, Net Income, Stock Price, Change in Stock Price (percentage), Worldwide Charitable Giving for the 4 years of 2016-2019.

The first indicator that we will be looking at is Revenue, and we can notice from the data that Revenue has recorded the following changes (1) Since the reference period of 2016 Intel has recorded an increase of 12.6B USD, or in relative units 21.21%, in 2019. (2) Since the reference period of 2016 AMD has recorded an increase of 3B USD, or in relative units 69.76%, in 2019.

From the revenue data, we can notice that Intel has a Revenue far greater than AMD's. This is due to the wide array of products and technologies they provide, far more than AMD, and still having a dominance on the CPU market share, 68,4% versus 31.5% for AMD in Q4 2019.

When it comes to the growth rate for the Revenue, we can notice that AMD had a growth rate more than 3 times larger than Intel's, 69.76% versus 21.21% for Intel. This is due to the launch of the new ZEN architecture that brought great interest from consumers for the performance and value of the product

The next indicator analysed is Net Income. We observe that Net Income has recorded the following changes: (1) Since the reference period of 2016 Intel has recorded an increase of 10.7M USD, or in relative units 103.88%, in 2019. (2) Since the reference period of 2016 AMD has recorded an increase of 839M USD, or in relative units 168.47%, in 2019. So, we can notice that Intel doubled the value of their Net Income from the reference period, and AMD has achieved a positive Net Income. To give a more meaningful analysis of the Net Income values we will take a look at the Profit Margin:

Table no. 1 Profit Margin for Intel and AMD 2016-2019

Profit Margin %	2016	2017	2018	2019
Intel	17,34%	15,28%	29,80%	29,16%
AMD	-11,58%	-0,63%	5,26%	4,67%

Source: Computed data from CSR reports from Intel and AMD

From the data, we can notice that Intel has 6 times more Profit Margin than AMD. This is in part due to Intel having their own foundries, thus benefiting from the profit margin related to production, while AMD is outsourcing the production and losing that profit margin in favour of TSMC.

Another performance indicator that investors are interested in is Stock Price, reflecting the investors' perception of the company's ability to earn and grow its profit in future years. From the data provided for the last four years, we can notice that both companies have recorded a growth in stock price, with Intel more than doubling its stock price, while AMD from the brink of bankruptcy achieved a stock price that is three quarters the value of Intel's. This was a huge leap and a very good investment opportunity, and this is all due to the new ZEN architecture.

The last indicator that we will be looking at is one rather important in regard to evaluating a company's CSR performance, Worldwide Charitable Giving. This indicator contains the amounts of cash donated or invested in non-profit activities. The values recorded for the two companies are the following:

Table no. 2 Worldwide Charitable Giving 2016-2019

Worldwide Charitable giving in million \$	2016	2017	2018	2019
Intel	112,70	89,60	84,20	75,10
AMD	0,17	0,21	0,27	0,45

Source: CSR reports from Intel and AMD

From this data, we can conclude that Intel gives in absolute values far more money than AMD, but when considering the Profit Margin, both companies have respectable amounts regarding charitable givings.

5. Conclusions

Corporate social responsibility reports aim to enable companies to properly determine the impact of their activities on the environment and on society. Although the two companies have different sizes and financial power, they both have committed substantial financial resources when it comes to being a steward of the environment and society, as well as preserving corporate ethics in their business activities and their supply chain. When considering the net income for 2019 for both companies, we can notice that Intel spent 3 times more than AMD when it comes to Worldwide Charitable Giving.

When it comes to the results of their CSR strategies and goals another trend emerges. We can notice that Intel has provided more quantifiable data when it comes to all the four points of interest studied in this paper (Environmental sustainability, Supply chain responsibility, diversity, and inclusion, Improving the world through technology). This shows that Intel is collecting more data, and precisely measuring their performance in their own facilities as well as in their supply chain. Equally important as the data itself, is how you display it. When it comes to the structure of the two reports two key differences emerge.

The first noticeable difference is in the flow of information following a well-determined structure. In Intel's case, the data in the report is presented in well-defined chapters, each with the purpose of following the goal, strategy, and measurable result formula. In AMD's case, the data regarding the same goal is scattered in multiple chapters over the entire report. This is most noticeable when analysing the environmental indicators. This method of scattering the information, and repeating it in a different format could indicate the lack of data provided in the report.

The second noticeable difference is in the clarity of the information regarding their strategies, and programs. In both cases, the two companies provide additional information when it comes to their strategies and programs via hyperlinks that send the reader to the appropriate site, that further details the subject. When it comes to using the data available in the written format of the report, Intel provides sufficient information to understand the strategies used and the activities of the subsequent programs, the provided links only offer further information for interested readers. In AMD's report, certain strategies and their regarding programs do not provide ample information for the reader who is not already familiarised with them. In some cases, you must follow the provided links to properly assess the doings of a certain program. This approach is not very friendly to the average reader, who is interested in getting the proverbial lay of the land when it comes to understanding their business.

After reviewing the financial information provided in the report, we can notice that both companies provided relevant data, and more than sufficient for a CSR report, for the purpose of evaluating their economic development. For further information, the two companies have financial reports available online as well, that provide the entire ensemble of financial performance indicators.

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7. References

- Ben-Amar, W. and McIlkenny, P. 2014, "Board effectiveness and the voluntary disclosure of climate change information", *Business Strategy and the Environment*, Vol. 24 No. 8, pp. 704-719;
- Gray, R. and Milne, M.J. 2015, "It's not what you do, it's the way that you do it? Of method and madness", *Critical Perspectives on Accounting*, Vol. 32, pp. 51-66;
- Cheng, S., Lin, K.Z. and Wong, W. 2016, "Corporate social responsibility reporting and firm performance: evidence from China", *Journal of Management and Governance*, Vol. 20 No. 3, pp. 503-523;

- Nobanee, H. and Ellili, N. 2015, "Corporate sustainability disclosure in annual reports: evidence from UAE banks: Islamic versus conventional", *Renewable and Sustainable Energy Reviews*, Vol. 55, pp. 1336-1341;
- Hogan, J. and Lodhia, S. 2011, "Sustainability reporting and reputation risk management: an
- Australian case study", International Journal of Accounting and Information Management, Vol. 19 No. 3, pp. 267-287
- Dragomir, V.D. 2010, "Environmentally sensitive disclosures and financial performance in a European setting", *Journal of Accounting and Organizational Change*, Vol. 6 No. 3, pp. 359-388;
- Cho, C.H., Guidry, R.P., Hageman, A.M. and Patten, D.M. 2012, "Do actions speak louder than words?
 An empirical investigation of corporate environmental reputation, accounting", *Organizations and Society*, Vol. 37 No. 1, pp. 14-25
- Lund-Thomsen, P., Lindgreen, A. and Vanhamme, J. 2016, "Industrial clusters and corporate social responsibility in developing countries: what We know, what We do not know, and what We need to know", *Journal of Business Ethics*, Vol. 133 No. 1, pp. 9-24;
- Idowu, S.O. and Towler, B.A. 2004, "A comparative study of the contents of corporate social responsibility reports of UK companies", *Management of Environmental Quality: An International Journal*, Vol. 15 No. 4, pp. 420-437.
- Idowu, S.O. Capaldi N., Fifka M., Zu L., Schmidpeter R., 2014, Dictionary of Corporate Social Responsibility CSR, Sustainability, Ethics and Governance, Springer;
- Chandler D., William B. Werther Jr 2013, Strategic Corporate Social Responsibility, Stakeholders, Globalization, and Sustainable Value Creation, Third Edition, Sage Publication, California, USA, 2013
- Perrini, F. and Tencati, A. 2006, "Sustainability and stakeholder management: the need for new corporate performance evaluation and reporting systems", *Business Strategy and the Environment*, Vol. 15 No. 5, pp. 296-308;
- De Villiers C., Maroun W.2018, Sustainability Accounting and Integrated Reporting, Routledge;
- Suchman M., 1995, Managing Legitimacy: Strategic and Institutional Approaches, The Academy of Management Review Vol. 20, No. 3, Jul.,;
- Vurro, C. and Perrini, F. 2011, "Making the most of corporate social responsibility reporting: disclosure structure and its impact on performance", *Corporate Governance: The International Journal of Business in Society*, Vol. 11 No. 4, pp. 459-474;
- Qiu, Y., Shaukat, A. and Tharyan, R. 2016, "Environmental and social disclosures: link with corporate financial performance", *The British Accounting Review*, Vol. 48 No. 1, pp. 102-116;
- *** https://www.amd.com/
- *** https://www.intc.com

Using Digital Marketing to Study Customer Behavior

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Abstract

More and more, marketing experts and management representatives of internationally renowned companies state, on various occasions, that the technologies used in production, distribution, promotion / communication activities are evolving rapidly, leading to changes in markets and changes in customer behavior. It is clear that all the changes specific to the digital age are a matter of concern to any organization, regardless of its size, object of activity, market in which it operates, because they can act as either opportunities or threats, with important (sometimes decisive) consequences in terms of economic and social results.

In this context, of multiple changes taking place, this paper aims at bringing to attention an analysis of the use of digital marketing (especially in terms of studying customer behavior) by a small company, established only 3 years and a half ago, an approach which has ensured its success in the market.

Key words: digital marketing, consumer behavior, business success

J.E.L. classification: M30, M31, M3

1. Introduction

"The pace of change is so fast that the ability to change has now become a competitive advantage," stated Richard Love, an HP representative. (Armstrong and Kotler, 2015. p.28)

The activity and behavior of the companies, on the one hand, people'swork andlifestyle, and their buying behavior, on the other hand, have changed significantly, especially after the 90s, with the increasingly obvious shaping of a new model of economy (called digital economy) based on technological progress.

The companies' interest in digitizing their business is determined by the advantages they can gain: the possibility of cutting their costs, the conditions for expanding the area of their action and increasing the degree of their penetration into different markets. (Koter *et al.*, 2009, pp. 10, 23). The digital economy model has led companies to rethinkingtheir concern for meeting the needs / desires of customers, focusing on two aspects, considered essential for their business, namely: the generalization of their offer and the individualization of the demand. These concerns bring to attention a new type of marketing behavior of the companies, based on the "understand and respond" principle. (Koter *et al.*, 2009, pp. 10, 23). Companies, through various activities, create the favorable framework for the clear, personalized expression of customers' needs / desires, use digital technologies in order to significantly reduce the time and effort that customers devoteto searching, ordering and receiving the goods. The reorganization of the activity on the "understand and respond" principle gives certain advantages to companies, materialized especially in the following aspects: the ability to create and offer personalized original products, ensuring a high degree of customer satisfaction and the possibility of increasing the economic efficiency level. (Koter *et al.*, 2009, pp. 10, 23).

2. Theoretical background

In the marketing literature, specialists were paying attention, ever since the end of the 19th century, to the strong impact of technology on the whole business, referring especially to the Internet. "From time to time, a new technology or idea appears, that is so deep, so powerful, so universal, that it changes everything... It does not happen often, but when it does, the world changes forever", stated Lou Gerstner, President of IBM (Koter *et al.*, 2009, p.17).

Regarding the evolution of the Internet, Harris and Dennis point out that while in 1969 it was a demonstration project, aimed at connecting four US university campuses, in 2002 it registered over 300 million users worldwide and in 2006 it reached 1,022,863,307 users. (Gay et al., 2009, p. 7) In comparison, while telephony reached 50 million customers in 40 years, the Internet reached the same level in just 4 years. (Gay et al., 2009, p.2)

Statistics show that at the beginning of 2020, there were over 4.54 billion active Internet users, which represents a share of 56% of the world's population (7.76 billion people). These figures show that six out of ten people have Internet access (https://www.affde.com/ro/). In July 2020, there were approximately 4.57 billion active Internet users, representing 59% of the global population (Bennet, 2021) (Florea, 2020).

The Internet (focused on digitization and networks), along with technological progress and globalization are considered the essential elements which have contributed to shaping the concept of a new economy. Specific to this model is that economy is based on the management of information and information systems, which is why it is also called digital economy (Koter *et al.*, 2009, p.18). Esther Dyson, president of EDventure Holdings Inc., stated in 2000 that "the Internet is not just a retail channel. It is not just a means of advertising. It is a tool that fundamentally changes the way a company conducts its business, takes orders from its customers and gives them value" (Koter *et al.*, 2009, p.17). Afuah and Tucci stated in 2003 that the Internet has an immense potential for transforming all activities (Gay *et al.*, 2009, p. 7).

Companies have become aware that the new (digital) technologies have the ability to create new opportunities related to creating / developing new products and markets. The success of the companies that have integrated and reorganized their entire activity using digital technologies is the confirmation of this approach. At the same time, the international economic reality demonstrates the opposite, in the sense that if companies do not keep up with the evolution of technologies, they are very likely to exit the market (Armstrong and Kotler, 2015, pp.28-30,100-103).

Digital technology is attracting more and more people, from a very young age, causing extensive changes in many aspects of their lives: from their communication, information, socializing, spending their free time, shopping, to their professional / educational activities. In this context, digital technology has been assimilated, quite quickly, into the marketing activity of the companies. This explains how modern companies approach their customers by combining a variety of digital tools. Experts consider that digital marketing and social media marketing are based on the use of, in particular, the following digital tools: "websites, social media, mobile ads and applications, online videos, e-mail, blogs and other digital platforms", and customers get in touch with them using different digital devices: "computers, smartphones, tablets, TVs with Internet access" (Armstrong and Kotler, 2015, p.28).

3. Research methodology

In the content of the present study we have combined several research methods so as to ensure the achievement of the proposed objectives. (Jupp, 2010; pp.95-97; 102-103; 113-115; 117-119) (Silverman. 2004; pp. 41-43; 48-54). The theoretical approaches of specialists regarding the current impact of the digital technologies progress on the activity of the companies, but also regarding customer behavior represent a collection of secondary information from the specialized literature, using desk research. In the case study we have used secondary information, of a quantitative nature, represented by four economic indicators of the analyzed company, respectively: sold items; net sales; products (models) and orders. This information has been collected in a longitudinal and transversal profile, from the internal records of the company (Jugănaru, 1998; pp.15-17; 23-25; 29-30).

4. Findings

The company Autonation Army SRL was founded on June 23, 2017; however, it actually started its economic activity in mid-2019. The object of its activity is represented by "Activities of advertising agencies", namely the personalization of articles of clothing and other general-purpose objects, mugs, keychains, and stickers for car enthusiasts.

The business idea started from the fact that the entrepreneur had to deal with the lack of supply inpersonalized products, intended for car enthusiasts, such as: clothing items, keychains, or personalized mugs.

Moreover, the entrepreneur also identified a demand for these product lines and decided to determine the dimensions of the potential market.

An important aspect of the marketing activity was the identification of the target market. A virtual community of car enthusiasts was set up. Using the social networking platform Facebook, the decision was made to organize events, i.e., meetings ofthe members of a group, during which the product offer was presented, initially represented by personalized keychains; it is worth mentioning that at each meeting the entire stock of products was sold.

Following a direct, selective kind of marketing research, based on questionnaires and structured interviews with the group's members, the entrepreneur discovered that car enthusiasts presented an unsatisfied demand for several lines (categories) of customized products. This aspect determined the decision to introduce, in the structure of the offer, new product lines: personalized mugs and personalized clothing items.

An important component of the marketing activity is represented by the choice of product suppliers. In their selection, the quality level of the products has always been taken into account, given that Autonation Army SRL aims to ensure that the degree of satisfaction of its customers is as high as possible.

The marketing research carried out within the company has shown that the target market, represented by car enthusiasts, shows in its behavior the openness to use various digital devices, for different purposes and activities. Hence the decision to set up the online store.

The company's activity has registered a continuous growth from the moment of its establishment until now, as can be seen from the data presented in Table no. 1 and the graphical representations below. Furthermore, during this period, the company has created a large database, especially useful for its entire activity, from choosing its suppliers, determining the size and frequency of orders, to studying buying behavior, developing communication with its customers and increasing their loyalty.

In order to carry out the analysis of the evolution of the activity of the company Autonation Army SRL, we have selected four economic indicators: (1) sold items; (2) net sales; (3) products (models) and (4) orders, focusingonthem throughout the entireperiod of activity. Moreover, given the large number of items sold by the company (over 900 products) we have grouped them into six main lines / categories: (1) sweatshirts, (2) T-shirts, (3) stickers, (4) mugs, (5) caps and (6) beanies.

Table no.1. The evolution of the main economic indicators of the company Autonation Army SRL by categories of products, in the 2019-2021 period

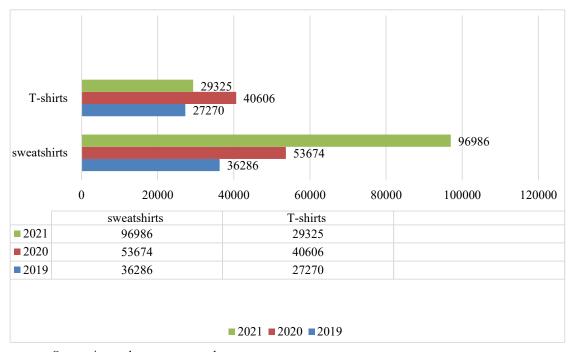
categor	ies oj p	rouncis,	in the 20	17-2021	periou							
Year	2019				2020				2021			
categories of products	sold items	net sales	Products (models)	orders	sold items	net sales	Products (models)	orders	sold items	net sales	Products (models)	orders
sweatshirts	318	36.286	104	318	522	53.674	128	470	892	96.986	161	802
T-shirts	455	27.270	181	455	703	40.606	194	494	483	29.325	214	352
stickers	7	146	47	7	269	2671	52	126	225	2395	56	119
mugs	14	529	7	14	27	1076	16	21	27	1075	11	26
beanies	0	0	0	0	10	529	6	9	22	1154	8	17
caps	0	0	0	0	0	0	0	0	1	65	1	1

Source: internal company records

The data in Table 1 show that two product lines - sweatshirts and T-shirts - have the highest values, for the four analyzed indicators, which can be interpreted as being the preferred products by the company's customers.

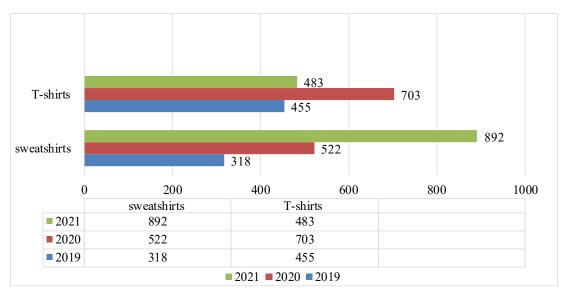
We have performed a comparative analysis of the evolution of each indicator for these two product lines.

Figure no. 1. The graphic representation of the evolution of the "sales volume" indicator, in the 2019-2021 period



Source: internal company records

Figure no. 2. The graphic representation of the evolution of the "sold items (pieces)" indicator, in the 2019-2021 period



Source: internal company records

T-shirts sweatshirts sweatshirts T-shirts **2020 2019**

Figure no. 3. The graphic representation of the evolution of the "number of products (models)" indicator, in the 2019-2021 period

Source: internal company records

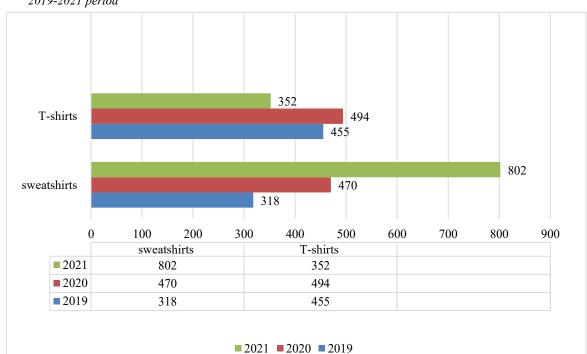


Figure no. 4. The graphic representation of the evolution of the "number of orders" indicator, in the 2019-2021 period

Source: internal company records

5. Conclusions

Specialists consider that the possession of IT and marketing skills are essential aspects / factors forsetting up and developing a businessfor students, for ensuring success in a digital economy. (Gay *et al.*, 2009, p.4)

The study presented in this paper is a confirmation of this approach. Marketing and IT knowledge have helped a graduate of a bachelor's degree at the Faculty of Economic Sciencess in Constanta to become a successful entrepreneur.

The student started the business from identifying an unsatisfied need / desire, correctly estimated the potential of the target market, anticipated that using digital technologies will confer the ability to generate new opportunities for the creation / development of new products and markets, and the decisions related to organizing and running the business were based on the research into customer buying behavior and specific elements of digital marketing.

A permanent concern, which has become a specific element of the marketing activity and on which the success of the Autonation Army SRL is based, is the provision of high-quality products and the development of communications that it can ensure a high degree of customer satisfaction.

6. References

- Armostrong, G., Kotler, Ph., 2015. *Introduction to marketing [Introducere în marketing]*. Bucharest: PEARSON Publishing House.
- Gay, R. Charlesworth, A., Esen, R., 2009. *Marketing on-line a customer-oriented approach* [Marketing on-line o abordare orientată spre client], Bucharest: ALL Publishing House.
- Jugănaru, M., 1998. Theory and practice in marketing research [Teorie și practică în cercetarea de marketing]. Bucharest: Expert Publishing House.
- Jupp, V., 2010. Dictionary of social research methods[Dictionar al metodelor de cercetare social]. Iași: Polirom Publishing House
- Koter Ph., Jain, D., Maesincee, S. 2009. Marketing in the digital age. A new vision of profit, growth and renewal [Marketinul în era digitală. O nouă viziune despre profit, creștere și înnoire]. Bucharest: Meteor Press.
- Silverman, D., 2004. *Interpretation of qualitative data [Interpretarea datelor calitative]*. Iași: Polirom Publishing House.
- Bennet, J., 2021. 23 Amazing statistics about the Internet and social media in 2021 [Statistici uimitoare despre Internet și social-media în 2021], [online] Available at: https://ro.wizcase.com/blog/statistici-uimitoare-despre-internet-si-social-media/>[Accessed November11, 2021]
- Florea, I., 2020. *Câți oameni folosesc internetul? [How many people use the Internet?]* [online] Available at: https://casastiti.ro/cati-oameni-folosesc-internetul [Accessed November 10, 2021]
- Internet 2020 Statistics: Internet Status Report [Statistici Internet 2020: Raportul privind starea internetului][online] Available at:https://www.affde.com/ro/ [Accessed November 10, 2021]

Using Digital Marketing for Product Development and Communication Strategies

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Abstract

Digital marketing, as a modern form of direct marketing, has experienced the fastest development and nowadays it represents a new business model. The success enjoyed by digital marketing is due to the advances in Information and Communications Technology, the investments made by companies in this field, the economic and social advantages offered to business partners (suppliers, organizational customers, final consumers), but also to the changes in lifestyle and customer buying behavior.

The aim of this study is to analyze the mode of application of digital marketing within a small company.

The paper includes a theoretical part, represented by points of view provided by specialists on digital marketing and a case study, in which we have analyzed the main digital marketing activities, especially those regarding the product and the communication, carried out by the company Autonation Army SRL, in the 2020 -2021 period.

Key words: digital marketing, Internet, communication, business success

J.E.L. classification: M30, M31, M3

1. Introduction

Digital technologies have revolutionized the business world in an obvious way since the late 1990s, when the Internet recorded a significant development. Ever since that time, Bill Gates, the President of Microsoft, has been drawing attention to the impact of the Internet on the direction taken by business activity: "The Internet is a tidal wave. It will sweep away almost every industrial sector, drowning those who will not learn to swim in its waves" (Gay *et al.*, 2009, p. 2). Certain specialists' points of view, formulated as predictions, end up being quickly confirmed by the activity of the companies. Digitized technologies are beginning to change the business environment in the sense that it is becoming more interconnected and fluent, transparent, and efficient, they manifest in a virtual environment, both in the B&B (Business to Business) sector and in the B & C (Business to Consumer) sector. In this context, companies are becoming aware that, along with the investment effort put in ICT (Information and Communications Technology), it is important to also concern themselves with the reconfiguration of the marketing activity, so that they are able to provide greater value for their customers.

In this study we are bringing to attention certain theoreticians' points of view regarding the new dimension of marketing in the context of the digital economy, the importance of marketing in organizing the company's activity and establishing its strategy, while in the case study we are presenting a selection of digital marketing activities in particular regarding the product and the communication, practiced by the Autonation Army SRL company, in the 2018-2021 period.

2. Theoretical background

Advances in the field of digital technologies and, in particular, the explosion of the Internet have created the framework for the emergence of the online marketing concept and its implementation, in various forms, in companies' activity. The presence in the specialized literature of e-marketing, e-trade, e-business concepts shows that digital technologies are present in all the structures of the company and in all internal and external activities of its business (Gay et al., 2009, p. 3). In defining these concepts, specialists are emphasizing the presence of a common element, namely the use of the Internet for conducting profitable business. The secret behind the success of the companies which have rapidly implemented the Internet in their business is largely due to the openness shown by managers to the use of information technology and to changing their development strategy. Internet use has created a new dimension – a virtual one, i.e., the global market, in which the relations between business partners are gradually starting to become more efficient, while the relations with the clients are reconfigured and manifest in new forms.

Whereas classic marketing is defined by specialists as a means of organizing and managing a company's activity based on identifying, anticipating and satisfying the needs / desires / demand of customers in a profitable way, e-marketing emphasizes that by using the Internet and digital technologies the marketing mission expands, being aimed at "building and maintaining the relationship with the customer through online activities, in order to facilitate the exchange of ideas, products and services, thus meeting the objectives of both parties" (author's note: buyers and sellers) (Gay et al., 2009, p. 6). Moreover, specialists are also recommending marketing to become more and more involved " in the strategy and organization of a company", drawing attention to the concept of holistic marketing (Koter et al.; 2009, p. 20). The new marketing paradigm (holistic marketing) has as a starting point the individual requirements of the client, focuses its attention on the value / satisfaction offered to the client, the company's core skills and collaborative networks, uses database management and integrates the collaborators, consumers, employees and communities into the value chain. All this effort aims at increasing the company's profitability and customer loyalty by providing superior value, in the context of developing mutually beneficial, long-term relationships.

The new form of direct marketing - digital marketing - (which uses online, social media and mobile marketing channels) has experienced the fastest development and nowadays it represents a new business model (Armstrong and Kotler, 2015; pp. 448-449) (Man and Bruzeanu, 2000, p. 7) (Veghes, 2003; p. 221). Online shopping, also called e-procurement, is becoming predominant both between/among companies, and with their end consumers. Digital marketing enables business partners to easily and quickly gather important information, reduces the time needed for and between ordering and delivery activities, reduces purchasing costs, enables the company to better track its transactions. Digital marketing and social media marketing are the framework for the interaction with the end consumers, but also with organizational customers, being the basis for developing mutually beneficial and lasting relationships (Armstrong, Kotler; 2015, pp. 163-166). Furthermore, the use of digital channels and social networks also provides the possibility of increasing the degree of buyers' involvement precisely because there is the possibility of interconnection anytime and anywhere. A specialist in business social networking pointed out that "Customer expectations have changed. Customers want to have, at their request, a say on how they interact with your company" (Armstrong and Kotler, 2015, p. 166). Digital marketing has the greatest ability to bring the company representatives closer to their customers, but also the customers among them.

3. Research methodology

In this study we have combined several research methods, in order to highlight the theoretical possibility offered by digital marketing in developing product and communication strategies within a company (Jupp, 2010; pp. 95-97; 102-103; 113-115; 117-119) (Silverman, 2004, pp. 41-43; 48-54). In the theoretical part, we have used desk research to gather secondary information from the specialized literature, represented by specialists' views on the main features and advantages of implementing digital marketing.

In carrying out the case study, we have also used secondary, quantitative information, represented by economic indicators analyzed by the company, respectively: sales volume generated by advertising campaigns, campaign profitability - ROAS (Return On Ad Spent), number of impressions of the advertising campaigns, the amount spent on advertising campaigns, impressions frequency and website engagement, number of completed orders.

4. Findings

The company selected for this research, Autonation Army SRL, has been integrating digital marketing elements since the start of its activity, in the year 2019.

In order to achieve its object of activity, represented by the personalization of certain items used by car enthusiasts, the company is importing from different (EU or non-EU) manufacturers articles of clothing, mugs and stickers, it customizes them in various ways (this aspect representing its production activity), then proceeding to promote and sell them.

In the first year of activity, the personalization of the products in its portfolio was done in the form of an outsourced service, however, the experience gained and the amount of revenue from sales determined the entrepreneur to adopt a new strategy plan. Thus, in the second year of its activity (2020), the company began to invest in purchasing machinery specific to the personalization activity, which provided it with the opportunity to organize and fully control the production flow within the company.

The Autonation SRL company has developed commercial relations with a large number of producers, companies specialized in import services, courier companies, ad production, etc.

The creation of the online store has meant the initiation of business profiles within digital platforms and social networks, such as: Google MyBusiness, Facebook, Instagram, TikTok, without using a paid promotion tool in the online environment.

The most important element in carrying out its sales activity has been the WooCommerce platform, a platform where the online store has been created, allowing the construction of a detailed database with information on: the sales volume, number of available items and their performance, average value of an order, as well as other relevant statistical data so that the entrepreneur can be able to measure the results of his economic activity.

In the year 2020, the decision was made for the promotion activity to be carried out through paid advertising on various digital platforms and through social networks. The Facebook platform, through the Facebook Ads Manager tool (recently renamed Meta for Business), is used by the Autonation Army SRL company as the main platform for a promotion directed at users of mobile devices and users of laptop / desktop devices.

This tool, made available by the Facebook platform, offers the companies that choose to promote themselves for a fee through the Facebook ecosystem (Facebook, Instagram, Messenger, WhatsApp) a series of algorithm templates especially designed to maximize the companies' effort to promote themselves in the form of defining and achieving various objectives: increasing brand visibility, increasing the number of users visiting the online store, increasing the engagement with the company's Facebook page, generating potential customers, increasing the number of completed conversions

/ orders, etc. (https://www.facebook.com/business/help/200000840044554?id=802745156580214).

At the same time, other promotional platforms, such as Google Ads and TikTok, were tested, but the results obtained were below expectations, which is why the company gave up collaborating with these platforms.

At the beginning of 2020, the entrepreneur implemented promotion campaigns which aimed either to increase the number of online store visitors or to increase the number of completed orders in the online store.

The strategies used to promote the products have been created using heuristic methods, such as trial and error, in order to be able to test and measure the results from different campaign configurations.

As an example, we recall that, by using the *split A/B testing* comparative analysis (Bolboaca, 2015), the entrepreneur decided to set up two advertising campaigns with similar content and similar budgets, but with different demographic targets (segments) in order to appreciate if there

were significant differences in the obtained results. At the end of the campaigns, the entrepreneur found that the sales volume and rate of return indicators were higher for the campaign carried out without selecting a demographic group (segment), while the campaign with the demographic segment defined in depth in terms of age, location, habit purchase and interest had a much poorer performance.

During the year 2020, the company carried out 16 promotion campaigns through the Facebook ecosystem, carried out within the Facebook, Instagram and Messenger platforms. These campaigns had a total cost of 2,800 lei, generated 333 orders completed in the online store and generated revenues totaling 53,053 lei, with the ROAS indicator (Return On Ad Spent) between 5 and 25, with an average of 18.95.

The ROAS indicator - Return On Ad Spent - is a number obtained by dividing the value of revenue by the amount spent (Ekine, 2018).

In this study, we have selected, for the year 2020, at first, two of the most efficient promotion campaigns, which had the same objective - increasing the number of completed orders, and we have performed a comparative analysis of the performances obtained (Fig.1), and then two of the most efficient campaigns, but which had different objectives: Campaign no. 1 has aimed to increase the number of completed orders, and campaign no. 2 has aimed to increase the number of visitors / hits of the online store and we have carried out a comparative analysis of the achieved performances (Fig.2).

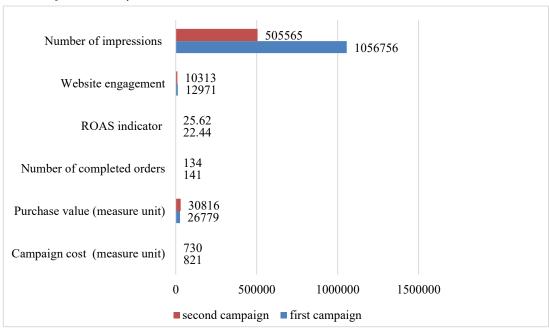


Figure no. 1. A graphic representation of the performances of two promotion campaigns, which had the same objective, in the year 2020

Source: the company's internal records

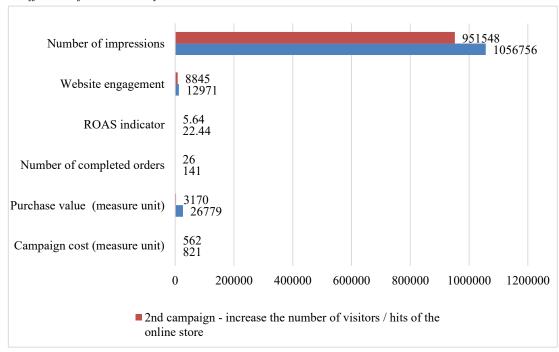


Figure no. 2. A graphic representation of the performances of two promotion campaigns, which had different objectives, in the year 2020

Source: the company's internal records

In the product promotion strategy for the year 2021 81 promotion campaigns were created and carried out, with the following objectives: increasing the number of completed orders, increasing the number of visitors in the online store and increasing the number of likes of the company's Facebook page. The promotion campaigns were carried out on the Facebook and Instagram platforms, on all types of devices and operating systems used by the potential customers.

These promotion campaigns had a total cost of 6,138 lei, generated 418 completed orders in the online store and generated revenues totaling 57,626 lei, with the ROAS indicator between 6.45 and 19, with an average of 8.95.

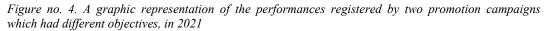
It should be noted that in 2021, Apple's decisions to change the privacy policy for iOS devices posed a threat to the Facebook platform and created serious problems for the users of this platform (Autonation SRL company being among them), in terms of the promotion activity.

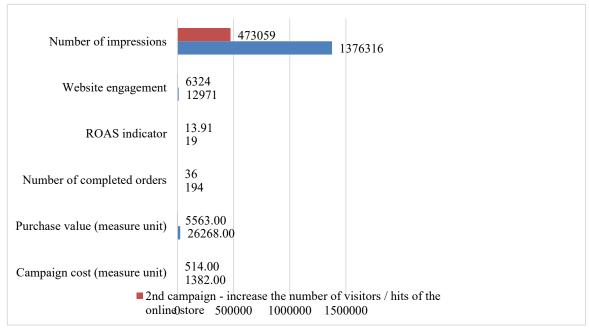
For the year 2021 we made the same selection of promotion campaigns as for the year 2020, and the results of the comparative analyses are presented in Fig. 3 and Fig. 4.

357988 Number of impressions 1376316 8845 Website engagement 12971 9.3 19 **ROAS** indicator 49 Number of completed orders 194 Purchase value (measure 6897.42 unit) 26268.00 741.56 Campaign cost (measure unit) 1382.37 0 500000 1000000 1500000 second campaign first campaign

Figure no. 3. A graphic representation of the performances recorded by two promotion campaigns which had the same objective, in 2021

Source: the company's internal records





Source: the company's internal records

The comparative analysis of all the indicators selected in order to measure the performance of all the advertising campaigns carried out during the years 2020 and 2021 is presented in the following table.

Table no. 1. A comparative analysis of the performances of the promotion campaigns carried out in the vears 2020 and 2021

Year	Number of carried out campaigns	Facebook advertising costs Measure Unit	Facebook advertising revenue Measure Unit	ROAS number (average)	Total number of impressions	Impression frequency (average)	Website engagement	Online store completed orders
2020	16	2,800	53,053	18.95	3,070,318	1.93	40,800	333
2021	81	6,138	57,626	8.95	4,859,080	1.31	57,978	418
Modifications 21/20	Abs/absolute + 65 Rel/relative +406%	abs + 338 rel +119%	abs +4,576 rel +8.61%	abs - 10 rel – 52.77%	abs +1,788,762 rel +58.25%	abs - 0,62 rel -32.12%	abs +17,178 rel +42.1%	abs +17,178 rel +42.1%

Source: company's internal records

The values of the indicators presented in Table 1 show that, in 2021 compared to 2020, the activity of the Autonation SRL company registered an increasing trend, and the results obtained were due to the intensification of the promotion activity.

5. Conclusions

The Internet and digital technologies have seen a continuous rise in our country as well. The most used platforms in Romania in 2020 were Facebook, Youtube, Whatsapp and FB Messenger (Kemp, 2020).

Statistics show that the Romanian market is an opportunity for online business.

The activity of the Autonation Army SRL company, presented in this research, is conducted entirely through the online environment, thus confirming the above-mentioned aspect. When establishing the company's strategy, in particular the aspects related to the product lines offered and the promotional activities carried out are taken into account.

Based on the comparative analysis of all the indicators followed in the promotion campaigns carried out in 2020 and 2021, but also of the parameters used to configure these ads, such as: demographic segmentation, budgets allocated for each campaign, objectives set or images and messages transmitted, the company has chosen a new promotion strategy, considered appropriate for the current market situation, able of ensuring the growth of its business.

Thus, for the year 2022, in the promotion campaigns to be carried out, the following aspects will be taken into account:

- the demographic criteria used will be: age and location (age over 16 years, throughout Romania);
- promotion budgets allocated to each campaign will be capped at a maximum of 15 lei / day;
- limiting to two objectives for future promotion campaigns, respectively: increasing the number of completed orders and increasing the number of visitors in the online store;
- designing bold messages and images, specific to the targeted niche market.

Certainly, the evolution in the IT field, the changes in the customers' buying behavior, but also other factors will determine the Autonation Army SRL company to adapt the marketing strategy, in order to increase its economic results and to offer its customers as much satisfaction / gratification as possible.

6. References

- Armostrong, G. and Kotler, Ph., 2015. *Introduction to marketing [Introducere în marketing]*. Bucharest: PEARSON Publishing House
- Gay, R., Charlesworth, A., and Esen, R., 2009, Marketing on-line a customer-oriented approach [Marketing on-line o abordare orientată spre client]. Bucharest: ALL Publishing House.
- Jupp, V., 2010. Dictionary of social research methods [Dicţionar al metodelor de cercetare socială].
 Iași: Polirom Publishing House
- Koter Ph., Jain, D. and Maesincee, S., 2009. Marketing in the digital age. A new vision of profit, growth and renewal [Marketinul în era digitală. O nouă viziune despre profit, creștere și înnoire], Bucharest: Meteor Press.
- Man, Y. and Bruzeanu, M., 2000. Direct marketing. Practical course [Marketing direct. Curs practic]. Bucharest: Teora Press
- Silverman, D., 2004. *Interpretation of qualitative data [Interpretarea datelor calitative]*. Iasi: Polirom Publishing House
- Vegheş, C., 2003. Direct Marketing [Marketing direct], Bucharest: Uranus Press
- Bolboaca, A. 2015. A / B testing what it is and how to use it [Testarea A / B ce este şi cum se foloseste], [online] Available at: https://www.jurnaldedigitalmarketing.com/digital-marketing/testarea-a-b/ [Accessed 18 November 2021]
- Ekine, R., 2018. *How to calculate Facebook ROAS for your online business*, [online] Available at: https://newsfeed.org/how-to-calculate-facebook-roas-for-your-online-business [Accessed November 18, 2021]
- Kemp, S., 2020. Digital 2020 Report on Internet use and Social Media ROMANIA [Digital 2020 raport despre utilizarea internetului si Social Media- ROMÂNIA] [online] Available at: https://datareportal.com/reports/digital-2020-romania [Accessed November 18, 2021]
- https://www.facebook.com/business/help/200000840044554?id=802745156580214> [Accessed 18 November 2021]

What Do Consumers Know About the Relationship Between Soft Drinks and Their Health?

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Abstract

The effects of soft drink consumption are a matter of public interest. Through their research, scientists are trying to establish a link between the consumption of these drinks and the health of consumers. The unprecedented rise in obesity among the population, especially children and adolescents, diabetes, cardiovascular disease and other conditions, has raised concerns and sparked suspicion that widely marketed soft drinks are harmful. This paper aims to identify the opinions and attitudes of consumers in Romania about the quality of soft drinks in relation to their health. The authors conducted quantitative marketing research - the data has been collected based on a questionnaire in electronic format and applied platforms present in the online environment. The research results show that although there are a large number of people who consume soft drinks, few know anything about the ingredients of these drinks and the influence they can have on their health.

Key words: soft drinks, synthetic sweeteners, acidity regulators, consummer health, marketing research

J.E.L. classification: I12, M31

1. Introduction

Madar and Neacşu (2011,p.51) point out in their paper that due to the changing environment in which people live and work, the concept of food has been revised, emphasizing its role in preventing consumer health.

The human body contains, at maturity, an average of 60% water (higher percentages are found in children and lower in the elderly and the percentage is higher in men than in women), of which about two thirds are in the cells of the body (in the intracellular space) and a third in the extracellular structures. If there is a change in the distribution of water in the two structures, then it leads to the installation of either hyper hydration or dehydration.

Soft drinks are considered important in human nutrition, primarily for hydrating the body, but also for the intake of vitamins and minerals that some of these drinks bring. As a number of substances with low nutritional value are also used (sugar, synthetic sweeteners, flavorings, acidifiers), the consumption of soft drinks is a potential factor with a major impact on consumer health. Over time, several studies have been conducted to highlight the connection between these two components. On the other hand, it also tries to highlight the positive action of the consumption of soft drinks on health, by industry and consumers.

This paper analyzes the soft drink market, reviewing both the theoretical aspects and some of the practical elements encountered in the production and marketing of this group of products, whose market share has increased dramatically in recent decades.

2. Literature review

Soft drinks are products made from flavored concentrates, fruit juices, vegetable juices, fruit or herbal syrups, flavoring substances (natural or synthetic), table water or mineral water, sweeteners (sugar, glucose, saccharin or other sweeteners), food acids, vitamins or other substances, with or without the addition of carbon dioxide (Fofiu, 2014). The most common fruits in the production of similar juices and drinks are: citrus fruits, apples, berries, pineapple, plums, grapes, bananas, pears, quinces, melons. The most common vegetables in the manufacture of similar juices and drinks are: carrots, cabbage, beets, tomatoes, celery, ginger, parsley, spinach, lettuce, garlic, etc. Other food resources for the preparation of "health drinks" make up a growing list: seeds, cereal flakes, sprouted cereals, etc.

Additions of flavorings, synthetic sweeteners (saccharin, acesulfame K, aspartame), synthetic dyes (tartrazine, Orange S, azorubin, Ponceau 4R, erythrosine, Blue Patent V), food acids (citric, tartaric, ascorbic, phosphoric), preservatives sodium benzoate) or other substances is obtained with the approval of the Ministry of Health and in the concentrations established by the hygiene norms. Sugar-free soft drinks are made from a mixture of water, flavorings, preservatives, tiny amounts of fruit juice and food additives. These products are devoid of nutrients, have no biological value, attracting through their sensory properties.

Soft drinks usually contain water, sweeteners / sweeteners (8, 12%; many types of soft drinks use as sugar substitutes) carbon dioxide (0.3-0.6%), acidifiers (0.05 - 0.3%), flavorings (0.1-0.5%), dyes, chemical preservatives (legal limits), antioxidants and / or foaming agents (eg saponins up to 200 mg $^{\prime}$ ml) (Banu, 2010).

The water used in soft drinks must meet the standards for drinking water, in accordance with European Directive EC 98/1983, the US Environmental Protection Agency (EPA) and the standards of the World Health Organization (WHO) (Serpen, 2012, p.1510).

Băuturile răcoritoare conțin între 1% și 12% zahăr sau fructoză, sub diferite forme, mai puțin cele cu zero zahar. These represent, the main source of energy. Excessive sugar consumption can cause different negative health effects, such as obesity, diabetes or non-alcoholic fatty liver disease. Natural sweeteners provide 1.5-4.0 calories per gram and bring an increased contribution to body weight.

To protect the health, alternative sweeteners are used, which are added to soft drinks, which are labeled as "no added sugar". These sweeteners are approved for use at acceptable levels of daily intake (ADI). The most used sweeteners (with the maximum dose allowed in the EU) are aspartame (600 mg / L), accesulfame K (350 mgL), sucralose (300 mg / L) and saccharin (80 mg / L) (Ionescu - Tirgoviste, 2020).

Fruits and fruit juices are known to be a rich source of nutrients such as carbohydrates, organic acids, minerals, vitamins, flavors and antioxidants. All fruit juices contain fructose sugar, but the sugar content varies depending on the fruit used.

Carbonation of soft drinks varies from 1.5 to 5 g / l. This process makes the drink more acidic, which serves to sharpen the aroma and taste.

To regulate the taste of soft drinks, acidity regulators are used, which balance their sweetness. Banu (2010) mentions that acidity regulators also play an important role in the natural preservation of soft drinks. Most soft drinks contain citric acid (E 330) as an acidity regulator, as it potentiates the action of beneficial antioxidants and adds flavor. Malic acid (E 296) is also used to enhance aromas, succinic acid (E 363) which has a wide range of uses, such as dairy and desserts. The regulations in force allow its use only in instant drinks. Citric acid, succinic acid and phosphoric acid are covered by EC Regulation 1333/2008 on food additives. Citric acid, succinic acid and phosphoric acid are subject to EC Regulation 1333/2008 on food additives (https://www.legislation.gov.uk/eur/2008/1333/contents).

The use of food coloring in soft drinks fulfills several important functions: a) makes the product more attractive from an aesthetic point of view; b) adds to the correction of natural color variations or to changes during processing or storage; c) maintains the qualities by which the drink is recognized. Soft drinks also contain dyes, which also have antioxidant properties. As consumers increasingly prefer naturally colored beverages, the trend in the EU and US markets is for

manufacturers and traders to reduce the use of artificial colors in their products. The use of dyes in EU countries must comply with Regulation (EC) No 1333/2008 on food additives.

Flavors are found in soft drinks in relatively small quantities, so the influence on the health of consumers is relatively low. European Union legislation defines different types of flavors: natural, natural-identical and artificial. Based on the work of the European Food Safety Authority (EFSA) in 2012, the European Commission has established a list of flavors that can be used in the EU. This authority has also developed a series of guidelines for assessing the safety of flavorings used.

Consumption of soft drinks per capita has increased significantly in the last 5 decades around the world. These drinks remain one of the important sources of added sugar in the diet of the population. Consumption of long-term sweetened soft drinks in large quantities is associated with an increased risk of cardio-metabolic disorders (obesity, metabolic syndrome, diabetes and cardiovascular disease), but also certain types of cancer. A study by (Ng M, Fleming T, Robinson M, et al. 2014, p.760) shows that in the last two decades, obesity has increased substantially worldwide and is estimated to be associated with over 3 million deaths per year. The WHO recognizes that, in this century, obesity has an equal or higher prevalence compared to malnutrition and infectious diseases. Therefore, in the absence of drastic prevention and treatment measures, it is estimated that in 2025 over 50% of the world's population will be obese (CNEPSS, 2015).

These statements are also supported by other studies which look at the link between the consumption of soft drinks and the weight gain of their consumers. The results of these studies show an increase in diabetes 2 cases, certain types of cancer, etc. (Greenwood, et al. 2014 p.729; Hung-Hao Chang et al. 2010, p.263; Bassett et al. 2020, p.3331; Katzmarzyk et al. 2016, p.2). The conclusion of these studies is that sugar-sweetened soft drinks have a stronger negative influence on the consumers' health than those containing synthetic sweeteners. Other authors have studied the habit of people to consume soft drinks while playing video games. These studies show that with the length of time people spend playing computer games the consumption of soft drinks consumed during this time has also increased, negatively influencing the health of consumers (Turel et al. 2017, p.196).

Based on existing evidence, several countries have sought to develop and implement strategies to reduce the consumption of sweetened beverages, either by increasing the marketing price, limiting its availability or by raising public awareness. These strategies include fiscal policies, public education through media and schools, restricting the size and availability of portions of sugarsweetened beverages and customer friendly labeling. Therefore, a reduction of the ad valorem tax of 10% on caloric drinks was proposed, which would have a significant effect on consumption (between 2 and 10% decrease in caloric drinks). The same result was found by Katzmarzyk et al 2016, which shows a relationship between the level of economic development and the consumption of soft drinks.

In the UK, for example, Action on Sugar, a non-governmental organization, has developed an action plan to reduce free sugars added to food by 40% by 2020 (SACN, 2015). Similar, Yuan Ma, et al. (2016, p.111) propose a gradual reduction of the amount of sugar in soft drinks by 40%, without adding synthetic sweeteners. This would lead to an average reduction in energy intake of 38.4 kcal per day after 5 years. In Norway, The Norwegian Beer and Soft Drinks Producers association announced that in 2020, over 60% of soft drinks consumed in this country were sugar-free (UNESDA, 2020). The Dutch Association of Soft Drinks, Waters & Juices also announced that the industry has reached its intermediate goal of reducing calories by 25% of its products compared to 2012. This reduction was achieved in 2019, one year before the established deadline (UNESDA, 2020).

A study conducted at European level (EHIS) during 2013-2015, established that in Romania, 63.2% of men and 49% of women were overweight in 2014.

According to the WHO, in 2016, the prevalence of overweight in people over 18 in Romania was 57.7% in both sexes. In 2016, Romania had a prevalence of obesity in adults of both sexes between 20 - 29.9% (CNEPSS, 2015).

The Romanian Ministry of Health organized and financed national health programs (through Order 377/2017) that took place during 2017-2018. An example is the National Program for Health Assessment and Promotion and Health Education, containing the Subprogram for Health Assessment and Promotion and Health Education, which had as specific areas, interventions for a healthy lifestyle and health assessment of the general population. The Romanian Nutrition Society developed in 2006

"Guide for healthy eating". The Ministry of Health has concluded a collaboration protocol with the PRAIS foundation for the implementation since 2011 of the national movement And I live healthy! It aims to inform, educate and mobilize the young generation, primary school students and their families for a healthy lifestyle, based on balanced nutrition and exercise (CNEPSS, 2015).

3. The soft drink market

The soft drink market is expected to grow by \$ 316 billion in 2019-2023. This increase will be largely due to continuous product innovations in this market. These changes take into account the ingredients, wording and packaging to increase sales. By relying on consumer demand for healthier products, suppliers are introducing products with additional benefits. For example, in April 2018, a redesigned Sprite product was launched on the UK market, which uses a combination of sugar, acesulfame K and aspartame. The manufacturer claims to reduce the sugar content of the product by approximately 50%. Such innovations will help grow the global soft drink market in the forecast period (Technavio 2018).

The top four producers in the global soft drink industry accounted for 39.10% of the industry's capacity in 2015, with production facilities located worldwide. The largest soft drink companies in the world are Coca-Cola Company, PepsiCo, Ting Hsin International Group and Jiaduobao Group (RFD-TV, 2020).

The consumption of soft drinks is popular in both Europe and the USA, with the consumption frequency and portion size increasing significantly in the last three decades. The average daily consumption is about 600 ml of soft drinks per person in the US, 240 ml in the UK (Greenwood, et al 2014, p.726). Another study shows that in the USA, there was a 123% increase in the consumption of soft drinks between the 70s and 90s, the estimate being the highest at 196% for boys between 14 and 17 years (Morgan, 2013, p.251). Other studies have similar results that indicate that the consumption of sugary drinks is common among children. The results of the study indicate that 12.8% of boys and 10.8% of girls (Table 1) reported daily consumption of regular soft drinks (Katzmarzyk et al. 2016, p.10).

The soft drink market in the EU has been on the rise over the last decade, as can be seen in Table 1.

Table no. 1. Evolution of the soft drinks market in the EU in the period 2013-2018

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		2013	2014	2015	2016	2017	2018	2019
Millions c	of	121051.0	120836.8	124277.5	124937.3	126844.5	128853.6	128853,6
liters								
Liters pe capita	er	235.3	234.3	240.1	240.6	243.6	246.9	243,9

Source: https://www.unesda.eu/consumption

In terms of calories contained, in 2018, unsweetened or low-calorie soft drinks had a share of 26%, while normal soft drinks, with added sugar, had a share of 74% (https://www.Unesda.eu/consumption/).

In Romania, the market for these beverages has been in line with the evolution of the EU market trend, but the growth has been higher, as can be seen in Table 2.

Table no. 2. The evolution of the soft drinks market in Romania during 2013-2018

		2013	2014	2015	2016	2017	2018	2019
Millions liters	of	2963.2	2890.3	3254.0	3548.0	3738.2	3935.6	3997,0
Liters capita	per	148.2	145.1	164.2	180.1	190.9	202.3	206,5

Source: https://www.unesda.eu/consumption/

From the point of view of the calories contained, in 2018, in Romania the share of dietary soft drinks (unsweetened or with synthetic sweeteners) is much lower (4%) compared to the share of those sweetened with sugar (96%) (https://www.unesda.eu/consumption/).

The data in the two tables show that although in the EU sales per capita was relatively constant during the analyzed period, in Romania it increased significantly, tending to reach the average value of European consumption.

4. Research methodology

Taking into account the previous research, the authors of this paper conducted a quantitative marketing research to identify the opinions and attitudes of consumers in Romania regarding the quality of soft drinks in relation to consumer health.

The objectives of the research were:

- Knowing how often soft drinks are consumed;
- Determining consumers' preferences regarding the choice of soft drinks
- Determining the degree of subject's satisfaction with the soft drinks consumed;
- Establishing how much importance consumers attribute to the available information about soft drinks;
- Identifying the awareness of the negatively health effects of soft drink consumption;
- Establishing consumer desires to improve the quality of soft drinks;
- Gathering knowledge about the soft drinks consumers by categorizing them by age, sex and socio-profession.

A quantitative marketing research was carried out. The data was collected using a questionnaire in electronic format and applied to the platforms present in the online environment (using social networks such as Facebook and Whatsapp). The period in which this study was conducted is September - October 2021. Data collection was based on a questionnaire answered by 250 people. Data collected from respondents were processed with SPSS statistical processing software.

The questionnaire used open-ended questions, closed-ended questions and questions with a unique answer. The end includes questions to define the profile of the subjects. The resulting sample was 250 subjects, of which 137 (54.8%) female and 113 (45.2%) male.

From the age distribution, the sample was structured as following: under 18 years there were 23 respondents (9.2%), between 18-25 years there were 173 (69, 2) respondents, between 26-45 years there were 41 (16.4%) respondents, and over 45 years, 13 (5.2%) respondents.

5. Results and discussions

Of the 250 respondents, only 245 answered affirmative to the question of whether they consume soft drinks, representing a percentage of 98% (Table 3).

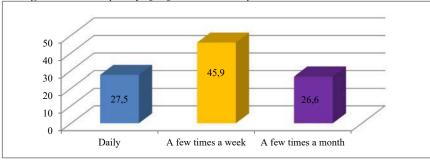
Table no. 3. Distribution of respondents consuming soft drinks

	Frequency	Percent (%)
Yes	245	98
No	5	2
Total	250	100

Source: Authors' own research

When asked how often they drink soft drinks, 244 people answered, out of 250. The most common answer was "several times a week" (45.9% of respondents), followed by "several times a month", (26.6%) (Figure 1).

Figure no. 1. Frequency of soft drink consumption

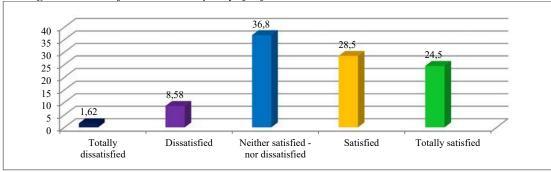


Source: Authors' own research

Respondents were asked what type of soft drinks they consume. This question was answered by 245 people out of a total of 250. The most common answer was "both" (natural and carbonated drinks), mentioned by 158 respondents (64.5% of the total valid answers). The less common answer was "carbonated", respectively 41 (16.7% of the total valid answers).

To the question "How satisfied are you with the quality of soft drinks in general", most (36.8%) said that they are neither dissatisfied - nor satisfied, 28.5% answered that they are satisfied, 24.5% are very satisfied, 8.58% are dissatisfied and only 1.62% are very dissatisfied. It can thus be seen that the vast majority of respondents are satisfied and very satisfied with the quality of the soft drinks they consume (53%) (Figure 2).

Figure no. 2. Satisfaction with the quality of soft drinks



Source: Authors' own research

The research aimed to identify the level of knowledge of respondents about the quality of soft drinks they consume. Thus, 49.39% of those surveyed said that they have quite a lot of general knowledge about the quality of soft drinks, and only 36.8% said that they have little knowledge about this (Table 4).

Table no. 4. General knowledge of respondents about soft drinks

	Frequency	Percent (%)
Few	92	37,55
Pretty much	121	49,39
I wasn't interested	32	13,06
Total	245	100

Source: Authors' own research

The interviewed subjects were asked if they thought that the consumption of these drinks can affect their health. It can be seen (Table 5) that the vast majority of 86.12% are aware of the negative effect of soft drinks on their health.

Table no. 5. Awareness that the consumption of soft drinks affects health

	Frequency	Percent(%)
No	34	13,88
Yes	211	86,12
Total	245	100

Source: Authors' own research

Respondents were asked to say what they believe are the most harmful substances in soft drinks that could affect their health. From the data presented in Table 6 it can be seen the most harmful substances contained in the soft drinks from the questioned consumers point of view, are synthetic flavors (28.8%), sugar and sweeteners content (24.8%) and synthetic dyes (21.6%). In the last two places are the acidity regulators (14.3%) and the carbon dioxide content (10.5%).

Table no. 6. The most harmful substances present in the composition of soft drinks

·	Frequency	Percent (%)
Sugar / sweeteners content	61	24.8
The content of synthetic dyes	53	21.6
The content of synthetic flavors	70	28.8
Content of acidity regulators	35	14.3
The amount of carbon dioxide	26	10.5
Total	245	100

Source: Authors' own research

Another question referred to the opinions and knowledge of the interviewees about the diseases that are related to the excessive consumption of soft drinks, respectively sugar. Respondents believe that excessive consumption of soft drinks can harm the body's health and lead to various diseases (Table 7). Thus, the subjects consider that obesity (31%), type 2 diabetes mellitus (29%) and cardiovascular diseases (24.9%) are the most common diseases that can occur due to excessive consumption of soft drinks. Scoring a lower percentage are an increase in body mass index (5.3%) and an increase in waist circumference (9.8%).

Table no. 7. Diseases associated with the consumption of soft drinks

	Frequency	Percent (%)
Obesity	76	31
Type 2 diabetes	71	29
Cardiovascular diseases	61	24.9
Increased body mass index	13	5.3
Increasing the waist circumference	24	9.8
Total	245	100

Source: Authors' own research

The research wanted to identify possible measures to improve the quality of soft drinks on the market, from the consumer perspective. Thus, the members of the sample were asked (via an openended question) what they would like to improve about the soft drinks they consume most often. Of the 250 people surveyed, 105 expressed their opinion. The most frequent answers were:

- less / removal addition of dyes;
- smaller amount of added sugar
- better, more natural taste;
- more diversified assortment;
- clear labeling;
- more suggestive slogan;
- not to harm health;
- carbonated ones contain less acid;
- the price should be lower for natural drinks as well;
- not to contain preservatives.

Following the analysis and interpretation of the data obtained from the research, the following conclusions were drawn:

- There are very few people who do not consume soft drinks, most do;
- Most people consume both natural and carbonated drinks;
- A large number of people are satisfied and very satisfied with the quality of these drinks;
- A total cumulative percentage of 50.61% answered that they either have little knowledge and general information about the quality of soft drinks consumed or that they were not interested in knowing;
- Regarding the verification of the soft drinks label, consumers are most interested in the sugar content, respectively 103 respondents (42.2%). It's a good thing, because diabetes is starting to become the disease of the century because of the excess sugar used.

6. Conclusions

The soft drink industry, like any productive sector that offers consumer goods, must constantly adapt to changes in the consumption behavior. In the age of technological change, consumers are facing an increasingly complex environment, which leads to significant challenges in their decision-

making capacity and in their protection. This is increasingly influenced by aggressive advertising, internet, digitalization and globalization. In recent years, the consumer trend is to put more emphasis on health. As a result, their preferences are towards low-calorie products made from natural ingredients, and this trend continues due to the measures adopted both at European and local level.

Taking into account the results of the studies conducted on the relationship between the soft drinks consumption and consumers' health, both producers and the authorities should take a number of measures to prevent the negative health effect of these products on the population consuming them. Manufacturers may reduce the products' sugar content and other harmful ingredients and may label the content with correct and user friendly information. National authorities may require producers to introduce a certain amount of sugar in soft drinks and to write the quantity of sugar and other components on the product label.

The limit of the study is related to the size of the researched sample, which is not representative for the Romanian population. This research can be the starting point for further research to deepen this topic. The results of the research can be used by the authorities to carry out educational programs, especially among children and young people, so that they are aware of the effects of increased consumption of soft drinks.

7. References

- Banu, C., 2010, Aplicatii ale aditivilor si ingredientelor in industria alimentara. Bucharest: Asab Publishing House
- Bassett, J. K., Milne, R. L., English, D. R., Giles G. G. & Hodge, A. M., 2020. Consumption of sugar-sweetened and artificially sweetened soft drinks and risk of cancers not related to obesity. *International Journal of Cancer*, 146, pp.3329–3334.
- CNEPSS (National Center for Health Assessment and Promotion), 2015. Analiză de situație de Ziua Europenă Împotriva Obezității [Situation analysis of the European Day Against Obesity], [online]. Available at: https://insp.gov.ro/sites/cnepss/date-statistice-obezitate [Accessed 15.11.2021].
- EC Regulation 1333/2008 on food additives. [online]. Available at: https://www.legislation.gov.uk/eur/2008/1333/contents [Accessed 15.11.2021].
- Fofiu, V., S., 2014. Sucuri din fructe si bauturi racoritoare [Fruit juices and soft drinks], [online].
 Available at: https://vasile-sebastian-fofiu.webnode.ro/news/sucuri-din-fructe-si-bauturi-racoritoare [Accessed 28.07.2020].
- Greenwood, D. C., Threapleton, D. E., Evans, C. E. L., Cleghorn, C. L., Nykjaer, C., Woodhead C., Burley, V. J., 2014. Association between sugar-sweetened and artificially sweetened soft drinks and type 2 diabetes: systematic review and dose–response meta-analysis of prospective studies, *British Journal of Nutrition*, 112, pp.725–734.
- Hung-Hao Chang, Nayga Jr., R. M., 2010. Childhood Obesity and Unhappiness: The Influence of Soft Drinks and Fast Food Consumption. *J Happiness Stud* 11, pp.261–275.
- Ionescu Tirgoviste C., 2020. Sweeteners and their usefulness in metabolic disorders. *Galenus Review*, [online]. Available at: https://www.revistagalenus.ro/practica-medicala/indulcitorii-si-utilitatea-lor-in-afectiunile-metabolice [Accessed 28.07.2020].
- Katzmarzyk P. T., Broyles, S. T., Champagne, C. M., Chaput, J.-P., Fogelholm, M., Gang Hu, Kuriya, R., Kurpad, A., Lambert, E. V., Maia, J., Matsudo, V., Olds, T., Onywera, V., Sarmiento, O. L., Standage, M., Tremblay, M. S., Tudor-Locke, C. & Pei Zhao, 2016. Relationship between Soft Drink Consumption and Obesity in 9–11 Years Old Children in a Multi-National Study. *Nutrients*, 8, pp.1-13.
- Morgan, R. E., 2013. Does consumption of high-fructose corn syrup beverages cause obesity in children? Pediatric Obesity © International Association for the Study of Obesity. *Pediatric Obesity* 8, pp.249–254.
- Neacşu N.A., Madar, A., 2011. The role of water in food products. *Bulletin of the Transilvania University of Braşov*, 4 (53) (2), pp.51-56.
- Ng, M. et al., 2014. Global, regional, and national prevalence of overweight and obesity in children and adults during 1980-2013: a systematic analysis for the Global Burden of Disease Study 2013. *Lancet*; 384: 766–781.
- RFD-TV, 2020. Global Soft Drinks Market 2020 Industry Research, Share, Trend, Global Industry Size, Price, Future Analysis, Regional Outlook to 2025 Research Report, [online]. Available at: https://www.rfdtv.com/story/41698315/global-soft-drinks-market-2020-industry-research-share-trend-global-industry-size-price-future-analysis-regional-outlook-to-2025-research-report 31.08.2020].

- SACN (Scientific Advisory Committee on Nutrition), 2015. Carbohydrates and health. London: Stationery Office, [online]. Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/fi le/445503/SACN Carbohydrates and Health.pdf [Accessed 31.07.2020].
- Serpen, J. Y., 2012. Comparison of sugar content in bottled 100% fruit juice versus extracted juice of fresh fruit. Food and Nutrition Sciences, 3, pp. 1509–1513.
- Technavio, 2018. Global Soft Drinks Market 2019-2023, [online]. Available at: https://www.technavio.com/report/global-soft-drinks-market-industry-analysis?utm_source=pressrelease&utm_medium=bw&utm_campaign=t26_wk39&utm_content=IRT_NTR30064&tnplus [Accessed 31.08.2020].
- Turel, O., Romashkin, A., Morrison, K. M., 2017. A model linking video gaming, sleep quality, sweet drinks consumption and obesity among children and youth. *Clinical Obesity* 7, pp.191–198.
- UNESDA, 2020. Over 60% of soft drinks sold in Norway in 2020 are sugar-free, [online]. Available at: https://www.unesda.eu/news/over-60-of-soft-drinks-sold-in-norway-in-2020-are-sugar-free/ [Accessed 31.07.2020].
- UNESDA, 2020. Soft drink producers in the Netherlands achieve commitment to reduce calories in their products by 25% a year in advance of the deadline, [online]. Available at: https://www.unesda.eu/news/soft-drink-producers-in-the-netherlands-achieve-commitment-to-reduce-calories-in-their-products-by-25-a-year-in-advance-of-the-deadline [Accessed 31.07.2020].
- UNESDA, 2019. Vânzările/consumul de băuturi răcoritoare în EU şi România [Sales / consumption of soft drinks in the EU and Romania], [online]. Available at: https://www.unesda.eu/consumption [Accessed 31.07.2020].
- WHO (World Health Organization), 2017. Global Health Observatory, [online]. Available at: http://gamapserver.who.int/gho/interactive_charts/ncd/risk_factors/obesity/atlas.html [Accessed 31.07.2020].
- Yuan Ma, Feng J He, Yunjian Yin, Hashem, K.M., MacGregor, G. A., 2016. Gradual reduction of sugar in soft drinks without substitution as a strategy to reduce overweight, obesity, and type 2 diabetes: a modelling study. *Lancet Diabetes Endocrinol*, 6, pp.105-114.

The Brand Reflected in the Mind of the Consumer. Conceptual Map of the Starbucks Brand

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Abstract

This study aims to highlight the main elements associated with the Starbucks brand from several perspectives (benefits, attributes, attitudes). Through a qualitative research based on a semi-structured interview that also includes questions related to the ZMET technique, it is intended to obtain a reflection of the Starbucks brand from the consumer's mind materialized in the realization of a conceptual map.

Key words: brand associations; concept maps; ZMET technique.

J.E.L. classification: M30, R59, Z18

1. Introduction

The issue of defining the concept of brand is becoming more common and more intensively studied (Denegri-Knott, 2006, p. 950). Despite the growing importance of this concept, a generally accepted single definition is hard to find, so as to fully cover the complexity of this concept (Phillips, 2020, p. 135). The brand is positioned at the intersection of the following key words: differentiation, innovation, connection, creativity, uniqueness and interest/attraction. In this context, the identification and determination of network associations that occur in the mind of the consumer as a result of branding strategy, is the main pillar in strengthening and crystallizing brand image and also creating an identity on the market like a business card.

The importance of knowledge regarding the brand and its influence on the consumer buying decisions have been extensively studied and published in a variety of research (Jaakkola, 2020, p. 18). It is important to comprehend the substance and the structure of this knowledge because they influence to an expansive degree what information comes to the mind of the consumers when they are thinking to a certain brand - for instance, in response to the marketing activity of that particular brand.

The success of long-term relationship of the consumer with the brand is conditioned by a set of brand associations from the consumer's mind. Identifying and measuring these associations is the main concern for the brand managers. The existing methods are available rather to practitioners from sociology and psychology field than those in the marketing field, since these associations are subject to cognitive processes from the mind of the consumers. One of these methods, which have been simplified in such a way so that it can be accessible for the marketing field, is the construction of conceptual brand maps using brand association from the consumer's mind. These maps are the visual representation of the words associated by consumers with the brand, and also the way they are interconnected between them.

2. Literature review

Currently, the brand is the most important component of the company's assets, while the most important are intangible assets such as: company's name, patents, logos. A study conducted in 2000 shows that, in the case of the best twenty performing companies in the world, only 20% of their resources were tangible, while the rest of them being intangible assets (Paek, 2012, p. 3).

A method of classifying associations would depend on the level of abstractedness (Phillips, 2020, p. 135) meaning the information content of association. Keller (1993, p. 21) proposed three types of brand associations: attributes, benefits and attitudes.

Attributes are descriptive traits that characterize goods and services. They represent a way through which competitors from a market differentiate their products or services. As Keller (1993, p. 21) indicated, we consider the classification of attributes depending on their type of relationship with the performance of goods and services. Product related attributes - are envisaged ingredients/components necessary for operation of the product or services needed by clients (direct). Non product related attributes - outside parts of the product or service related to the consumption or acquisition (indirect). To understand better, they are classified into price information; packaging information; user imagery; usage imagery.

The benefits are the values that consumers assign to the goods or services - simply put, what consumers think they will use the product or service for. The benefits are favorable results for the consumer, due to the advantages that the products or services can offer; basically, it is what consumers buy. It can be identified three types of benefits (Novak, 2006, p. 175): functional benefits, experiential benefits, symbolic benefits.

Attitudes are defined as the overall assessment of the consumer brand. Attitudes are important because they favor the formation of consumer behavior. Attitudes may be accounted for the convictions about attributes which are identified with the product itself and to the functional and experiential benefits reliable with the perceived quality. Equally, attitudes may also be reported to beliefs about attributes which are not related to the product, supporting the idea that attitude has an expression function of value which allows individuals to express their own concepts. Being difficult to identify all the attributes and benefits, the researchers included in the multidimensional models of analysis, a general attitude towards the brand (Denegri-Knott, 2006, p. 950) because it can bring to light important insights for analysis. Moreover, attitudes are formed through a process of decision-making which does not involve a long process of thinking.

It is important to mention that brand associations characterize brand image, creating its multidimensionality by importance, intensity, uniqueness.

Associations are different between them in the manner of assessing their importance. Actually, this term refers to the value of a certain brand association in the buying process. Thus, consumers will not appreciate an attribute or benefit as being good or bad if it makes little difference to them. Also, not all formed associations will have significance relevance in the buying process. For example, many times consumers have already formed in their minds associations related to the product, color, aspect. Although these associations will facilitate brand recognition or awareness of its existence, they will not necessarily constitute an important factor in the purchasing decision. For example, when a consumer does not have very much time, speed and efficiency of servicing can be more important factors than if the consumer is not rushed.

Associations may also be characterized by the intensity of connections between brand nodes from the consumer's mind. The quality of these associations relies on upon how data is seen by consumer and how it remains stored in memory as a feature of the brand image. Intensity is based on both quantitative functions - how much a person is thinking to the information from memory and qualitative function - the way a person thinks about the information received. The associations created in the minds of consumers will be even more powerful since it will think more of the meaning of information related to the product or service.

The uniqueness of brand associations is related to the position of the brand, meaning that there is a sustainable competitive advantage which gives the consumer an important reason to buy a particular brand. The existences of strong and significant associations that are unique to a particular brand, implying superiority over other brands are indispensable critical factors of success of that particular brand. Thus, when a brand wants to stand out from other brands from the same category, as a result

of a property with a decisive role, the phenomenon will depend on the uniqueness of the brand profile, reflected by the unique combination of brand associations formed in the consumer's mind.

The conceptual map (graphic organizer) is a technique of visual representation of concepts and the links between them (Novak, 2006, p. 175). Conceptual maps which are also called cognitive maps, are defined as an image of the way of thinking, feeling and understanding of the consumer who elaborates them, at first simplistic, then more and more complete, becoming a working procedure in different disciplines, but also inter- and transdisciplinary (Campbell, 2002, p. 208). Concept maps or "argumentation forms" emphasize the relationships that are established between the knowledge that the consumer has and on how he organizes his experience, ideas, but also how to apply them. The thorough learning of the new concepts depends on the concepts already existing in the mind of the consumer and on the relationships that are established between them (Ausubel et al, 2001, p. 1107).

Concept maps are used in Marketing visually presenting the perception of customers or potential customers. They are usually done to identify the position of a product, a product line or a brand in relation to the competition. But they have also successfully entered the practice of Marketing research. Qualitative research consists of practices and interpretative materials that make the world visible. These practices turn the world into a series of representations, including field notes, interviews, conversations, photographs, recordings, and memoirs. This means that qualitative research studies things in their natural context, trying to understand or interpret the phenomenon in terms of the meanings that people bring (Novak et al., 2006, p. 175).

ZMET is a hybrid method, based on various fields, including verbal and nonverbal communication, visual sociology, visual anthropology, literary criticism, semiotics, mental imaging, cognitive neuroscience and phototherapy (Christensen et al. 2002, p. 477). The method involves semi-structured, in-depth personal interviews centered on visual images that the informant brings to the interview. Validation studies of ZMET applications indicate that 4 to 5 deep interviews that focus on identifying and understanding the main topics can determine 90% of the information available from a large set of interviews (Christensen et al. 2002, p. 477).

3. Investigation of brand associations using the ZMET technique

The purpose of ZMET is to obtain metaphors and constructions and to establish relationships between constructs, using both verbal and non-verbal stimuli. In addition to the concept map, ZMET produces non-verbal sensory dictionaries to accompany each construct. These user-friendly dictionaries are made up of images and sensory data that different clients use to transmit constructs. Dictionaries provide a basis for obtaining visceral feelings, since the relevance of each image to a particular construct is described by the voice of the customer. Moreover, customers' digital images provide visual images that integrate their important constructions. Many images also convey the reasoning of the connection between constructs.

Several important types of constructs can be drawn from the literature. First, non-verbal communication is more widespread than verbal communication. Second, visual images are entry points for access to people's knowledge structures. Third, photography is a powerful tool for accessing consumers' visual images. Fourth, research documents the importance of visual images in marketing communication. Finally, most market research tools are based on verbal communication. That's why researchers have developed the ZMET technique, a methodology that relies on visual sensory images and other metaphors to obtain customer constructions.

A total of 20 clients were recruited to participate in the study. After qualifying for participation in the study (based on selection), clients receive a set of instructions and guidance on this research topic, e.g., a brand name, service concept, product use, or a design. a product. They are instructed to take photos and/or collect pictures from magazines, books, newspapers or other sources that indicate what the subject means to them. The personal interview involves a guided conversation that we believe yields more valid, more reliable, and, more importantly, more relevant perspectives than traditional structured interview approaches.

In order to apply ZMET technique we used 10 techniques. Below we will list and explain each step:

- Step 1. The story based on the pictures the participant is asked to describe in as much detail as possible the chosen image.
- Step 2. **Omitted images** the participant is asked to communicate what other images he would have liked to bring, but, for various reasons, he could not obtain them and explain their relevance.
- Step 3. **Survey of the metaphor** the participant was asked to sort the images according to his preferences. At this stage, the main concepts regarding the perception and feelings of the participants regarding the proposed topic are established.
- Step 4. Choosing the triad the interviewer chooses 3 images at random from the set of images, and the participant is asked to explain how any two of the images are similar to each other, but different from the 3rd.
- Step 5. **The most representative image** the participant chooses the most representative image. He also has to think further, beyond the limits of photography and say what he thinks could fit into this image.
- Step 6. **Opposite images** the participant is asked to describe images that show the opposite of the task.
 - Step 7. **Sensory images** expressing opinions through sensory images.
 - Step 8. Mind map the participant creates a mind map based on the results obtained.
- Step 9. **Summary of images** in this stage the basic ideas from the collage are identified, the participant is accompanied by a specialist.
- Step 10. Concept map finally, researchers need to identify the key concepts highlighted and establish relationships that form between them. In order to create the concept map, they have to follow the frequency with which the same concepts were repeated in several participants and make various connections based on the attributes discovered.

4. Research methodology

In our first base of the research, we set out to identify the specific Starbucks brand associations. Using the identified associations, we will build a conceptual map of brand association representative for the Starbucks brand starting from the respondents' own conceptual maps. The creation of the Starbucks brand maps will take into account the three types of associations mentioned by Keller (attitude, benefits, attributes), identifying the main similarities and differences between these concept maps.

The objectives assumed in order to achieve the proposed goal are:

- 1) Identify the attributes associated with the Starbucks brand
- 2) Identify the benefits associated with the Starbucks brand
- 3) Identify the attitudes associated with the Starbucks brand
- 4) Identify representative images associated with the Starbucks brand (according to ZMET)
- 5) Identification of sensory images related to the Starbucks brand (according to ZMET).

The chosen method was the semi-structured interview in which the questions specific to the ZMET technique were included. The interview guide included questions on the three types of associations indicated by Keller, which totaled eight subdivisions.

Respondents, 20 in number, qualified after three filter questions designed to select only subjects who drank coffee from Starbucks at least weekly. The resulting sample consisted of 15 women and 5 men aged between 25-35 years, from Iasi.

To carry out the research, we followed two stages. The first stage consisted of applying an indepth interview with a number of 12 open-ended questions, which had the role of generating associations, mentioning situations, specifying certain elements regarding the product, highlighting services specific to the Starbucks brand. These open-ended questions combined several types of projective techniques, namely: sentence completion test (question no. 5), word association test (questions no. 1 - 4), imaginary situations (question no. 6), drawing images (question no. 7), cognitive questions (questions no. 9 - 10); emotional question (question no. 11); conative question no. 12.

In the second stage, we performed the ZMET technique on the same sample of 20 people who also answered the in-depth interview, in order to obtain as much information as possible from each respondent for the construction of the conceptual map of associations for the Starbucks brand.

For the realization of the conceptual maps, the rules of their composition were taken into account, according to the BCM (BCM - Brand Concept Maps) model (Böger, 2017, p. 90).

Table no. 1 Rules for making conceptual brand maps adapted to the BCM (Brand Concept Maps) model

Stages	Indicators	Rules
Identification of core brand associations.	Frequency of mention of associations.	Inclusion of associations that have been mentioned in at least 50% of the individual maps.
	Number of interconnections.	Inclusion of associations that have been mentioned in at least 40% - 49% of individual maps, if the maximum value plus the minimum divided by two of the indicator - the number of interconnections - is equal to or greater than that of the previously selected essential associations.
2. Identifying first level associations.	Frequency of mentioning first level associations. The ratio between the frequency of mentioning associations at the first level and the frequency of mentioning associations.	The ratio between the frequency of mentioning the associations on the first level and the frequency of mentioning the associations - the value equal to at least 50%.
	Type of interconnections.	Inclusion of more superordinate than subordinated interconnections.
3. Identification of lines for basic associations.	Frequency of connections between associations.	Identification of the turning point which represents the equality between the number of interconnections and the number of pairs of associations. Inclusion of links between associations that correspond to or are greater than the inflection point.
4. Identification of lines for secondary brand associations.	Frequency of links between associations.	Inclusion of associations that are related to the basic ones, respecting the condition of the inflection point mentioned in the previous stage.

Source: (adapted after Roedder-John, Loken, Kim and Basu, 2008)

5. Findings

The first step was to identify the main associations that will be found on the consensus map. Thus, the main association, as expected, was Starbucks = coffee. The brand has managed to establish itself and be known as a brand that sells coffee. We took into account only the associations that were included in approximately 50% of the individual maps, but also associations that appear with a frequency of 40 - 45%, because they are representative for the present research.

Other important elements associated were the words "relaxation" and "smell of coffee". Most respondents perceive the place as a place to relax, where you can enjoy your favorite drink and smell the strong coffee. We can also mention that the names of favorite drinks have appeared among the associations.

Among the products or services associated by the respondents of the brand the most common were product - coffee, service - coffee preparation and "excellent" evaluation. It follows that people who drink coffee at Starbucks perceive the brand as a coffee-focused one, and when you come across a smiling face full of enthusiasm to serve you, this experience stays in your mind for a long time,

making you come back again and again to experience this feeling of satisfaction. Because Starbucks relies more on service delivery, it invests heavily in employee training, which is why the barista concept is very sophisticated, not everyone can become a barista.

The map of associations that folds perfectly with the Starbucks brand and that customers have found appropriate brings together the following concepts:

Elements - green (logo, design), logo, coffee smell, prestige, popularity, niche (addresses a certain audience), customers, view, ambiance, eco-friendly brand, professionalism, friendly staff, bright place, comfortable chairs, agglomeration, bad writing, too much coffee smell, crowding.

Situations - business discussions, building relationships, consistent and deliberate in the experience with consumers.

Products - cream, syrup, donut, flavors, vanilla, sweet/salty taste, quality products, glasses.

Services - coffee making, pleasant atmosphere, good mood, comfortable chairs, smiles, expensive, professionalism, wonderful experience, "before you took your coffee at the office, now, since there is Wi-Fi at Starbucks, you take your office for coffee.", relaxation, relaxing environment.

Local - pleasant ambiance, central location, spacious, brand, logo, quiet, clean, wood, light, simple, free Wi-Fi, relaxing atmosphere, bright, comfortable, green, simple.

Clients - active, diversified, beautiful, undecided, relaxed, happy, rich, energetic, creative, comfortable, fast, honest, involved, determined.

Serving - cumbersome, pleasant, quality, standard, pleasant, impeccable, different, demanding (takes a long time), princely, excellent, professional.

Barista - pleasant, professional, friendly, kind, calm, attentive, joking, smiling, nice, original.

Coffee - Pleasant, aromatic, delicious, strong, natural, black, roasted, full-bodied, unique taste.

Menu - attractive, clear, diverse, limited, attractive, gloomy, playful, too many prices.

Complementary products - thermos, tea, cups, glasses, thermos, packets of coffee, cakes.

The test of completing the sentence gives us an image beyond physical limits, a psychological interpretation that is based on the experience lived on a conscious or unconscious level by the individual. Thus, the people who drink coffee from Starbucks are active, creative, full of life, young, faithful, business, rich, romantic and in trend with fashion. It follows that these people have a much higher self-image index than other regular coffee consumers.

Regarding the vision towards the brand, it is scored in the following form: innovation, top brand, brand no. 1, global brand, second home, place to relax, coffee universe.

The elements related to the personality of the Starbucks brand are unique and original: a friend who visits him less often, strong personality, strong brand, connection between the communities, strong competitor.

Following the discussions, one last question of the interview was based on the changes/modifications that consumers would like to make to the brand. Few people want to adopt new changes, most love the brand as it is and do not want radical changes. On the other hand, we also have people with an innovative character, so the main proposals have been folded in price, hiring more bartenders to avoid creating queues, more vivid colors, different arrangement of products, would start to make personalized coffees (there is a device in China that draws the person's face, instead of bunnies, flowers, etc.), the logo (assimilation of jellyfish, octopus-woman).

Associated attributes:

In general, the notion of attribute refers to a conclusion of a characteristic of an entity or substance. In our case, an attribute (research) is a characteristic of an object, thing, word, phrase, or clause that modifies a noun. When I refer to attributes for the present research, they take a new form, namely, attributes that refer or do not refer to the product, in order to make as many differences as possible between the two characteristics of the brand and to identify direct or indirect influence on the brand.

Participants expressed their thoughts and feelings about features that are not directly related to the product, such as:

- price (14 out of 20 consider the price to be too high);
- packaging (perceived positively by words such as 'attractive', 'personalized', 'cute packaging', 'beautiful'):
 - product information, interior, advertising display;
 - images of use, users;

- the attributes of the brand personality (unique, young, fantasy, extravagant, full of color, giving a feeling of familiarity).

Among the attributes related to the product, two emerged in order as very important: serving and coffee itself. Consumers saw the Starbucks service as only "average" or "good," being limited. According to the participants, the level of service of Starbucks is not high, but it is acceptable: "it is not special", "it is limited only to taking the order at the counter". The coffee was not noticed as special either (neither bad nor good, so-and-so), but it was still appreciated for being fresh and strong.

Associated benefits:

Participants expressed a sense of prestige or superiority when consuming Starbucks products. Some participants stated that: "I feel like I belong to a higher class", "feeling of superiority", "rich", "distinguished from other people", "proud and self-confident", "I feel that I am in a high-class environment", "feeling of superiority", "pleasant", "makes me feel good". Interestingly, the study showed that more loyal participants showed more experiential benefits when consuming coffee at Starbucks. Meanwhile, participants who frequented the venue showed more symbolic benefits when they were at Starbucks. For example, several of the participants in the discussion and in-depth interviews described Starbucks as "modern" and "stylish."

Associated attitudes:

The majority of respondents, namely 18 out of 20, showed a positive attitude towards the Starbucks brand. Cognitive, affective and conative questions related to attitudes, highlighted very well-marked features about the Starbucks brand. Participants pointed out that the overall quality of the Starbucks brand is generally good. As for the place, it is comfortable and the brand image is positive, although the price is quite high. Most attendees knew exactly what the home country of the Starbucks brand was and said they felt relaxed when they were at Starbucks. Finally, many participants, especially younger consumers, considered Starbucks to be their favorite coffee brand. All concluding that he intends to return and buy more.

ZMET technical interpretation:

To make the ZMET technique we used a set of already predefined images that illustrate the two locations in Palas, Starbucks at the entrance to Palas Mall and the ground floor with terrace. Thus, the respondents were asked to choose a representative picture based on which to describe the main feelings invoked.

The first step focused on building a story around the chosen image, a way in which each respondent had the opportunity to express their thoughts and feelings about what they see, feel, think, what they once experienced. It is a combination between the feelings experienced at a given time and the ability to go through this state once again.

Each image created a story and conveyed a feeling. Respondents' favorite images were one from Starbucks in the upstairs room (an image of the crowded venue) and one below (an image of the empty venue). The feelings / attitudes that were the basis for choosing these pictures were:

- 1. The feeling of satisfaction that generated the repetition of the purchase.
- 2. The feeling of loneliness, peace before the opening of the place, which generated the idea that Starbucks is a place of refuge, the second home, the place where you feel at ease.

The second stage folded on the idea of feelings and thoughts that could not be transmitted through images. This stage had the role of identifying what is really in the minds of the respondents, feelings that are in "conflict" with the real world, or what they want to see, but have not yet had this opportunity. Following the analysis, we identified a series of such ideas that could not be reproduced through images: sad customers, a children's playground, a street man, a poor man, etc.

The third stage was based on probing metaphors. As the literature says, the metaphor is the understanding and experimentation of one thing in relation to another. Only through metaphors can we better understand the client's thinking and behavior. Many metaphors are mental images, and most of them are visual. When I refer to the survey of metaphor, I want to highlight the extension of the image collection framework, the enlargement of the picture in all directions, which would see and help the respondent to understand what the role of Starbucks in their life is. For some it is

"pampering time", for others advertising is a factor that determines them to consume coffee; staff attitude; care for nature - recyclable glasses; relaxation etc.

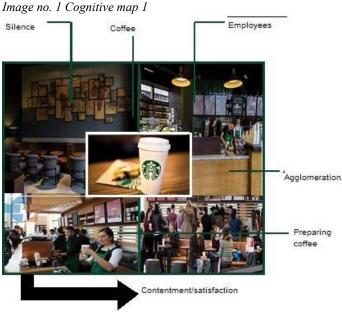
ZMET's main objective is to identify the main sensory metaphors associated with a particular brand, in our case, Starbucks. The five characteristics (sound, color, taste, smell, touch) are associated by each respondent with the brand. Upon hearing the name Starbucks, customers associated it with "the sound of the coffee machine", "slow songs" or songs that have the word coffee as lyrics. When you say Starbucks and ask what color it is associated with, the color green and white automatically comes to mind, which was demonstrated by the answers given by the participants. The unmistakable aromatic and strong taste is predominant in 16 out of 20 cases and of course the smell cannot be associated with anything other than coffee (20 answers). As for the tactile sensation, it is associated with finesse, it results from touching the hand with the fine glass of coffee.

The stories that hide behind a coffee are always shared with colleagues, older friends, close people, where memories and thoughts have free rein, and relaxation is the predominant feeling felt by respondents. They stated that they go to Starbucks only accompanied by someone, never alone, which shows that Starbucks is associated with the idea of family, friendship, memories.

The collage of images hides many meanings behind, I will illustrate only a few of them, to see how the respondents thought them and what were the keywords attributed to each image and the general idea behind the collage. We used a set of 5 predefined images, and the respondents had the opportunity to choose them according to their preferences. They were the same images for everyone, because I wanted to see what feelings an image can arouse for a certain person and whether there will be similarities or differences between them among other respondents.

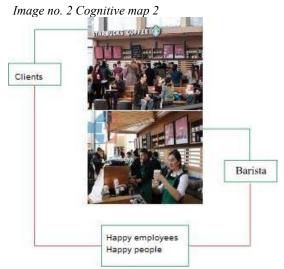
The stories summarized by cognitive maps are exemplified below:

1) "It is morning, and the sun has just risen. Employees got to work and began to prepare their workspace. I arrived shortly after and ordered a latte. A pretty young lady wrote my name on it and offered it to me. Before I left, the place was crowded, and I went to work."



Source: personal organization

2) "The speed with which the products are prepared. Happy customers, who have a friendly discussion and enjoy a good coffee, some "lucky" ones sitting on chairs, and others are eagerly waiting for their order to be taken."



Source: personal organization

6. Conclusions

This way of building conceptual brand maps is an important tool in brand management decision making. It offers the opportunity to know the way information is stored in the consumer's mind and the system of relations within it.

Starbucks = coffee, the brand has managed to establish itself and be known as a brand that sells only coffee. Because Starbucks relies more on sensory marketing, emotions are the backbone of the brand-consumer relationship. Regarding the vision towards the brand, it is scored in the following form: innovation, top brand, brand no. 1, global brand, second home, place to relax, coffee universe.

According to the respondents' answers, the smell of coffee is one of the strongest elements that attract them locally and that has the power to generate an addiction that is difficult to control. The decor of Starbucks cafes is also welcoming and warm, and the smell of coffee is unique. Starbucks is one of the first brands to resort to sensory branding, using a special device that keeps the strong smell of coffee.

The elements related to the personality of the Starbucks brand are unique and original: a friend you visit less often, strong personality, strong brand, connection between the communities, strong competitor. Our research has resulted in a number of recommendations for an entrepreneur who would like to open a coffee shop, based on the experience of the Starbucks brand:

- Create an identity before you open your own place, this is a very important thing, people will know about you before you appear in a certain place;
- Location is very important for your business; choose a good, well-transited area, if you want people to associate you with quality, then choose a place that suits you (eg Starbuck has chosen a place associated with prestige and high quality);
- Sell quality products and highlight this (Grains collected on plantations in Kilimanjaro, Ethiopia, Tanzania, Cameroon, Brazil, Colombia, Mexico, Nicaragua), thus adding value to your brand;
- Stay up to date with all the news, be careful what the competition does, do what they do too, but much better;
- Implement new marketing concepts (Starbuck is the first company to implement sensory branding), be one step ahead of the competition, learn from the best;
- Quality employees, if your employees will be satisfied, then be sure that you will have happy customers; focus and try to make work a passion for every employee, it takes effort, but it's worth it (barista Starbucks);
- Try to make your place a place to relax, where customers feel at home, offering both quality products and facilities (Wi-Fi, comfortable sofas, relaxing music, pleasant smell, relaxing colors, open space, airy etc.);

- Adapting products for several categories of customers, not only for premium ones, even if you aim somewhere high.

7. References

- Ausubel, D.; Novak, J.; Hanesian, H., 1978. Educational Psychology. New York: Werbel & Peck
- Böger, D., Kottemann, P., Meißner, M., and Decker, R., 2017. A mechanism for aggregating association network data: An application to brand concept maps. *Journal of Business Research*, 79, 90-106.
- Campbell M.C. 2002. Building Brand Equity, International Journal of Medical Marketing, 2(3), 208-218.
- Christensen, G.L. and Olson J.C. 2002. Using the Zaltman Metaphor Elicitation Technique (ZMET) to Map Consumers' Mental Models, *Psychology & Marketing*, 19, 477-502.
- Denegri-Knott, J., Zwick, D., and Schroeder, J. E., 2006. Mapping consumer power: an integrative framework for marketing and consumer research. *European Journal of Marketing*, 40(9/10), 950-971.
- Jaakkola, E. 2020. Designing conceptual articles: four approaches. AMS review, 10(1), 18-26.
- Keller K.L. (1993) Conceptualizing, Measuring, and Managing Customer-Based Brand Equity, *Journal of Marketing*, Volume 57, No.1, 1-28
- Novak, J. D., & Cañas, A. J. (2006). The origins of the concept mapping tool and the continuing evolution of the tool. Information visualization, 5(3), 175-184.
- Paek, S.L., 2012. A study of Brand Image for Starbucks. The Hong Kong Polytechnic University, 9, 1-15.
- Phillips, B. J. and McQuarrie, E. F., 2020. Road map or secret weapon? The role of conceptual metaphor
 in shaping marketing communications about exercise. In Lowrey, T.M. ed. 2020. Psycholinguistic
 phenomena in marketing communications London: Psychology Press, 135-154.
- Roedder-John, D., Loken B., Kim, K. and Basu Monga, A. 2008. Brand concept maps: A methodology foridentifying brand association networks. Journal of Marketing Research, 13, 549-563.

Marketing Semiotics - the Universal Language of E-Consumer

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Abstract

This researched aimed to study the perception related to shocking stimuli present in advertising. These visual elements raise the perception of images and brand semiotics perception is facilitated by shocking images and messages.

The results from the 3 stages of semi-structured interviews revealed that the semiotic elements identified in Nivea's and Caribu's Advertisements such as logos, colors, characters, symbols or language used played an important role because they accentuated perception by transforming an advertising into a shockvertising, creating a strong recall effect in the mind of the consumers.

Key words: Marketing semiotics; shocking advertisement; Marketing stimuli.

J.E.L. classification: M30, R59, Z18

1. Introduction

Semiotics is a science claimed by many others, like: mathematics, computer science, aesthetics, psychology, psychoanalysis, sociology, rhetoric and also marketing (Aiello, 2019, p. 368). Although new as an object of study, semiotics has very ancient roots, dating back to ancient Greece, when there was a medical discipline called semiology, which consisted of studying and interpreting the signs or symptoms of various diseases (Stănciulescu, 2004, p. 11). But the ancients considered not only medical symptoms as signs, but also language as a category of signs or symbols, which serve people to communicate with each other. Therefore, the concept of sign (from the Greek semeion - sign) is very old. He designates something that can be perceived and interpreted: colors, heat, shapes, sounds, etc., everything that can be perceived with the help of the senses. In modern times, semiotics (the American term) or semiology (the French term), although designating the same discipline, still have special connotations. Semiotics is considered a philosophy of languages and semiology (fr. Semiology) would refer to the study of particular languages, such as gestural image, theater, cinematography, etc.

In Marketing, we consider semiotics as an entire system of signs that express ideas, having three subordinate domains (Kroeber-Riel, 1995, p. 59): syntax (which deals with the formal characteristics and relationships of the signs themselves), semantics (which studies the content and meaning of signs), and pragmatics (which deals with the effects of signs on those who use them, transmitter and receiver). The sign is the fundamental unit of semiology (Fedorova, 2019, p. 199), it is a unit of meanings and semiologists believe that everything that has a meaning - an advertisement, a painting, a conversation, a poem - can be known by its signs and their action (Rose, 2001, p. 69).

Peirce (1990, p. 15) proposed a classification, depending on the type of relationship that exists between the signifier and the referent. From this perspective, there are three distinct categories of signs:

1. the icon corresponds to the class of signs whose signifier is in a relationship of analogy (resemblance) with the referent, the object it represents. The iconic signs (Chandler, 2007, p. 31) are not only visual (photography, figurative drawings, computer image that reproduces objects from

reality, etc.), but also auditory (noises, sounds from nature), olfactory (synthetic perfumes and smells that reproduce natural smells), tactile (imitation each skin reproduces the tactile sensations of genuine skin), gustatory (the synthetic taste of certain foods or beverages, which reproduces that of natural tastes).

- 2. the index or the index corresponds to the class of signs whose signifier maintains a relation of psychic contiguity with what they represent, the referent (contiguity close neighborhood, without continuity). Signs of this kind are the pallor for fatigue, the smoke for the fire, the cloud for the rain, the footprints on the sand, the tracks of the tires of a car, etc.
- 3. the symbol corresponds to the class of signs whose signifier maintains a convention relationship with their referent. Through social and cultural conventions, certain meanings were assigned to certain signs, such as the flags of the countries, the black color of mourning in Western cultures and white in some Oriental, the language of flowers, etc (Kauppinen-Räisänen, 2018, p. 101). Language is an arbitrary system of symbolic signs.

2. Semiotics and advertising

Advertising images, which are a prototype of the media image, are in the category of those best suited to semiotic analysis (Faizan, 2019, p. 135), as has been the case since the 1960s, especially through the work of representatives of the French school of semiology.

The life of the modern human beings is daily assaulted by semiotics through advertising, from clothing labels we wear, to the nicely packed food, TV commercials, etc. We save this "sea of images" that we are surrounded subconsciously (Petre et al., 2005, p. 121).

Images are often used in advertising because they provide a significant example or illustration of the subject and they express the best a message. Images are used because they can evoke a multitude of emotions and reactions to the public. Also, they can express ideas very quickly, much faster if they were described by using a text. An image can be manipulated until its entire aspect is changed and due to the digital technology all of them are processed, intensified or improved in order to cause a high emotional impact to the public.

Advertisement causes different emotions from one campaign to another and the limit between awareness and often is very subtle. Controversies related to this type of campaigns questioned the impact through advertising because they can shock the public in a positive manner, to get them out of the passivity, where cruelty and offense begin.

Virvilaite (2013, p. 134) stated that the emotions caused by shocking advertising stimulate the consumer to choose or not to choose the advertised brand.

The power of shock is an image trait that forces the viewer to consciously notice it, because the multitude of visual images saturates the public and it has to be completely unusual in order to attract attention. The power of shock is one of the essential qualities of a good photo, but it also needs to have a high emotional impact and a proper content. The results show that distinctive stimuli have a positive effect on the degree to which attention is attracted and the ad is memorized (Tan et al., 2009, p. 368).

The aim of this research is to study the perception related to shock images present in advertising and how visual elements raise the perception of images. We also want to determine if brand semiotics perception is facilitated by shock images and messages. This is an exploratory qualitative research aiming to see the psychology behind the ads.

3. Research methodology

Our approach started from a question: Is the perception of semiotic elements presented in print advertisements facilitated by shocking images and messages? Therefore, we wanted to analyze the perception of semiotic elements (such as logo, color, written message) from the advertisements which have a shocking message. This thesis aims to develop an in-depth analysis of the phenomenon of the perception of shocking advertisements. The objectives of our study are:

- O1To identify the perception of the semiotic elements;
- O2To identify the perceived message of the ads;
- O3To identify the feelings created by the ads;

O4To identify the recall effects of the visual elements from the ads;

In order to complete the prescribed research there are the 3 stages of the analysis and the method used is the exploratory qualitative research to see the psychology behind the ads.

1. Choosing the advertisements and Content Analysis.

Two shocking advertisements were selected and fully analyzed. The criteria used to select the ads was based on the semiotic components such as logo, signs, language, figures, symbols, but also on how well known was the ad and its brand and how many consumers were exposed to the advertisement. The advertisements chosen were from known brands, but those ads were never seen by the subjects. The ads chosen were also each from a different product field: the first one is from personal care industry and the second one from the food industry. The content of the ads was fully analyzed from the semiotics point of view by researching the company and looking for the following components of the advertisement: logo, signs, language, figures, symbols, colors, font and characters.

2. Interview- part 1

The second stage was an in-depth analysis by creating a semi-structured interview as a discussion on online platforms agreed by subjects (skype, zoom) to see how the advertisements were perceived. The semi-structured interview delved into the semiotic world by bringing out the perceived message of the ad, what emotions felt the subjects about the ad, what doesn't fit together, what thoughts the subjects took away from the ads, and how the advertisement affected their desire to buy from the advertised brand or the product advertised.

3. Interview- part 2

The third stage was the second part of the semi-structured interview, also a discussion with the subject, one week later, to identify which was the recall effect of the semiotics including visual elements from the ads such as general visual items, colors, messages or other brand semiotics, but also to identify the order of perceiving this visual image and to see if the shock influences the perception.

In order to see how effective are the advertisements analyzed we measured the following facts: emotional response, purchase desire after viewing the ad, product recall, brand recall, visual elements recall, the most impactful ad.

Participants were approached individually via Skype or Zoom and they were invited to answer to 11 questions in the first part of the interview and 23 questions in the second part of the interview, one week later. The questions were in Romanian, their mother tongue language. All participants were asked to indicate their age, gender and occupation in both of the first and the second part of the interviews. On average, it took 15 minutes to answer the questions. In total, a number of 20 participants took part in the study, all of them being chocolate consumers, young people from the generation Z aged between 20 and 26 which are interested in buying a car in the close future and also consumers of the personal care industry products.

4. Findings

The first advertisement analyzed was one from Nivea, a brand owned by the German company Beiersdorf. By creating an advertisement where the main character is holding in his right hand his own previous head, before using the Nivea's products, they created an image which is shocking for anybody who sees the ad. Nowadays, people encourage natural beauty and Nivea tried to prove wrong by using this ad. Also, the written message of this ad is inappropriate, offensive and shocking, because Nivea deliver the message that if you are a black person and you don't keep your face clean-shaven and your hair with a crew-cut, you will look like a beast. The power of the shock message force the viewer to observe deeply an image and catch his attention. In order to attract the attention of he viewer, Nivea delivered a shocking message and image in order to raise the quality of the ad by adding two essential facts: touching content and controversy message.

Image no. 1 Semiotics within Nivea ad



Source: personal organization

The semiotics identified within this ads are:

- ➤ Logo: The Nivea's brand logo doesn't have any graphic elements in it, but only a rectangle with the brand's name written in capitals, the background is dark blue and the letters are white. This logo has a simple design which is easily recalled. The name of the brand is written with the Eagle Bold. This simple logo represents the professional manner of the brand, the comfort their products give to the consumers and gives you the idea that you can trust their brand.
- Written message: 'Made for men'; 'Re-civilize yourself'; 'Look like you give a damn'. The slogan 'Re-civilize yourself' is a semiotic element from this advertisement and it is the main sign from the ad because it is imposed over the image. This sentence describes that if you are a black person and you don't keep your face clean-shaven and your hair with a crew-cut these will make you look like a beast.
 - The sentence 'Made for men' describes the target population for this product and the world men refers to these men from the ad.
 - The tagline from this ad is 'Look like you give a damn' which is an aggressive way to encourage men to use this brand products in order to make them look nice.
- Font: Nivea's ad is based on the Eagle Bold font and the letters are written with uppercase and also are the slogan and the tagline, written in bold.
- ➤ Colors: The colors which appear in this advertisement are white and dark blue and shades of grey. The colors white and dark blue represent the colors of the sky and sea, but also help to keep brand's identity with a high recognition value. The color blue is associated with a trustful brand and white is associated with high quality products which protect the skin.
- ➤ Language used: The word 'damn' from the tagline of the advertisement is used to express the anger, the frustration.

The second advertisement was from Caribú Chocolate, a Peruvian chocolate brand that little is known about. The advertisement chosen from this brand has the following written message: "The Dark Side of Sweetness".

The advertisement is supposed to show the message that their Caribú line of bitter chocolate is a very dark chocolate, but to do that Caribú shows the girl in the advertisement performing a "dark" action of putting a baby chick through a meat grinder.

This advertisement could be offensive, shocking and aggressive to a few different groups of people. First, it is offensive and shocking for those who are concerned with animal rights as this advertisement clearly shows abuse to animals Also, it could portray bad parenting in the sense that the young girl was not taught proper principles of treating animals.

Image no. 2 Semiotics within Caribu ad



Source: personal organization

The semiotics identified within this ads are:

- Logo: The logo is very hard to see because in the bottom right corner of the image and it's written with dark brown shades and small letters and only a persistent reader could see it and only if he searches very closely. Their logo reflect the essence of the brand: bitter chocolate.
- Slogan: 'The Dark Side of Sweetness' is the written message from this Caribu Bitter Advertisement and the idea of this message was to alert the consumer that this chocolate is so dark and it can make you do horrible things including killing an animal just for entertainment.
- Characters: In this image we can see two characters: the little girl and the baby chick. The little girl does a shocking action: she is grinding up the baby chick in a meat grinder. The little girl should represent the innocence of a child, but in this image she is doing a strange a horrible action which made the ad a shocking one.
- Colors: The background is made with dark shades which are reflecting evil and dangerous moods and the preponderant color used is dark green.
- Language used: We have only one written message in this ad: The Dark Side of Sweetness'. In this sentence, the language used can be interpreted from the speech figures point of view. The world dark is associated with sweet, and from lexical perspective they are antonyms.

The shocking advertising has the purpose to capture the eye of the viewers by violating some social norms or ideas in a deliberate manner in order to break through the noise of the advertising.

A shocking content is created by using semiotic elements which violate some norms and intend to transform the message of the ad in something that can offence or hurt someone in order to raise the engagement with the brand or to raise the commitment with the brand

The cruelty from the Caribu Ad shows to the public another perspective of reality which has to be proportional with the concern related to violence and by bringing the children in the forefront made the message more sensitive

In the Caribu advertisement, from the first glance you will see the shocking image: a girl performing a dark action- she is putting a baby chick through a meat grinder. This image is offensive, aggressive and shocking for many groups of people: for people concerned with animal rights, for young viewers, for people with little siblings, for parents, for grandparents or even for other groups of people.

This Caribu ad was transformed in a shockvertising because the consumers recall better and frequently the content and the brand which transmit fear or negative emotion instead of those ads which transmit only positive emotions.

The semiotic elements identified in those two advertisements were:

- the written message was perceived by 17 respondents in Nivea's ad, while none of the respondents noticed the written message from the bottom right corner in Caribu's ad
- **the slogan** was secondly noticed by the respondents for both ads: in Nivea's ad was perceived by 15 out of 20 people, while in Caribu's one was noticed by 14 out of 20 respondents
- **the logo** was the third element noticed in Nivea's ad, by 12/20 people, while in Caribu ad was notice only by 4/20 people, because you have to pay a lot of attention to see de small logo from the right bottom corner.
- **the colors** of the ads caught the attention of the respondents, 11/20 notice the colors in Nivea ad, while 10/20 noticed the colors in Caribu ad.
- the characters were noticed only by 7 people in Nivea ad, while in Caribu ad, the characters were notice from the first place by 18 out of 20 respondents.
 - only in the Nivea ad was noticed the language used, by 5 out of 20 subjects.

The message perception of the two advertisements was mainly negative, as following:

- 18 out of 20 respondents said that they find the Nivea ad message an **aggressive** one, while the preponderant message for Caribu ad was **brutality**, 19 out of 20 perceived like this the message. The respondents considering the ad an aggressive one explained their answer saying that it is promoting an aggressive message because it instigates violence by showing a character holding a human head in his hand.
- the second message perceived by subjects for both Nivea and Caribu ad is the promoted **violence**, 16/20 subjects responded the same.
- the **racism** was perceived by 14/20 subjects in Nivea ad, because of the written message and message sent by the character. For Caribu 15/20 subjects perceived the message as an **aggressive** one
- on the fourth place 12/20 subjects considered the Nivea's message a **shocking** one, while Caribu message shocked 15 subjects.
- a **discriminatory** message was received by 8/20 subjects, and **repulsion** by one single person in Nivea Ad and by two in Caribu's case.

The feelings provoked by the ads were:

- for both ads, **shock** was the first feeling among the subjects, 17/20 respondents were shocked or **astonished** by the ads.
- for the Nivea advertisement, the second feeling among the subjects was **discomfort**, 10/20 subjects encountered this. In the Caribu ad, 11/20 were **disgusted** about the ad;
- for the Nivea ad, **confusion** was created for 9/20 subjects, while 10/20 subjects were **scared** about the Caribu ad;
 - for both ad, 8 out of 20 subjects took **aggression** as a feeling;
 - for the Nivea ad, disdain was the feeling of 6/20 subject and ignorance for 4/20 subjects
- the last feeling subjects encountered for Caribu ad was the antagonistic one, because they find the innocence of young age opposite with the aggression of putting a baby chick in a meat grinder.

One week later, the same respondents were kindly asked to rejoin for a short feedback interview, aiming to reveal the recalling effect of those two advertising stimuli exposure.

So, a week later, the most impactful advertisement considered by 14 out of 20 respondents was the Caribu chocolate advertisement, while Nivea for Men advertisement was considered impactful for only 6 out of 20 subjects.

Also, we aimed to identify the colors recalled by our subjects:

- the color blue was recalled by all 20 subjects for Nivea ad, because they linked the logo's color with the ad, while for Caribu ad the dark green shades were recalled by 17/20 subjects.

- the color white was recalled by 18/20 subjects for the Nivea ad, because they linked the products purity with the advertisement, while for the other ad, the color black was recalled by 14/20 subjects
- grey color is the third recalled color by 10/20 respondents for Nivea ad, while pink was linked with the little girl from the Caribu ad by 9/20;
- the last color recalled by 8/20 for Nivea ad is black, while 4/20 recalled the yellow color for the Caribu ad.

We aimed to identify the recall effects of the semiotic elements from the ads such as general visual stimuli:

- we can observe that 20 subjects recalled the **logo** from Nivea, after 1 week from the first interview, while 19/20 subjects recalled the **character** from the Caribu ad;
- the **slogan** from Nivea ad was recalled by 16/20 subjects, while the **brand** Caribu was recalled by 18/20 subjects;
- the third place stands for the **symbol** of the head carried by the main character was recalled by 15/20 respondents, while the **written message** was recalled by 14/20 subjects;
 - the **colors** were recalled by subjects for both ads, 9/20 for Nivea and 6/20 for Caribu;
- the **clothing** was recalled by 7/20 subjects, they recalled that the character was wearing a casual outfit;
 - the font was recalled by 5/20 respondents for Nivea ad and by 9/20 subjects for Caribu ad.

To sum up, 18 out of 20 subjects considered that the brand semiotics perception was facilitated by the shocking message from Nivea ad; while all subjects considered that the brand semiotics perception was facilitated by the shocking image from Caribu ad. All the subjects, for both advertisements, considered that a shocking image make the brand easily to be recalled.

The second part of the interview had the purpose to identify which was the recall effect of the visual elements from the ads such as general visual items, colors, messages or other brand semiotics, but also to identify the order of perceiving this visual images and to see if the shock influences the perception.

The results from the questions regarding the recall effects of subjects lead to a positive effectbecause the advertisements had a shocking image or written message, subjects remembered almost all the visual and semiotics elements which they mentioned and noticed before, in the first stage of the interview, the same elements identified and analyzed in the first stage of research.

The subjects recalled the predominant colors from both advertisements, because they associated the colors which define the brand with advertisements or they associated colors with the colors which express the primary shades from the ad or shades related to the emotion felt when viewing the ads.

The subjects identified the advertisement from Caribu more impactful then the one from Nivea for Men because the Caribu ad created more harm on the emotional part.

The subjects considered that brand semiotics perception is facilitated by shock images or messages and they are strongly believing that a shocking image or message can make the brand easily to be recalled, because in a world full of advertising, differentiation is needed.

Limitations

- We could not measure if the recall effect was influenced by the notoriety of the brands;
- An experiment could be conducted in order to better highlight the cause/effect results;
- Equipment could influence the findings, because the order in which the semiotic elements would have been perceived better with an eye-tracking system.

5. Conclusions

Semiotics is considered a philosophy of languages, a general theory of signs and its elements refers to visual elements such as image, logo, symbols, characters, font, written message, slogan, etc. The image is the main tool through semiotics elements can be expressed, because semiotics has a core contribution when we are speaking about meanings.

Photos are used in advertising for a variety of reasons: they can provide an eloquent example or illustration of the subject in question or to express a message. Images are used because they can evoke a multitude of emotions and reactions in the ranks to the public, for example an image of an

athlete known in the immediate vicinity of a product may suggest that this celebrity supports and supports that product.

Images can express ideas very quickly, much faster than if they were described by a text and due to this fact, the images are a key element in advertising.

Images are a tool used in advertising to reach the attention of the consumer by using different ways of catching their attention: by intense physical impulses (color and size of the ad), by emotional impulses (reproductions of people's expressions) or by surprising impulses (images that go beyond and exceeding the waiting horizon of the subject by stimulating their mental activity). In advertising the most important thing is not only to arouse attention, but also to maintain it and images can have effects because of the surprising impulses which produce a sufficient activation in the mental activity of the subjects.

Using images is probably the most interesting part of design, because they have a profound impact on the end result. An image can be manipulated to completely change the appearance, to accentuate or diminish, isolate or complete certain properties to be used in design.

Image manipulation techniques can lead to results spectacular. Nowadays, with the vast digital technology, almost all images presented to the public are processed, intensified or improved in some way before to be printed or published. The success of such a work is measured by reaction emotional that is induce to the public.

This researched aimed to study the perception related to shocking images present in advertising and how visual elements raise the perception of images and if brand semiotics perception is facilitated by shock images and messages.

To sum up the results from the 3 stages of the research, the semiotics elements identified in Nivea's and Caribu's Advertisements such as logos, colors, characters, symbols, language used played an important role because they accentuated the properties of the advertisements by transforming them from advertising in shockvertising and created a strong recall effect in the mind of the consumers.

n the first stage were identified and analyzed the semiotics elements within the two advertisments, the same elements which were identified by the subjects in the second stage of the research which means the perception of this elements was increased because the subjects found the advertisments shocking and once the image or the written message was seen, the subjects searched in the image for the promoted brand, for the logo, for slogan or main characters. Their interest in finding who and what is behind the ad increased significantly.

The visual and semiotic elements were recalled easily by the subjects because the perception of this elements was facilitated by shock images and messages. This elements had a higher impact on the subjects because the emotional response appeared in the moment they fist saw the ad.

The recall effect was tested after one week after the first contact with the ads and due to the fact that ads caused numerous illocutionary effects such as shock, the subjects stated that it is easier to remember visual elements, brands or products when an image creates a negative impact, because in a world where you see a lot of brands and products advertisements which you may confuse at one point, the differentiation is needed in order to get noticed or recalled.

An advertisement should have a dose of shock, even if it is in the image or in its written message, because this shock attracts the attention and forces the viewer to notice in a conscious way the ad. A proper content in conjunction with a high emotional impact message or image can have a positive effect on the degree to which attention is attracted and the brand and product advertised is perceived and memorized.

6. References

- Aiello, G., 2019. Visual semiotics: Key concepts and new directions. IN Pauwels, L and Mannay, D. ed. 2019. *The SAGE handbook of visual research methods*. London: SAGE Publications, 367-380.
- Chandler, D., 2007. Semiotics: the basics. London: Routledge.
- Faizan, M., 2019. The role of semiotics in advertising: communicative approach. *Language in India*, 19(2), 135-142.
- Fedorova, L. L., 2019. Semiotics of Advertising: The Functional-Communicative Analysis. Vestnik NSU. Series: History and Philology, 18(6), 199-211.

- Kauppinen-Räisänen, H., and Jauffret, M. N., 2018. Using colour semiotics to explore colour meanings. *Qualitative Market Research: An International Journal*, 21(1), pp. 101-117.
- Kroeber-Riel, W., 1995. Bildkommunikation. Munchen: Franz Vahlen Verlag.
- Petre, D., Iliescu, D., 2005. Advertising Psychology, Bucharest: Comunicare.ro.
- Peirce, C.S., 1990. Significance and Action. Bucharest: Humanitas Publishing House.
- Rose, G., 2001. Visual Methodologies. London: Sage Publications.
- Stănciulescu, T., 2004. At the beginning it was the sign. Another introduction to semiotics. Iași: Editura Performantica.
- Tan, S. and Owyong Yuet See, M., 2009. The semiotic function of clothing and gender roles on broadcast business news. *Business Communication Quarterly*, 72(3), 368-372.
- Virvilaite, R and Matuleviciene, M., 2013. The impact of shocking advertising to consumer buying behavior. *Economics and management*, 18(1), 134-141.

Management of the Pharmaceutical Entity's Resources in the Conditions of the Sanitary Crisis of COVID-19

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Abstract

The aim of the paper is to identify the peculiarities of the management of the pharmaceutical entity's resources in the conditions of the health crisis, caused by Covid disease 19. The global uncertainty regarding the dynamics and evolution of the pandemic generated by SARS CoV 2 virus of the resources made available to them. If remote work has been a life-saving solution for many fields of activity, for the pharmaceutical field, the adoption of a flexible work schedule could not be considered a variant for the efficient use of the employed resources. Thus, in strict correlation with the still unknown trend of the Health Crisis, an adequate management of resources in pharmaceutical entities is an aspect that should not be neglected given the specific field of activity, respectively participation with the state in ensuring the health of the population.

Key words: management, resources, pharmacy, Covid19 disease, efficiency, profit

J.E.L. classification: 115, L65, P46

1. Introduction

With the onset of the pandemic, pharmaceutical companies, like all other fields of activity, had to change the way they organize the functional processes and manage the resources used to achieve the object of activity and the purpose for which they operate.

Thus, considering that the purpose of the pharmaceutical entities is their contribution, together with the state, to ensuring the health status of the population, we must not ignore their general objective.

As is well known, the objective of each entity is to carry out activities efficiently, through the rational use of resources employed, respectively profit, as the only condition for perpetuating the development of the entity and society in general.

In the period following the outbreak of the health pandemic, the entities have adapted to the conditions arising from the restrictions imposed on the development of activities, by implementing digital and technological solutions that allow operation at the highest possible parameters.

All this required decisions to be taken by the management of pharmaceutical entities, which resulted in unforeseen investments in financial, human, information and other resources, the result of which led to the efficiency of all processes. These decisions materialized almost in real time in solutions applicable both within the entity and in solutions applicable to the external environment, respectively in relation to patients, pharmaceutical and service providers, in relation to other employees, state authorities and others. Thus, even though the pharmaceutical field is highly regulated in terms of production, distribution and marketing of pharmaceutical products, many companies have implemented processes, applications and integrated platforms that are easy to access and use, ensuring the use and management of maximum efficiency. all resources employed.

The need for optimal use of resources through debureaucratization, digitization and technologicalization of some processes have led to the elimination of resource waste channels in all forms. As it is known, the beginning of 2020 began worldwide with one of the major health crises

caused by the spread of the SARS CoV2 virus, a crisis that is far from over in 2 years. Even though, starting with December 2020, the antidote that could still reduce the effects of the disaster caused by this virus, determined the launch on the pharmaceutical market of some vaccines with efficacies of up to 90% -94%, reaching the 3rd dose of administration, at the end of 2021, the pandemic is at the end of wave 4 and even the beginning of wave 5.

Mutations in this rapidly spreading virus indicate that it cannot be eradicated in the near future, which will directly affect the research, production and marketing of vaccines that respond to new changes. All these phenomena will determine a certain behavior manifested by the management of the entities on each link of the value chain.

2. Theoretical background

As is well known, the essence of management science is generally the study of the processes and managerial relationships developed in an organization. Thus, the content and dynamics of management within the pharmaceutical entity is based on the study of processes and managerial relationships specific to this field. They aim to discover the principles and legal provisions governing the pharmaceutical business, as well as to build new systems, methods, techniques and procedures that will increase the competitiveness of the use of resources in this market.

The managerial activity in the pharmaceutical entities is based on the activity regarding the use of human, material, informational and financial resources. The success of this activity includes a series of stages arranged in a logical sequence in which the objectives of the organization and the embedded subsystems are established (departments, compartments, services, offices, etc.), the resources and means necessary to achieve them and coordinate the activity of human resources, in order to obtain the highest possible economic and social efficiency.

The structure of the management process is determined by the functions or attributes of the managers, namely: the function of forecasting, organizing, coordinating, training, monitoring / evaluating.

The managerial process in the pharmaceutical field includes important phases, namely the forecast phase (during which the prediction function is manifested in the predilection), the operational phase (in which the functions of organization, coordination and training are mainly exercised) and the measurement phase. interpretation of the results, in which the control-evaluation function is mainly manifested.

All these characteristics generally valid for the management activity on the pharmaceutical market were applicable and present especially in the conditions of the health crisis caused by COVID 19 disease, as will be presented below and concretized in relevant indicators for each resource used.

3. Research methodology

The objective of this study is to highlight the effects of management activity in the efficient use of resources involved in various pharmaceutical entities and the evolution of the Romanian pharmaceutical market in the period after the COVID-19 disease, caused by infection with the new SARS-CoV-2 coronavirus.

The research method considered the direct, selective analysis of the effects of the use of resources, which were directly influenced by the manifestations determined by the prevention or treatment of this disease, in the period after the health crisis.

The materials used were those provided by statistics from institutes specializing in research and analysis of the evolution of the global pharmaceutical market during this pandemic period.

4. Findings

Starting from the resources used to achieve the object of activity in the pharmaceutical entities, we will try an approach of their management for each of the resources.

Considering the human resource as the most important, the one that activates the other resources, we will start with the presentation of its specificity within the pharmaceutical entities.

The approach of the pharmaceutical service as part of the national health system can sometimes be assimilated with social services, which leaves its mark on the role of the pharmacist in this system.

In the conditions of the market economy more and more the pharmacist is often confused with a trader in the true sense of the word. We must not ignore the role of the pharmacist in streamlining the management of the drug as a result of his scientific and multidisciplinary training.

Thus, the role of the pharmacist in the administration must be established, respectively the position that the pharmaceutical coordination system has within the health system, in the formulation and implementation of the drug management policy. Pharmaceutical management includes the selection of essential medicines, quality assurance, their purchase, distribution and rational use, hence the need to establish an educational policy in the field of workforce training.

The management of the pharmaceutical workforce must take into account the fact that the pharmacist is the one who advises the patient, prescribes over-the-counter and over-the-counter drugs, checks the legality, safety, correctness of the prescription, and limits self-medication.

In addition to the social side, the role of pharmacists in achieving the economic side of achieving the object of activity must be specified. This economic side is reached when the pharmacist monitors the treatment in case of minor symptoms or disorders, the release of over-the-counter drugs, on which occasion he transfers the costs of the national health system to the patient but also in the sale of parapharmaceuticals and medical devices.

Thus, the work of pharmacies in the current market relations, influenced by the effects of the crisis in the field of health, changed the requirements for an employee in such an entity, increased the importance of an innovative attitude towards the work performed but also a high professionalism. the requirement of the competitive environment on the pharmaceutical market.

The COVID -19 crisis, materialized in the unexpected increase in sales, amplified the key role of the staff in completing the medical act, hence the investment in motivating them in various forms as the main factor in increasing the financial efficiency of the entity and improving service to his patients.

The efficient use of labor in pharmacies and implicitly motivating it by fulfilling the sales plan for certain pharmaceuticals, requires the development of sales schemes in complex therapies and consequently, they can be sold together, for example: antibiotic + vitamins + probiotic or cold remedy + vitamins + immunomodulators, etc.

Information resource in the pharmaceutical system refers to information technologies but also to the circulation, collection, processing, transmission, storage and distribution of pharmaceutical information. An efficient management of the IT resource will ensure the information necessary to substantiate the strategic and managerial economic policy decisions that will be the basis for substantiating the data necessary for the elaboration of the economic growth models of the pharmaceutical unit. Monitoring the use of information resources as well as human and financial resources has led to the emergence and imposition of the concept of "information resource management" and managers are required to manage information as a resource. Pharmaceutical information has become increasingly expensive because it is itself the basis of drug production, of competition in the pharmaceutical market.

Regardless of the strategy chosen and the resources invested, the current context of the healthcare crisis created by COVID-19 disease is very favorable for the Pharma field and confirms the upward trend in sales which is expected to increase in the near future. This trend has also been influenced by the expansion of online commerce as a way to respond to patient demand.

The year 2020 has come with the biggest challenges for the pharmaceutical market and can be considered one of the most difficult in recent times, including the management of all the resources involved in achieving the purpose of these entities. The ignorance of the details about the new coronavirus led to precautions being taken by the population to ensure their health. The need of the population for the need for medicines in the fight against the pandemic is very well known. As a precautionary measure, this pandemic phenomenon has led to the purchase of drugs dedicated to the treatment of this disease COVID-19, even if not the entire population has been affected to the same extent, from the beginning.

Thus, the management on the entire value chain has faced a training of all resources to respond both quantitatively and qualitatively to the consumption needs of the affected population. This phenomenon has led to an increase in the demand for specific drugs to prevent and treat this disease. The restrictions imposed by limiting the spread of the SARS-CoV-2 virus have come with major changes in production strategies and especially those of direct sales to the population. This has led to a substantial increase in pharmacy revenues. These revenues were supported by the sales of online pharmacies but also by those with normal sales. It was the pandemic that accelerated the process of digitization of services in the healthcare industry due to the imposed physical distance measures. This virtual approach of patients has created a new sales channel for the pharma network.

In the context of the health crisis, the investments made to make more efficient the use of material, human, financial and informational resources for the new type of online customer, will continue to exist even after the end of the pandemic, the advantages of this type of trade are already known.

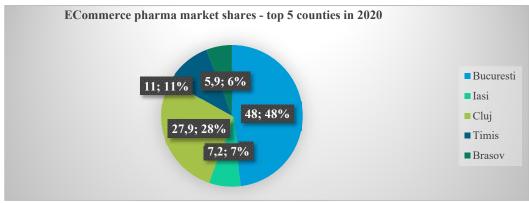
According to the data presented by the research company, Cegedim Romania, the results of online sales generated significant business growth, even if the pharmacies continued to be open during the lockdown period, the average number of products listed in online pharmacies was over 19000, respectively a 2820% increase in a pharma site compared to the previous period, thus indicating a wide variety of products offered.

During the analyzed period, in the top of medicines sold online were over-the-counter medicines, food supplements to increase immunity, dermatocosmetics, protective materials, protective masks, disinfectants, medical devices for determining blood oxygen, protective gloves.

Thus, in order to maximize revenues, online pharmacies needed a certain sales strategy that can be adapted in real time, the same involvement as a physical pharmacy.

Regardless of the strategy chosen and the resources invested, the current context is very favorable for the Pharma field and confirms the upward trend that will intensify in the future. The regions with the largest share of online orders are Bucharest and the counties of Cluj-Napoca, Timiş, Iaşi and Braşov. This distribution is in line with the geographical distribution of online orders and for stores in other fields (fashion, home & deco, kids & toys) and shows the opening of these regions to eCommerce.

According to a study conducted by ContentSpeed, a specialized platform for specific requirements in the pharmaceutical field, regarding the eCommerce pharma market shares, Bucharest and Cluj have important shares, as shown in the chart below.



Graph no.1. ECommerce pharma market shares - top 5 counties in 2020

Source: Content Speed, own processing

Throughout the pandemic, patients have increasingly appreciated the ability to check online on their own sites or even to book in pharmacies, where they can find certain drugs in stock.

The TeleFarmacie module is also used, through which a dedicated form is available on the website for sending the prescription to the pharmacy. It also includes integration with POS, management solutions or the internal application that manages such applications.

Throughout the pandemic, since its inception in 2020, until now, the population has turned to pharmacies for the purchase of pharmaceuticals, which has led to a considerable increase in sales, hence the place among those who earned from the medical crisis, whether we are talking about independent pharmacies, chain pharmacies or drug distribution companies.

According to financial information published for 2020, the turnover of pharmaceutical companies has increased compared to the level recorded in 2019.

In the pandemic year 2020, based on the data published on the specialized sites and the Cegedim Romania reports, the first 14 pharmaceutical companies on the local pharmaceutical market registered a turnover of 3.97 billion euros, increasing by 2.97% compared to year 2019, with a net profit of 88.6 million euros, respectively 41% higher than the previous year.

If we analyze the structure of the released products, we find that during this period, the population turned to pharmaceuticals of strict necessity, and especially those related to the prevention of coronavirus.

Even if the year 2020 was a difficult one from the point of view of the organization but also of the use of financial, human and informational resources in the open circuit pharmacies, it can be appreciated that this field is among the winners of the pandemic.

Thus, the result of the efficient use of resources on the pharmaceutical market has materialized in maintaining the growth trend of sales and in 2021, significant are the volumes (number of boxes) recorded by major companies in the pharmaceutical market, as shown in the following table.

Table no.1 Top 20 companies by volume of medicines released in the period July 2020-June 2021

Nr.	Pharmaceutical companies	Nr. released boxes	Market share
crt		(millions of boxes)	(100%)
1.	ZENTIVA (LABORMED ŞI ALVOGEN)	71,3	11,4
2.	SUN PHARMA (Terapia)	59,1	9,4
3.	SERVIER	36,2	5,8
4.	SANOFI	29,9	4,8
5.	KRKA D.D.	28,6	4,6
6.	GLAXOSMITHKLINE	28,4	4,5
7.	VIATRIS	25,4	4,1
8.	ANTIBIOTICE IAȘI	25,0	4,0
9.	BIOFARM	21,4	3,4
10.	GEDEON RICHTER	19,7	3,1
	TOTAL 10 COMPANII	345,0	55,0
11.	MENARINI	19,0	3,0
<i>12</i> .	NOVARTIS	18,8	3,0
<i>13</i> .	RECKITT BENCKISER	14,2	2,3
14.	ASTRAZENECA	12,6	2,0
15.	TEVA	11,1	1,8
<i>16</i> .	MERCK KGaA	10,8	1,7
<i>17</i> .	NATUR PRODUKT YDROVIT	10,1	1,6
18.	BAZER AG	9,6	1,5
19.	MERCK & CO	8,6	1,4
<i>20</i> .	FITERMAN PHARMA	8,0	1,3
	TOTAL 20 COMPANII	467,8	74,6
	TOTAL PIAȚĂ FARMACEUTICĂ	626,8	100

Source: Cegedim Customer Information, own processing

According to the results of the Pharma & Hospital Report study, Cegedim Customer Information estimates that between July 2020 and June 2021, the volume of medicines delivered to patients in Romania was 626.8 million boxes, an increase of 0.6% compared to consumption in July 2019 - June 2020. The total number of treatment days increased by 8.7%.

Thus, Zentiva Corporation ranks first with sales of 71.3 million units, followed by Sun Pharma (including Therapy) with 59.1 million units and Servier (including Egis) with 36.2 million units.

The list of the top 10 companies is completed by Sanofi (29.9 million units), Krka (28.6 million units), GlaxoSmithKline (28.4 million units), Viatris (25.4 million units), Antibiotice Iaşi (25.0 million units), Biofarm (21.4 million units) and Gedeon Richter (19.7 million units).

Table no.2 Top 20 companies by sales of medicines released between July 2020-June 2021

Nr.	Pharmaceutical companies	Sale	Market share
crt		(millions of lei)	(100%)
1.	SANOFI	1046,8	5,4
2.	NOVARTIS	977,3	5,1
3.	ZENTIVA (LABORMED ȘI ALVOGEN)	861,6	4,5
4.	SUN PHARMA (Terapia)	770,0	4,0
5.	SERVIER	767,8	4,0
6.	ASTRAZENECA	707,8	3,7
<i>7</i> .	BRISTOL MAYER SQUIBB	703,7	3,6
8.	GLAXOSMITHKLINE	670,0	3,5
9.	VIATRIS	580,2	3,0
10.	MERCK & CO	573,9	3,0
	TOTAL 10 COMPANII	7658,90	39,7
11.	HOFMANN LA ROCHE	531,3	2,8
12.	PFIZER	525,1	2,7
13.	GILEAD SCIENCE INC,	509,4	2,6
14.	BAYER AG.	498,0	2,6
15.	JOHNSON &JOHNSON	477,4	2,5
16.	ELI LILLY	433,8	2,2
<i>17</i> .	MENARINI	396,6	2,1
18.	ANTIBIOTICE IAȘI	346,8	1,8
19.	KRKA D.D.	334,7	1,7
20.	RECKITT BENCKISER	322,0	1,7
	TOTAL 20 COMPANII	12034,0	62,3
	TOTAL PIAȚĂ FARMACEUTICĂ	19.306,9	100

Source: Cegedim Customer Information, own processing

Thus, from the point of view of the value of the medicines released on the first place, Sanofi is with 1046.8 million lei, followed by Novartis with 977.3 million lei and Zentiva with 861.6 million lei.

The proof that the resources of the pharmacies were used with maximum efficiency during the analyzed period is also demonstrated by the structure of sales by release segments, respectively by retail and by hospital, as the information in the following table is presented.

Table no. 3 Volumes and sales of medicines released between July 2020 and June 2021

Release channel / segment	Total boxes (mil.)	Market share (100%)	Total sales (mil.)	Market share (100%)
RETAIL	604,6	96,5	16663,0	86,3
- RX	363,9	58,1	11753,3	60,9
- OTC	240,7	38,4	4910,0	25,4
HOSPITAL	22,2	3,5	2643,9	13,7
Total market	628,8	100,00	19306,9	100,00

Source: Cegedim Customer Information, own processing

As can be seen, the release segment represented by pharmacies in the analyzed period, has a market share of 96.5% of the volume of dispensed boxes and 86.3% of sales related to the release segment owned by the hospital, where the level is extremely reduced by 22.2% of the volume.

Thus, we can appreciate that the population resorted to the consumption of medicines directly from pharmacies and less hospitalization was agreed during this pandemic period. These results represent the effect of the restrictions imposed as well as the detention of patients to be admitted to hospitals for the treatment of chronic diseases.

5. Conclusions

The summary of this information resulting from the study leads us to outline a picture of the pharmaceutical entity in terms of efficient use of human, information and financial resources in the conditions of a deep global medical crisis.

Thus, ensuring the stability of the pharmaceutical market both in terms of quantity and quality and the successful operation of a pharmaceutical entity in a competitive environment, depends on an efficient management of all resources involved in achieving the object of activity.

Providing pharmaceutical services according to the requirements of the local or regional pharmaceutical market, requires an adequate management of human resources, the only one that sets in motion the other resources involved in the process of achieving the object of activity, hence the need to find appropriate motivation strategies. employees.

Thus, the personnel policy must be an integral part of all the management activities and production policies of the pharmaceutical entity, hence the need to adapt it to the new conditions of the pharmaceutical market relations.

6. References

- Burnei, I.,2010. Management şi marketing farmaceutic modern [Modern pharmaceutical management and marketing] Bucharest: Davila
- Ionescu, V.C., 2017. Management. Bucharest: Faculty of Law
- Jack E., 2011. Basic Management Principles. University of Kansas, School of Pharmacy.
- Kaehler B., Grundei J., 2019. *HR Governance, A Theoretical Introduction*, original version published by Springer.
- Mark S. M., Saenz R., 2019. Management essentials for pharmacists
- M. A. Chisholm-Burns, A. M. Vaillancourt, M. Shepard, 2011. Pharmacy Management, Leadership, Marketing and Finance. Jones and Bartlett Publishers

Improving Production Flows by Integrating AOA Critical Networks

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Abstract

The main objective of the "AOA critical networks" concept in the manufacturing flow is to support companies that want to improve their processes so that they become more competitive by implementing various tools and techniques for continuous improvement.

At present, it is known that a high level of productivity can be obtained and maintained only by involving all the actors involved in the production process, and to optimize the production flow as a whole, action must be taken to increase flexibility, the means of production and therefore their reactivity. The AON critical networks method can be integrated in the analysis of production systems, especially regarding the optimization of production flows.

The main object of the research is the development of an adaptive production planning system that can optimize the flow of materials, which will lead to an optimal cost of the production project.

Key words: production project, material flow, production costs, AOA network **J.E.L. classification:** M11, C20, D24

1. Introduction

The ability of business management to anticipate change in a digital environment and to adapt to new situations in a planned manner leads to the long-term profitability of the industrial enterprise.

The frame of reference, which integrates concepts of materials management, operational management of production, industrial optimization, as a whole, as a factor of synergy between the functions of the industrial enterprise, must be approached in a systemic vision. The objective of this framework is to make a precise transformation of the elements of the system, between which there are a number of causal or functional relationships and connections, so that, at the end of the industrial process, the input elements expressed in value are modified in an amplifying sense.

The systemic approach comprises a very large number of elements, linked together by direct and inverse relationships and connections that allow the scientific explanation of some very complex phenomena, which take place inside this system. In order to place, at least in part, the enterprise as a system, in this frame of reference, it is necessary to know the nature of these relationships, as well as some minimum information elements on how the system behaves at a given time. It can be said that the structure of the enterprise as a system is given by the number of elements that make up the system, the connections and the relationships between them that define the active structure of the system, i.e. those factors that determine the ability to transform input elements.

2. Theoretical background

The object of study of this adaptive system is the management of material flows and information in the production process. The notion of material flow is a distinct entity that is transformed in value amplifier based on an individual technological process from semi-finished product (raw material) to finished product.

The models used to optimize value added in the value chain, at the level of material flow, are based on the following concepts:

- value is added to the flow of materials, as a separate entity, because it is subject to the individual technological process of transformation from semi-finished product to finished product.
- the production costs incurred for the achievement of the added value increase in direct proportion to the added value in each stage of transformation of the material flow and represent about 80% of the cost of the finished product.

Thus, the physical transformation and, at the same time, the value amplification of the material flow determines the dual importance of its optimization within the production. The duality of optimization consists in the analysis of the transformation of the flow of materials from a technological - economic point of view at each level of transformation. A problem with the ordering of the production flow is the establishment of an order to carry out the operations of a production project, so that the interdependencies between them are respected both in terms of technological process, available resources and total execution time. minimizing it.

In order to allow a detailed analysis of the problem of ordering the production flow, a choice of the optimal execution variants and a continuous control of its evolution and added value, we must break down the production project into component parts (operations) at a level that to allow the unitary treatment of each part and the establishment of connections between them. The operation is a distinct part of a production project, a precisely determined sub-process that consumes time and resources.

Among the inter conditions (interdependencies) between activities, we are interested, in particular, the temporal ones, called precedence relations, which can be of three types:

- Finish start" type this type is the most common and we say that activity A precedes activity B by an "end start" interdependence if activity B can only begin after a time interval t_{AB} from the end of activity A.
- > "Start start" type if activity B can only start after a time interval t_{AB} from the beginning of activity A.
- ➤ "Finish finish" type if activity B cannot be terminated until after a time interval t_{AB} from the termination of activity A.

Interdependence intervals can be equal to zero (activity A directly precedes activity B), positive (activity A precedes activity B late), negative (activity A precedes activity B in advance). The decision on the optimal duration of a material flow, as a whole, is taken at the level of production scheduling based on decisions from the level of production planning, according to the graphical networks of analysis AON, AOA.

3. Research methodology. AON-AOA constructions

From a given list of subordination relations (in the sense of hierarchy), at the level of a flow of materials in the sense of subordination relations (of hierarchy), two types of networks of the manufacturing project can be formed. One of them has a trivial construction - AON ("activity-on-node"), and the other non-trivial - AOA ("activity-on-arc").

The trivial construction is a graph that marks the requirements of subordination by identifying the activities in the circles or nodes of the graph while the arcs, by definition, represent graphically (by arrows) the technological succession. The limit between graphs and networks does not exist, because mainly in the literature specific to the programming of manufacturing projects, the second name - network is traditionally adopted. In the language of manufacturing project planning, these networks are "node activity" structures, abbreviated AON ("activity-on-node").

The non-trivial construction is more interesting and closer to optimal values referring to the AOA ("activity-on-arc") structures, here the activities being represented by springs while the nodes play their natural role of defining the points of divergence and convergence of springs.

The analysis performed in the construction of an AOA network for the manufacture of an industrial product presents the situation of the subordination requirements for the ten operations for the manufacture of an industrial product, given in the form of a list of dependencies (conditions) between the operations of the industrial product.

Table no. 1 Activity times

T_1	T_2	T_3	T_4	T_5	T_6	T_7	T ₈	T ₉	T_{10}
	T_1	$T_1T_5T_4$	1	T_4	T_4	$T_1T_2T_3T_5T_4$	T_4T_6	$T_5T_8T_6T_4$	$T_5T_8T_6T_4$

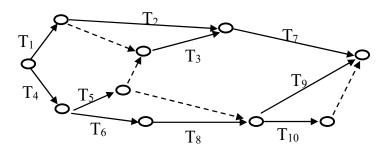
Source: own processing

The requirements that can be deduced through transitivity are introduced, that means, we show $T_4 \prec T_8$ and $T_6 \prec T_8$ when only the latter is needed because $T_4 \prec T_8$ is involved by $T_4 \prec T_6$ which was indicated earlier in the list.

The AOA network has introduced arcs (those with dashed lines) that do not represent actual activities but some fictitious ones (do not require time and resources), useful for the representation of subordination (Figure 1).

It is obvious that for a given AOA structure, the corresponding AON representation is formed by the line diagram of the AOA network.

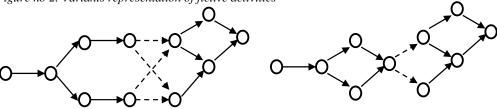
Figure no. 1 AOA flow chart for industrial product manufacturing



Source: own processing

There are several ways to build a successful AOA network from a list of subordination requirements. This is due to the alternative possibilities of using the fictitious activity. In Figure 2 both networks show the same subordination structure but use a different number of fictitious activities. In this respect, a realistic hypothesis is to prefer a representation with minimal dimensions of the AOA network, important being the one that indicates a smaller number of fictive activities.

Figure no 2. Variants representation of fictive activities



Source: own processing

An efficient and general method of building AOA networks with minimal fictitious activities appears to be a difficult "hard N-P" problem. Because this problem is looking for a graph G = (V, E), an existence decision of a subset $V' \subset V$ cu $V' \cap \{i, j\} \neq \emptyset$ for all the sides $\{i, j\}$ from E, and which has the upper bounded dimension of a certain input limit value k, the graphical mapping is done as follows: noting the G peaks with $v_1, v_2, ..., v_n$ and the E sides with $e_1, e_2, ..., e_m$, a set of activities is created $\{v_1, v_2, ..., v_n, e_1, e_2, ..., e_m, x\}$.

The relations of subordination are given by the pairs $\{(e_i, v_j) | e_i \text{ is incident in } v_j \text{ from } G\} \cup \{(e_i, x) | 1 \le i \le m\}$. Thus, G has an appropriate number of peaks only when the number of requirements of that AOA network does not exceed a number that represents $(2 \cdot |E| + k)$ fictive activities.

For the graph in Figure 3(a), the subset of vertices $\{v2, v4\}$ is a coverage and is minimal in this regard Thus, as shown in Figure 3 (b), an appropriate AOA network can be drawn using a number of (3|E|) fictive activities (a number of 2/E/ of these are required in any construction).

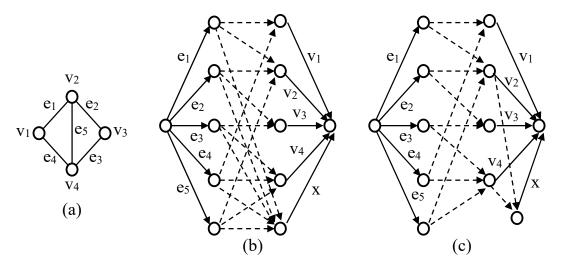
On the other hand, the structure in Figure 3 (c) uses only (2/E/+2) and, more importantly, any smaller number is invalidated, leading to a false subordination structure. It is obvious to identify the fictitious activities in the AOA network in figure 3 (c) with optimal assurance of the peak in G.

The complex state of the problem of minimizing fictitious activities attracts the usual interpretation that comes with the perspective of the most unfavorable case.

Thus, while there are very complicated examples of the problem, there are many others in which the number of fictitious activities is easily minimized or at least reduced to a number that is verified to complete the optimization.

In fact, it is very easy to formulate heuristic (methodological) rules for building AOA networks and with which relatively efficient structures are obtained.

Figure no.3 AOA chart with minimal fictive activities "hard N-P"



Source: own processing

3. Basic critical material flow scheduling

In the context of the AOA network, the activity is represented by the arc (i, j) and its duration with τ_{ij} . The problem in scheduling the flow of materials at the level of a production project refers to how short the duration of the production project is.

For the production project network G = (V, A), is defined for each peak $i \in V$, a variable, s_i , which indicates the start time of any activity (arc) coming out of the top of i peak.

Also, that the peaks are marked a cyclically, ie for each arc $(i, j) \in A$, i < j and that the network has only one initial peak marked with the number 1 and only one final peak, noted n = |V|. Under these conditions the next linear programe will operate, P_{CP} :

$$P_{CP}$$
: min $s_n - s_1$
s.t. $s_j - s_i \ge \tau_{ij}$, $(i, j) \in A$

It is obvious that the minimum value for the completion of all operations in the production project is determined by the size of the longest flow in the production project network. The length of the flow represents the total duration of all operations in the flow. This is the critical flow that results from the critical states associated with how operations are scheduled. Of course, if they are delayed from starting as soon as possible, then the duration of the entire production project is also delayed.

Determining the size of the longest path in an acyclic network is especially straightforward with labeling methods.

Using the project network G = (V, A), matrix construction $Q = (q_{ij}), 1 \le i, j \le n$ is realised:

$$q_{ij} = \begin{cases} \tau_{ij}, & (i,j) \in A \\ 0, & i = j \\ -\infty. & \text{in rest} \end{cases}$$

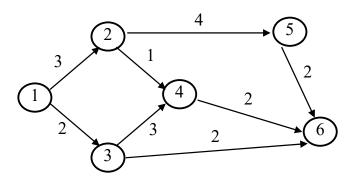
Fictive activities have 0 duration and thus we construct a vector $S^0 = (s_i^0), 1 \le i \le n$:

$$s_i^0 = \begin{cases} 0, & \text{dacă vârful } i \text{ este final (nesuccedat)} \\ -\infty, & \text{in rest} \end{cases}$$
Now, starting with S^0 we will form the S^k vectors by recurence:

$$S^{k} = S^{k-1} \cdot Q, \quad k = 1, 2, ..., \overline{k} \le n,$$

Recursion stops when either two successive vectors are identical or when k = n, regardless of which event occurs first. Thus, its value $s_n^{\overline{k}}$ provides the length of the critical flow and hence the minimum duration of the production project. The matrix Q is formed for the network in figure 4, the calculation of the vector S is given below and the minimum duration of the project is 9 units of time.

Figure no. 4. AOA network



Source: own processing

$$Q = \begin{bmatrix} 1 & 2 & 3 & 4 & 5 & 6 \\ 1 & 0 & 3 & 2 & -\infty & -\infty & -\infty \\ -\infty & 0 & -\infty & 1 & 4 & -\infty \\ -\infty & -\infty & 0 & 3 & -\infty & 2 \\ -\infty & -\infty & -\infty & 0 & -\infty & 2 \\ 5 & -\infty & -\infty & -\infty & -\infty & 0 & 2 \\ 6 & -\infty & -\infty & -\infty & -\infty & 0 \end{bmatrix}$$

1	2	3	4	5	6
$\mathfrak{S}^{\circ} = \{0$	- x	- x	- x	- x	- x)
$\S^1=\{0$	3	2	- v	- v	- v)
$S^2=\{0$	3	2	5	7	4)
$\mathfrak{S}^3=\{0$	3	2	5	7	9)
$\mathfrak{S}^3=\{0$	3	2	5	7	9)

It should be noted that the explicit identification of the critical flow, and thus of the critical operations, is easily determined in the usual way by following the calculation of the S marking presented above. We will start with the label of the final peak n (the network contains a single final peak and a single start peak) after which we proceed by recurrence; at a given peak j which is known as the longest flow, we need to determine only those peaks i for which inequality $s_i^{\bar{k}} - q_{ij} \ge s_i^{\bar{k}}$ is mandatory.

For those peaks (at least one peak must satisfy this inequality) that exist, respectively the arc / operation (i, j), must be the longest flow at j peak. The process is repeated in this way until the initial peak is reached. Thus, the calculation provides a single critical flow given by the sequence of peaks $\{1, 2, 5, 6\}$. The calculations described above provide the starting times of the activity without delay, starting from the initial peaks of the project network and increasing the longest flow, from them to the final peaks. The process can be assimilated with an earlier calculation (without delays).

If we consider at the origin the moment of start without delay of an operation that starts from j peak as being ES_{jk} , then $ES_{jk} = \max_i (EF_{ij})$ wehere EF_{ij} represents the moments of end without delay of the activities that end in the j peak. So: $EF_{ij} = ES_{ij} + \tau_{ij}$.

If we consider, in analogy, the calculation considering delays or the calculation with delays, the time of delayed end of an operation starting at the top j, then reducing the moment of duration of that operation would generate the time of delayed start. If we mark the start time late LS_{ij} and late end time with LF_{ij} , then $LS_{jk} = LF_{jk} - \tau_{jk}$ where $LF_{ij} = \min_k (LS_{jk})$.

If we know the delayed and no delayed start times of an operation, we have a measure of the stagnation moment.

Noted with S_{ij} , the stagnation moment of an operation is $LS_{ij} - ES_{ij} = LF_{ij} - EF_{ij}$. This is the interval at which the start of an operation can be delayed and the duration of the minimum production project cannot be exceeded. One form of stagnation used is the determination of free stagnation, FS_{ij} , which measures the delay that an operation can maintain before the start time of any operation increases.

So $FS_{ij} = ES_{jk} - EF_{ij}$. Free stagnation can never exceed the value of conventional stagnation for an operation, and when it is different from zero at certain peaks of the project logic network, then the peaks have a degree greater than 1 so they are not on the critical flow.

4. Conclusions

The method is used as an alternative and fast way to establish the critical flow at the level of a logical network of the production project and as a variant of determining the minimum total stagnation interval. Balancing the flow of materials in the logical network of the production project, through adaptive programs, leads to the existence of an adaptive system of production planning and thus production management will have a remarkable ability to adapt to continuous changes from a complex and dynamic environment.

The existence of an adaptive system for planning the production of a balanced and orderly flow of materials, has as objectives: identifying the critical flow and thus identifying critical operations and free stagnation, optimizing the tasks allocated to available resources and optimizing the number of resources involved in the project. production. Thus, the adaptive production planning system will optimize the flow of materials, depending on the number of parallel production projects and will lead to the establishment of an optimal cost of the production project.

5. References

- Anderson, D. R., Sweeney, D. J., Williams, T. A., 1998/. An Introduction to Management Science: Quantitative Approaches to Decision Making, West Publishing Company;
- Bronson, R., Naadimuthu, G., 2008. *Theory and Problems of Operations Research*. New Delhi: Tata Mc Graw Hill Publishing Company Limited;
- Boldur, G., Săcuiu, I., Ţigănescu, E., 1979. Operational research with applications in economics. Bucharest: Didactic and Pedagogical Publishing House;
- Jerome D. Wiest, J.D. Wiest, F.K. Levy, 1977. A management guide to PERT/CPM: with GERT/PDM/DCPM and other networks, 2d edition. Prentice-Hall in English;
- Krishnamoorthy M., Deo N, 1979. Node-Deletion NP-Complete Problems, Mathematics, Computer Science. SIAM J. Computational;
- Melnic L.V., Topalu AM., Ilie C., Ilie M, 2011. Meta hetaeristically optimization of the materials flow in workshop, The 16th IBIMA conference on Innoviation and Knowledge Management: A Global Competitive Advantage will be held, pp 808-820;
- Neagu C, Nitu E., Melnic L., Catana M.C. 2006. Engineering and production management. Bucharest: Didactic and Pedagogical Publishing House;
- Neumann K., Zimmernann J., 1997. Resources Levelling for projects with schedule dependent time windows. *European Journal of Operational Research*;
- Neagu C., Melnic L, 2009. Optimization Model of the Materials Flow in the Workshop (OMF).
 Scientific Bulletin of the Polytechnic University of Bucharest;
- Wellons M.C., Reklaitis G.V., 1991. Multi-product campaign production planning. Ind. Eng. Chem. Res.

Coaching and Mentoring Study Hypothesis Testing with the SPSS Software

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Abstract

The data presented in this paper are part of a larger study that tests various hypotheses to determine the extent to which managers' and performers' opinions affect the general opinion that various factors identified above influence coaches' and mentors' performance. To achieve the proposed goal, the statistical software SPSS was used. Now we will test Hypothesis: Respondent profile (manager or performer) affects the opinion on whether the regulation of the coaching or mentoring profession influences their performance

Keywords: coaching, mentoring, strategies, workforce, human resources

J.E.L. classification: J21, J23, J24, M12, M53

1. Introduction

This paper is a continuation of a previous study entitled "Designing the coaching and mentoring strategy in Romania under the pressure of the pandemic caused by SARS-Cov2 virus" which aimed to create a strategy for the sustainable development of human resources through coaching and mentoring programs.

2. Theoretical background

In the Romanian market there is a need to implement coaching and mentoring strategies to mitigate discrimination effects. The results of the Angajez 45+ programme are brought into discussion as a basis. From the data provided, it followed that in 2020, 46% of job refusals were aimed at people in the 45-54 age segment. On the other hand, in terms of gender analysis, it followed that age is a discriminatory criterion for women, as the percentage of refusals for women is 63% and for men 37%. One of the aspects invoked in the case of refusals relates to the lack of digital skills. (Angajez 45+)

To deal with the human resources problem, various organisations are partnering with colleges and universities to attract qualified staff immediately after graduation. Nuclearelectrica participates in the Dual School programme and has a collaboration with Ovidius University in Constanta to attract junior engineers to the workforce. (Nicut, 2021)

An important aspect to be taken into account regarding the human resources crisis is that of artificial intelligence. Soon, more and more companies will turn to this solution to fill the labour shortage. Edenred has launched the chat-bot Felicia, capable of taking customer requests. (Edenred). Uniqa Insurance has deployed a claims support bot called Ana, capable of providing advice to the company's customers. (Uniqa). Banca Transilvania has developed an artificial intelligence-based assistance program. The bank's customers receive online assistance from the chat-bot Ino. (Banca Transilvania). Perhaps one of the boldest projects to automate HR processes is that initiated by Provident. The Arya HR robot replaces HR specialists. It has the ability to identify candidates, can

carry out the entire hiring process as well as the liquidation process. (Tudorică, 2021) Another HR product that replaces the human workforce is the Games for Business product, developed by Aims International, which has been launched in Romania. Given that the remote work has gained significant importance in the current context, various HR processes can be solved much more easily through this IT platform. (Games for Business) Another example of products aimed at automating processes within HR departments are the solutions developed by Romanian Software. (Romanian Software) Following the demand for process automation in HR departments, Total Soft has improved its product portfolio, launching a module for continuous feedback for employees during the pandemic. (Total Soft)

3. Research methodology

Quantitative analysis can be used to describe the behaviour of a population in relation to a problem. Using statistical methods of quantitative analysis, a representative sample can be analysed, and then the measured results can be extended to define the whole population under study. (Pop, 2011)

The SPSS software solution was used to perform this analysis. It has been used since 1986, and today it is widely used in marketing because along with other similar applications it works with a complete package of statistical functions. (Ansari, 2014)

In this case statistical tests were conducted using methods such as: ANOVA, Chi-Square test, regression, Person R and Spearman. The goal was to test the hypothesis that the correlation between the respondent's opinion, according to the hierarchical level, and the antecedent condition - the regulation of the coach or mentor profession - previously used in the QCA analysis, influencing performance, was revealed. It should be noted that SPSS analysis was used for the sample of coaching and mentoring providers. Initially, a questionnaire was circulated to 161 respondents, 91% were managers and 9% were performers. In order to be able to analyse the data using SPSS, a new questionnaire was circulated only to respondents with an executive profile. This resulted in an additional 73 data sets. In the end, 147 data sets provided by managers and 87 provided by performers were available for analysis. With a fairly balanced sample in terms of respondent profile, quantitative analysis was started using SPSS.

Figure 1 shows the overall conceptual model of the whole test.

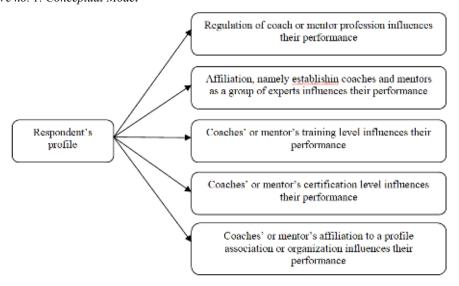


Figure no. 1. Conceptual Model

Source: Figure made by the authors

4. Findings

The approach to test the hypothesis was started: the profile of the respondent (manager or performer) affects the opinion on whether the regulation of the coaching or mentoring profession influences their performance. Thus, in Table 1 we have the centralization of the results obtained from the survey.

Table no. 1. Summary of the results

		Regulation o	Regulation of coach or mentor profession influences				
			their perform	mance			
		Disagree	Disagree Neither agree Agreement Entirely				
			nor disagree	_	agree		
		10	45	60	32	147	
Respondent's	Management						
profile	Execution	6	20	28	33	87	
Total 16			65	88	65	234	

Source: Table resulting from the use of SPSS application

Within the presented hypothesis, the first operation was to perform the Chi-Square test, the results of which are illustrated in Table 2. In this case, the asymptotic significance must be analysed. Thus, it is observed that the coefficient's value is greater than 0.05 (the reference threshold), therefore, Hypothesis 1 is not validated. Further analysis shows that the value of the Pearson Chi-Square coefficient, which is 7.367 (column 2), in the context of 3 degrees of freedom (column 3) is lower than the reference value of 7.81. Since the values obtained are outside the reference ranges, but still very close to the limits, we can conclude that the hypothesis analysed is validated to a very small extent.

Table no. 2. Chi-Square test

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	7.367a	3	0.061
Likelihood Ratio	7.243	3	0.065
Linear-by-Linear Association	3.74	1	0.053
N of Valid Cases	234		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 5.95.

Source: Table resulting from the use of SPSS application

Table 3 shows the results of the Pearson (parametric coefficient) and Spearman (non-parametric coefficient) correlation coefficient tests. It should be noted that the relationship between the two coefficients is given by the approximate formula Spearman = Pearson · 10%. The coefficients take values between -1 and 1. The closer to 0 the correlation degree decreases. For a higher accuracy of the final result the conventional interpretation will be used instead of applying Colton's rules. Given that the two coefficients fall in the range [0;0.2] it can be stated that there is a very weak correlation between the two factors analysed, almost non-existent, so the trend of the previous test holds, Hypothesis 1 being validated to a very small extent. The fact that the Spearman index is positive means that there is a direct relationship between the two variables analysed, both increasing simultaneously.

Table no. 3. Pearson R and Spearman correlation coefficient test values

		Value	Asymptotic Standardized Error ^a	Approximate T ^b	Approximate Significance
Interval by Interval	Pearson's R	0.127	0.066	1.945	.053°
Ordinal by Ordinal	Spearman Correlation	0.136	0.066	2.093	.037°
N of Valid Cases		234			

- a. Not assuming the null hypothesis.
- b. Using the asymptotic standard error assuming the null hypothesis.
- c. Based on normal approximation.

Source: Table resulting from the use of SPSS application

Regression analysis will follow. The aim is to determine the equation expressing the dependence between the two variables included in the analysed hypothesis. In general, the linear regression equation of the form $y = a \cdot x + bis$ used, where y represents the dependent variable and x expresses the value of the independent variable. For a high accuracy of the result, the regression equation that best expresses the relationship between the variables under analysis should be chosen. The parameters 'a' (slope) and 'b' (intercept) are determined by the least squares' method.

In Table 4 the value of the correlation coefficient - R and the coefficient of determination - R2 are determined. The low value of the correlation coefficient R of 0.127 is observed, which means that the hypothesis is validated to a very small extent, the correlation being very weak according to the interpretation criteria. The R^2 value shows the extent to which the total variation of the dependent variable (Regulation of profession) can be defined by the predictor (Respondent's profile). It can be seen that the weight is very small - only 1.6%.

Table no. 4. Regression model

				Std. Error of the
Model	R	R Square	Adjusted R Square	Estimate
1	.127ª	0.016	0.012	0.897

a. Predictors: (Constant), Respondent's profile

Source: Table resulting from the use of SPSS application

As to the running of the ANOVA test, the results of which are detailed in Table 5, the value of asymptotic significance is of interest. It can be seen that the value is 0.053, slightly above the significance threshold of 0.05. Therefore, it can be stated that the regression model to be constructed predicts, but not statistically significant, the dependent variable.

Table no. 5. ANOVA^a test correlated with the regression model

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.044	1	3.044	3.784	.053b
	Residual	186.58	232	0.804		
	Total	189.624	233			

- a. Dependent Variable: Regulation of coach or mentor profession influences their performance
- b. Predictors: (Constant), Respondent's profile

Source: Table resulting from the use of SPSS application

Table 6 helps to establish the regression model, as the data contained therein are defining in the construction of the regression equation, but also provides clues on the validation of the relationship between the predictor and the dependent variable. It is noted that the value of the asymptotic significance of the constant is 0, so the regression equation predicts the dependence between the two variables.

Table no. 6. Coefficients associated wi	th the regression model for Hypothesis 1
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Unstandardized Coefficients		Standardized Coefficients				
Mo	del	В	Std. Error	Beta	t	Sig.
1	(Constant)	3.54	0.176		20.062	0
	Respondent's					
	profile	0.236	0.121	0.127	1.945	0.053

a. Dependent Variable: Regulation of coach or mentor profession influences their performance

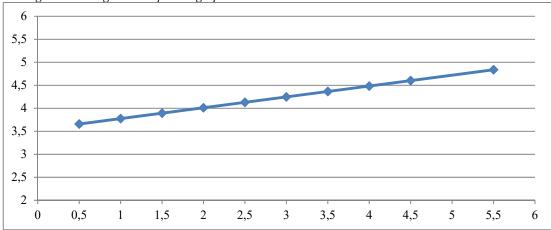
Source: Table resulting from the use of SPSS application

The regression equation for Hypothesis 1 has the form below, and the graph generated by it has the form in Figure 2:

$$RPC = 3.54 + 0.236 \cdot PR$$

Where: RPC = Regulation of the coach or mentor profession; PR = Respondent's profile

Figure no 2. Regression equation graph



Source: Figure made by the author

5. Conclusions

As can be seen, Hypothesis 1 is validated to a very small extent. As a substantiation, it should be noted that the Chi-Square test results are outside the permissible limits, but not by much. Once we go further with the testing we notice a recovery of the situation, so it can be considered that the decision made in the case of this hypothesis is justified.

6. References

- Angajez 45+., https://www.angajez45plus.com/ [Accessed 28 April 2021].
- Ansari, S., 2014. Big data Analytics. Introduction to Big Data Analytics: A Webinar. [online]
 Available at: https://www.youtube.com/watch?v=3SK9iJNYehg&t=8s [Accessed 12 August 2017].
- Banca Transivania., https://www.bancatransilvania.ro/ [Accessed 01 May 2021].
- Edenred., https://www.edenred.ro [Accessed 01 May 2021].
- Games for Business., https://gamesforbusiness.com [Accessed 02 mai 2021].
- Nicuţ, M., 2021. [online] Available at: https://www.economica.net/nuclearelectrica-incheie-parteneriate-cu-licee-si-universitati-pentru-angajarea-tinerilor 499910.html> [Accessed 01 May 2021].
- Pop, M. D., 2011. Cercetări de Marketing Curs universitar. [Marketing Research University course] Cluj-Napoca.

- Romanian Software., https://romaniansoftware.ro/ [Accessed 04 May 2021].
- Total Soft., https://www.totalsoft.ro/ [Accessed la 04 May 2021].
- Tudorică, I., 2021. [online] Available at: https://www.economica.net/robot-arya-hr_193587.html [Accessed la 01 May 2021].
- Uniqa., https://www.uniqa.ro/ [Accessed 01 May 2021].

Strategy: An Overview

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Abstract

As a consequence of a significant increased number of companies, humans are witnessing a war where the main characters are represented by organizations. The relevance of the strategy concept in this competitive business environment can be narrowed down to actions taken by firms in order to survive and grow. Strategy may be perceived a company's move designed to achieve objectives. The aim of this study is to clarify which are the questions that a definition of strategy should answer to in order to facilitate the understanding of the notion, starting for presenting several explanations of the concept provided by pioneers of strategic management. The methodology followed a quantitative approach; therefore it assumed the gathering and analysis of available data. The results present in a briefly manner what strategy and how it may be defined.

Key words: strategy, strategy definition, strategic management, company

J.E.L. classification: L10, L29, M19

1. Introduction

As a practice identified in several studies, a discussion regarding the strategy concept may be initiated by referencing to the famous boo written by Sun Tzu. This ancient Chinese military and strategist has become a source of inspiration for the current environmental business. He revealed an important part of a strategy, namely actions based on anticipated knowledge. From his perspective, the strategy concept refers to the significant effort of organization to survive, expand and defeat competitors (Angwin *et al*, 2017, p.xv). Moreover, the term itself has its origins in the military framework (Toma *et al*, 2015a). The term strategy derives from the Greek word "strategos" which is referring to military officers, later alluding to the arrangement that commanders took on in their order of troops (Savolainen, 2016, p.1156).

Nowadays, the concept has been mostly analyzed from a business perspective (Toma *et al*, 2015b). Due to the fact that the number of companies has increased significantly in the past decades, humans are witnessing a war where the main characters are represented by organizations. The relevance of the strategy concept in the actual business environment cannot be narrowed down to actions taken by companies in order to survive and grow as today's business organizations have fully understood the need to successfully compete in the age of incessant risk and high uncertainty (Toma, 2013; Toma *et al*, 2013a; Toma *et al*, 2015c). Moreover, they have identified and implemented numerous strategic tools and methods in their business processes (Marinescu *et al*, 2008; Toma, 2008; Toma *et al*, 2013b).

This article incorporates the fundamental information required to illustrate the idea of what strategy is and how it may be explained, contributing to a better comprehension of the notion. The introduced definitions are examined considering the distinctive and common characteristics associated with the concept. The dimensions of the conceptual framework of strategy is developed

starting from several definitions provided by the pioneers of strategic management and comparing them with some other relative new explanations of the term. The aim of this study is to clarify which are the questions that a definition of strategy should answer to in order to facilitate the understanding of the notion.

2. Literature review

Even though the term has been used since 1954 in the domain of business management, a globally accepted definition has not been provided so for (Bolisani *et al*, 2017). In 2008 were identified more than 91 explanations utilized by academics to describe the term strategy (Ronda *et al*, 2011). Initially, the role of the concept in the business environment has been introduced by Chandler who stated that the term can be associated with an enterprise's objectives, plan designed to achieve these goals and the mean used in this regards (Chandler, 1962, p.159). Subsequently, Kenneth added that the concept can be viewed as the result of decisions taken over time. (Andrews, 1987, p.13). These past decisions represent important lessons for companies and, therefore, considering the consequences of bad or good actions taken, the future directions can be shaped. Consequently, Mintzberg sustained that the strategy represents "the plan of future and the summary of past models" (Xiu-bao Yu, 2021, p.16). Furthermore, Ansoff defined strategy as the results of market trends and opportunies, exploited by organization in order to increase market share (Bracker, 1980, p.220). Moreover, Porter associated the term with the competitive advantage, value and uniqueness constitutes the essence of the term (Porter, 1996, p.64).

Since these pioneers of strategic management have sustained the relevance of strategy in the business environment, a variety of definitions has raised creating confusion among academics and practitioners. Some explanations of the concept are based on a narrow approach, while others focus on a more broad perspective. For instance, strategy is can be correlated with the term of challenges (Rumelt, 2011, p.6). Then again, "strategy, rendered as a cohesive core of guiding decisions, is an entity's evolving theory of winning high-stake challenges through power creating use of resources and opportunities in uncertain environments" (Khalifa, 2020, p.136). Several definitions are framed by investigating past activities and some by investigating choices to shape what is to come. Therefore, strategy may represent a way of determinating the future of the organization by achieving objectives based on a proper management of available and attract resources (Barad, 2018, p.3). Thus, considering the individual or collective perspective, strategy may be perceived as an initiative of the top management team to increase the performance of an organization (Hill et al, 2016, p.4), a collective effort of the individuals wotking within a company, translated into decisions and plan of actions (Grant, 2016, p.4), the firm's capability to surpass competitors, grow and survive (Khalifa, 2020, p.134) or it might be defined as employees' and employers' effort put into overcoming challenges (MacIntosh et al, 2014, p.3). Concentrating on scope, strategy may reveal the attemption of firm in winning (Eisenhardt et al, 2017, p.246).

3. Research methodology

The current study addresses a quantitative examination including the colection and investigation of secondary data, respectively scientific articles and books. Thus, the first step conducted was to establish the research objectives, namely developing an understanding of what strategy is and how it may be explained, contributing to a better comprehension of the notion. The second step followed in this examination was to consult scientific articles in order to find the relevant ones and develop an understanding of strategy.

The dimensions of the conceptual framework of strategy was developed starting from several definitions provided by the pioneers of strategic management (for instance, Chandler, Kenneth, Ansoff, Mintzberg and Porter) and comparing them with some other relative new explanations of the term (for example, definitions of strategy provided by researchers during 2014 and 2019).

Each of the explanations presented in the paper have been discussed and subjected to content analysis. Furthermore, definitions have been transformed into a list of key words associated with the concept. Afterwards, these key words were grouped into questions. These queries had the role of

clarifying which are the dimensions that a definiton of strategy should address in order to facilitate the understanding of the notion.

4. Results and Discussions

Definitions are design to help individuals understand better concepts or terms with which they may operate on daily basis. Findings sustain the need of clarification in regards with the dimensions of the conceptual framework of the strategy concept. Thus, considering the explanations presented in this paper, a proper definition for the strategy notion should provide an answer for the following questions: is the strategy a collective, individual or an organizational effort?; why do firms need to have a strategy?; which are the factors that create the need of a strategy implementation?; how a company plans to address the current business needs?; which is the scope of the strategy? (Table no.1).

Table no.1: Content analysis of definitions provided for the strategic concept

Tubic no.1. Comeni t		Viaea for the strategic concept	Overtions address: 3		
	Author of the definition provided	Key words identified in the definition provided for	Questions addressed by the definition		
	for the strategy	the strategy concept	provided for the		
	concept	the strategy concept	strategy concept		
	Chandler (1962)	• Enterprise	• Is the strategy a		
Definitions of	Chandier (1902)	Enterprise	collective, individual or		
strategy (pioneers			an organizational effort?		
of strategic		Long-term goals	How a company plans		
management		• Long-term objectives	to address the current		
perspective)		• Actions	business needs?		
perspective		• Resources	busiless fieeds?		
	Ansoff (1965)	Decisions/ Rule	How a company plans		
	Alisoii (1903)	Decisions/ Rule	to address the current		
			business needs?		
		Product/market scope	• Which is the scope of		
		• Growth vector	the strategy?		
			the strategy?		
	Andrews (1965)	Synergy Pattern of decisions	. Havy a sammany along		
	Andrews (1903)	• Pattern of decisions	How a company plans to address the current		
			business needs?		
		Objectives	Which are the factors		
		• Purpose	that create the need of a		
		• Goals	strategy		
		• Policies	implementation?		
		• Future plans			
		Intentions	• Which is the scope of		
Definitions of		(image/reputation)	• which is the scope of the strategy?		
strategy (pioneers	Mintzberg (1987)	• Future plans	How a company plans		
of strategic	Willitzbeig (1987)	Past models	to address the current		
management		• Fast models	business needs?		
perspective)	Porter (1996)	Set of activities	How a company plans		
, ,	Polici (1990)	• Set of activities	to address the current		
			business needs?		
		Uniqueness	• Which is the scope of		
		Mix of value	the strategy?		
	Khalifa (2019)	• Entity	• Is the strategy a		
	ISHailia (2017)	- Linuty	collective, individual or		
			an organizational effort?		
		• Decisions • Resources +	How a company plans		
		power creating	to address the current		
		power creating	business needs?		
		• Win	• Which is the scope of		
		- vv 111	• which is the scope of		

			the strategy?			
		Opportunities	Which are the factors			
		• Uncertain environment	that create the need of a			
		•High stake challenges	strategy			
			implementation?			
	Eisenhardt et al	• Firms	• Is the strategy a			
	(2017)		collective, individual or			
			an organizational effort?			
Relative new		• Win	• Which is the scope of			
definitions for the			the strategy?			
	Hill et al (2016)	Managers	• Is the strategy a			
strategy concept		Company	collective, individual or			
			an organizational effort?			
		• Actions	 How a company plans 			
			to address the current			
			business needs?			
		Performance	• Which is the scope of			
			the strategy?			
	Grant (2016)	Unifying theme	How a company plans			
		Actions	to address the current			
		Decisions	business needs?			
		• Individual	• Is the strategy a			
		Organization	collective, individual or			
			an organizational effort?			
	Wunder (2016)	• Firm	• Is the strategy a			
			collective, individual or			
			an organizational effort?			
		Competition	• Which is the scope of			
			the strategy?			
		Survival	Which are the factors			
Relative new			that create the need of a			
			strategy			
definitions for the			implementation?			
strategy concept	MacIntosh et al	Collective	• Is the strategy a			
	(2014)		collective, individual or			
			an organizational effort?			
		• Challenge	Which are the factors			
			that create the need of a			
			strategy			
		oncentual framework of strategy	implementation?			

Source: Author's proposed analysis for the conceptual framework of strategy based on literature review

From Chandler's point of view the concept of strategy may be correlated with the long-term objectives and the set of actions taken by companies in order to achieve the stated goals. Considering the applicability of the definition in the current business environment, firms operate not only with long-term objectives, but also with medium and short-term objectives. Additionally, goals may be perceived as the base of the strategy due to the fact that the efforts made by firms have the intention to support the achievement of them.

Andrew's explanation of the strategy notion is similar with Chandler's. Both are referring to objectives as an essential component of the conceptual framework of the term. Thus, the authors considered that goals derive from strategy and companies are responsible with designing the strategy. On the other hand, Andrew describes actions as plans and policies meant to shape an organization's success. Thus, an important characteristic of the strategy concept has been revealed in this definition, respectively the future perspective. Strategies are design to guide companies in their process of achieving results. Both Chandler's and Andrew's explanations establish the essence of the strategy concept, namely the development of a plan of actions projected with the intention of sustaining

objectives and the level of action, respectively the determination of who should formulate and implement the strategy (enterprises).

On the other hand, Mintzberg summarizes the term of strategy as a combination of past experiences and future models. A business model describes how a firm creates, provides, and captures value. Considering the explanation provided by Mintzberg, strategies may be perceived as proposed solutions based on learnings, for current and future issues of a firm. The researcher captures through the definition provided the purpose of strategy, respectively the design of value oriented solutions.

Another revolutionary approach which increased the importance of strategy in the business world was revealed by Ansoff through the association created between the concept and the opportunity of growth through markets and products. In his provided definition regarding the strategy, Ansoff, presented the term as a determining factor for creating synergy. Therefore, through the use of strategies firms may be able to associate different elements and make them work together in orders to achieve stated goals.

Porter's definition captures the uniqueness and flexibility of the term. Strategies are usually used as tools that may help the company differentiate itself in the market. Therefore, these may address certain needs and depend on different factors. Considering the nature of the factor (internal or external for the firm), strategies are formulated and adopted. Each organization has to find a proper solution for the issues, opportunities or challenges it may face. Uniqueness relays in creating and choosing the model that suits best the firm's interest.

Moreover, findings show that the conceptual framework of strategy nowadays is usually built around an idea presented by well-known authors in the field of strategic management. Considering this perspective two problems have been identified when researchers try to define the strategy concept. Firstly, most of the relative new definitions sustain the same idea and associate the strategy concept with others presented already by the pioneers of strategic management. Few of them try to come up also with something new, adapted to the current business environment. Therefore, an important problem remains the fact that authors use synonyms (for instances, some utilize the term of resources, while others are referring to resources as available means), but, practically, they express the same thing using other words. Thus, a strategy may be perceived as a decision/a plan of actions/a set of actions/a model that reveals how companies manage to exploit opportunities thought a collective or an individual effort, use resources, achieve objectives and survive. Secondly, some researchers in their attempt to explain the concept become subjective and choose to extend the dimensions of strategy (or associate) with elements that are not necessarily proven to be connected with the term itself. This result of the study is in agreement with other existing papers, for exemple Yu Xiu-Bao (2021) and Khalifa (2019).

5. Conclusions

Strategy represents one of the most important drivers for any successful company all over the world. The concept is difficult to define in an academic manner due to its complexity. Strategy can be found not only in the business environment, but also in the daily life of individuals. Whenever someone has set an objective for himself, the strategy process begins, a plan has been made and resources (existing or acquired) are used in this scope. Most of the times, this plan needs to be adjust or changed based on unexpected or initially not considered factors that might affect our goals achievement focus. It may be perceived as a constant effort to adapt to life or business changes in order to survive. Therefore, strategy may be considered a multifaceted concept.

As shown in this paper, strategy has an impressive evolution over time especially in the business environment. The pioneers of strategic management have an important contribution in capturing this concept's characteristics and utility in the business world even nowadays. They represent a source of inspiration for currently researchers. The later most often try to apply the theory or explain it based on the new reality of the business environment in their own words. Not having a common definition for the concept of strategy may create confusion among individuals. The outcome of this study concurred with other theoretical approach on defining the strategy concept such as Bolisani *et al*, 2017. Thus, this paper presented a proposal of the dimensions that a definition of the strategy concept

should address. This proposal scope is to create a common ground for the definition process of the notion, namely which questions should an explanation of the strategy term should respond to in order to facilitate its comprehension by individuals.

6. References

- Andrews, K.R., 1987. The Concept of Corporate Strategy. Illinois: Irwin.
- Angwin, D. and Cummings, S., 2017. The Strategy Pathfinder: Core Concepts and Live Cases. 3rd ed. Chichester: John Wiley & Sons Ltd.
- Barad, M., 2018. Strategies and Techniques for Quality and Flexibility. New York: Springer.
- Bolisani, E. and Bratianu, C., 2017. Knowledge strategy planning: an integrated approach to manage uncertainty, turbulence, and dynamics. *Journal of Knowledge Management*, 21(2), pp.233-253.
- Bracker, J., 1980. The Historical Development of the Strategic Management Concept. The Academy of Management Review Journal, 5(2), pp.219-224.
- Chandler, A. D., 1962. Strategy and Structure: Chapters in the History of the Industrial Enterprise. The American Historical Review Journal, 68(1), pp.158–160.
- Eisenhardt, K. and Bingham, C., 2017. Superior strategy in entrepreneurial settings: thinking, doing, and the logic of opportunity". *Strategy Science Journal*, 2(4), pp. 246-257..
- Grant, R., 2016. Contemporary Strategy Analysis: Text and Cases. Chichester: John Wiley and Sons Ltd.
- Hill, C. W., Jones, G. and Schilling, M., 2016. Strategic Management: Theory: An Integrated Approach. Boston: Cengage Learning.
- Khalifa, A. S., 2020. Strategy: restoring the lost meaning. *Journal of Strategy and Management*, 13(1), pp. 128-143.
- MacIntosh, R. and Maclean, D., 2014. Strategic Management: Strategists at Work. London: Red Globe Press
- Marinescu, P. and Toma, S.-G., 2008. *Implementing Lean Management in the Romanian Industry*. In: T. Koch, ed., 2008. *Lean Business Systems and Beyond*. New York: Springer, New York. pp.269-276.
- Porter, M. E., 1996. What is strategy?. *Harvard Business Review*, 74(6), pp. 61–78.
- Ronda, P. G. A. and Guerras, M. L. A., 2011. Dynamics of the evolution of strategy concept 1962–2008: A co-word analysis. Strategic Management Journal, 33(2), pp.162–188.
- Rumelt, R. P., 2011. *Good Strategy/Bad Strategy: the Difference and Why it Matters*. New York: Crown Business.
- Savolainen, R., 2016. Information seeking and searching strategies as plans and patterns of action: A conceptual analysis. *Journal of Documentation*, 72(6), pp.1154-1180.
- Toma, S.-G., 2008. What is Six Sigma? *Manager*, 8, pp.152-155, [online]. Available at: https://www.ceeol.com/search/viewpdf?id=547433 [Accessed 2 November 2021].
- Toma, S.-G., 2013. Economia Întreprinderii. București: Editura Universității din București.
- Toma, S.-G. and Marinescu, P., 2013a. Global strategy: the case of Nissan Motor Company. *Procedia Economics and Finance*, 6, pp.418-423, [online]. Available at: https://www.sciencedirect.com/science/article/pii/S2212567113001573 [Accessed 2 November 2021].
- Toma, S.-G., Bratu, A. and Burcea, M., 2013b. When business strategy meets creativity. *Network Intelligence Studies*, 2, pp.148-153, [online]. Available at: https://seaopenresearch.eu/Journals/articles/NIS 2 17.pdf> [Accessed 2 November 2021].
- Toma, S.-G. and Grădinaru, C., 2015a. From military strategy to business strategy. *Strategii Manageriale*, 31(1), pp.227-233, [online]. Available at: < http://www.strategiimanageriale.ro/papers/160132.pdf> [Accessed 1 November 2021].
- Toma, S.-G., Marinescu, P. and Grădinaru, C., 2015b. Strategic planning and strategic thinking. *Revista Economică*, 68(5), pp.168-175, [online]. Available at: http://economice.ulbsibiu.ro/revista.economica/archive/68515toma&marinescu&gradinaru.pdf [Accessed 1 November 2021].
- Toma, S.-G. and Marinescu, P., 2015c. Strategy and change. *Manager*, 21(1), pp.145-150, [online]. Available at: http://manager.faa.ro/en/article/Strategy-and-Change~818.html [Accessed 1 November 2021].
- Xiu-bao Yu, 2021. The fundamental elements of strategy: Concepts, Theories and Cases. New York: Springer.

Towards Sustainability in Banking Services Development. Customer Satisfaction with Banking Services – Influences and Perspectives

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Abstract

Sustainable development has become an imperative across businesses and industries and the banking industry makes no exception, especially since it is a very dynamic industry worldwide. However, the sustainable development faces numerous challenges and one of them is represented by the desideratum to achieve high customer satisfaction. Paying attention to customer satisfaction has become an imperative for bank management as a natural consequence of the development of the industry on the one hand, and the evolutions of customer behavior on the other. The present paper aims at assessing the influence of a series of socio-demographic factors on customer satisfaction with banking services in Romania, using an artificial neural network. We chose seven demographic variables (age, education, gender, professional status, marital status, residence, and income). The results revealed the hierarchy of the socio-demographic factors with impact on customer satisfaction with banking services.

Key words: customer satisfaction; banking services; sustainability; Romania; demographic variables **J.E.L. classification:** M31

1. Introduction

Sustainable development has become an imperative across businesses and industries and the banking industry makes no exception, especially since it is a very dynamic industry worldwide. At the same time, the industry has been facing numerous challenges lately, such as the digitalization, increased competition, and instability of money and foreign exchange markets.

Paying attention to customer satisfaction has become an imperative for bank management as a natural consequence of the development of the industry on the one hand, and the evolutions of customer behavior on the other.

The paper aims at evaluating the influence of an array of socio-demographic variables on customer satisfaction with banking services, using an artificial neural network. The article is divided as follows: introduction, a conceptual approach to customer satisfaction with banking services, research methodology, results, and conclusions of the paper.

2. Literature review regarding sustainability and customer satisfaction with banking services

The relation between sustainable development and the banking industry has been approached from two angles. On the one hand there has been explored the role of the banking industry in the sustainable development of the society (Weber, 2014; Jeucken, 2001; Schmidheiny and Zorraquin, 1998, Jeucken, 2004, Nguyen, 2016) while on the other hand, increasing attention has been paid to the sustainable development of the banking industry itself, especially following the 2007 financial crisis.

During the past twenty years, the banking industry has gone through both periods of crisis and of expansion in Romania. The recent crises have diminished the profits of banks, therefore providing a suitable context for the preoccupation towards sustainable development and customer satisfaction. At the same time, customers have changed their behavior being more prone to evaluate several other aspects besides the primary characteristics of the service they are looking for. Therefore, the sustainable development of the banking industry and the banking services tightly depends on customer needs and wants, their perception on the delivered quality, and eventually, on customer satisfaction. Customer satisfaction has therefore become a point of interest for the banking industry, not only a preferred research subject for theoreticians.

The sustainable development of the banking industry focuses on multiple angles and research directions varying from promoting sustainable business models in banking (Yip and Bocken, 2018), approaching social and ethical issues (Goyal and Joshi, 2011; de Clerck, 2009), and banking corporate social responsibility practices (Abiola, 2014; Perez et al., 2013; Weber et al., 2014; Pellicano et al., 2014; Scholtens, 2009, Chaudhury 2012) to green banking (Pinter et al., 2006, Meena, 2013; Biswas, 2011, Bihari, 2011, Kunhibava et al., 2019), social banking (Weber and Remer, 2011, Krause, 2019) or banking products and service innovation (Jeucken, 2010; Tan et al., 2016, Bouma et al., 2017).

It is obvious that the technological development have led to the creation of innovative and sustainable banking services such as e-banking or mobile banking services, as discussed in several papers (Vijayaragavan, 2014, Sakalauskas et al., 2009, Ramnaraina and Pillay, 2015, Weber, 2005). The bottom line is, however, that the sustainable development of banking services can only be achieved through customers. Therefore, it all comes down to the attention paid to customers and their needs (Raut et al., 2017), eventually translated into concepts such as customer satisfaction (Rebai et al., 2016; Tornjanski et al., 2017) or customer loyalty (Ibe-enwo et al., 2019).

Customer satisfaction as a general concept has been vastly debated in the literature and within this body of literature customer satisfaction with financial services, especially banking services received special attention. Research evolved around topics such as identifying types of banking services customers (Beckett et al., 2000) or pointing out satisfaction determinants (Belas and Gabcova 2014, 2016; Keisidou et al., 2013; Mylonakis, 2009; Ozatac et al., 2016, Ilie et al., 2017, Moraru and Duhnea, 2018).

3. Research methodology

The data for the study were obtained from a questionnaire-based descriptive quantitative research conducted in two counties in the South East of Romania, Constanta and Tulcea, in the autumn of 2019. The questionnaire comprised a socio-demographic section (age, level of education, gender, professional status, marital status, residence, and level of revenues/income) and a section aimed at assessing the general level of satisfaction and a series of satisfaction determinants with banking services (on five-point semantic differentials, from 1 – very unsatisfactory to 5 – very satisfactory).

The sample size was determined using the formula in Daniel and Cross (2013). The general population was 873,969 (the adult population, aged above 18 years in the region under survey, according to the official statistics for 2018), the z-score was 1.96, corresponding to a confidence level of 95%, the margin error was 0.03, while the probability to obtain an affirmative answer to the question addressed was 0.5. The resulting sample size was 1,066. 1,098 questionnaires were collected but after eliminating the incomplete ones the analysis was conducted on 1,094 questionnaires.

The socio-demographic data were introduced in an artificial neural network (ANN) in order to determine the hierarchy of the input data influence on customer satisfaction, through ANN training and testing. Therefore, in order to obtain a hierarchy of the socio-demographic factors a feedforward ANN with backpropagation training algorithm was used. Open source Python 3 through the online Colab Notebooks from Google was used (modules Pandas, Numpy, Matplotlib, Seaborn for the graphic representation of the data and modules Pandas, Sklearn, Numpy, and Torch.nn for the construction, training and testing of the ANN.

4. Results

The structure of the sample is presented in table 1.

Table no.1. The structure of the sample

Tuble no.1. The structure of the sample									
Gender	(%)	Education	(%)	Professional Status(%)		Residence (%)		Income-Lei(%)	
F	51.5	Elementary	51.9	Student	14.6	Urban	80.2	<1000	19.6
M	48.5	University	37.3	Employee	64.0	Rural	19.8	1001-1500	15.5
		Post-university	10.8	Entrepreneur	6.4			1501-2000	21.1
		Ť		Family worker	0.1			2001-2500	13.5
				Self-employed	2.0			2501-3000	7.6
				Unemployed	0.5			3001-3500	6.8
				Pensioner	12.4			3501-4000	6.9
								4001-4500	6.6
								>4500	2.4
Marital	(%)	Age	(%)						
Status	` ′		` ′						
Single	28	18- 24	15.5						
Married	58.8	25-34	16.9						
Divorced	9.7	35-44	22.3						
Widower	3.6	45-54	22.4						
		55-64	14.2						
		>65	8.7						

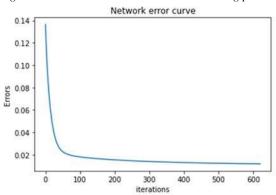
Source: Authors' processing

The ANN had the following features:

- Type: feedforward,
- Hidden neuron activation function: tanh = hyperbolic tangent,
- Optimizer for weights modification: ADAM = ADaptive Moment Estimation,
- Learning rate = constant = 0.00001,
- Batch size = 5,
- One hidden layer with 15 neurons,
- Stop after no iteration change = 200.

Figure 1 presents the evolution of the network error in the training process.

Figure no.1 Network error evolution in training process



Source: Authors' Simulation in Google Colab Notebooks Python

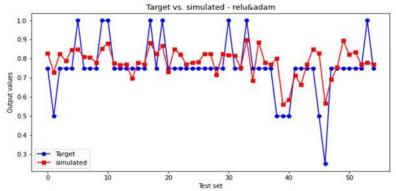
The results of the training were as follows:

- No. of iterations = 621,
- Max. error = 0.219,
- Min. error = -0.328,
- Mean absolute error (on testing) = 0.085,
- Mean squared error (on testing) = 0.128,
- Mean absolute error (on training) = 0.109,

- Mean squared error (on training) = 0.023,
- Random Forest Regressor: model score on training data = 0.740; model score on testing data = 0.579.

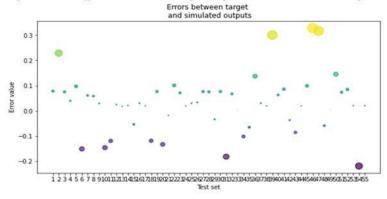
Figure 2 shows the comparison between the target output data and the simulated output data.

Figure no.2 Comparison between target output data and simulated output data. Test set



Source: Authors' Simulation in Google Colab Notebooks Python

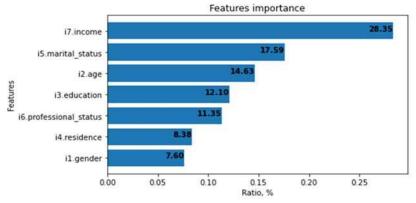
Figure no. 3. Difference between target output data and simulated output data



Source: Authors' Simulation in Google Colab Notebooks Python

The simulation revealed the importance of the analyzed factors as predictors of customer satisfaction (figure no.4).

Figure no. 4 Input data feature importance in training process



Source: Authors' Simulation in Google Colab Notebooks Python

5. Conclusions

The banking services industry is very dynamic, both worldwide and in the Romanian market. The recent developments within the banking industry have brought forth the concern for sustainable development and the related concept of customer satisfaction. Nowadays, the profits of banks depend on the ability to achieve sustainable development goals and the diversification of banking services. Banks therefore changed their approach and directed their efforts towards customer retention and gaining new customers. This present-day concern with customer satisfaction is what prompted this article, which builds upon several other research articles already published by the authors.

The study focuses on the Romanian customers, in one of the most important regions of the country as far as the economic activity is concerned, and investigates several demographic factors in relation to customer satisfaction with banking services. The use of an artificial neural network revealed a hierarchy of socio-demographic factors influencing customer satisfaction with banking services, with the most relevant being the income. There is a vast body of literature dedicated to customer satisfaction determinants in the banking industry; however, considerably fewer studies focus on the socio-demographic factors. In our opinion, the research on customer satisfaction should take into account the socio-demographic characteristics of the customers and develop consumer profiles that may enable the industry to develop tailored services that best fit customer demands.

6. References

- Abiola, I. Corporate Social Responsibility in Nigerian Banking Industry: When Will the Lip-Service Games End?. Journal of Economics and Sustainable Development 2014, 5(22), 21-26.
- Beckett, A.; Hewer, P.; Howcroft, B. An exposition of consumer behavior in the financial services industry. *International Journal of Bank Marketing* 2000, 18/1, 15-26.
- Belás, J.; Gabčová, L. Reasons for Satisfaction and Dissatisfaction of Bank Customers. Study from Slovakia and the Czech Republic. *International Journal of Entrepreneurial Knowledge* 2014, 2 (1), 4-13.
- Belás, J.; Gabčová, L. The relationship among customer satisfaction, loyalty and financial performance of commercial banks. *Ekonomie a Management* 2016, 2(1), 132-144.
- Bihari, S. C. Green banking-towards socially responsible banking in India. *International Journal of Business Insights & Transformation* 2011, 4 (1), 82-87.
- Biswas, N., 2011. Sustainable Green Banking Approach: The Need of the Hour. *Business Spectrum*, I (1), 32-38.
- Bouma, J.J.; Jeucken, M.; Klinkers, L., 2017. Sustainable Banking: The Greening of Finance. NY, US: Routlegde
- Chaudhury, SK.; Das, SK.; Sahoo, PK., 2011. Practices Of Corporate Social Responsibility (CSR) In Banking Sector In India: An Assessment. *Research Journal of Economics, Business, and ICT*, 4, 76-80.
- Constanta County Statistics Directorate, available online: https://www.constanta.insse.ro/
- Daniel, W.W., Cross, C.L., 2013. *Biostatistics, A Foundation for Analysis in the Health Sciences*, Tenth edition, Wiley.
- de Clerck, F., 2009. Ethical Banking. In: Zsolnai L., Boda Z., Fekete L. (eds) *Ethical Prospects*. Dordrecht Springer:
- Goyal, K.A.; Joshi, V., 2011. A study of social and ethical issues in banking industry. *Int. J. Eco. Res.*, 2(5), 49-57.
- Ibe-enwo, G.; Igbudu, N.; Garanti, Z.; Popoola, T., 2019. Assessing the Relevance of Green Banking Practice on Bank Loyalty: The Mediating Effect of Green Image and Bank Trust. Sustainability, 11(17), 1-16.
- Ilie, M., Moraru, A.D., & Ghita-Mitrescu, S., 2017. The Hierarchical Determination of Customer Satisfaction with Banking Services Using an Artificial Neural Network, *Transformations in Business & Economics*, 16(2A), 401-420.
- Jeucken, M., 2004. Sustainability in finance: banking on the planet, Eburon Academic Publishers: Delft, The Netherlands, 2004.
- Jeucken, M., 2011. Sustainable finance and banking: the financial sector and the future of the planet. London, UK: Earthscan Publications.
- Jeucken, M., 2010. Sustainable finance and banking: the financial sector and the future of the planet. Routledge.

- Keisidou, E.; Sarigiannidis, L.; Maditinos, D.I.; Thalassinos, E.I., 2013. Customer satisfaction, loyalty
 and financial performance: A holistic approach of the Greek banking sector. *International Journal of*Bank Marketing, 31(4), 259–288.
- Krause, K.; Battenfeld, D., 2019. Coming Out of the Niche? Social Banking in Germany: An Empirical Analysis of Consumer Characteristics and Market Size. *Journal of Business Ethics*, 155(3), 889-911.
- Kunhibava, S.; Ling, S.T.Y.; Rahman, N.F.A.; Ruslan, M.K., 2019. Green banking frameworks in Asia with an in-depth focus on Bangladesh and China. Asia Pacific Journal of Environmental Law, 22 (1), 93-116.
- Meena, R., 2013. Green Banking: As Initiative for Sustainable Development. Global Journal of Management and Business Studies, 10, 1181-1186.
- Moraru, A.-D., & Duhnea, C., 2018. Assessing Customer Satisfaction with Banking Services Using 3D Mathematical Representations. In B. Krstic (Ed.), Strengthening the Competitiveness of Enterprises and National Economies Thematic collection of papers of international significance (pp.19-37), University of Nis, Serbia.
- Mylonakis, J., 2009. Bank satisfaction factors and loyalty: a survey of the Greek bank customers. *Innovative Marketing*, 5(1), 16-25.
- Nguyen, Q.K., 2016. Blockchain A Financial Technology for Future Sustainable Development. 3rd International Conference on Green Technology and Sustainable Development (GTSD), Kaohsiung, 51-54.
- Ozatac, N., Saner, T., Sen, Z., 2016. Customer Satisfaction in the Banking Sector: The Case of North Cyprus. Procedia Economics and Finance, 870-878.
- Pellicano, M.; Vesci, M.; Troisi, O.; Cosimato, S.; Tuccillo, C., 2014. Stakeholder engagement for sustainable development in banking industry. An Italian case study. 13th EBES Conference – Istanbul.
- Pérez, A.; Martínez, P.; Rodríguez del Bosque, I., 2013. The development of a stakeholder-based scale for measuring corporate social responsibility in the banking industry. *Serv Bus*, 7, 459–481. https://doi.org/10.1007/s11628-012-0171-9
- Pinter, E.; Deutsch, N.; Ottmar, Z., 2006. New Direction Line of Sustainable Development and Marketing in Green Banking, 1-10. Available at SSRN: https://ssrn.com/abstract=2505529 or http://dx.doi.org/10.2139/ssrn.2505529
- Ramnaraina, T. D.; Pillayb, M. T., 2016. Designing Sustainable Banking Services: The Case of Mauritian Banks, *Procedia - Social and Behavioral Sciences*, 224, 483 – 490.
- Raut, R.; Cheikhrouhou, N.; Kharat, M., 2017. Sustainability in The Banking Industry: A Strategic Multi-Criterion Analysis. *Business Strategy and the Environment*, 26(4), 550-568.
- Rebai, S.; Azaiez, M.N.; Saidane, 2016. D. A multi-attribute utility model for generating a sustainability index in the banking sector. *Journal of Cleaner Production*, 113, 835-849.
- Sakalauskas, V.; Kriksciuniene, D.; Kiss, F.; Horváth, A., 2009. Factors for Sustainable Development of E-Banking in Lithuania and Hungary, 5th International Vilnius Conference, EURO Mini Conference "Knowledge-Based Technologies and OR Methodologies for Strategic Decisions of Sustainable Development" (KORSD-2009) ISBN 978-9955-28-482-6.
- Schmidheiny, S.; Zorraquin, F., 1998. Financing change: the financial community, ecco-efficiency, and sustainable development. Cambridge, Masschussets (US): The MIT Press.
- Scholtens, B. Corporate social responsibility in the international banking industry. Journal of Business Ethics 2009, 86(2), 159-175.
- Tan, L. H.; Chew, B.C.; Hamid, S.R., 2016. Service Innovation in Malaysian Banking Industry towards Sustainable Competitive Advantage through Environmentally and Socially Practices. *Procedia - Social* and Behavioral Sciences, 224, 52 – 59.
- Tornjanski, V.; Marinković, S.; Jančić, Z. Towards Sustainability: Effective Operations Strategies, Quality Management and Operational Excellence in Banking. Amfiteatru Economic 2017, 19(44), 79-94
- Vijayaragavan, T., 2014. Modern Banking Services A key Tool for Banking Sector. IRACST International Journal of Commerce, Business and Management, 3(4), 589-594.
- Weber, O., 2005. Sustainability benchmarking of European banks and financial service organizations. *Corporate Social Responsibility and Environmental Management*, 12(2), 73-87.
- Weber, O., 2014. The financial sector's impact on sustainable development. *Journal of Sustainable Finance & Investment*, 4(1), 1-8, DOI: 10.1080/20430795.2014.887345
- Weber, O.; Diaz, M.; Schwegler, R., 2014. Corporate Social Responsibility of the Financial Sector Strengths, Weaknesses and the Impact on Sustainable Development. *Sustainable Development* September/October, 22(5), 321-335.

- Weber, O; Remer, S., 2011. Social banks and the future of sustainable finance. New York (US): Routledge,
- Yip, A. W.H.; Bocken, N.M.P., 2018. Sustainable business model archetypes for the banking industry. *Journal of Cleaner Production*, 10 February, 174, 150-169.

A Methodological Approach for the Journey through Real-Time Marketing: From Customer Journey Analytics to **Personalization Engines**

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Abstract

Many companies rely in practice on personalization engines and value co-creation in order to boost the efficacy of their one-to-one customer relationships. Real-time marketing (RTM) can increase the efficacy of marketing activities by taking advantage of technology, big data analysis, social media and constant connectivity. RTM fosters consumer engagement in value co-creation and in the personalization of products, offers and customer service. This paper suggests a methodology for implementing RTM by considering the main characteristics of customization strategies: novelty, serendipity and diversity. Based on the seven rules for RTM implementation, we propose and discuss the process of incorporating big data and customization strategies into a personalization engine driven by machine learning and big data analytics. We include in the personalization engine value co-creation drivers based on marketing drive value, customer lifetime value and strength and intensity of brand associations. The proposed process-based framework for RTM implementation integrates algorithms related to customer profile to calculate their future purchase probability, thus being a useful managerial tool for segmenting and targeting consumers in real-time. By adapting marketing communication patterns to these permanently 'evolving' segments, value co-creation and consumer satisfaction increase, while the AI algorithms also improve.

Key words: real-time marketing, personalization engines, big data marketing, customization strategiesm value co-creation

J.E.L. classification: M30, M31, C55, C81

1. Introduction

Real-time marketing (RTM) is an emerging, multi-disciplinary approach to relational marketing and services marketing which combines technology and management practice. The relational marketing paradigm focuses on the firm and the customer co-creating value, as defined by the customer and its expectations (Kao et. al., 2016). First introduced by Oliver, Rust and Varki (1998), RTM is conceptualized as a valid approach for continuous customer communication and for developing mass-customized offers that meet consumers' evolving needs. Thus, RTM offerings meet customers' current, individual needs (space) and are also able to adapt to their future needs (time) (Oliver, Rust and Varki, 1998).

The rapid rise of e-commerce has generated endless opportunities to create new value in the online marketplace (Suh et al., 2004). Mobile devices and services are becoming powerful channels for both distribution and marketing communication. This is a big paradigm shift from the classic relationship marketing and holistic marketing approaches to the network approach and big data marketing.

RTM makes personalized targeting possible by taking advantage of technology, social media and constant connectivity to foster organic consumer engagement and interactions towards co-creating personalized products, offers and customer service (Buhalis & Sinarta, 2019). For example, locationbased advertising uses Google location-tracking technology in order to provide users with commercial information and ads which are specific to their current location. This is a simple example of service personification based on consent and preference management.

However, the practical implementation of RTM can be often largely problematic and unfeasible. First of all, customization strategies aimed at providing individually-tailored products fail to be customer-centered in a profitable manner for a business. RTM aims to increase customer participation and involvement in order to also increase their *perceived control* and thus to enhance their user experience and satisfaction (Stevens et al., 2017). By doing so, companies are also forced to focus on long-term one-to-one customer relationships. However, many companies often fail in practice to measure the efficacy of their one-to-one customer relationships and also of customers' satisfaction regarding their perception of control in co-production environments. Therefore, in order to properly implement a holistic marketing orientation, firms should first of all try to understand which components of their value-creation chain and service concept are most important to different subsets of customers (Munteanu et al., 2014).

Secondly, although companies are obviously benefitting from using a personalization engine on their Web site, social media accounts or in their digital products and services, customers are increasingly reluctant to be profiled in such a manner. Basically, customers have little or no control over the information that defines their customer profile, since user profiles are deeply buried in personalization engines. Furthermore, there is often no real incentive for a customer to take part in a personalization engine.

Finally, as RTM is inherently associated with the rise of e-commerce, it is also associated with the rise of a new global market and thus of fierce competition. While firms are competing in delivering targeted, personalized online offers, consumers are faced with advertising fatigue. Thus, consumers are increasingly trying to resist many of the online RTM methods used for targeting them by using ad-blockers, unsubscribing to newsletters and by minimizing any unsolicited communication. Therefore, offering highly relevant offers and content proves crucial first for moving through the advertising clutter and being noticed and then for remaining relevant and engaging, in order to establish a long-term customer relationship.

Considering these issues, we propose a methodological approach for RTM implementation. We focus on co-creating value as a main approach for customer relationship management (CRM), while also proposing measures to incentivize customer participation.

2. Theoretical background

RTM can be regarded as a network structure consisting of multiple interacting actors that perform interdependent actions (Miles, 2018). Each of these actors is supported in practice by core technologies to collaboratively provide mutual offerings. For example, a public forum such as Quora or Reddit developed their own app for mobile users in order to better integrate them into their ecosystem. The purpose of such integration is to facilitate the use of techniques for online marketing. These integration techniques include the use of tools such as database marketing, one-to-one marketing and target marketing (Ha & Park, 2002). Therefore, RTM needs to consider the ever-evolving role of technology in building customer relations.

Traditionally, relationship marketing emphasizes the mutuality of relationships in value co-creation (Anker et al. 2015). However, value co-creation is mainly conceptual and anchored in service marketing rather than in the broad marketing theory and practice. Therefore, it lacks *empirical evidence* in two important directions: 1) the appropriate contexts and conditions for collaborative co-creation; 2) the effects of value co-creation on firms and customers (Alexander et al., 2012).

Studies have suggested that consumers use relationships with companies to satisfy their self-definitional needs (Bhattacharya & Sen, 2003). Whether a customer perceives his relationship with a company or brand as a mutually beneficial relationship or not determines the efficacy of value co-creation. For example, efficacy may be boosted by using on the company website a collaborative filtering module that identifies customers whose interests are similar to those of a given customer and recommends products this given customer previously liked.

In practice, narrow-minded personalization can create such called "filter bubbles" that present themselves as invisible and personal universes of information that might trap users into a relevance paradox (Pariser, 2011). The problem with "filter bubbles" is that they confine customers to isolated information neighborhoods and restrict them from seeing or exploring the vast array of other purchase possibilities (Nguyen et al. 2014).

In order to avoid this problem, personalization techniques should be based on novelty, serendipity and diversity (Matt et al. 2014). *Novelty* is based on bringing forth items, facts, services or information not previously known by the consumer and is important because it drives user engagement. *Serendipity* is based on unexpectedness, surprise and awe and is important because it fosters a positive emotional response. *Diversity* is based on variety and is critical to maintain relevance and to prevent boredom or disengagement. In practice, only a combination of personalization and diversification can improve competitive performance in value co-creation (Ranjan & Read, 2016). As a result, RTM can simultaneously improve the baseline, plain personalization and plain diversification approaches in terms of both efficacy and accuracy.

However, as they focus on the relevance of suggestions for their customer base, most common personalization techniques tend to disproportionally consider and amplify the popularity of available choices and options (Hamedani & Kaedi, 2019). As a result, most common personalization techniques tend to guide our choices towards common and frequent consumption patterns, but those patterns are subject to a concentration bias, especially for already popular choices. For example, if a product has a sufficient number of popular, detailed, positive reviews, these will generate the consumption trends (Su & Niu, 2021; Jimenez & Mendoza, 2013). Consumers will ignore negative reviews for that same popular product or ignore similar products with neutral or less reviews. In a similar fashion, personalization algorithms recommend products based on prior sales and ratings, thus creating a rich-get-richer effect for popular products and negate the growth opportunities for new or unpopular products (Hamedani & Kaedi, 2019). As a consequence, narrow-minded personalization techniques such as online recommendation systems can have detrimental effects, such as arbitrarily deconstructing non-prevailing views. Moreover, they can alienate consumers more highly oriented towards diversity and novelty.

The customer journey is based on consumer brand associations and inferences that are highly dependent on the semantics of the information (Wu et al. 2019) and anchored in the context of location-based information (Lemon & Verhoef, 2016). As a result, this journey is not necessarily related to commonalities in exposure, experiences, and selected choices among the different users. With a variety of systems using personalization engines, there is a lot of data being collected about users as they interact with social media, the web and tracking software. Each personalization engine independently builds up user profiles and can use this information to personalize the system's content and service offering, but they cannot accurately map the customer journey (Wu et al. 2019).

Therefore, we postulate the following seven customer-centered rules for RTM implementation:

- 1. Consumers find meaning in a customer relationship that creates a positive sense of self;
- 2. A meaningful customer relationship determines the customer purchase pattern;
- 3. A purchase pattern that is repeated and validated forms the *customer journey* and provides customer insight;
- 4. Customer insight can be generalized by discovering associations between customers that share the same journey, thus forming a consumer ecosystem;
- 5. The consumer ecosystem is based on their primary need, which is best satisfied by a basic service, and on further personalized needs, which require personalized services;
- 6. As the precision of satisfying personalized needs increases by using a combination of individual and multi-lateral services, the efficacy of the personalization engine also increases;
- 7. Personalization engines must avoid the formation of "filter bubbles" and map the consumer journey accurately.

3. Research methodology

This paper suggests a methodology for implementing RTM that can use customer analytics for a personalization engine. The role of the engine is to apply a marketing action to any potential customer by extrapolating from previous purchasing patterns and purchasing probability for a given product. As real-time online marketing requires simplicity, speed, and accuracy, a classic relationship marketing customization approach is not adequate, therefore data mining must be combined with a big data structure into a neural network (Cheng et al., 2020). The process-based framework for RTM implementation is depicted in figure 1. The first step involves batch processing, namely simultaneously data mining a number of available cases regarding the customer profile to unveil relevant purchase patterns. The second step involves stream processing, the high-speed analysis of online data resulted from using the mining algorithm defined in the previous step, in order to evaluate purchase probabilities.

1. Batch processing:

purchase patterns

Machine learning & big data analytics

Analytical data store (API provider)

Analytics & reporting (customization provider)

Figure no. 1. The process-based framework for real-time marketing implementation

Source: Authors' own contribution

3.1. Batch processing

The first step of the RTM implementation process is to select the most relevant information from each *category of big data* required for RTM. The big data categories most used in marketing applications include behavioral, attitudinal and transactional metrics. Each category of data is subject to batch processing based on *association rule mining*. Association rule mining identifies correlations between sets of items and thus possible patterns and causal relations (Zhao & Bhowmick, 2003). Because association rule mining usually generates too many redundant rules (Chen et al., 2006), it is somewhat difficult to find important rules that give essential information about customers while also remaining relevant in a marketing context.

Therefore, we recommend the association rule mining should be calibrated in accordance to the customer-centered rules, in order to unveil the commonalities in different types of customer journeys. Additionally, to select the most relevant rules, we advocate for the use of resource-based theory (Kozlenkova et al., 2014) in a big data context for deciding on the volume, variety and velocity of processed data. Specifically:

- The overall *volume* of processed data should be proportional with the *marketing decision value*, thus with the importance of marketing benefits than can be obtained for processing the data.
- The *variety* of data consisting from the number of different data entry points regarding a particular customer -, should be determined by analyzing *customer lifetime value*. Valuable customers in terms of purchased volumes, purchase frequency and brand interactions during their lifetime relation with the brand should be profiled in more depth, to enhance personalization and co-creation value.
- The *velocity* of data defined as the time between two successive actualizations of client data should be determined by analyzing the strength of *brand associations*. Consumers with less strong brand associations may change their preferences and purchase patterns much easier, thus require a more frequent calibration of delivered content to retain and engage them.

Based on these parameters, a purchase pattern should be determined for each possible customer. All determined purchase patterns will be discarded in the absence of associated financial metrics, while only the relevant ones will be integrated into the analytical data store via the API provider.

3.2. Stream processing

The second step is to predict the *purchase probability* for each possible customer. Each purchase probability is subject to stream processing based on decision tree and logistic regression models. In order to accomplish this task, the data set from the mining algorithm used in the first step will be modified, selecting the most relevant data.

A hybrid approach based on artificial intelligence (Chen et al., 2006) must be used to predict the weight of each parameter in the model: marketing drive value (MDV), customer lifetime value (CLV), strength and intensity of brand associations (SBA, IBA).

In the hybrid-based approach, in step 1 we first compute the *accuracy* of Φ as an independent classifier. Φ will always be trained for each of the above model parameters based on regression weights from a multiple regression model including purchase intention as a dependent variable and marketing drive value, customer lifetime value, strength and intensity of brand associations as independent variables.

Secondly, in step 2 we *independently* predict the *purchase probability* for each parameter based on the customer decision tree. Finally, in step 3 we train λ as a dummy variable to avoid misclassification. For each step, a large-scale deep learning algorithm that has already been tested and corrected for web scraping must be used. The resulting function is described in equation 1.

$$Min \sum_{i}^{n} \Phi \lambda \overline{T(i,j) \oplus M(i,j)}$$
 (1)

 Φ = independent classifier;

 $\lambda = \text{dummy variable};$

i = customer i;

n = the maximum number of potential customer for the product j;

i = the given product for which we make the analysis;

T(i,j) = calculates the *purchase pattern* for customer i and product j (presented as a "fail or no fail to purchase" index), by using the batch processing of consumer data (Step 1).

M(i,j) = calculates the *purchase probability* for product j regarding customer i (presented as a probability distribution), by using stream processing (Step 2);

$$M(i,j) = \int_{-\infty}^{\infty} x_i f(x) dx$$
, where:

$$x_i = MDV \circ CLV \circ SBA \circ IBA$$
 and $f(X) = \sum_{i=1}^{n} x_i p_i$

 \bigoplus = exclusive OR function that encapsulates the threshold or critical value for each given parameter and its regression weight as a classifier.

It must be noted that if the critical value for each given parameter is greater than 0.5, the hybrid approach will predict if the customer will buy the product in any given setting. Therefore, detected purchasing patterns are not only used as input data for step II, but also as a marketing customization tool. Afterwards, the prediction model extracts target customers from the pool of potential customers and classifies them throughout the purchasing probability. It is important to find viable target customers because only those customers are susceptible to be influenced by brand positioning and can be directly related to company revenue. If a potential customer is a valid target customer, the target value is 1 for purchasing the product; otherwise, the target value for purchasing the product is 0. All target fields should be binary (0 or 1) in order to obtain a nominal type of data sequence.

The decision tree should use the chi-square method as splitting criterion with at least a 0.2 significance level because in a marketing setting, purchasing a product is built upon customer engagement (Calder et al. 2016). A significance level below 0.2 can indicate insufficient engagement and is rather specific to purchasing non-differentiated products such as vegetables at a grocery store.

There are no specific requirements for building the neural network linked to marketing activities, therefore the standard Multiple-layer perceptron algorithm can be used for building the neural network. It is important for the hybrid model to be the best prediction model possible (this is assured by selecting the model with the minimum possible misclassification rate). In practice, a lift chart can be used to measure the performance of the prediction models. In this context, the lift value from the chart explains the ratio of customers who actually buy in reality the product (within a predetermined time interval such as one month from the prediction) to the total number of purchasing customers (in a month).

Analyzing the lift chart of a mining model can provide further insights into customer segmentation. A *lift chart* illustrates the improvement provided by a mining model when compared against a random guess, measuring this improvement through a *lift* score (Microsoft, 2021). By dividing sections of the lift chart by *sorting target customers in an ascending order of purchase probability*, managers can employ a micro perspective on customer value co-creation. By specifically targeting each customer segment from the lift chart in different periods of time (e.g. via personalized emails or browser ads), purchase probability helps digital marketers to establish a one-to-one marketing action plan that is personalized for each customer and is an automated process. Because the API provider manages product recommendation solely based on real customer behavior, marketers gain full control towards the inducement of product purchases in a real-time manner.

4. Conclusions and managerial implications

Central to RTM logic is the proposition that the customer has the center role in value co-creation. Previous approaches for RTM implementation are based on customer profile and purchasing information. But the limitation of this approach is that the marketing strategy becomes reactive rather than proactive. We provided a practical solution to eliminate these limitations by proposing a methodology for RTM using purchasing patterns through associations rule mining and purchase probability prediction. In a practical setting, incorporating purchasing probability into the process-based framework for RTM can help better targeting customers and provide valuable information for marketing strategy based on offer personalization. Also, the use of purchasing patterns into the personalization framework has macro marketing implications such as increased customer satisfaction, more efficient marketing expenditures and a higher probability for marketing actions to induce purchase. Our proposed RTM framework creates the premises for offering a highly personalized and relevant content to consumers. Thus, their skepticism towards the online use of personal data and annoyance towards commercial messages unsuited for their needs should greatly decrease.

Our methodology has clear advantages for RTM implementation. First, our methodology requires a short processing time to calculate purchasing probability because it is based on machine learning. Therefore, it uses a small amount of data compared to classical customization strategies that usually require customer-based marketing research. Secondly, detected purchasing patterns can be used both as input data, but also as a marketing customization tool. Thirdly, a RTM personalization engine build upon the proposed methodology will amplify the salience of various available choices and options, not only the most popular ones. The salience of these choices will be based on the consumer profile generated through association rule mining, in a consumer ecosystem that is controlled by the company. The association rule mining will be based on our seven customer-centered rules for RTM implementation. As a result, consumers are empowered to bypass "filter bubbles" with each interaction with the services or products of the company.

From a theoretical standpoint, we think that the original contribution of this paper is to suggest a methodology for RTM implementation based on predicting the value of the anonymous customer. Further research should focus on testing this methodology in a real-case scenario. Future case studies should be built for products, services, but also for corporate brands.

From a managerial standpoint, the proposed framework for RTM implementation represents a useful tool for managing the process of value co-creation in a highly competitive business setting, by integrating various diverse customization strategies and relationship marketing methods.

5. References

- Alexander, M., Evanschitzky, H. & Murray, R., 2012. Value co-creation: exploring the effects of collaborating with a proactive generation of customers (PhD Thesis, University of Strathclyde).
- Anderson, S., Pearo, L.K. & Widener, S., 2008. Drivers of service satisfaction: linking customer satisfaction to the service concept and customer characteristics. *Journal of Service Research*, 10(4), 365-81.
- Anker, T.B., Sparks, L., Moutinho, L. & Grönroos, C., 2015. Consumer dominant value creation: A
 theoretical response to the recent call for a consumer dominant logic for marketing. European Journal
 of Marketing, 49(3/4), 532-560.
- Bhattacharya, C.B. & Sen, S., 2003. Consumer–company identification: A framework for understanding consumers' relationships with companies. *Journal of Marketing*, 67(2), 76-88.
- Buhalis, D. & Sinarta, Y., 2019. Real-time co-creation and nowness service: lessons from tourism and hospitality. *Journal of Travel & Tourism Marketing*, 36(5), 563-582.
- Calder, B.J., Malthouse, E.C. & Maslowska, E., 2016. Brand marketing, big data and social innovation as future research directions for engagement. *Journal of Marketing Management*, 32(5-6), 579-585.
- Chen, G., Liu, H., Yu, L., Wei, Q., & Zhang, X., 2006. A new approach to classification based on association rule mining. *Decision Support Systems*, 42(2), 674-689.
- Cheng, J.H., Chen, H.P. & Lin, Y.M., 2020. A hybrid forecast marketing timing model based on probabilistic neural network, rough set and C4.5. Expert Systems with Applications, 37(3), 1814-1820.
- Hamedani, E.M., & Kaedi, M., 2019. Recommending the long tail items through personalized diversification. *Knowledge-Based Systems*, 164, 348-357.
- Kao, T.Y., Yang, M.H., Wu, J.T.B. & Cheng, Y.Y., 2016. Co-creating value with consumers through social media. *Journal of Services Marketing*, 30(2), 141-151.
- Lemon, K.N., & Verhoef, P.C., 2016. Understanding customer experience throughout the customer journey. *Journal of Marketing*, 80(6), 69-96.
- Jiménez, F.R. & Mendoza, N.A., 2013. Too popular to ignore: The influence of online reviews on purchase intentions of search and experience products. *Journal of Interactive Marketing*, 27(3), 226-235.
- Kozlenkova, I. V., Samaha, S. A., & Palmatier, R. W., 2014. Resource-based theory in marketing. Journal of the Academy of Marketing Science, 42(1), 1-21.
- Munteanu, M.C., Pagalea, A. & Cristea, A., 2014. A holistic approach on internal marketing implementation. *Business Management Dynamics*, 3(11), 9-17.
- Matt, C., Benlian, A., Hess, T. & Weiß, C., 2014. Escaping from the filter bubble? The effects of novelty
 and serendipity on users' evaluations of online recommendations, 35th International Conference on
 Information Systems, Auckland.
- Microsoft, 2021. *Lift chart (analysis services data mining)*. Available at: https://docs.microsoft.com/en-us/analysis-services/data-mining/lift-chart-analysis-services-data-mining?view=asallproducts-allversions.
- Miles, C., 2018. *Marketing, rhetoric, and control: The magical foundations of marketing theory*. New York: Routledge.
- Nguyen, T.T., Hui, P.M., Harper, F.M., Terveen, L., & Konstan, J.A., 2014. Exploring the filter bubble: the effect of using recommender systems on content diversity. In *Proceedings of the 23rd international conference on World Wide Web* (pp. 677-686).
- Oliver, R.W., Rust, R.T. & Varki, S., 1998. Real-time marketing. *Marketing Management*, 7(4), 28-37.
- Pariser, E., 2011. The filter bubble: How the new personalized web is changing what we read and how we think. New York: Penguin.
- Ranjan, K R., & Read, S., 2016. Value co-creation: concept and measurement. *Journal of the Academy of Marketing Science*, 44(3), 290-315.
- Stevens, J., Esmark, C.L., Noble, S.M., & Lee, N.Y., 2017. Co-producing with consumers: how varying levels of control and co-production impact affect. *Marketing Letters*, 28(2), 171-187.
- Suh, E., Lim, S., Hwang, H., & Kim, S., 2004. A prediction model for the purchase probability of anonymous customers to support real-time web marketing: a case study. *Expert Systems with Applications*, 27(2), 245-255.
- Su, X., & Niu, M., 2021. Too obvious to ignore: Influence of popular reviews on consumer online purchasing decisions. *Human Systems Management*, 40(2), 211-222.
- Wu, Q., Hsu, W. L., Xu, T., Liu, Z., Ma, G., Jacobson, G., & Zhao, S., 2019. Speaking with Actions-Learning Customer Journey Behavior. In 2019 IEEE 13th International Conference on Semantic Computing (ICSC) (pp. 279-286). IEEE.
- Zhao, Q., & Bhowmick, S.S., 2003. Association rule mining: A survey. *Nanyang Technological University, Singapore*, Technical Report 2003116.

The Evolution of Real Estate Markets in Romania

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Abstract

The evolution and development of the notion of real estate, respectively real estate, makes us define them as a set of tangible elements that include the land; all the elements that are its natural components - springs, trees, minerals, etc.; as well as all the elements that are added by people - buildings and all facilities.

The paper, through the approached topic, aims to present the trend of real estate investments, both upstream and downstream, this includes both suppliers / developers and customers.

Key words: real estate, ground, evolution

J.E.L. classification: M31

1. Introduction

In addition, all permanent attachments of buildings and facilities, such as sewage, water, electrical and heating installations, are considered to be part of real estate; as well as their built-in components, such as electrical panels, water and gas meters, elevators. In summary, real estate includes all the elements located in the basement and above its ground.

2. Theoretical background

From a theoretical point of view, according to specialists, the real estate market is a support in the evolution of other markets, but it also develops or stagnates depending on the evolution of other markets. We are sometimes talking about an overlap or an interpenetration of the existing markets. Theoretical aspects of the literature were the basis of the research

3. Research methodology

The limitation to working with levels models in valuation analyses, according to the study conducted from external sources.

The wide spread of these actions and the strong influence of the real estate market on the economy as a whole and in particular, requires a minimum knowledge of the real estate economy, both at the level of individual as a citizen and at the level of entrepreneurship to achieve a successful business. Complexity of processes, principles and mechanisms - purchase and sale of real estate, insurance and property disputes, taxation, leasing of property, incorporation of real estate and redistribution of real estate shares, implementation of investment projects and guaranteed loans, etc. - led to the development of a field in economics, real estate economics and implicitly, as we showed in the first chapter and marketing of real estate services.

Figure no. 1. Investment transaction market



Source: Author's own contribution

The real estate market represents the totality of transactions that involve property or use rights over lands and buildings (Romanian Competition Council, 2009, Investigation Report for the analysis of the real estate market and services related to real estate transactions; Bucharest)

By real estate transaction we mean the transfer of a right, usually of ownership or use, from a third party to another, a transfer that can be permanent or temporary, accompanied by a compensation, usually money. The value of the transaction is dictated, as in any market by the interaction between supply and demand, but we will notice that the real estate market has some special features compared to other markets, features that we are required to mention from the beginning, to better understand well the complex and slightly different mechanism found here.

First of all, we emphasize the specific character of the real estate, namely it is "fixed", the transfer of the use or ownership of the good does not imply its actual transport. On the other hand, each traded real estate differs from the others by: construction, positioning, composition, related infrastructure - access to means of transport, schools, churches, etc. The real estate market is a complex of well-cohesive and sometimes intertwined structures. I have divided this market into segments - the residential space market, the office space market, the commercial space market, the land market, the industrial parks market, the investment transactions market - which I will analyze separately, thus enhancing the value of each. In Romania, the real estate market had a rather strange evolution after the years of communism. Remaining with an important dowry of constructions in the '90s, the real estate market was manifested only by the ownership of citizens with houses especially apartments, small exchanges between them as well as by transactions with large industrial constructions by their privatization, all taking place almost uncontrollably through various kinds of speculation. The situation created being preceding the deindustrialization of the country and its transformation into a consumer market. At the beginning of the 2000s, the real estate market began to coagulate, with the sale of old apartments, the late start of new constructions and the reallocation of large industrial constructions to the economic system in various aspects - modernization of spaces, demolition and putting land in the real estate circuit, etc. the first industrial parks appear. It reaches in 2007, the most important evolution of the real estate market in Romania, supported by an increase in new constructions in all areas: residential, offices, buildings for production, shopping complexes with impressive areas, industrial parks. The economic crisis is stopping this momentum and has the consequence of stopping many projects and a free fall of the market. Slowly after 2012 the market begins to recover, supported by the economic recovery, state-supported programs - such as Prima Casa, the attraction of European funds - helps to develop tourism through the construction of new accommodation and leisure, the development of production units through new constructions and the modernization of existing ones, to the development of agriculture in particular by building new animal husbandry bases and subsequently processing agricultural products.

4. Findings

After 2015, the growth of the real estate market becomes more and more sustained, reaching a well-defined market with new rules of the game. Next, I will present each of the segments of the real estate market separately through an evolutionary analysis and a presentation of the situation that has been reached at the moment. To better understand this I will start by dealing with the construction situation, the basic product present on the real estate market.

The situation and the role of their constructions in the real estate market gear is observed that the way of realizing the constructions directly influences the real estate market both from the point of view of its dynamics and from the point of view of the prices practiced on it. For starters, I will go on a theoretical analysis of what construction economics means, so trying a definition we could say that "The construction market is the space where demand and supply are manifested in relation to the traded object specific to this market and can take the form of the following types of works: general and special constructions for buildings and civil engineering works. It must be borne in mind that the concept of *construction* encompasses both buildings and civil engineering works.

The construction sector operates in several main market segments, such as: civil engineering, rehabilitation and maintenance of buildings and works, residential buildings, non-residential buildings, specialized services, etc.

As in any field and on the construction market, the trading price of specific products and services is established when the demand meets the supply, however, having significant influences due to other factors such as: the evolution of construction materials prices; the evolution of the price of land and constructions on the real estate market; the evolution of the salary on the labor market and especially on the field; policies specifically required by law; financial-banking circumstances; economic prospects at national and international level, etc.

The construction sector has as main beneficiary the real estate market, which by definition carries out transactions with property or use rights for land and buildings. However, there are major differences between the two markets, one of the most relevant of which is that the construction market creates added value, while the real estate market does not achieve this "added value", transactions on this market having a speculative character in to a large extent and involves seriously limited resources. At the same time, these two markets have major interdependencies, clearly dictated by construction - one realizes them, the other trades them. These interdependencies are manifested in prices; at the level of the type and type of the traded object and of course at the level of the respective demand and supply that manifests itself in each of the two markets. That is, part of the demand on the construction market is found in part of the supply on the real estate market - because we can divide the beneficiaries of construction works into two categories: on the one hand those who will use for personal use the goods obtained from construction works, purchased constructions and on the other hand those who will become bidders on the real estate market, hoping to obtain profits by selling or renting the constructions made / rehabilitated and purchased on the construction market. We can conclude that in the conditions of the manifestation of a growing demand on the construction market we will observe an ascending offer on the real estate market. So, there is a clear relationship between the demand in the real estate market and the supply in the construction market and between the demand in the construction market and the supply in the real estate market and even between the price evolutions in the two markets.

The evolution of the demand on the construction market, generated by the real estate market is due to several factors: the growing need for real estate with the final destination of renting to third parties (especially office buildings and commercial spaces concentrated in shopping complexes); in the case of public interest objectives, it is manifested by the development of new investments that correspond to the current requirements; Another feature of the demand generated by the real estate market is the development of products with a high degree of complexity, etc.

The interdependence between the two markets can also be observed on the residential segment of the real estate market. With the economic crisis, the portfolio investors disappeared, leaving changes due to the real estate crisis having a direct influence on the construction market. With the onset of the crisis, portfolio investors in the residential market have disappeared and with them a

large part of the speculative demand generated by them, leaving room for individuals who want increased comfort by asking for suitable housing. This type of demand has a direct influence on the construction market, being during the crisis the only engine of growth in the construction market despite the fact that they have influenced, in a negative way, the profit margins of developers and builders, but ensuring to them the exit gate. Programs, initiated by the state through which it guarantees a part of the mortgage loan, such as Prima Casa, have maintained this trend despite their limitations and shortcomings.

The construction field represents one of the sectors of the Romanian economy taken into account in the calculation of the Gross Domestic Product (GDP), being among the first 5 sectors as an importance of the share. Over the years, the contribution of the construction sector to GDP has fluctuated more or less dramatically, so if after the revolution it had a relatively low share in 2008, as a result of a dramatic increase in value added created by the construction sector, the share in GDP reaches a high level of about 12.7%, a level that unfortunately decreases gradually reaching in 2018 a level of only 6% (Figure no. 2). This gap does not mean that the construction sector has gone worse (after a decline dictated by the economic crisis, until 2012, it recovers spectacularly reaching increasing sales by 2018) but the influence of other sectors: continuous increase in consumption; the emergence of new sectors with major incidence - IT field, etc.

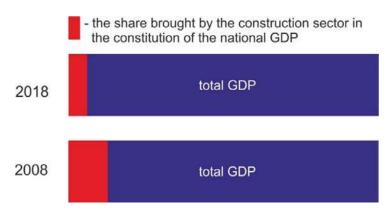


Figure no. 2. Share of the construction sector in GDP, at the level of two reference years

Source: National Institute of Statistics

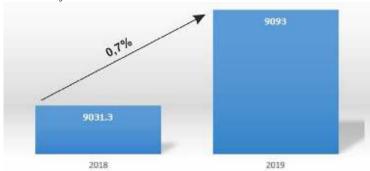
The situation presented above refers strictly to the contribution of the construction sector, excluding the real estate market. Analysing the later we will see that it had a different behaviour, namely if in 2008 it had a share in GDP of about 7.4%, it grows by about one percent in 2018, reaching a share of 8.3% of GDP.

In recent years, as we have shown in the analysis of the real estate market, the construction market has had a positive evolution, supported by both residential and non-residential constructions. The interest of foreign and domestic investors, the requirements for buildings with high comfort, lending conditions, changing the mentality of beneficiaries, state policies are the main factors influencing both markets, otherwise very well twinned. Presenting in these lines the interdependencies between the construction market and the real estate market, the way of elaborating the object of most real estate transactions as well as the relations between supply and demand and how they manifest in the two markets, allows us much easier to analyse and present in continue to segment the real estate market. It is known that housing is one of the basic needs of man, and access to it is an important factor in maintaining and improving the quality of life, thus presenting itself as a basic pillar of society.

At the same time, it can be observed that in all studies on real estate markets, the most important contribution is made by the market of residential spaces or homes. This market, if it is not always manipulated by the values at stake, then it certainly does so by the volume of constructions. So always remains one of the standards that characterize the standard of living of a country. At the end of 2019, according to INS (National Institute of Statistics https://insse.ro/),

the residential real estate market in Romania included over 9 million homes, figure no. 3, which are under a positive trend in recent years, comprising approximately 24.5 million rooms, with an average of 2.7 rooms per home and a total living area of over 430 million m2, with an average area per house of 46.7 sqm. In the capital, the total number of homes is about 800 thousand, divided into almost 2 million rooms and with a total living area of over 30 million m2.

Figure no. 3. Situation of households



Source: Author's own contribution

Table no. 1. The housing stock and some derived indicators, by development regions

Specification	Housing	Rooms	Surface	Rooms on	Living space	
	- number -	- number -	- m ² -	a flat	On a	On a
					room	house
				- number -	- m ² -	- m ² -
Total Country	9,092,963	24,858,411	434,017,196	2.7	17.5	47.7
North East	1,468,801	3,961,854	66,934,641	2.7	16.9	45.6
South East	1,135,882	3,304,263	53,923,509	2.9	16.3	47.5
South-Muntenia	1,368,779	4,027,437	62,838,801	2.9	15.6	45.9
Southwest Oltenia	959,236	2,766,805	43,105,932	2.9	15.6	44.9
West	845,243	2,261,460	43,235,030	2.7	19.1	51.2
Northwest	1,185,336	3,053,048	58,200,454	2.6	19.1	49.1
Center	1,059,764	2,688,651	51,727,072	2.5	19.2	18.8
Bucharest-Ilfov	1,069,922	2,794,893	54,051,757	2.6	19.3	50.5

Source: National Institute of Statistics

The statistical proportions present at national level are quite symmetrical at the level of Bucharest. Thus, approximately 10% of Romania's population lives in the capital where 10% of the national housing fund is found. In the analysis of recent years we will see that the western part of the country begins to compete with Bucharest in some chapters, so we will see that in terms of average living area per home, the western part occupies the first place with an area of 51.2 square meters, seconded by Bucharest - Ilfov with 50.5 sqm habitable per dwelling, a report that changes when analysing the living area per room, where the Bucharest-Ilfov area has an area of 19.3 sqm / room while the West is an area of 19.1 sqm living space per room, from these points of view Oltenia area is the worst.

What does this data actually show us? A national rebalancing of the housing situation, dominated until 2015 by Bucharest. I would attribute this rebalancing to economic investments in several areas of the country (you can see an explosion in municipalities such as Cluj Napoca, Timisoara and even Oradea or Arad); of the increase of the population incomes (one of the most eloquent is that of the workers in the IT industry, which we find in these cities) but also of the change of the perception of the young inhabitants on the space in which they want to live. western markets - found both in media or online presentations and by the ideas brought by those who work or have worked abroad and lived in such constructions).

A zonal situation, at country level, of the distribution of housing is presented in Figure no. 4 (2019, Housing Fund. Https://insse.ro/)

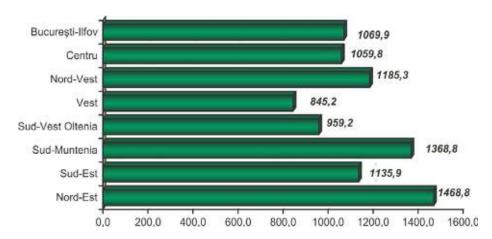


Figure no. 4. Distribution of the housing fund, by development regions, on December 31, 2019

-mil housing -

Source: National Institute of Statistics

What we can say is that the vast majority of these homes were built before 1989, when the pace of urban development was much more pronounced due to industrial development, and demographic change was supported by special regulations (prohibition of abortions, bans on emigration, etc.). After the revolution, by repealing these regulations we have witnessed and still witness a decrease in the population of Romania, reaching from over 23 million before "89 to just over 19 million in 2019, which also contributes to housing needs.

In the early 1990s, most of these dwellings passed from state ownership to private ownership, causing approximately 98% of the country's housing stock to be owned by the population today.

In the first approximately 10 years after the 1989 Revolution, the construction of new homes experienced a period of stagnation, with the total number of homes being added annually only those already under construction. After the 2000s, the phenomenon of real estate development appeared in Romania as an effect of the increase of prices on the residential market and the timid start of the construction of new homes. These things together with the completion of the transition process from the centrally planned economy to the market economy and Romania's accession to the European Union have amplified the parameters of the real estate market and have led to a substantial increase in new construction in recent years.

In 2017, Romania ranked 1st in the EU, with a rate of 96.8 % (EUROSTAT, 2018) as a percentage of owner-occupied housing in total housing, followed by countries in the former communist bloc such as Bulgaria, Hungary, Poland, with countries with a developed economy such as Germany (51.4 %), France is after half of the ranking that is concluded by Switzerland. This situation is due both to the phenomenon of mass ownership of the population in the early 1990s (in the former communist countries), and due to the negative natural increase of the population in the last 20, which we also have in those countries, but also by socio-cultural (situation in Latin countries). The geographical / country distribution of the share of owneroccupied dwellings in the total dwellings shown 5 (https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Housing statistics/ro).

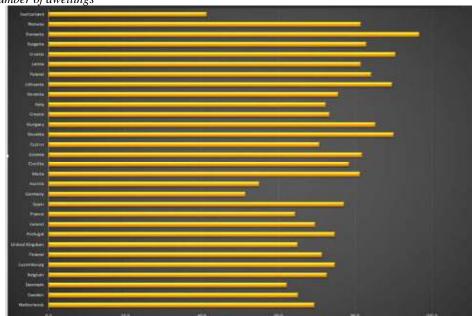


Figure no. 5. Geographical distribution of the weight of dwellings, occupied by owners in the total number of dwellings

Source: https://ec.europa.eu/eurostat/statistics-xplained/index.php?title=Housing statistics/ro

The factors listed above are indicators that provide important information about the will of the people in some countries for ownership housing against hiring them. Taking into account Romania, the following aspects are relevant: the previous regime, in the process of industrialization, also produced many houses, which it made available, in different forms, to those who worked in factories and who woke up after the 1990s "owners with proper documents "of them; we must not forget that villages were built even during communism, and young people who came to the city were encouraged to take a leap, which betrays our Latin character and the name of "having something of our own", socio-cultural factor important in the tendency to become owners and we will find it in the next aspect, namely the opening of borders after 1990, the deindustrialization of Romania and the pursuit of money makes a large part of the population go to work abroad, especially in Western Europe, things that have led to a negative birth rate, reflected in the need for fewer homes. This last aspect, i.e. labour mobility, is paradoxically transposed in our country, after a few decades (years in which those who work abroad raise capital) and seconded by the sense of ownership, in redefining the real estate market by starting it on a trend positive, fuelled by rising land and real estate prices, as well as the need to build new buildings (here I would add an interesting aspect, namely that the statistics do not include "so-called modernizations" of old houses, which in most cases actually meant a construction new - clearly favoured at one point by ambiguous legislation and lack of reaction from the authorities).

This sense of ownership made those who worked abroad for decades become owners there. In conclusion, Romanians with a special sense of ownership prefer to live in their own buildings to the detriment of those rented - figure 6.

However, it should not be forgotten that the issues presented have a significant impact on the structure of the real estate market and the risks to which it is exposed. Thus, it has been observed, at European Union level, that states with high occupancy rates by landlords induce higher risks, while those with lower rates have lower risks. If we look a little at the market we will see that paradoxically, a country like Germany (one of the strongest European economies) is considered one of the cheapest (in terms of income) and most stable real estate markets in the world precisely because more than half of the population lives in rented houses and apartments. In the period of economic adjustment, after the recession, the hypothesis of additional risks generated by a high rate of owner-occupied housing was actually confirmed, so high-rate states suffered massive price corrections while Germany and the Nordic states maintained a relative stability of property prices.

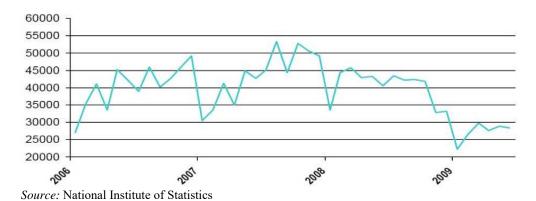
Figure no. 6. Property versus rent in Romania



Source: Author's own contribution

For a long time on the Romanian market there was no official real estate index calculated on the basis of trading values, there are instead several such indicators calculated mainly by private or state bodies, based on displayed prices, an important indication of market evolution being clearly provided by liquidity (number of transactions), a strong element correlated with prices, we can observe how the analysis of the real estate market in Romania was made, until 2006-2009, the period considered as a period of economic recovery after the recession.

Figure no. 7. The monthly evolution of the number of real estate transactions (January 2006-June 2009)



*

1,400,000,000 1,200,000,000 800,000,000 600,000,000 400,000,000 200,000,000 0 2003 2004 2005 2006 2007 2008 e2009

Figure no. 8. The evolution of taxes paid to the state as a result of real estate transactions 2003-2009 (estimate)

Source: National Institute of Statistics

As can be seen from the graph of the monthly evolution of the number of transactions - figure 7, the market liquidity has a cyclical dynamics, the winter periods being characterized by decreasing transactions. During the analysed period, the summer and autumn of 2007 show the highest number of transactions, exceeding 53,000 in August and 52,000 in October. At the other end of the spectrum is the beginning of 2009 when the monthly number of transactions fell for the first time in the last 3 years below 25,000. The decrease of prices on the real estate market most probably started in the middle of 2008 (the year considered in Romania as the peak year of the economic recession), fact demonstrated by the dynamics of monthly transactions, as well as by the evolution of the total value of taxes collected by the state. real estate transactions. The taxes collected by the state decreased in 2008 by almost 150 million lei compared to the previous year, after registering a doubling in the period 2006-2007. In the first half of 2009, their value fell by more than 60% compared to the same period of the previous year due to severe economic contraction - figure 8.

5. Conclusion

After a period in which the common element of market analysis was the difficult context generated by the influences of the economic crisis, in 2013 an improvement in the fundamentals of the real estate market was highlighted. (2009, Romanian Competitors Council; Investigation report for the analysis of the real estate market and services related to real estate transactions; Bucharest)

6. References

- Romanian Competitors Council, 2019. *Investigation report for the analysis of the real estate market and services related to real estate transactions*, [online] Available at: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Housing_statistics/ro
- Housing Fund., 2019
- Classification of activities in the national economy CANE Rev. 2
- https://insse.ro/
- https://bnr.ro/statistics

The Influence of the Exchange Rate on the Real Estate Market

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Abstract

Globally, we are dealing with markets influenced by various "strong currencies", dominated by the US dollar and newer, especially on the European market, the Euro. These currencies influence prices through the exchange rate with the national currency of countries that are not affiliated to them but have their own currency. The aim is to present the margin of evolution of the real estate market, depending on the evolution of the exchange rate.

Key words: influence, exchange, real estate

J.E.L. classification: M31

1. Introduction

In the exchange rate of a country we will always find one or two top currencies, i.e. currencies around which economic transactions are made. At these currencies, through their exchange rate, directly affect the price of products on the markets of that country, bank rates and in general all types of transactions. So valid for the real estate market, these currencies have taken over the way of expressing the prices of real estate assets, we find ourselves in the situation where in many countries we will find the price of real estate expressed in the currency predominant in the area. In order to better see the influence of the exchange rate on the actual price of a building, we will summarize, for the most part, to treat the situation on the Romanian market.

2. Theoretical background

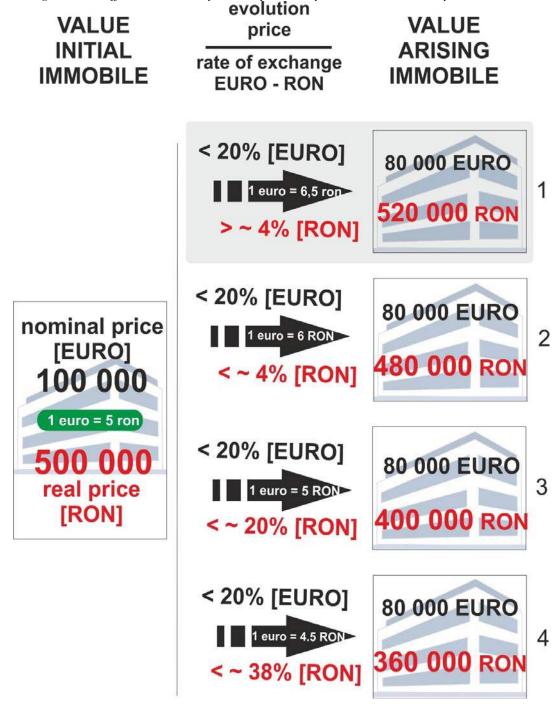
Regardless of the type of market, we must take into account the fluctuations of the transaction currency and at the same time the evolution of the exchange rate. Real estate market experts say that the evolution of the euro has an overwhelming influence on the real estate market. The price regardless of the market, bears the influence of the exchange rate.

3. Research methodology

The limitation to working with levels models in valuation analyses according to the study conducted from external sources.

On the Romanian market, in most cases, the real estate trading currency is Euro, and the income of market participants is of course in Lei. We will see that we are dealing here with a phenomenon, which may seem strange at first sight, namely the nominal level of prices has in some situations, an opposite evolution to the real level of prices and in other situations their value behaviour differs. - see figure no. 1.

Figure no. 1. Different evolutions of nominal prices compared to real ones - example



Source: Author's own contribution

4. Findings

We see a decrease in the price of a building from 100,000 Euros, - called nominal price (equivalent to 500,000 Ron - called real price, expresses the price in the currency in which the gains are made), to 80,000 Euros which is actually a reduction *nominal* by 20% of the prices, which, however, in *reality* puts us in one of the following situations:

- 1. an increase of the price by about 4 percent, given by the devaluation by over 25% of the national currency (in our case the Leu) in relation to the Euro;
- 2. a 4% decrease in the price, in the conditions of the devaluation of the national currency by only 20% in relation to the Euro;
- 3. a decrease of about 20 percent in the price, provided that the same exchange rate between the Euro and the Leu is maintained;
- 4. a decrease of more than 20% in the price, if the national currency (Leu) suffers an appreciation in the exchange rate with the Euro.

As can be seen, real prices depend on the exchange rate (in our case Euro / Leu), a rate that also has an effect of accentuating the impact of macroeconomic indicators on prices. However, in reality, the exchange rate has a balanced role in the steep changes in nominal prices:

- * during the period of sustained economic growth, the nominal prices of real estate assets have an accentuated upward trend, partially offset, however, by an appreciation of the national currency against the Euro;
- * during the period of economic adjustment, the phenomenon was reversed, the decrease in real estate prices being partially offset by the depreciation of the national currency.

Basically, due to the effect generated by the exchange rate, real prices (in Lei) had a much lower margin of volatility than nominal prices (in Euro). This, however, is not a market rule, as all the variants presented in the example above are possible on the market.



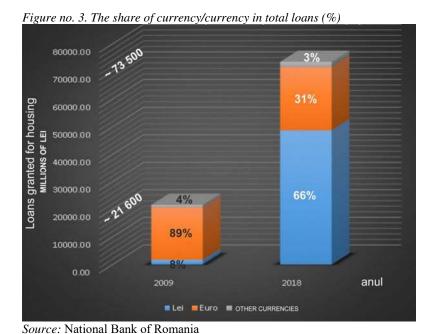
Figure no. 2. Trends of some euro currencies in the exchange rate with the RON

Source: National Bank of Romania

If we analyse a little the last 10-15 years, we will notice interesting periods in the currency behaviour, especially for certain so-called exotic currencies, in this case the Swiss Franc (CHF) - see figure no. 2 (the data source is the NBR statistics^[1]), which decisively influenced the real price of real estate credited by this currency and in time the consumer's opening on the credit currency, see figure no. 3 (the data source is the NBR statistics^[2]), although quotations remained in Euro.

Thus, on the credit market during the economic crisis, the Swiss franc appears with very attractive interest rates for the population, first of all, making it to focus on loans in this currency. On the other hand, at the first opportunity, with the recovery of the economy, the parity with the leu has a sudden rise for quite a short time, which determines a real increase in the rates paid by the creditor with his income in lei, so a citizen who at the beginning of the loan had a rate of about 700 lei wakes up in a period of about 2 years with a rate exceeding 1000 lei, in some months, but without benefiting from proportional salary increases (incomes). At some point the situation becomes so stressful that even state intervention is needed to balance the situation. This situation is a good example to show the difference between the real cost and the nominal cost of a building.

Analysing the graphs in Figure no. 3 we can say that along with the behaviour of the dominant currency on the market, this situation (the risk generated by exotic currencies), influences the buyer's behaviour towards lending, especially in real estate, because if we take consumer loans we will see that they are divided almost equally between local currency and currencies.



From the NBR statistics, we find out that at the end of 2018, the loans for housing of the population reached around the amount of 73.5 billion lei (approximately 15, billion euros). Of which more than half, about 66% loans in Lei, followed by those in Euro with about 31% and other currencies with only 3%. If we compare these with the situation in 2009, we will find a reversal of the ratio between types of loans, with a significant increase in loans in lei to the detriment of those in euros and a significant decrease in those in other currencies - due to the confidence of the beneficiary their behaviour in the exchange rate.

Also statistically, we see a tripling of the value of lending, a fact highlighted by the recovery from the economic crisis, the improvement of living standards and last but not least the increase of investors' interest in this market.

Another indication of the impact of the trading currency on the share of the domestic currency in total housing loans is related to the discrepancy between certain regions. Thus, in addition to the dominant market of Bucharest, significant markets also appeared in the province, highlighting Cluj Napoca, Timișoara, Constanța, Iași etc., although there are still areas with relatively low potential. Although the national currency has taken the place of currencies in lending, prices remain in Euro.

5. Conclusions

We could say that the quotations in euro on the domestic real estate market have a double effect: it gives stability to real prices, but it is also an additional source of inefficiency. This last fact is due to the impact that foreign currency trading has on the increase of transaction costs and on its total risk. But as we have shown, the reversal of the share of the national currency in relation to the currency, in the value of lending, could translate into several aspects:

- the buyer's awareness that his income is in lei;
- the impression that risks are controlled, the exchange rate difference is expressed at the beginning of the transaction and in principle no longer affects rates;
- balancing the level of interest rates on loans in Lei with those in Euro;

• the buyer's awareness that loans in exotic currencies, so-called advantageous, generate much higher risks than those in the national currency or the euro.

And yet the tradition and the impression of the stability or growth of the Euro, as well as the fact that the future is defined by the changeover to the Euro currency, makes the price of real estate remain expressed in Euro. Even the buyer who took a property in lei, in the capacity of seller will ask for the price in Euro.

6. References

- Romanian Competitors Council, 2019. *Investigation report for the analysis of the real estate market and services related to real estate transactions*. [online] Available at: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Housing statistics/ro
- https://insse.ro/
- hhtps://www.bnr.ro-statistics

Innovative Marketing Strategies for the Development of Tourism in Romania

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Abstract

The development and implementation of a strategic plan can be seen as the most important activities undertaken in any business or by any public or private sector organization. Strategic decisions are the key decisions that must be made by any organization; and a number of more detailed operational decisions can be made from the strategic decisions that set the framework. Implementing the established strategies will determine the eventual long-term success or failure of the organization.

In every service sector, every organization needs to look at ways to attract consumers to buy the services they offer. This is also applied in the tourism industry where every organization should be creative in its marketing approaches and be more innovative in all its actions. Technological progress has permitted access on the market to many autonomous suppliers and is allowing consumers to make purchasing decisions based on the total experience of a destination, therefore tourism marketing has become increasingly difficult over the past few years. In this article, our aim is to highlight the importance of using innovative marketing strategies as a way to attract customers (in this case, represented by tourists) and develop the tourism sector in Romania.

Key words: tourism, marketing, innovation

J.E.L. classification: Z3

1. Introduction

Tourism is the most important social, economic and cultural phenomenon in the world, being one of the most profitable sectors of the world economy. Romania is trying as much as possible to pay more attention to the development of tourism, In this sense, tourism development strategies and policies in Romania were created, tourism development programs, as well as other actions aimed at the development and innovation of tourism, in order to create or enhance a positive image of the destination brand. The objectives of the tourism development strategies in Romania include creating a competitive tourist product, which should rise to the level of the actual and potential values (historical, cultural, and otherwise), as well as our country's natural resources which can be exploited at their maximum potential. In this context, Romania needs innovative marketing activities, as part of their strategic development plan, in order to create a promising brand destination, by promoting its tourism attractions, as well as services, on domestic and international markets. Also, a significant contribution, aside from the marketing strategies, can be brought by correctly implementing programs destined to promote the Romanian tourist brand.

As mentioned before, there is a great potential for the development of tourism in Romania. International tourist routes operating in the country are mainly ecological routes, which include elements of historical heritage and tourism is present in many forms (cultural, religious, recreational, health/balneary, etc.). This article aims to highlight the existing tourism potential and expose innovative marketing strategies in order to develop tourism. The existence of extraordinary natural

resources must motivate the development of innovative activities, in order to promote, so that tourism occupies its well-deserved place in the country's economy.

2. Literature review

2.1. Strategy and Innovation

As defined by Alfred D. Chandler, strategy is "the determination of a company's core long-term goals and objectives, as well as the adoption of courses of action and the allocation of resources to achieve those objectives" (Chandler, 1962, p. 21). Porter defined the term of "strategy" as "a broad formula, which guides a business's approach to compete on the market, defines its goals and establishes policies that will be needed to fulfill those goals" (Porter M., 1980, p. 62). In a different approach, strategy is "the framework that guides those choices that determine the nature and direction of an organization" (Tregoe, 1980, p. 142).

Innovation is a concept of interest in all fields of activity and has often been associated with human evolution. According to Schumpeter, innovation is the introduction of new elements in a field of activity (Schumpeter, 1930, p. 8). According to Mohr, innovation means "a new use of existing products or a new market for products or even a new method of marketing." (Mohr, 1969, p. 35) According to Romanian authors, Ioan L.Gheorge P. and Monica B. (2010) innovation is described as "the introduction or modification of a new idea, product or service". (John L.Gheorge P. and Monica B., 2010, p. 12).

2.2. Tourism Marketing

Marketing is "the development of all activities necessary to ascertain the needs and demands of the market, scheduling product availability, transferring ownership of goods, their physical distribution and facilitating the entire research process related to these issues." (McCarthy E., 1964, p. 3). In the opinion of other authors, marketing is "the economic and social process by which individuals and organizations meet their needs and desires through the creation, supply and exchange with stakeholders (customers) of valuable products and services" (Ph. Kotler et al. 2006, p. 6).

Tourism marketing can be defined as a managerial process through which tourism organizations identify the actual and potential dimensions of tourism demand, communicate with demand carriers (tourists) in order to acknowledge and assess their touristic needs and stimulate their desires, motivations and preferences in order to design and adapt the offer (tourism products and services) with the purpose of optimizing and satisfying their requirements and exigencies, maximizing organizational objectives at the same time (Balaure et al., 2005).

2.3. Innovative Marketing

Andrews and Smith (1996) consider innovative marketing as a significant process that differentiates and helps the organization achieve a specific goal. (Andrews J., Smith D.C., 1996, p. 14). On the other hand, Clemmer (1998) explained that marketing innovation and creativity are the main elements that provide the key to success in an organization's business environment. (Clemmer J., 1998, p. 8). Haddad and Algadeer (2004) believe that marketing innovation reflects the firm's ability to continuously improve its products and services, which in turn helps to achieve major benefits for customers because their products and services will meet their needs in a unique way. (Haddad, Algadeer, 2004, p. 82).

3. Innovative marketing strategies in the Romanian tourism sector

Tourism services are a category of leading products that must be promoted and distributed in consumer markets through a variety of methods and using different electronic platforms and ideologies. By using different ways and platforms, tourism organizations are allowed to innovatively approach marketing strategies, in order to attract as many customers as possible. However, in many respects, the marketing challenges faced by tourism businesses are exceptional, due to the fact that

some touristic products cannot be promoted in isolation from their competing and complementary products (Middleton and Clarke, 2001, p. 238). In addition to this challenge comes the fact that the tourism industry is part of the services sector, and the tourism product is mainly a range of services. Moreover, although tourism businesses are considered to be users of new technologies, there is still an under-utilization and under-exploitation of innovative technologies as strategic marketing tools.

The innovation of marketing strategies in Romanian tourism involves the introduction and use of new, modern concepts, adapted to the new digital era, so that tourist destinations become as visible and visited as possible. Innovating tourism marketing must be aimed at improving, modernizing, changing and adapting production methods, transport, changes in hospitality services, opening new market segments, etc. Tourism marketing innovation strategies focus mainly on the use of new technologies, materials, methods and energy sources in order to develop the tourism sector and increase its profitability.

In order to develop marketing strategies for the development of tourism in Romania, as complex and efficient as possible, it is necessary to use innovation as a tool for obtaining and applying the results of scientific thinking. From this point of view, tourism is an extremely vast field for innovation as a complex transversal socio-economic system. Tourism not only creates a new product or service, but also uses innovations introduced in other areas of management. For example, hotels, travel agencies, transport companies are widely used in the field of information technology development. Creating a tourist product, tourist services, booking plane and train tickets - all these processes have reached a new level with the introduction of the latest developments in information technology.

The main strategic factors of innovation that influence the development of tourism refer to the level of scientific and technological development, economic and political stability, the availability of the relevant legislative framework and other external factors. It also implies the availability of the necessary volume of natural and financial resources, as well as the level of development of the tourist infrastructure. In order to develop tourism in Romania, the developed tourism market and the degree and type of competition must be taken into account. Quality is another important factor for innovation and attracting tourists, as well as the availability of highly qualified staff in all areas of tourism. (Verma, R., 2008, p. 4).

In the tourism marketing sector, certain specific characteristics are identified, such as the fact that tourists are temporary, being exposed to an area of goods and services for shorter periods and they must immediately feel well, the difference between daily life and "escape from everyday life". Tourists seek relaxation, to be left with beautiful memories, which is why a marketing strategy that uses innovation should consider strategies that appeal to emotions. (Chron, 2019). Also, tourism marketing innovation strategies can establish promotion mechanisms and create more development opportunities by cooperating with the organizers of local festive and cultural events, horizontal alliances and integration of resources, etc. (Yeh, et al., 2019, p.23). The inclusion of innovation strategies in tourism marketing involves following current, modern market trends. Tourism marketing must keep pace with the dynamic developments of the industry, relating to the diversity of marketing in modern organizations.

Through marketing innovation strategies it is desired to achieve the proposed objectives in the most innovative and modern ways; the complexity of tourist services and the importance of intermediaries in the distribution of tourism products must be taken into account, as well as the criteria for choosing tourist services by consumers.

Innovation in marketing policy in the field of tourism must be based on efforts at a national level and requires a coherent set of action practices, based on specific programs. Any innovation-based marketing strategy must take into account identifying its target audience, attracting new customers by understanding the behavior of the consumer of tourist services, providing high quality services and using effective promotion tactics locally and globally. (Bizfluent, 2019, p. 3).

4. Marketing tools and techniques related to new technologies

The tourism industry was among the top five economic industries that took advantage of the opportunities offered by new technologies. Since 1980, advances in technology along with globalization, has led to the emergence of the concept of e-tourism, an important segment of e-commerce which involves the application of information and communication technologies in the

tourism industry; it is considered to be the future of the tourism industry.

Digital marketing is a term that encompasses all marketing processes that take place through a variety of digital channels and gadgets in order to promote the products or services of a business. The term actually means implementing marketing ideas through the use of resources such as computers, laptops, tablets, smartphones, digital panels, game consoles, mobile phones, digital magazines, catalogs or other digital media.

Online marketing (also known as Internet marketing or e-marketing), on the other hand, is defined as a subset of digital marketing. Online marketing involves the use of resources that require a direct connection to the World Wide Web (more specifically, the Internet) to promote a business's products and services.

The difference from online marketing is that digital marketing uses all digital platforms, digital channels and digital devices, whether online or not (including mobile marketing, video marketing, web television, etc.). In other words, digital marketing is not limited to using the Internet. Most digital marketing activities revolve around the use of the Internet. Due to the fact that Internet access can be achieved from any type of device, we can therefore define online marketing as a component of digital marketing.

Today, in the modern world of digital business, communication between individuals and companies takes place, mostly, in the online environment, through a series of online tools and techniques. Among the most commonly used online tools are: websites, social networks, e-mail and blog, and in terms of online techniques, those that have the highest efficiency are: online advertising, online PR, online sales promotion, search engine optimization (SEO), social media marketing (SMM), e-mail marketing (via newsletter) mobile marketing (ex: through specific apps), viral marketing ("buzz" marketing or e-WOM), and online branding.

The accelerated interaction and the strong relationship between technology and tourism makes the use of information and communication technologies suitable for the target group to increase the competitiveness between organizations, between tourist destinations, but also changes the way individuals interact with the organization.

The Internet is an important marketing tool that offers tourism organizations competitive advantages, such as reducing costs, increasing revenue, conducting marketing research necessary for the development of the organization, or, in the other case, for national development, in order to identify present trends, make predictions and directing marketing and management efforts in an optimal manner.

The continuous development of information and communication technology applications makes e-tourism focus on consumer-centered technologies. Also, the adoption of new technologies makes tourism service providers more efficient towards their customers, gaining the opportunity to quickly restructure their communication strategy.

5. Research methodology

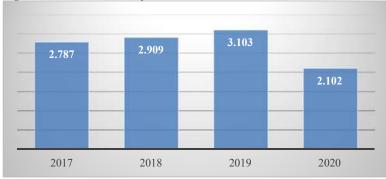
The present research is based on the identification and analysis of the existing problems of tourism marketing in Romania and the proposal of marketing innovation strategies in order to develop tourism in the country. To do so, we examined statistical data and reports. Firstly, we identified the following indices as being relevant for the analysis: the contribution of tourism to the national economy; the tendency of arrivals and receptions of foreign tourists; classification of the top ten destinations in Romania; competitiveness index for the tourism sector in Romania.

Based on these analyses, some existing gaps in the marketing of Romanian tourism were identified and strategic proposals based on innovation were formulated for the development of tourism and attracting and retaining tourists, especially foreign ones. Based on the idea that Romania has a very rich natural and cultural heritage that can be promoted by using innovating marketing strategies at national and international level, we proposed as main strategies online-marketing, through social media and destination branding, given their novelty.

6. Results

Data on the direct contribution of the tourism and travel sector to GDP, according to the Tourism Satellite Account (CST) in Romania, suggest that the indicator reached 2.102 billion, representing 0.84% of GDP in 2020. Even though we saw a decrease in 2020, this is most likely attributed to the Covid-19 pandemic; in the proceeding years, the trend was ascendant, indicating a growth of the share of tourism in GDP.

Figure no. 1 Contribution of tourism to the Romanian GDP



Source: INSSE

Most of the foreign tourists arriving in Romania are citizens of the Republic of Moldova, being closely followed by those of Bulgaria, Hungary and Ukraine. At a greater distance from them are the arrivals of tourists from Serbia, Germany and Italy. With a rather small percentage, there are also arrivals of tourists from the United Kingdom on the territory of our country (Table 1.1.). This ranking indicates an underdeveloped tourism for foreign markets and a weak marketing of tourist areas in Romania. The number of foreign tourists is small and the variety of their nationalities is very weak.

Table no. 1 Arrival of foreign tourists in Romania

Country	2017	2018	2019	2020
Republic of Moldova	2052	2330	2523	827
Bulgaria	1603	1600	1857	1267
Hungary	1457	1491	1529	481
Ukraine	1208	1466	1755	663
Serbia	507	543	576	195
Germany	479	489	521	143
Italy	460	468	477	121
United Kingdom	213	216	244	67

Source: INSSE

In order to identify the weaknesses in the Romanian tourism marketing, an analysis of the number of tourists, both Romanian and foreign, was performed, depending on the types of tourist destinations in Romania. A small number of foreign tourists can be observed compared to the number of Romanian tourists. The capital and the big cities of the country receive a higher number of foreign tourists than the balneary resorts and the Romanian sea coast; the Danube Delta registers the lowest number of foreign tourists.

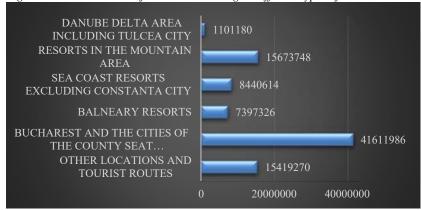
Table no. 2 The number of tourists according to different types of destinations

Touristic destinations	Types of tourists	2017	2018	2019	2020
Balneary resorts	Total	945257	1018721	1133359	601326
	Romanian	896515	979243	1098706	595762
	Foreign	48742	39478	34653	5564
Sea Coast resorts	Total	1049970	1111389	1153682	905266
	Romanian	1016287	1076044	1119401	899104
	Foreign	33683	35345	34281	6162
Mountain resorts	Total	2019142	2217110	2305517	1295105
	Romanian	1800140	1997812	2109378	1269109
	Foreign	219002	219298	196139	25996
Danube Delta	Total	100423	165431	166411	118325
	Romanian	76281	140077	146006	116797
	Foreign	24142	25354	20405	1528
Bucharest and county	Total	5992403	6178665	6275835	2359090
seat cities	Romanian	3860026	4030901	4209530	1994058
	Foreign	2132377	2147764	2066305	365032
Other locations and	Total	2036151	2213815	2340139	1119530
tourist routes	Romanian	1734017	1884432	2008174	1069945
	Foreign	302134	329383	331965	49585

Source: INSSE

The highest total number of tourists, as shown in figure 1.2., was as registered in the last 4 years in Bucharest and the county seat cities, while the lowest number of tourists was registered in the Danube Delta area. It is observed that the resorts in the mountain area are preferred by both Romanian and foreign tourists, to the detriment of those in the coastal area. However, such a low number of tourists in the Danube Delta should be a problem for the marketing of Romanian tourism, because this area offers incredible landscapes and natural resources, which must be capitalized and promoted at least in Europe.

Figure no. 2 The number of tourists according to different types of destinations in Romania



Source: Personal interpretation of the authors

The key indicators of Romania's competitiveness in world tourism show the share of earnings in Romanian tourism in relation to the world economy. Thus, table 1.3. provides information on the arrivals of international tourists and receipts for international tourists, recording average receipts on arrival of 432.93 Euro. The share of the tourism and travel industry in the world GDP and the share of jobs in the field of tourism and travel in the world GDP are also specified.

Table no. 3. Key indicators of Romania's competitiveness in world

International tourist arrivals	2.760.100	
International tourism inbound receipts	21,817.59 million Euros	
Average receipts per arrival	432.93 Euros	
T&T industry GDP (% of total)	3,183.54 Euros	
T&T industry Share of GDP (%GDP)	1,5	
T&T industry employment (% of total)	222,500 jobs	
T&T industry Share of Employment (% of total	2,6%	
employments)		

Source: The Travel & Tourism Competitiveness Report 2019

According to the competitiveness index for tourism and travel, Romania ranks 56th out of 140 countries in terms of tourism, with a total score of 4. This score was obtained by analyzing different indicators presented in Figure 1.3. Thus, in terms of international openness, Romania is on the 46th place with a score of 3.9. In the field of travel and tourism prioritization, Romania is only on the 101st place, with a performance score of 4.1. For the availability of ICT, Romania ranks 55th, and for human resources and the labor market, 73rd in the world. In terms of health & hygiene and safety and security, Romania occupies places closer to the first part of the top, number 36, respectively number 29. According to the index of competitiveness in the business environment, our country occupies a distant place, 76. And yet price competitiveness is not very low, occupying the 51st place, with a score of 5.6. For environmental sustainability, Romania ranks 48th and for ground & port infrastructure 72. Romania is not very well situated in the infrastructure of tourist services, ranking 56th, as well as in terms of tourist resources. Cultural resources and business travel are rated with a better score, placing Romania on the 44th place.

Performance Overview

Figure no. 3 Competitiveness index for tourism and travel in Romania

B3rd infrastructure 549 Natura 3.2 560 Cultura urces 8 **Overall Score** 6 5 4 3 2 Score 1-7 (best) 2 3 5 6 7

Source: The Travel & Tourism Competitiveness Report 2019

Within the prioritization of tourism and travel in Romania, the following indices were analyzed, such as: government prioritization for the tourism industry; the effectiveness of marketing and branding to attract tourists and the evaluation of the country's brand strategy, which obtained low scores compared to other countries. Also, for the present analysis, we consider of high importance to point out that the indicators within the infrastructure and services also obtained low scores for the quality and density of the roads, for the quality of the railways and for the hotel rooms.

Very low scores were also obtained in the sustainability index for forest and fish heritage. In the index of natural resources for the number of natural sites in the world heritage and for the digital demand of natural tourism, low scores were also obtained. Within cultural resources, there are problems with sports stadiums, as well as the digital demand for cultural and entertainment tourism.

Thus, although Romania obtained an average score on most indicators, it ranked last in terms of government prioritization regarding development of the tourism and travel industry and the efficiency of marketing and branding to attract tourists. In both indicators, our country occupies the same place: 131 out of 136. The quality of the tourism infrastructure also falls behind, ranking 129th.

This analysis of the competitiveness index for tourism and travel of Romania reveals that the marketing strategies in the field of tourism in our country are not suitable and adapted to the needs and expectations on a global level. Severe shortages in certain areas of activity hinder the development of national tourism and therefore it is necessary to take measures in this regard and by innovative marketing and branding strategies in order to attract tourists.

7. Conclusions and recommendations

Both the share of tourism in Romania's GDP and the arrivals of foreign tourists indicate that tourism is poorly developed. The number of tourists from European countries is very small, which shows that the marketing and promotion of the Romanian tourism product needs improvements and adaptation to the new trends of the European tourism market. The fact that destinations in Romania with a great tourist potential in terms of natural resources receive a very small number of foreign and Romanian tourists, shows a lack of interest in promoting them.

Romania ranks 56th out of 140 countries in terms of competitiveness, with large gaps in infrastructure, accommodation services, and marketing effectiveness and branding to attract tourists. Thus, we can say that Romania occupies a good position compared to some countries in South-Eastern Europe, having natural riches and tourist attractions, but the existing problems in the marketing of the tourist product do not help enough to promote them. Improvements are possible in this regard to increase the online demand for natural tourism and the online demand for cultural and leisure tourism.

In order to bring improvements that would raise the low indices of tourism in Romania, it is recommended to use innovative marketing strategies. One of these strategies can be aimed at digital marketing to make the tourist areas of the country visible to as many international tourists as possible. Being as visible as possible in the online environment, travel agencies can implement various activities to make them known, reach a lot of people around the world and expose them to exclusive offers. Also, posting ads that reach as many people as possible can cause them to want to visit the places that Romania has to offer. The influence of digital marketing transcends borders and can allow the travel industry to attract people from around the world and turn unique places in the country into popular tourist destinations.

Social media platforms play a crucial role in tourism marketing because they have become a powerful tool for online communications, allowing tourists to interact and share their opinions, collaborate and contribute to the development, extension, evaluation of tourism experiences. The way social media channels are used has become an innovative phenomenon that is changing the way consumers plan and buy travel products. That is why the marketing strategies of Romanian tourism must find innovative and creative ways to enter the market through the online environment. This strategy should be seen as a way to facilitate the promotion of Romanian tourism products on the world market, which should be used as much as possible.

Branding is another innovation strategy for Romanian tourism marketing. Although, the branding process is not a new concept, it is very popular among today's tourist brands. Thus, through a flexible and innovative approach, determined by the expansion of media options, branding can contribute to the development of Romanian tourism.

Integrating mobile apps in order to increase awareness and visibility of tourist destinations and attractions, as well as accommodation structures and as a means of communicating with customers(notifications regarding price alerts, events around the area, things to do, facilities, services) is a widely-used technique in the tourism industry, which also allows organizations to gain relevant insights of their customers' experience, based on reviews and opinions, revealing where they should focus their management and marketing efforts.

8. References

- Andrews, J., Smith, D.C., 1996. In Search of the Marketing Imagination: Factors Affecting the Creativity of Marketing Programs for Mature Product, *JMR*, *Journal of Marketing Research*, 33(2).
- Balaure, V., Căţoiu, I., Vegheş, C., 2005. Marketing turistic (Touristic Marketing), Ed. Uranus, ISBN: 973-7765-18-4.
- Chandler, A.D., Jr., 1962. Strategy and structure: chapters in the history of the industrial enterprise, M.I.T. Press;
- Clemmer, J., 1998. Path to innovation; Spend at least 25% of your time with customers, *Executive Excellence*, 15, 10–10.
- Haddad, S. and H. Algadeer, 2004. An empirical investigation on the impact of strategy within organizations on organizational improvement continuation strategy, *Jordan. J. Applied Sci.*, 7: 77-95.
- Ioan, L. P., Gheorghe, P., Monica, B. 2010. A Theoretical Approach of the Concept of innovation, July 9, 2019, from ftp://ftp.repec.org/opt/ReDIF/RePEc/bbu/wpaper/151-156.pdf.
- Kotler, Ph.; Keller, K. L.; Dubois, B.; Manceau, D., 2006. *Marketing management*, 12e édition. Paris: Pearson Education France;
- McCarthy, E.J., 1964. Basic Marketing. A Managerial Approach, Homewood, Illinois: Richard D. Irwin Co:
- Picincu, A., 2019. The Importance of Marketing in Tourism, *Bizfluent*, https://bizfluent.com/about-6584954-importance-marketing-tourism.html, accessed October 26, 2019.
- Porter, M. E., 1980. Competitive Strategy: Techniques for Analyzing Industries and Competitors, New York: Free Press;
- Tregoe, B., Zimmerman, J.W., Schuster, S., 1980. Top Management Strategy, *Strategic Management Journal*, Vol 2. 419-420; https://doi.org/10.1002/smj.4250020409.
- Verma, R., 2008. Key elements in service innovation: insights for the hospitality industry, *Cornell Hospitality Roundtable Proceedings*, 1-16.

Security Management from the Perspective of Internal Control and Audit

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Abstract

Risk management in order to implement the system of internal control and audit is to ensure integrity, transparency, and accountability, in terms of performance for any economic entity. The role of the internal audit is to evaluate and provide a substantiated and objective assurance to the general management on the degree of functionality, both on the whole internal control system and on each concrete form of its manifestation, according to the methodological and procedural framework and practice recognized in the field. Great flexibility is required in the organization and exercise of internal control and audit, because you cannot set rules for every situation encountered and also a rule if it is not topical or too rigid stagnates the process and leads to inefficiency. The result of this research is the strategy used on information security in the collection and processing of data necessary for organizing internal managerial control.

Key words: management, internal control system, organization, security

J.E.L. classification: M11

1. Introduction

The word risk derives from the Italian word risicare, which means to dare. In this regard, the risk is a choice, and not a destiny (Griffiths, 2018). The actions that we dare undertake, actions which depend upon the degree of freedom that we have or assume, all of the services to define everything that a human being is. From this definition, it follows that we are indeed subject to risks in everyday life, but we are in control with regard to their coordination, due to the fact that we are able to change many things, provided that we have the time and the required penchant. We are able to state that there is a risk in everything that we do, thus: one simple action, that of crossing the street, of taking a ride, of swimming, of knocking on a stranger's door, could end in misfortune or a disaster. There are risks in any activity that we undertake. They manifest in various ways, even if we refuse to admit that. However, the wisest thing we can do is to understand the risks and attempt to manage them, maybe even for our own benefit. In the specialized literature, there are several definitions of the concept of risk that we shall present hereinafter. Risk is defined as being the threat that an action or an event shall affect negatively the ability of an organization to achieve its objectives and to successfully perform its strategies (Fred, 2017). This definition highlights several essential factors, the risk is invariably a threat, respectively, meaning something that could take place, the threat refers to an event, that is, to something which must occur in order for risk to take shape, and if the event takes place, this will impact upon the achievement of the organization's objectives. From this definition, we observe that risk necessarily produces a negative impact on the objectives. Risk is the possibility or chance that something which will have an effect on the company's objectives will occur. This definition has, in addition to the advantage of being a simple and easy to comprehend definition, the word possibility/chance, which is a very well chosen one, considering that chance can

be both positive and negative. From the point of view of an internal auditor, the risk may be considered the heartbeat of the organization (Fayol, 2015). This analogy allows us to state that internal auditors must ensure that the organization adopts the issue of risk and manages it, rather than tolerate threats and, as a consequence of that, lose the opportunities. We strongly believe that risk management can also be a positive process, risk is not only that which takes place in an erroneous way, but also activities that one must ensure are correct or that one understood correctly. In practice, the risk may be perceived as a series of challenges, which must occur in the activities that we perform, and, especially, when we are on the verge of making decisions, in which case risk may become very grave. It is important for every organization, prior to risk assessment, to have its objectives firmly established based on real and possible risks. For these reasons, we recommend the internal auditors to always include an objective in the annual plan of internal audit regarding the assistance of managers for the improvement of the internal control system, on the basis of the risk management process, even if in practice there are major differences among entities regarding their organization (Parnell, 2013). Risk is also defined as being the uncertainty of a result, taking the shape of a probability of positive nature or of a threat, of certain actions or events, and it should be managed from the perspective of a combination between the possibility of something occurring and the impact that the actualization of this possibility would produce (Griffiths, 2018). Therefore, if the risk has a negative impact on the achievement of the objectives, then this remains a threat, and if risk holds positive connotations, these will become opportunities, which can either be ignored or exploited.

The purpose of the research is the evaluation of the main security procedures of the internal control which serve as a basis of efficient corporate governance.

2. Literature review

The concepts of internal control and internal audit, although different, contain elements that bring them closer, but also elements that differentiate them, which creates enough confusion, even among specialists. The standards of good practice in the field specify that each employee is responsible for his own internal control within the organization to which he belongs (Koufopoulos, 2012). In this sense, the internal control is found in the structure of each function of the management, of each activity and is in the responsibility of each employee, therefore it is not recommended to organize itself as a separate compartment within the entity (Kaplan and Norton, 2020). In addition to its internal control, the line management also has other control attributions that can evolve, respectively diminish or develop, depending on the evolution of the risks within the department it coordinates.

The concept of internal control has been constantly defined and redefined, at least in relation to two aspects, namely (Spencer, 2016):

- 1. decentralization of activities, which led to diversification control activities and the delegation of their powers to within the same structure;
- 2. amplification of the number of provisions, norms, rules and regulations, which provide the manager with the means of action for the proper use of resources in view increase effectiveness.

The internal control-audit system is defined as the integrated set of concrete internal control instruments, implemented at a given time in any entity, in order to achieve the established objectives. Optimal functioning of entities based on an integrated framework of internal control and audit requires the existence of an appropriate control environment that promotes ethical values, is transparent, accepts standards of good practice and establishes responsibilities in the spirit of strategies and policies approved by top management (Rothaermel, 2020).

In addition, the definition of risk management includes a specific objective (keeping risks within the limits of risk tolerance) and a specific link with certain functions of management (direct utility in developing the overall strategy of the organization, ie in planning). If the risk management aims at stabilizing the trajectory towards the achievement of the strategic objectives, the internal control aims at ensuring that, on the way to achieving the strategic objectives, the current objectives are permanently met (Amason, 2020). Risk management involves, of course, all management functions, including control, and is the responsibility of general management. As it also involves management and coordination functions, it is the responsibility of risk management to take the appropriate response. Even if it refers to the entire organization, the control function exercised within the risk management is specific and cannot replace the managerial control, which is exercised on hierarchical

levels. In other words, the internal control represents an objective possibility (attribute, attribute) of the general management, and the risk management constitutes a normative possibility of the general management, a lever of reaching the competence established by the norm (constitutive act, regulation of organization and functioning).

Risk management is embodied in the managerial functions of forecasting, coordination, organization and training is supported by the continuous exercise of the control-evaluation function, a function performed by the internal audit, which consists essentially in comparing the results with the objectives, identifying the causes that determine the positive or negative deviations and taking corrective measures necessary preventive measures (Rothaermel, 2020). Therefore, internal control is a global managerial function, and risk management involves all management functions at a specific level

In conclusion, we can appreciate that the relationship between the notions of internal control-audit and risk management is defined by the common ownership of the terms of risk management and the current objectives of the organization.

3. Research methodology

The objective of the research is constituted by the evaluation of the main security procedures of the internal control which form the basis of good corporate governance. In the research which was carried out, 200 managers from Romania within four organizations from the following fields: agriculture, hotels/restaurants, trade and construction participated. The research took place from February 2021 - June 2021. The research was based upon the use of the questionnaire sent by e-mail and the size of the group surveyed for this study was the simple random survey.

We used in the research the mathematical method of maximum global utility. The stages of applying the mathematical method consist in:

Stage 1. The utility matrix is determined with the following elements

$$x_{ij}$$
, $i = 1,..., r$ and $j = 1,..., n$. (1)

It is calculated for each element that makes up the largest maxim criterion, as follows:

$$x_{ij} = u_{ij} = \frac{x_{ij} - x_{i\min}}{x_{i\max} - x_{i\min}}$$
 (2)

and the minimum criterion is calculated with the formula:

$$x_{ij} = u_{ij} = \frac{x_{i \max} - x_{ij}}{x_{i \max} - x_{i \min}},$$
(3)

 x_{ij} = element *i* associated element *j*;

 $x_{i \max} = \text{minimum of element } i$:

 $x_{i \min} = \text{maximum of element } i.$

Stage 2. The value of the global utility for each element is determined as the sum of all the elements that make up the utility matrix as well as the importance coefficient for each element in the matrices.

$$UG_{j} = \sum_{i=1}^{r} \alpha_{i} u_{ij} \text{, where } \sum_{i=1}^{r} \alpha_{i} = 1$$

$$\tag{4}$$

Stage 3. Choose the project that corresponds to the maximum overall utility V_j maximum global utility corresponds.

$$\max \{UG_j\} \Rightarrow V_{j=1,\dots,n} \tag{5}$$

The research study is based on the analysis of the way of applying the main security procedures of internal control which form the basis of good corporate governance. In the process of data analysis the security of internal control was approached as a system comprised of five categories of security procedures:

S1 -The security of procedural control: is held by every employee of the entity; requires a systematic update; represents the basis of the development of the other form of control and audit.

- S2 The security of preventive financial control: performs monitoring of financial risks; it is usually removed when the procedural control reaches a satisfying level; can be exercised from an upper level.
- **S3** *The security of the subsequent control*: is accomplished by general management decision; a control department can also be constituted; can be exercised from an upper level.
- **S4** *The security of internal audit:* assesses the managerial control system; counsels the general management.
- **S5** *The security of financial audit:* assesses the existence of the function of internal audit; closes the feedback of the function of internal audit; provides a certification of the final financial circumstances; assesses the way the managerial control system is organized; represents an external assessment.

4. Findings

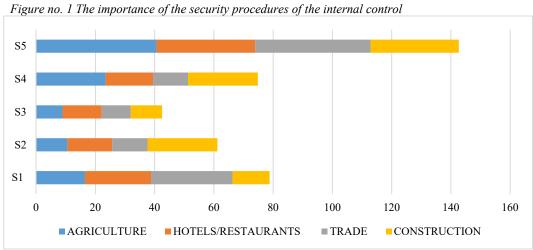
In Table no. 1 the informational basis of the study is displayed, the proportion of the importance that managers give to each security procedure of internal control, respectively.

Table no. 1 The importance of the implementation of the procedures

	FIELD OF ACTIVITY				
APPLIED		HOTELS			
PROCEDURE	AGRICULTURE%	/	TRADE %	CONSTRUCTION %	
I KOCEDUKE	(v1)	RESTAURANTS %	(v3)	(v4)	
		(v2)			
S1 (c1)	16.45	22.35	27.5	12.5	
S2 (c2)	10.55	15.15	11.9	23.61	
S3 (c3)	8.9	13.25	9.8	10.54	
S4 (c4)	23.45	16	11.82	23.55	
S5 (c5)	40.65	33.25	38.98	29.8	

Source: the author's own concept

The main results show that the managers of the organizations take into account firstly S5 - The security of the financial audit, and lastly S3 - The Security of the subsequent control (Figure no.1).



Source: the author's own concept

Going over the calculus algorithm involved:

Step 1 – Construct the matrix of the units with the elements x_{ij} Figure no. 2.

Figure no. 2 Matrix of the units

0.26	0.66	1.00	0.00
1.00	0.65	0.90	0.00
0.00	1.00	0.21	0.38
0.99	0.36	0.00	1.00
0.00	0.68	0.15	1.00

Source: the author's own concept

Step 2 – The calculation of the global utilities for each organization (Table no. 2):

Table no. 2 Results of the calculation of global utilities

GLOBAL UTILITY	RESULT
AGRICULTURE	2.25
HOTELS/RESTAURANTS	3.34
TRADE	2.26
CONSTRUCTION	2.38

Source: the author's own concept

Step 3 – In Table no. 2 it is noticeable, through the calculation of the global utilities, that the highest global utility is held by the organization in the field of activity Hotels/Restaurants.

Consequently, following the application of the calculus algorithm of the method of maximal global utilities, we may conclude that the organization in the field of activity Hotels/Restaurants had the best assessment regarding the importance of the security procedures of internal control regarding corporate governance.

5. Conclusions

The creation and the proper functioning of this process, which is a lenghty one, entails collective and individual efforts, in such a way as it can be adapted in the best possible manner to the specificity and the dimension of the entity, while also abiding by the provisions of the law and the general principles of the managerial internal control.

The security of the procedural control, which must cover between 50-90% of the overall activity of control organized within the entities. The procedural control includes self-control in all its forms: mutual control, hierarchical control and the partner's control, the former operational control, and concomitant control, respectively, which must be implemented in the operational work procedures. The operational work procedures must contain integrally the legal framework regulating the business, the control activities dissipated throughout the flux of the processes, the responsibilities, and the documents that are elaborated. Once realized, the procedures will be implemented, improved, appropriated by the executive and management staff, systematically updated, and approved by the relevant levels of management.

The security of the preventive financial control must represent approximately 1 – 5% of the overall activity of internal control within the entity and which must become an optional control at the disposal of the management. In this regard, the general management decides whether it needs this control and it determines the activities related to which it must be exercised. Overall, preventive financial control supervises the logical coherence of a chain of financial operations. The responsibility of the preventive financial auditor is joint with the management's, but only with regard to his/her fault, even if he/she was misled.

The security of the subsequent control is an ex-post control which must represent 9-10% of the overall activity of control within the entity.

The security of the internal audit – must perform the assurance of the functionality of the managerial system of control and the counseling of the general manager.

The security of the financial audit – must ensure:

- the accuracy and reality of the financial circumstances, according to the accounting regulations in force;
- the assessment of the management and control systems to the authorities responsible for observing the financial obligations or to other public funds;

The fact that the resources which are at the disposal of a public entity are always limited, forces the entity to perform a comparison between the additional costs generated by the new system of internal control and the advantages it brings before this system is implemented and developed. Given that each instrument of internal control implies both certain implementation costs and anticipated effects, the management is in the position to analyze, from the perspective of efficiency, if the implementation of the instruments of internal control, in its entirety, is justified or not. The managerial internal control can provide the management with data regarding its progress or setback in reaching the intended goals. The managerial internal control offers a reasonable, but not absolute, assurance that the public entity achieves its intended goals. The reasonable assurance implies reaching a level of trust which is satisfactory from the point of view of costs, benefits, and results, a level that is established by self-evaluation and external evaluation. Therefore, the costs of the internal control must be lower to the achieved benefit, the latter being measured by means of the degree of risk reduction in achieving the objectives.

Having in view a series of internal or external factors (which could not be taken into account when the managerial internal control was devised), the probability to achieve the objectives of the entity is damaged by the limits of the internal control, such as:

- the ongoing changes occurring in the internal and external environment of the entity;
- human errors: inaccurate interpretations, reasoning mistakes, negligence, oversights;
- abuse of authority shown by some people in management, coordination or supervising positions;
- restriction of the independence of the staff in performing the job requirements;
- control procedures ill-adapted or adapted and not applied;
- the costs of the managerial internal control. The managerial internal control must be efficient, it must not generate additional costs, and it must lead to the saving of the material, financial and human resources. Although an entity can define its own system of good managerial internal control, this can be implemented or dealt with subjectively by the staff within the entity, as a consequence of the lack of professional training.

In accordance with the legislation in this area, the managerial internal control is the responsibility of the managers of the entity, who have the obligation to design, implement and continuously develop it. The implementation of the system of managerial internal control, through its own human resources, ensures both their ongoing professional self-improvement and the removal of additional expenses for counseling in the area. In the light of the benefits mentioned above, it is considered that entrusting third parties with accomplishing the activities concerning the implementation and development of the system of managerial internal control is not advisable for the achievement of the mission of the entities.

The findings of the internal control and audit must contribute to the improvement of the activities, but this should not materialize only by recommending the addition of new control activities, even if there are risks, as they involve additional costs.

The purpose of organizing internal control and auditing is to provide reasonable assurance against risks and not absolute assurance. Reasonable assurance is more than minimal and always relates to the entity's objectives.

6. References

- Amason, A., Ward, A., 2020. Strategic Management: From Theory to Practice. London: Routledge
- Fayol, H., 2015. General and Industrial Management. London: Pitman
- Fred, D., 2017. Strategic Management: Concepts and Cases. New Jersey: Pearson Prentice Hall
- Griffiths, P., 2018. Risk-Based auditing. England: Gower Publishing Limited

- Kaplan, D., Norton, P., 2020. The Strategy-Focused Organization: How Balanced Scorecard Companies Thrive in the New Business Environment. Boston: Harvard Business Press
- Koufopoulos, D., 2012. Essentials of Strategic Management. California: SAGE Publications Limited
- Parnell, J., 2013. Strategic Management: Theory and Practice. California: SAGE Publications Limited
- Rothaermel, F., 2020. Strategic Management. New York City: McGraw-Hill Education
- Spencer K., 2016. The Internal Auditing Handbook. Hoboken: John Wiley & Sons

Post-pandemic Challenges and Evolutions for the Romanian E-Commerce Market

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Abstract

The purpose of the present paper is to provide an in-depth analysis of Romanian e-commerce under the influence of Covid-19 and to highlight the positive evolution of the e-commerce phenomenon in Romania.

Amid the Covid-19 pandemic, the Romanian e-commerce market has known an upward evolution, of progressive growth. This led to the situation where large numbers of well-established players that used to be present exclusively offline on the retail market have chosen to concentrate a significant amount of their resources in transferring their business online, but also to the emergence of new participants that have been mesmerized by the appeal of e-commerce, in general, and by the extremely good results of the Romanian e-commerce market, in particular. The fact that the prospects are good for the Romanian e-commerce market is an opinion unanimously shared by many local entrepreneurs and is also confirmed by the yearly increase in sales.

Key words: e-commerce, marketing strategies, online business

J.E.L. classification: M31

1. Introduction

As new, revolutionary technologies emerge, companies need time to adapt in order to make steps in the right direction. There is also a high level of reluctance, which is manifested at all levels of organization.

Even though the personal computer appeared 4 decades ago, companies continued to use the classic working ways for a long time after, with paper or carbon paper being some examples in this sense, only after the 1990s adopting the new technology for creating and connecting working locations in a network, managing inventories, etc.

2. Literature review

The Internet is more than a new way of promotion or a new marketing policy, it is an absolute business philosophy that allows and facilitates the exchange of personal, physical and virtual experiences, from a sender to a final receiver.

Ever since the first online ad appeared in 1994, when HotWired made an ad to AT&T and asked, "Have you ever clicked your mouse right here? You will", the classic approaches of trade, either local or international, have fundamentally changed. (Agrawal et al., 2009, p.100) The business paradigm would change its content, B2C but also B2B relations moving to another level, much more developed and customized. It was found that between 1993 and 1998, advertising through the print media decreased by about 3% in the US, leading to a decrease in the revenues of concerned newspapers, which led to the idea of the gradual disappearance of print media and its replacement for the online press.

After 1996 and until now, there has been a significant increase in online advertising revenues, an increase that has also been supported by the development of the online consumer segment. (https://www.wmm.ro/publicitate-online-inceputuri-si-prima-campanie-publicitara-pe-web/)

Figure no. 1. The beginning of online advertising



Source: https://www.wmm.ro/wp-content/uploads/2015/09/inceputurile-publicitatii-online.jpg

It is well known that e-Commerce is the main factor that determines and facilitates the globalization of the world economy by removing the routes between partners and reducing the communication time to complete the business between the concerned partners. In other words, the globalization of the world economy is the main factor that helps the development of e-commerce. (OECD, 2000).

The Internet is a channel for sending and promoting messages from a sender - a trading company, a channel that is compatible with (almost) all classic promotion techniques, but also with other promotional techniques, such as:

- branded content;
- experiential marketing;
- advertising through play;
- promotion through influencer. (Ban, 2020, p.235)

Electronic commerce (e-Commerce), according to the Organization for Economic Co-operation and Development (OECD), is the conduct of business via the Internet, with the sale of goods and services taking place offline or online. (OECD, 1997, p.157) In Figure no. 2 we will see a distribution of the total sales obtained from e-commerce, at global level, for 2018, UNCTAD source. We notice that the undisputed leader is the United States, with a value of \$ 8,640 Billion, followed by Japan and China. What we will find is that B2B is about 5 times more valuable than B2C.

Figure no. 2. E-commerce sales: Top ten economies in 2018

Rank	Economy	Total e-commerce sales (\$ billion)	Share of total e- commerce sales in GDP (%)	B2B e-commerce sales (\$ billion)	Share of B2B e- commerce sales in total e-commerce (%)	B2C e-commerce sales (\$ billion)
1	United States	8,640	42	7,542	87	1,098
2	Japan	3,280	66	3,117	95	163
3	China	2,304	17	943	41	1,361
4	Korea (Rep.)	1,364	84	1,263	93	102
5	United Kingdom	918	32	652	71	266
6	France	807	29	687	85	121
7	Germany	722	18	620	86	101
8	Italy	394	19	362	92	32
9	Australia	348	24	326	94	21
	Spain	333	23	261	78	72
	10 above	19,110	35	15,772	83	3,338
	World	25,648	30	21,258		4,390

 $Source: https://www.growglobal.com/global-e-commerce-b2b-e-commerce-5-times-bigger-than-b2c-e-commerce/\#: \sim: text=The \%20 value \%20 of \%20 global \%20 B2B \%20 e-commerce \%20 in \%20 20 18, the \%20 list \%20 for \%20 both \%20 B2B \%20 and \%20 B2C \%20 e-commerce.$

The world has known the Internet and has become an integral part of it, whether we are referring to everyday life, or the classic communication that has been replaced by virtual, online communication, through social networks such as Facebook, Instagram, Tik Tok, Pinterest, Snapchat, etc., but also the classic business approach has been gradually replaced by one of virtual communication and promotion.

In Figure no. 2 we can see a statistics regarding the use of the internet from a global point of view. Thus, as at March 31st, 2021, the total number of Internet users worldwide is 5,168,780,607 active users.

Figure no. 3

World Regions	Population (2021 Est.)	Population % of World	Internet Users 31 Mar 2021	Penetration Rate (% Pop.)	Growth 2000-2021	Internet World %
Asia	4,327,333,821	54.9 %	2,762,187,516	63.8 %	2,316.5 %	53.4 %
Europe	835,817,920	10.6 %	736,995,638	88.2 %	601,3 %	14.3 %
Africa	1,373,486,614	17.4 %	594,008,009	43.2 %	13,058 %	11.5 %
Latin America / Carib.	659,743,522	8.4 %	498,437,116	75.6 %	2,658.5 %	9.6 %
North America	370,322,393	4.7 %	347,916,627	93.9 %	221.9 %	6.7 %
Middle East	265,587,661	3.4 %	198,860,130	74.9 %	5,953.6 %	3.9 %
Oceania / Australia	43,473,756	0.6 %	30,385,571	69.9 %	298.7 %	0.6 %
WORLD TOTAL	7,875,765,687	100.0 %	5,168,780,607	65.6 %	1.331.9 %	100.0 %

NOTES. (1) Internet Usage and World Population Statistics estimates are for March 31, 2021. (2) CLICK on each world region name for detailed regional usage information. (3) Demographic (Population) numbers are based on data from the <u>United Nations</u> Population Division. (4) Internet usage information comes from data published by Nielsen Online, by the International <u>Telecommunications Union</u>, by <u>GfK</u>, by local ICT Regulators and other reliable sources. (5) For definitions, navigation help and disclaimers, please refer to the <u>Website Surfing Guide</u>. (6) The information from this website may be cited, giving the due credit and placing a link back to www.internetworldstats.com. Copyright © 2021, Miniwatts Marketing Group. All rights reserved worldwide.

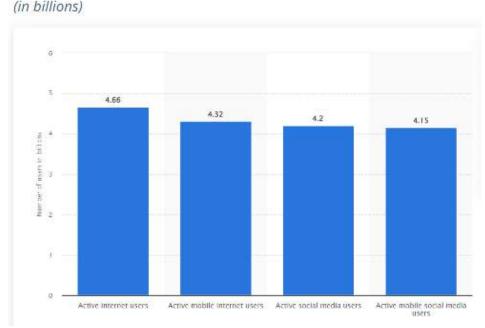
Internet Users in the World by Geographic Regions - 2021

Source: https://www.internetworldstats.com/stats.htm

Online businesses have blown up with the confidence that entrepreneurs have begun to have in online promotion, the mirage of earnings has begun to become a reality, online consumer segments have grown with the emergence of various social media platforms. In 2004 and 2006, respectively, two of the social networks most used in the online environment at present were born: Facebook (the new Meta, year 2022), created by Mark Zuckerberg, respectively Twitter, created by Jack Patrick Dorsey Christopher Isaac Stone, Noah Glass, Evan Williams.

Regarding the current online users, most of those who use social networks, use the smartphone as a communication terminal. As we will see in Figure no. 4, the global digital population related to the use of social media via smartphone has a share of 4.15 billion active users, compared to 4.66 billion total active internet users, which indicates the huge interest in social networks.

Figure no. 4
Global digital population as of January 2021



Source: https://www.statista.com/statistics/617136/digital-population-worldwide/

3. Research methodology

This paper focuses on a marketing research conducted by combining office research with the observation method. (Jugănaru, 1998, Jupp, 2010)

The information collected and used in this research belongs to the type of secondary information. We used various sources, divided into two categories, classic sources (books, articles, etc.) and online sources. The vast majority of sources used are online.

We processed the information and made personal interpretations (Silverman, 2004) on the studied phenomenon, the online commerce in Romania impacted by the Covid-19 pandemic.

4. Findings

The 1990s coincided in Romania with the transition to a free market economy, and the access to state of the art information technology determined the newly established companies to get in touch with it. The Internet, in its incipient form, has begun to take shape. Since the appearance of the first online store in Romania, in 1997, inaugurated by PC NET, cybershop.ro, and until now, things have evolved to what is today the modern online commerce, respectively the 50th place in the world, with a value about \$ 3 billion, reported for 2020.

In 1998, the online store e-shop.ro appeared, which was to introduce the famous shopping cart, in a more rudimentary version than what exists nowadays. In 2000, the Ordinance no. 130/2000 inured, the one that was to regulate from the legal point of view the status of the contracts concluded remotely, a first step in what constitutes the legality of online business in Romania. In 2002, the Law on Electronic Commerce appeared, the Law no. 367/2002, which would further regulate the activity of electronic commerce, so "The future sounds good online".

On December 17th, 2001, the famous Emag.ro platform was launched, which would set the tone for marketplace e-commerce, in a similar formula to Amazon.com, Ebay.com, Alibaba.com and which would eventually become the market leader in Romania, but also with outlets to other markets, in Hungary - Emag.hu, Bulgaria - Emag.bg.

In 2006, according to data provided by ANCOM, over 4 million Romanians browsed the Internet, with various purposes, either to purchase a product, or to socialize, or just to obtain information from various fields, offered by specialized search platforms. Also in 2006, there were over 433 online stores, according to research by GPEC and underclick.ro.

In 2008, according to data provided by GPEC at the request of ANCOM, the number of online stores reached 875, respectively we notice the doubling of the number of stores in about 2 years, from 2006 to 2008. We notice an increased interest of Romanians for online commerce, a very good motivator also being Romania's accession to the EU in 2007, which generated Romania's opening to the international B2B and B2C market. Romanians were more and more active, both in the position of potential buyers, but also in the position of entrepreneur, in online format. Thus, after the appearance and the possibility to use Google services for promotion, such as: Google Adsense, Google Ads, Google Merchant, etc., the Romanian entrepreneurs activated and made full use of these facilities and grew their online business.

In 2011, the volume of online transactions related to e-commerce registered a figure of approximately EUR 120 million, in relation to the Romanian local market, according to Romcard data. Online marketing is becoming a necessity, large corporations starting to rethink the classic promotion strategies. Online promotion spending on various channels, such as Google and Facebook, has increased. A new context of online promotion, affiliate marketing, has also emerged, and in 2009 Emag launched today's famous affiliate platform, Profitshare.

In 2012, the total number of online stores reached the spectacular figure of 3,500, according to the GPEC Report. We notice a 4 times higher increaseduring the period from 2008 to 2012, from 875 stores to 3,500. In 2012, the volume of online transactions related to e-commerce recorded a figure of approximately EUR 500 million in relation to the Romanian local market, and as a percentage of the total retail market, the e-commerce retail market represented 1.3%.

In 2014, the total number of online stores reached 5,000, according to the GPEC Report, and in 2015 the e-tail market reached a traded value of approximately EUR 1.5 billion (excluding services, utilities and tourism), with approximately 11 million online users, according to data provided by Romcard. (https://issuu.com/gpecro/docs/istoria-ecommerce-ro)

In 2017, the value of online shopping made by Romanians was about EUR 2.8 billion, 40% higher than the previous year, 2016, according to data provided by GPEC. Also, E-commerce as a percentage of total retail reached 5.6%.

With the emergence of Covid-19 at an international level, but also at local level, in Romania the companies, be they foreign or domestic, from various branches of activity, have enhanced the online activities, in order to compensate the losses from the offline segment. Covid-19 restrictions have accelerated the growth of the e-commerce segment, due to the inability of consumers to purchase from the classic offline segment. Thus, whether we are talking about B2B or B2C, things have evolved to an unprecedented acceleration in the online area, entrepreneurs realizing that they have no choice but to outsource activities in this direction, to invest heavily in digital technology and further training courses, for to face this new challenge. Thus, according to estimates by ARMO (Romanian Association of Online Stores), the e-commerce sector reached the threshold of EUR 5.6 billion, at the end of 2020, by EUR 1.3 billion more than in 2019, exceeding the estimate with about EUR 500 million, an increase attributed to the Covid-19 pandemic, which led to an unplanned acceleration. (Raport GPeC E-Commerce România 2020: Cumpărături online de 5,6 miliarde de euro, în creștere cu 30% față de 2019 | Blog-ul GPeC)

"Estimates from the Europe e-Commerce Report for 2021 show a total turnover generated by the Romanian e-commerce sector of around EUR 6.9 billion. We are witnessing a doubling of the turnover in online commerce in the last 4 years, a trend that makes e-commerce one of the most efficient and dynamic sectors of the Romanian economy", added Florinel Chiş, ARMO Executive Manager. (https://www.zf.ro/business-hi-tech/asociatia-romana-magazinelor-online-estimeaza-cresteri-peste-20-20302028)

For the year 2021, we notice a 23-24% e-tail market growth compared to the data provided for the year 2020, from EUR 5.6 billion to 6.9 billion. Taking into account that at European level the annual (2020/2021) growth is about 12%, Romania has a considerable advance, almost double. However, we must keep in mind that this is possible due to the fact that Romania is still ranked among the last countries in Europe, in terms of Internet access, digitization, etc.

The Covid-19 pandemic also led to the emergence of many new online businesses, entrepreneurs who noticed fantastic opportunities, who put them into practice, taking advantage of the growing appetite of Romanians for online purchases, these becoming a must-have for certain types of products and services.

This evolution of the Covid-19 pandemic in Romania has had a direct and strong impact on the growth of e-commerce and the speed-up of the adoption of online payment by card. The main players that helped this rapid growth were online stores, as well as shoppers. During this period, we also noticed a significant transition from cash pay-on-delivery to the courier to card payment, the population's confidence in the payment method by card increasing rapidly. Thus, after an analysis by DreptulLaBanking, based on BNR statistics, it was found that the volume of card transactions increased by 60% in June 2021 compared to June 2019. Also, the total number of cards amounts to 19.2 million in June 2021, compared to 17.7 million cards in June 2019. The annual increase in the volume of card transactions, reported in June 2021 compared to June 2020, is 46%. (https://adevarul.ro/economie/bani/tranzactiile-plata-cardurile-crescut--60-doi-ani-fondul-pandemiei-1 617f993c5163ec42710b4ea1/index.html)

5. Conclusions

In a world crushed by the Covid-19 pandemic, with a global economy affected in many areas of activity (hospitality, classic trade, passenger air transport, etc.), we still see a definite boost in the area of online commerce. Large companies such as Amazon, Facebook (Meta), Tesla, have reported increased in revenues in 2021 compared to the previous year 2020, when the Covid-19 pandemic began. Romania is no exception, the figures say it all, online commerce is the one that has outpaced the other fields of activity, companies such as Emag.ro, Fashion Days, Vivre.ro, have had increases in sales during the pandemic, and things do not seem to stop here. Other predominantly offline companies have added or improved the online version, offsetting the losses caused by the pandemic, in some cases reporting better financial data than the period preceding the Covid-19 pandemic.

6. References

- Agrawal, N. et al. in S. Ray, S. Yin, 2019. Channel Strategies and Marketing Mix in a Connected World. Springer Nature (Vol. 9)
- Ban, O., 2020. Promotional techniques [Tehnici Promoţionale]. Cluj: University Press of Cluj Publishing House.
- Jugănaru, M., 1998. Theory and practice in marketing research [Teorie și practică în cercetarea de marketing]. Bucharest: Expert Publishing House.
- Jupp, V., 2010. Dictionary of social research methods [Dictionar al metodelor de cercetare socială].
 Iasi: Polirom Publishing House
- OECD, 2000. E-commerce for Development Prospects and Policy Issues, Technical Paper, no. 164
- OECD, 1997. Electronic Commerce: Opportunities and Challenges for Government, p.157, Paris
- https://www.wmm.ro/publicitate-online-inceputuri-si-prima-campanie-publicitara-pe-web/
- https://www.growglobal.com/global-e-commerce-b2b-e-commerce-5-times-bigger-than-b2c-e-commerce/#:~:text=The%20value%20of%20global%20B2B%20e-commerce%20in%202018,the%20list%20for%20both%20B2B%20and%20B2C%20e-commerce.
- https://www.internetworldstats.com/stats.htm

- https://issuu.com/gpecro/docs/istoria-ecommerce-ro
- Raport GPeC E-Commerce România 2020: Cumpărături online de 5,6 miliarde de euro, în creștere cu 30% față de 2019 | Blog-ul GPeC
- https://www.zf.ro/business-hi-tech/asociatia-romana-magazinelor-online-estimeaza-cresteri-peste-20-20302028
- https://adevarul.ro/economie/bani/tranzactiile-plata-cardurile-crescut--60-doi-ani-fondul-pandemiei-1 617f993c5163ec42710b4ea1/index.html
- Silverman, D., 2004. Interpretation of qualitative data [Interpretarea datelor calitative]. Iasi: Polirom Publishing House.

The Challenges and Importance of Virtual Teams During the COVID-19 Pandemic

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Abstract

The covid-19 has changed how things are run in nearly all facets and aspects of life. As much as it is a health crisis, it is also a socio-economic issue. Indeed, the effects of the pandemic on the economy are set to be palpable into the future even after the world is healed from the pandemic. Thus, business organizations have to learn, adapt or intensify their use of virtual teams since virtual teams are essential in business existence and success during the pandemic. This article conducts an extensive and relevant review of literature that expounds on the subject. After the various pieces of literature are reviewed, a summary of the findings of the challenges and importance of virtual teams during the pandemic is made. The paper also presents the research methodologies used by the various authors in obtaining the results and a discussion on the matter of validity, limits of the study, credibility, and generalization of the data content.

Key words: virtual teams, pandemic challenges, communication technology, digital era

J.E.L. classification: J62, J81, M29

1. Introduction

The wake of the unprecedented Covid-19 pandemic occasioned an overhaul in how things were run in offices and workplaces. When the pandemic hit the world and took a devastating toll on lives and livelihoods, governments and international institutions had to invent ways that would curb the spread of the virus. The efforts spent on the task led to various policies and health guidelines. The World Health Organization recommended people to keep a social distance of at least one meter from others even if they don't appear sick. Offices and workplaces were required to ensure that staff and employees were not close to each other. Owing to the challenge of limited space in many workplaces and the opportunities and possibilities birthed by the fast-paced technological world, many companies resulted in virtual teams. However, this does not mean that virtual teams did not exist before the pandemic. A salient example of virtual teams that existed long before the pandemic is the Whirlpool Corporation. For building their latest product, a new division was formed in the 1990's. The project was about making a refrigerator free of chlorofluorocarbon, and the experts responsible for its development were drawn from different continents like Europe, South America and North America to form virtual teams. Thus, besides being a consequence of covid-19, virtual teams have been leveraged for various benefits and reasons. Some of the reasons are globalization, industrialization, stiff competition in the marketplace, and decentralization.

Virtual teams are the gathering of individuals spread across various time regions, different languages, dialects, race or nationalities which are joined by a common shared objective. They are united by the digital telecommunication technologies to achieve the organizational assignments. Derivable from the expanding rivalry in the business community, work globalization, the breakthrough in data, decentralization and correspondence innovations, organizations request

adaptability and readiness in their conveyance of items and administrations. Virtual teams assume a critical part to fulfill these needs. As organizations keep on battling for ability and talent which is quick turning into a scant asset, virtual teams structure permits organizations to use the accessible ability across boundaries. An ever increasing number of organizations are embracing virtual teams to deal with lessen their working expenses, to promote disseminating information and knowledge between their representatives to advance a progressive hierarchical learning and increase their employee's schedule, allowing them to being open all day, every day by having virtual teams in several time regions.

As per the social analysts, human connections draw their solidarity from the actual vicinity of the people. Because of the way that virtual teams have restricted or, no eye to eye collaborations, it tosses a heap of difficulties. For the achievement and success of virtual teams it is important to beat the social contrasts, correspondence boundaries, power battles and struggle to fabricate trust, cooperation and responsibility among the people. However it sounds troublesome yet can positively be accomplished through successful authority. With the right methodologies, cycles and devices set up, associations can benefit incredibly from this trendy pattern of virtual teams

Undeniably, the pandemic's wake has shed light and exposed the challenges and importance of virtual teams. This paper aims to underscore the challenges and importance of virtual teams during the pandemic.

2. Literature review

Since this paper aims to get to the nitty-gritty of the benefits and challenges of virtual teams during the pandemic, we review the relevant literature on the topic. The extensive and intensive literature review is essential for a clear and accurate understanding of the topic.

According to Victor Garro-Abarca et al., virtual teams and remote working have been facilitated and occasioned by technology advances and crises. The digital era is described by trend setting innovations that have made the worldwide software development improvement area to be a precursor in discovering available resources through which remote working will assist with exploiting the data, correspondence advances, and communication technologies to winding organizations to higher echelons (Garro-Abarca et al., 2021). The first crisis to be associated with the development and prevalence of virtual teams was the oil crisis. The crisis birthed a concept known as teleworking (Venn, 2016). Teleworking was characterized as utilizing remote computers equipment to access office equipment (Watad and DiSanzo, 2000). At the onset of the 1990s, the companies and business organizations that had the advantage of virtuality, cultural diversity, leadership, communication, the territorial allocation of employees, cohesion, the interdependence of tasks, and empowerment could form virtual teams. This was the time in history where there was an unprecedented advent of communications and the proliferation of the internet. According to the journal, the wake of the covid-19, which is also a crisis, found the virtual teams in place. The pandemic only highlighted and remarked their importance in a more broader and comprehensive way (Klonek et al., 2021).

Based on Victor Garro-Abarca, the virtual team's performance is affected by some factors. Communication, trust, geographical distribution, cultural diversity, leadership, and the methods used to develop work with virtual teams. Communication is essential because starting directions are not enough. Thus, communication in virtual teams needs a higher improvement in quality and in frequency. When people are distant away, they need to keep seeking instructions and consulting to ensure that they are doing the right thing. On the other hand, leadership influences the confidence among virtual collaborators (Abarca et al., 2020). Workers need clarification and good leadership so that they be aligned to the organization's goals. Trust plays an important role in virtual teams. Workers will execute their mandate well even while miles away, yet there is zero or minimum supervision.

Another piece of literature was penned down by Victor Garro, Pedro Palos-Sanchez, and Enrique Rus-Arias. The authors found out that globalization, digital culture, and an increase in the amount of technology that is available for online communications. Further, the need for virtual teams has been accelerated by the wake of pandemics, wars, and epidemics. The wake of the covid-19 pandemic, which is a health challenge, has made schools, businesses, hospitals, and all people, in general, learn how to avoid contracting the virus among the workers, students, and teachers. They have resulted in

remote working and virtual teams. According to the research, the professionals who have been using virtual teams even before the covid-19 outbreak are software developers, research and development professionals, engineering teams, developers of new products, and consultants. According to the research, the factors that affect the performance of virtual teams are interdependence of tasks, amount of virtuality as a moderating factor, characteristics of team tasks, empowerment, cohesion, leadership, team distributions, communication in virtual teams, and trust in the virtual teams. The research has stated that when companies use virtual teams well then, they are poised to benefit from increased scope; virtual teams are important tools for globalization, increased response time, efficiency, which creates value for the organization, dynamic adaptation of organizations to new situations, and environments. Other benefits that organizations have from having virtual teams are hiring staff with the necessary experience and skills regardless of their geographical locations. This helps increasing the full-scale performance of organizations. Other advantages of virtual teams are that they enable businesses to respond faster to market changes, improve creativity, and work with information trade.

According to Siebdrat et al., virtual teams, if managed well, can outperform collocated teams. The researchers investigated over 80 software development teams that have varying dispersion. These groups had members in different countries, cities, and continents (Siebdrat and Ernst, 2009). The researchers found out the virtual teams gained prominence when more and more companies started organizing their tasks over distance, when the teams started comprising members from different geographical locations, and when the teams comprised people with diverse cultural background.

According to the authors, virtual teams are here to stay. The virtual teams have both their bright and dark side. The study found out that there is trouble collaborating in virtual teams because of the distance. Thus, collaboration is easier in a collocated environment. Other challenges are that reduced trust, difficulties in coordination and communication and intensified incapacity to build up a common objective. Other potential challenges that arise from virtual teams are that the physical distance between the members in an organization decreases the closeness and affinity between the members, and this is a precursor for violence and conflicts. Another challenge is brought out by workers who are in different time zones. There are some places where people are at night time while in other places the people are at daytime. If the people were to work together, it would mean that they should work simultaneously. Thus, some workers will have to reorganize their schedules to accommodate the others. This is the part where confusion and frustration occurs.

On the bright side of dispersed teams, virtual teams are essential in accomplishing complex tasks. Complex tasks are like research and development. Big are known for consolidating their skills and proficiency in different locations that are geographically apart. The depth of expertise within the competency centers is strong. Another benefit of a dispersed team is that there is increased heterogeneity. There is a higher level of structural and demographic diversity than do the collocated teams. Structural diversity exposes the members to heterogeneous sources of feedback, work experience, and networking opportunities. The diversity in nationality among the members of the virtual teams has been found to enhance the problem-solving capacity as it brings more advantage to carry on a project.

Because virtual teams are here to stay, the studies recommend that the managers of corporations and business organizations learn how to maximize and optimize the benefits of virtual teams while reducing the disadvantages of the virtual teams. The team members must be committed to the organizational goals, actively support the team spirit and identify with the teams. The various ways through which managers can ensure that the benefits of dispersed teams are increased while the challenges are quelled are through emphasizing teamwork skills, promoting self-leadership across the group, providing eye-to-eye meetings, cultivating a worldwide culture, and not ignoring the meaning of small distances.

Deloitte conducted another relevant study on the topic of this research. The study posits that virtual era is here to stay. The organizations ought to accordingly support their existence and prosper with the reality. The researches admit that numerous businesses confronted difficulties of working with virtual teams in the initial phase of the covid-19 pandemic. This is why Deloitte came up with the piece of literature to suggest ways to overcome the challenges meted on them by the pandemic. The eight principles that can lead a team from physical to virtual-high performing team are ensuring

the well-being of the team, empowering and promoting self-leadership, strategically over-communicating, visibility and checking in frequently, leveraging on technology for collaboration, tracking capacity and progress, establishing a new rhythm and re-igniting team purpose and clarifying team roles (Deloitte).

Jennifer Feitosa and Eduardo Salas conducted a research where they identified the challenges of virtual teams during the covid-19 pandemic. The research identifies four main challenges affecting business organizations in the midst of the pandemic. The challenges are reduced trust among the team members, process loss in virtual teams, lack of inclusion emanating from huge levels of discrepancies in the member's local context, and the last challenge is in assessing the teamwork, often cognizant of the fact that many workers have been cut salaries, and thus they may not be performing optimally (Feitosa and Salas, 2020). If businesses can act towards addressing the challenges facing virtual teams, the authors state that the challenges can be turned into opportunities.

3. Research methodology

This study is a report of the results obtained after a thorough review on literature related to virtual teams, the benefits and challenges of the virtual teams and the prevalence and prominence virtual teams during the covid-19 pandemic. This study has the purpose to gain extra knowledge on virtual teams and their relevance during and post the Covid-19 pandemic through the explorative review method. The sources used in the research were obtained from credible search engines such as Google Scholar and ScienceDirect among other credible and scholarly journals and websites like Web of Science, Deloitte, Emerald. The peer reviewed sources were written in English. The key terms used in the search are virtual teams, covid-19, determinants of virtual teams of performance and the benefits and challenges of virtual teams. The studies used were published between 2016 and 2021. Most of the used sources were published in 2020 and 2021 since it is during this time that covid-19 wreaked havoc in the world. Before the sources were used, they were tested for reliability and validity. All the findings and conclusions made in this research were obtained from the sources.

4. Findings

From the laborious and extensive literature review, the various factors that have led to the proliferation of virtual teams are globalization, technological advancement, epidemics, war, crisis, pandemics, and the need to have global teams. Thus, the concept of virtual teams has been evolving over the years and decades. Some people call the virtual teams remote teams, dispersed teams, global teams, and computer-based teams, among other references. Some business organizations had not embraced the virtual teams until the covid-19 came knocking on their door.

They had to be aligned with the health guidelines and preventive measures to eradicate the vastly spreading virus. As a result, many companies have embraced virtual teams while others have increased the extent of virtual teams. Outright, the virtual teams have both benefits and challenges. From the various kinds of literature reviewed, virtual teams' challenges and importance during the pandemic can be obtained. It is worth noting that nearly all the sources agree that the benefits and challenges are premised on factors such as trust, cohesion, leadership, communication, empowerment, the geographical distance between the team members, cultural diversity, and the interdependence of tasks (Morrison-Smith and Ruiz, 2020). Business organizations have the arduous task of creating a conducive environment to ensure that the challenges of virtual teams do not overpower the advantages.

4.1. Challenges

One of the striking challenges is miscommunication or the lack of communication thereof among the team members. Undoubtedly, communication is key in business operations and in the prompt and efficient tasks execution. Although there are digital tools that help the team members to stay connected, the tools lack the personalization that comes with face-to-face interactions. Thus, emails and text messages can be misinterpreted as they lack the nonverbal cues, tone, and body language of in-person conversations. Another challenge occurs from the mode of communication that the various

team members prefer. Some members prefer to be contacted through an email, when others would rather choose messaging. Managers must overcome all the barriers to effective communications among the virtual teams.

Another obstacle is mistrusting your colleagues. The organizations have to face this major trouble and challenge while working with virtual teams. The organizations might feel like the virtual teams' output and productivity does not match the money they spend on the teams. This is a fertile ground for distrust (Jaakson et al., 2018). In other instances, a co-worker can feel like they are working more than the others, yet they are being renumerated the same. For instance, a worker can notice that their colleagues do not respond quick as they do. This makes them feel withdrawn and defensive. This is an impediment to virtual teams and the entire performance of business organizations.

In the wake of the pandemic, virtual teams are troubled by distracting environments. Many people are at home, including children, as a consequence of schools closing. When the teams are required to work from home, some of the team members may attend to their kids' needs while they should be working. The distraction usually diminishes the efficiency of workers who usually perform well (Besley and Stern, 2020). In extension, the performance of the business organization is affected.

Another challenge facing global teams is the interdependence between tasks. If any of the workers face unforeseen challenges or commitments, then it means that the work will be halted. For the tasks to be done, then all the members have to be scheduled for the same timetable as others. Outright, during the pandemic, there are many unforeseen occurrences. Some people contract the virus and fall ill, and that adversely affects their productivity and availability. Also, a member of toa virtual team can be held up attending to their loved ones who have suffered from the effects of the pandemics. Evidently, the pandemic increased the rates of deaths and illnesses, and thus people are more likely to have ailing concerned ones more often.

4.2. Benefits of Virtual teams during the pandemic

Virtual teams have played a critical role in ensuring that businesses adapt to new situations that the covid-19 pandemic has occasioned. Undoubtedly, the pandemic changed many implications that affect businesses operations. These changes were witnessed when there was a ban on international travel and flights, lockdown so that people do not move from one place to the other, and the disruption of the global supply chains (Guan et al., 2020). Organizations that did not have virtual teams before the pandemic faced it rough, and they had to stall some of the operations that had been affected by the pandemic. However, for organizations that had virtual teams in place, their operations were not stalled. This gave such businesses a competitive advantage over their competitors who did not have virtual teams.

Virtual teams facilitate the organizations to attract global talent. This means that organizations are not limited to hiring and recruiting workers who are not skilled or experienced while there are others who are talented, skilled, and experienced far away. This helps the organizations to benefit from industrious, efficient, and hardworking workers (Collings, 2014). Thus, the overall performance increases. The pandemic has adversely affected businesses, and business organizations need to have the best human resource to rise above the shackles of the pandemic. Virtual teams will bridge the geographical boundaries and allow businesses to hire talented workers from any part of the world. This will help businesses recover from the ills of the pandemic. The efficiency brought about by the virtual teams creates value for the organizations.

Another benefit of virtual teams during the pandemic is that businesses benefit from globalization. Globalization has made it possible for businesses to outsource raw materials from cheaper places and sell their products to other markets. Therefore, businesses have been able to tap on globalization to increase their market and lower the cost of production. Virtual teams help in the communication and planning of operations in various countries and regions where business organizations sell and market their products and suppliers of raw materials. The pandemic has shown people that the world is interconnected (Futures, 2021). Otherwise, how would one explain the spread of the virus from China to nearly all corners of the world? Thus, even businesses should spread their products from one corner of the world to the others. Virtual teams are one of the tools that will help them soar to large markets and overcome the adverse effects of the pandemic.

5. Conclusions

The benefits and drawbacks of virtual teams can be assessed from three points of view: organizational, individual, and cultural. This article sums up alternate points of view on the benefits and drawbacks of the virtual group and fills in as prepared reference for our pursuers.

We first present the advantages that we found beneficial for having virtual teams. The greatest benefit an organization has by implementing virtual teams is the cost savings. The organization can reduce or better, eliminate huge costs on land, office spaces, utilities bills and leaders' movement. Numerous organizations relocate their operations to the low-cost zones. In this way production cost additionally diminishes with the decreased unrefined material cost, functional expenses and lower wages of the representatives in these geographic areas. Attracting global talent is another great benefit. Virtual Teams enable organizations to search for ability past their nation. This unites the specialists and experts from across the globe to cooperate on the objective. Expanded information sharing and more noteworthy advancement occurs as organization's human resources share their comprehension of worldwide and nearby business sectors just as best strategic policies. Higher productivity means higher profits. Members of virtual teams will quite often have higher spotlight on the job that needs to be done. The individuals don't need to manage the organization bureaucracy which slows down the decision-making process. This improves the efficiency which shows as higher benefits. Since the individuals are spread across different time regions, there could be diverse group engaged on a similar task all day, every day of the week, so when one part rests there will be another elsewhere who might begin work where the previous had left. This abbreviates the item improvement time just as quicker reaction time to requests in both worldwide and local markets. If we see at a bigger cultural level, virtual teams have set out more current open doors for individuals who are less versatile and reluctant to move due to either family necessity or physical form. Presently any assignment that doesn't need the actual presence of an individual and which can be upheld by correspondence innovation and communication technology tosses a chance for some. This could open up to newer opportunities for every person who wasn't able to show their talent before.

We also did find some weaknesses of the virtual teams. The cost of technology can be one of them. The effective working of virtual teams is upheld by the proficient utilization of numerous correspondence and communication technologies like texting, emails and video-conferencing, among others. One device can't offer the total help. The expense related with these establishment and upkeep apparatuses is minimal on the higher side. Another issue that leads to a number of conflicts and contradictions between the individuals from virtual teams is the social and cultural contrasts. For example, while an European would draw up a direct report telling a terrible circumstance, this would be seen as inconsiderate by a Indian individual from the group. This would prompt struggles, conflicts, doubt and troubles in productive joint effort which is so imperative for the accomplishment of virtual team working. These difficulties are additionally encouraged by the shortfall of non-verbal signals so natural for up close and personal collaborations. So managing cooperation, distrust, conflicts and disputes is an important part for the wellbeing of the organization. Many individuals from virtual teams are antagonistically impacted by the absence of actual collaborations and social isolation may become a drawback from working in virtual teams. The majority of the correspondences in virtual climate is task-situated. In the present society where occupation is a significant social power for the majority of us on the grounds that a considerable lot of our working environment partners additionally comprise our dear companions, this gives a notgreat sensation of social confinement. This thus counter-impacts usefulness just as prompts pressure.

This small, but important number of detriments can be overwhelmed by following an alternate leadership and management approach, trainings, more prominent job clearness and powerful correspondence techniques. Organizations both big or small ones, are receiving the rewards of virtual teams for quite a while. It has been an all around perceived reality that virtual team is definitely not a passing tide yet it is digging in for the long haul.

The sources that have been used for this research are scholarly and peer-reviewed. Thus, the findings of this research can be used in other research that concern the same topic. However, the researchers used some sources that did not address the pandemic in the analysis. This has limited the study but has not affected its impact. The parting shot is that businesses should leverage virtual teams to overcome the challenges visited on them by the covid-19 pandemic.

Through the extensive review of virtual teams literature, the researcher concludes that virtual teams is an arising trendy pattern with adherents across all business areas. Very much like some other recent fad, virtual teams additionally need to be scrutinized by researchers to gauge its benefits and impediments prior to being acknowledged by the experts.

6. References

- Abarca, V.M.G., Palos-Sanchez, P.R. and Rus-Arias, E., 2020. Working in virtual teams: a systematic literature review and a bibliometric analysis. *IEEE Access*, 8, p.168923-168940.
- Besley, T. and Stern, N., 2020. The economics of lockdown. Fiscal Studies, 41(3), p.493-513.
- Collings, D.G., 2014. Integrating global mobility and global talent management: Exploring the challenges and strategic opportunities. *Journal of World Business*, 49(2), p.253-261.
- Feitosa, J., & Salas, E., 2020. Today's virtual teams: Adapting lessons learned to the pandemic context. *Organizational dynamics*, 100777, Advance online publication.
- Futures, B.L.I., 2021. Being Interconnected at the Time of COVID-19 Pandemic: A Call to Regain the Sense of Community. *Journal of Futures Studies*, 25(3), pp.39-48.
- Garro-Abarca, V., Palos-Sanchez, P. and Aguayo-Camacho, M., 2021. Virtual Teams in Times of Pandemic: Factors That Influence Performance. *Frontiers in Psychology*, 12, p.232.
- Guan, D., Wang, D., Hallegatte, S., Davis, S.J., Huo, J., Li, S., Bai, Y., Lei, T., Xue, Q., Coffman, D.M. and Cheng, D., 2020. Global supply-chain effects of COVID-19 control measures. *Nature human behavior*, 4(6), p.577-587.
- Jackson, K., Reino, A. and McClenaghan, P.B., 2018. The space between-linking trust with individual and team performance in virtual teams. *Team Performance Management: an international journal*. 25(1-2), p. 30-46
- Klonek, F.E., Kanse, L., Wee, S., Runneboom, C. and Parker, S.K., 2021. Did the COVID-19 Lock-Down Make Us Better at Working in Virtual Teams?. *Small-Group Research*.
- Deloitte, 2020.Leading Virtual Teams. Human Capital
- Morrison-Smith, S. and Ruiz, J., 2020. Challenges and barriers in virtual teams: a literature review. SN Applied Sciences, 2, p.1-33.
- Siebdrat, F., Hoegl, M. and Ernst, H., 2009. How to manage virtual teams. *MIT Sloan Management Review*, 50(4), p.63.
- Venn, F., 2016. The oil crisis. 1st ed., Routledge.
- Watad, M.M. and DiSanzo, F.J., 2000. Case study: the synergism of telecommuting and office automation. *MIT Sloan Management Review*, 41(2), p.85.

Green Brand Positioning as a Strategy to Guide the Green Marketing Mix: A Perspective on the Organic Food Supply Chain

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Abstract

This paper aims to establish the coordinates of the green brand positioning, as well as the influence exerted on the marketing mix. The research method used was the in-depth individual interview, conducted among specialists from certified organic companies that have in their portfolio an organic food brand. The research was conducted among manufacturers, processors, distributors and retailers. The results showed that the decision on brand positioning influences the other marketing decisions, but differences were found depending on the type and size of the company. The 4Ps contribute to the communication of brand positioning, but the product is the central element. The current situation on the Romanian market makes the price variable to be decisive in influencing the purchase decision, while communication is essential due to the necessary information and education effort. Last but not least, the main objective of distribution is to facilitate consumer access to this product category.

Key words: green brand positioning, green marketing strategies, green marketing mix, organic

J.E.L. classification: M31, Q57, M10

1. Introduction

Through the place it occupies at the level of marketing theory, brand positioning can be seen as a result of previous processes, market segmentation and targeting, and as a synthesis of the vision regarding the elements of the marketing mix. Thus, once it has been established how each component of the marketing mix supports the chosen positioning, they must be harmonized to be part of a coherent approach, materialized in the form of a marketing program capable of generating the desired position for the brand on the market and in the minds of consumers.

This approach can be quite complex, especially for companies that do not have a broad vision on the integration of marketing practices internally. The approach becomes even more difficult in the context of green marketing, many marketing tools need to be adapted to this perspective. In addition, the mission of these companies is often more difficult given their presence in underdeveloped markets.

Therefore, the challenges for companies operating in this field can be multiple and sometimes difficult to manage. That's why it is essential to have a better knowledge of the green market and current practices in the field of brand positioning, from the perspective of multiple types of participants, characterized by different levels of development, but which have in common the involvement in green marketing.

2. Literature review

2.1. Green brand positioning

A green brand involves a set of attributes and benefits associated with a low negative impact on the environment and creating a positive impression on consumers by increasing their concern for the environment (Hartmann, et al., 2005, p.10). The complexity and particularities specific to the

green brands determined the development in the specialized literature of an independent concept, green brand positioning, along with several other concepts in the field of brand management and more.

Green brand positioning involves "an active communication and differentiation of the brand from its competitors through its environmentally sound attributes" (Hartmann, *et al.*, 2005, p.10), but also through its specific benefits and values. Along the same lines is the opinion expressed by Suki (2016, p.2895) who considers that the green brand positioning is achieved through green attributes integrated in active communication campaigns, which could induce a more positive perception of green brands amongst consumers.

The complexity of the concept is underlined by Rex and Baumann (2007, pp.572-573) who opine that brand positioning is the most tangible discrepancy between green and conventional marketing. Noting the complexity of the concept, Huang (2014, p.254) believes that the green brand positioning is "part of brand identity and value proposition about a firm's environmentally sound attributes that need to be actively communicated to the target customers". Therefore, to achieve the desired position for a green brand, communication must be used to create a distinct identity in the minds of consumers.

2.2. The impact of the green brand positioning on the green marketing mix

Positioning, the last stage in the process of forming the marketing strategy (Mooradian, et al., 2012, p.33), is the synthesis of the segmentation and targeting activities previously carried out, giving meaning to the whole strategic planning approach. As a specific tool for strategic marketing, positioning guides all decisions regarding the marketing mix, providing coherence and consistency to all activities. In this sense, "the marketing mix can be seen as a tactical detail of the organization's positioning strategy" (Wilson & Gilligan, 2005, p.354), while "the positioning strategy is the essence of the marketing mix" (Schiffman & Kanuk, 2007, p.171).

In the field of green products, the environmental performance of any organization that adopts a green position must correspond to the rhetoric and expectations of consumers. All corporate activities must support this projected image, otherwise the organization will be "punished" by disillusioned consumers and the media (Polonsky and Rosenberger, 2001, p.24). Therefore, without being supported by relevant and tactically credible activities, the green brand positioning has no market value. In this sense, Bahl and Chandra (2018, pp.2-3) emphasize the need for a relationship between the green brand positioning and the variables of the marketing mix, which can be achieved by explaining in detail the concerns related to the natural environment (Leonidou, *et al.*, 2013, p.155).

Green marketing mix refers to green product development and the execution of pricing, distribution and communication, which is specifically aimed at promoting or preserving environmental welfare (Sohail, 2017, p.231). Each element of the green marketing mix is created and executed to help reduce negative effects or create a positive impact on the natural environment (Jain and Kaur, 2004, p.188; Eneizan, et al., 2015, p.821).

2.3. Green product

A green product can be defined as a product that seeks to protect or enhance the natural environment by conserving energy and/or resources and by reducing or eliminating the use of toxic agents, pollution and waste (Ottman, *et al.*, 2006, p.24). Lin and Chen (2016, pp.281-282) believe that among the attributes of green products should be found: eco-friendliness, harmlessness to the human body and avoidance of experimental testing on or killing of animals. Also, a green product is certified as such by a recognized organization (Gurau & Ranchhod, 2005, p.548).

The product can be the object of positioning, along with the brand or organization, it is placed in a perceptual space represented by its market, subjectively defined in turn by the consumer. On the other hand, "positioning is a crucial determinant for the potential of the product on the market and for its ability to differentiate itself" (Doyle, 2008, p.125). In connection with the company's product strategy, positioning allows continuous development of the manufacturing range, as close as possible to the exigencies of demand (Pop, et al., 2000, p.159).

2.4. Green price

The green price "accounts fully for the economic, environmental and social costs of a green product's manufacture and marketing while providing value for customers and a fair profit for the business" (Martin and Schouten, 2012, cited in Pomering, 2017, p.13). Therefore, pricing for a green product is one of the most complex green marketing decisions, given the difficulty, on one hand, of determining the actual costs of the product (lower limit) and, on the other hand, of estimating the willingness of the target audience to pay that price (upper limit) (Chamorro, 2003, p.146).

Green products are often priced higher than conventional products (Polonsky and Rosenberger, 2001, p.24; Peattie and Crane, 2005, p.36). Therefore, "the price of green products is a premium price" (Eneizan, *et al.*, 2015, p.822), practiced based on the existence of attributes that are, to a greater extent, green (Dean & Pacheco, 2014, p.14). Consequently, in many cases, price acts as a barrier to purchase because the consumer is not willing to spend more money to buy green products (Ginsberg and Bloom, 2004, p.80; Peattie and Crane, 2005, p.36).

Price valences, as a tool used in positioning a brand, are best highlighted in the method of determining the price based on the perceived value, the starting point being the establishment of a price that supports a certain positioning of the product. In the discussed context, the price can have an active role, being an element of product positioning, or a passive role, being an instrument that supports the chosen positioning (Vrânceanu, 2006, p. 30).

2.5. Green distribution

The green distribution involves choosing marketing channels in a way that minimizes damage to the environment (Arseculeratne and Yazdanifard, 2014, p.133; Eneizan, *et al.*, 2015, p.823) and physical distribution, to ensure the availability of green products to those customers interested in the issue of environmental protection (Stoica, 2020, p.4455).

Distribution is a key element in attracting the right customers for green products. Moreover, Singh and Pandey (2012, p.26) believe that customers will not look for mainly green products, so they should be distributed through the main outlets, so that they are not only available to a small niche market.

To successfully position a brand, "the firm must be concerned with elements such as the basic design of the marketing channel, the types of middlemen and the extent of market coverage in selected target markets" (Kabadayi, et al., 2007 cited in Darling, et al., 2009, p.520). In addition, if the positioning offers a promise as to when and where the customer benefits from the brand that is the subject of the positioning, then the distribution strategy acquires special importance and must be configured according to the positioning strategy.

2.6. Green marketing communication

Considered a new type of communication approach (Ries & Trout, 2004, p.15), the concept of positioning emerged five decades ago, when it was proposed by Al Ries and Jack Trout, in the field of advertising and promotion. Thus, we can consider that this variable of the marketing mix has the strongest implications in the field of positioning, through it ensuring the transmission of specific messages, including those related to product, price and distribution.

Marketing communication "involves how a brand should be positioned through messages" (Percy, 2014, p.29), "as well as the media strategy employed to reach the target group" (Belch & Belch, 2018, pp.58-59). In this regard, the specific activities of marketing communications must be integrated to provide a consistent message and to achieve the desired positioning (Keller, 2009, p.146).

If we refer to a green brand, the intensity of the communication made by an organization through messages about environmental concerns, whether or not they are correct, has a significant effect on the desired position of the green brand. "Therefore, the choice of marketing communication options and media channels, as well as messages with a stronger or less strong green character, brought together in an integrated communication strategy, play a key role in

influencing consumers' perception of the green brand" (Stoica, 2021, p.388). In this regard, we must keep in mind that promoting sustainable behavior "is a type of marketing intervention that encompasses a wide array of communication actions that encourage and motivate consumers to adopt positive attitudes towards sustainable consumption and engage in purchasing and consumption behaviors that support sustainability" (Bălan, 2021, p.13).

3. Research methodology

The purpose of this research is to identify the methods to substantiate the positioning strategy at the level of different participants in the supply chain, as well as the means of operationalizing the elements of the marketing mix used in defining and communicating the position of the green brand.

The method of gathering information was the in-depth, semi-structured individual interview. The target population consists of Romanian companies that have organic certification granted by an accredited certification body. The target population includes producers, processors, distributors and retailers, which have in their portfolio a green brand that represents the range of certified organic food. The research was conducted among professionals holding management positions.

During the information gathering stage, 25 interviews were conducted: 13 producers/processors, 7 distributors and 5 retailers, out of which 2 specialized retailers and 3 general retailers. To guarantee confidentiality, the interviews were coded as follows: IP - organic food producing/processing companies; ID - organic food distribution companies; IR.S - organic food retailers; IR.G - general retailers. The interviews were conducted between November 2020 and February 2021.

4. Findings

4.1. Green brand positioning in the field of organic food

Brand positioning is seen by the interviewed specialists as a necessary step to differentiate it from the competition, even if they evaluate the competition in this market as somewhat reduced, especially from local brands. Several differences were identified, depending on the place occupied by the company at the level of the supply chain, but in some cases also depending on the size of the company or the particularities of the activity.

In the case of *producers/processors*, the differences observed depend on the size of the company:

- SMEs are concerned with how they can differentiate themselves from the competition, but in a few cases these concerns manifest through a strategic approach. Usually, the positioning is done through the product and less at the brand level.
- Large enterprises have an important position on the market of conventional products, but in recent years they have also entered the organic food market, with the help of a brand extension. In this case, the positioning of the green brand does not differ fundamentally from the parent brand, but only involves the addition of positioning variables specific to organic production ("pure taste", "product without food additives, artificial colors, flavor enhancers", "healthy product"). However, the marketing mix is strongly adapted, especially the marketing communication. Positioning is based on a mix between traditional and green attributes/benefits, the aim being to define a position that attracts a large audience and to make the green product more than a niche product.

In the case of *international green brand distributors*, the implementation of the positioning strategy involves adapting to the local market, especially in the field of marketing communication. Without the specific involvement of manufacturers in identifying and creating the differentiating elements, some distributors believe that the green attribute is enough to support the brand positioning: "Entering the niche of green products, whether premium or low-cost, we see that there is not a very big difference between them. A product cannot be more green than another. Either it's green or it's not" (ID2).

- In the case of *retailers* that have a private green brand in their portfolio:
- Specialized retailers positioning for their brand is often similar to that created for the retail
 brand. The private brand products are a representation of what the retailer wants to offer its
 customers, sometimes in a more accessible form than the rest of the brands available in the
 stores' network.
- General retailers in their case, the private green brand is seen as a premium brand compared to
 the rest of the brands in the portfolio, which aims to attract as many customers as possible. The
 green brand also helps to support some pillars of corporate brand positioning, especially in
 recent years, when sustainability has become a concern for a growing number of players in the
 retail market.

At the supply chain level, we notice certain differences in terms of the degree of specialization in formulating the brand positioning strategy. Thus, producers (especially SMEs) are more specialized in the production activity, which leads them to rely on certain specific characteristics of green products. As for retailers and distributors, who are not so close to the production process, the brand positioning is based on more general elements, some of which are specific to conventional products. Such an approach is also explained by the fact that these companies want to transform organic food into mass products, so they have a different approach in defining and communicating brand positioning.

4.2. Green brand positioning - orientation strategy of the green marketing mix

The decision-makers have options that range between a positioning based mainly on traditional positioning variables (specific to conventional products) and a positioning where these variables are unimportant, those specific to green products being the ones that dominate. Between these two extremes, there are various other options for using a combination of available positioning variables.

In the case of a positioning characterized mainly by green elements, some of the attributes exceed the standards imposed by the legislation in force (Regulation EU 2018/848). Therefore, the company's efforts are focused on adding more green attributes or features, to be able to differentiate itself from the rest of the green brands. All these efforts are reflected in higher costs and, inevitably, are also found in the price set for the consumers. The price is considerably different from the price of the conventional competition and is higher than the price of green products that meet only the minimum criteria required by current legislation. The creation of a superior green product, with a premium price, determines the decision-makers to focus on marketing channels where it could be represented at its true value or could be delivered as such to consumers. That is why, as a rule, specialized stores are preferred, but the use of direct channels is also a frequently considered option. Direct contact with the client offers the possibility to have a personalized communication, this being an opportunity to offer a unique experience and to pass on the brand values. In all this context, communication has the role of communicating a message adapted to each micro-segment, by using channels and techniques adapted to communicate with small groups.

Instead, brands that are being positioned based on a small number of green elements target the whole market and therefore try to achieve an association with traditional attributes. The products are developed taking into account the minimum standards required by EU legislation in the field of organic farming. This strategy often does not allow the company to charge a premium price, so, as a rule, a lower price is adopted than that charged by premium green brands. In some cases, the price may reach the level of prices of conventional products (in particular, compared to premium conventional products). As a result of these decisions regarding the pricing strategy and the characteristics of the product, extensive distribution is preferred, especially in hypermarkets and supermarkets, but also in convenience stores in big cities or even in certain areas of a city. The communication is specific to a mass-market brand, which is usually a practice of manufacturers who are also market leaders in conventional products. Advertising is used because it has the power to influence a large number of customers, being effective in supporting the whole effort to launch a wide range of green products.

4.2.1. Green product

The green products "must be adapted to the target segments" (IR.G1), but they also need to be developed in accordance with the desired positioning. Instead, the other elements of the marketing mix must be "adapted to the product policy" (IR.G2).

The level at which the company is located in the supply chain determines a series of particularities, because the degree of involvement in the production and product development activities differs.

In the case of *organic food producers/processors*:

- Rigorous selection of organic ingredients/raw materials, to reflect the desired quality of the finished products, but also to support the attributes to be emphasized by brand positioning;
- Choosing the necessary processing methods and technologies, so that the desired attributes can be developed and supported (integral product, non-heat processed product etc.);
- Intensifying the concerns in the direction of procuring raw materials at the local level, so that the ingredients of Romanian origin predominate or even are found entirely in the finished product. Also, in this direction, we note a concern to provide raw materials from countries with a good image and which are recognized as countries with a tradition in organic farming. In the case of *international green brand distributors*:
- Building a green brands portfolio, which can ensure the turnover necessary for the "survival" of the company on the green market (in most cases);
- Selection of green products to meet the requirements and exigencies of Romanian consumers, but whose attributes/benefits can ensure differentiation from brands/products on the local market. In this case, we refer to international green brands developed mainly for a certain international market, which must find a place on the Romanian market, taking into account the fact that there is no possibility to adapt the product policy;
- Concentrating the activity in the direction of listing new products based on the novelties from the portfolio of international producers, as well as delisting non-performing products. These decisions are easier for distributors because the costs are lower than for producers/processors. In the case of *retailers that have in their portfolio private green brands*:
- Development of their range of green products in the direction of generating significant sales volumes. In this respect, retailers focus mainly on the launch of basic products, which are likely to have a higher demand;
- Products are mainly based on compliance with the minimum requirements imposed by law, so that they can generate lower costs (very rarely innovative products);
- Integration of the range of green products in the general direction of sustainability defined at the organizational level.

4.2.2. Green price

Setting the prices for green products is a constant concern, but not in all cases has a strategic approach been taken in this direction. Some experts consider that "the disadvantage of green products is related to high prices" (IR.G1), therefore, "product pricing is complex and depends on the local and even international market, the levels of market prices for the same products or for similar products, as well as the company's expectations" (IP12). Thus, pricing is a sensitive and complex issue, due to the impact on the consumer and, implicitly, on the success of a green brand on the market.

Depending on the company's place in the supply chain, the approach regarding the pricing policy may be based on different coordinates, but this is also influenced by the company's vision on the green market and the green brand in the portfolio.

Local manufacturer/processor of organic food:

• Which have an exclusively organic production: as a rule, these producers/processors charge higher prices than private green brands and, in many cases, even higher prices than international green brands. The analysis of the interviews shows that this practice is not a result of a decision to choose a premium positioning. Pricing starts from a preliminary assessment of

costs, especially production costs, but also takes into account the prices charged by competition in that food category, both organic and conventional. The lack of savings due to high production and/or the use of modern production technologies determines these operators to set prices above the level of those practiced by the competition (for which there are benefits due to the achieved economies of scale). If we expand the market area and refer to conventional products, then the gap increases considerably.

• Traditional producers of conventional food, present also on the market of organic food: mainly, these companies desire to make organic food as accessible as possible to a large category of consumers, so that they become mass products and companies can benefit from the advantages of industrial production. Even so, there is a price difference compared to conventional products, and even compared to private green brands. Although the advantage of these producers is that they use the same technology and resources as in the case of manufacturing conventional products, the price difference is mainly due to raw material costs. At the level of the entire portfolio, these producers consider the green brand as positioned premium, compared to the conventional range. Their main purpose is to cover as many market segments as possible within the same product category.

Distributors of international green brands do not have much flexibility in setting the pricing policy, being forced to start from the commercial conditions negotiated with the international producer. Given that distributors want to distribute the brands in their portfolio on a mix of marketing channels to ensure the desired financial results, their main concern is how they set the price and discount grid according to marketing channels (and/or forms of trade) and the price positioning practiced by the retailer. Regarding this subject, a significant number of distributors are reluctant to use certain marketing channels, especially those represented by general retailers (due to the commercial conditions required). In addition, even if these companies are more concerned with B2B sales, they are still involved in how the price policy impacts the final consumer, especially since they have also developed direct marketing channels. In terms of brand positioning, most of the time the manufacturer is not so interested in how the pricing policy is implemented in small markets, such as Romania, but rather in generating a certain volume of sales.

Retailers owning private green brands: in general, their purpose is to create an alternative to the rest of the brands available on the shelf (,,it is more than obvious that price plays an important role, no matter how much you try to communicate about products and to say what all the attributes are"- IR.G3). Their portfolio consists mainly of basic products for which a much more affordable price can be sustained than the rest of the competition. The desire is that green products "become accessible to a large category of population and not to a smaller segment, with a lot of money" (IR.G1). That is why, compared to the competition, private green brands usually have the best value for money.

In general, it was found that positioning approaches matter less in setting the pricing strategy. As a general rule, the green product is more expensive than conventional ones, the difference between them is due to a combination of factors. It should be noted that there are few cases in which organic operators manage to set their prices of conventional products, due to competitive trading conditions offered by international producers (e.g. plant-based beverages), modern manufacturing technologies (e.g. pasta), or low production costs (e.g. wine).

4.2.3. Green distribution

Distribution is seen as the way in which the green brand can fulfill the promise of the availability of its products to final consumers. Therefore, the distribution ensures the level of convenience desired by the target audience, the products can be easily purchased ("Distribution has an important role, so that the consumer can find the desired product at hand" - ID7).

Usually, companies are concerned about the presence of products in their portfolio in the place desired by the targeted customers, while a small number of specialists say that they are influenced by the positioning chosen for the green brand when selecting marketing channels.

Distributors of international green brands are more concerned with ensuring the availability of products to as many consumers as possible, which will help them achieve a sustainable sales volume. It is important to note that none of the distributors mentioned that the manufacturer

imposed restrictions on listing the brand on certain marketing channels. However, there are cases in which the international manufacturer has developed different brands for both specialty stores and general retailers. In this situation, clearer directions for the distributor are drawn. In addition, international green brands have found their place in major store chains in recent years, due to the involvement of retailers in the development of the area of organic, dietary and healthy products.

In the case of exclusively organic food producers, the situation is somewhat different, because they use more diverse marketing channels. A significant number of manufacturers consider that the place of the green brand is not in the hypermarket and supermarket, it is not a suitable sales space for "a product that has a story" (IP8) ("We considered our products to be special and therefore did not want them to reach the common shelves of supermarkets" - IP6). They prefer working with specialty stores or selling through direct channels. Specialized stores, perceived as having an important range of healthy products, are considered to be more suitable ("The fact that we sell in health food stores, for us is a plus for our image, we like the fact that we are seen as something healthy after all"- IP7).

On the other hand, traditional producers of conventional products, which also have in their portfolio organic food, usually use the same distribution network, being advantaged by the position held in the total market. Therefore, the placing of green products on the shelves of modern retail is easier to achieve than in the case of other producers. Their interest is to mass distribute green products, wanting to expand the consumer segment of these products. However, unlike the conventional alternative, the green brand is present in organic, naturist, "plafar" type (medical herbs store) stores, groceries. In this situation, the product mix chosen for each form of trade is essential.

As in the case of producers, in the case of *retailers* we must make a distinction between general retailers and specialized retailers. Thus, in the case of *general retailers*, their brand is distributed exclusively in their network, while in the case of *specialized stores*, in addition to distribution in their stores, it is also distributed in other retailers (their network cannot generate a significant volume for sales). In the case of general retailers, the green brand has the role of attracting other categories of public and/or to meet evolving needs, and to create a point of differentiation for the respective network of stores. The aim is also to highlight the retailer's constant concern for a healthy life and care for environmental protection ("*Green products are a flagship for a retailer's product ranges*" - IR.G1).

Over time, the sale of organic food has evolved from a limited number of store chains, 15-20 years ago, to an extensive network of retailers concerned with developing this domain. If at the beginning the green products were found in a great diversity only in specialized stores, of "plafar" type stores or were available through direct channels, in the last years the big networks also began to intensively expand this range of products. However, some local entrepreneurs also point to a common practice of large modern retail networks, namely that the success of a local brand causes some of them to develop a similar product under their brand, and the most often to delist the local product.

4.2.4. Green marketing communication

"Communication must be adapted to the target segment" (IR.G1), therefore, "for each target consumer a different message and different channels are required" (IP11). The complexity of communication derives from the diversity of micro-segments of consumers to be attracted, with different interests and motivations, but which in the end, together, represent the consumers of a certain green brand. Each category of consumers is "more sensitive to some details" (IR.S2), and the company must identify those elements of interest and incorporate them into messages capable of generating the desired change in behavior.

We note two different approaches in terms of marketing communication for green brands:

• Mass communication for a green brand: "It is important to have as much visibility as possible and then 360° campaigns still work, even if they are old school, with a greater focus on online, if we talk to young people, or in-store, if we talk with seniors" (IP11);

• Communication to micro-segments: "The difference is that you can't necessarily use high-coverage channels, such as TV promotion. It is not necessarily relevant for a green product or comparable to the targeted communication that you can do mainly through the online environment" (ID3).

Even if the choice of certain communication techniques and media are influenced by the available budget, it should be mentioned that the product also has an extremely important role. Thus, if we refer to basic green products, mass communication may be more appropriate. Instead, for a specialized green product with low demand, it is advisable to choose more personal communication channels. However, it is possible to find on the market different approaches to communication for products in the same category (but positioned differently from a price perspective).

If companies that prefer mass communication for the green brand try to achieve 360° communication, other companies are limited to a small number of communication techniques and channels, through which they want to target smaller segments, but in a more personal manner. Thus, mass communication is more specific to large producers (with conventional production) and, in some cases, to general retailers. The aim is for the messages to reach as large an audience as possible, among which to convince a large number of consumers to change their behavior,

It is important to make some additional clarifications regarding in-store marketing. Many specialists are keen to a double placement on the shelf in the large retail areas owned by general retailers: both in the shelf dedicated to organic food, and also in the shelf dedicated to the respective category of food products. This practice aims to "open the interest" for organic food and among those consumers who are not interested in organic food and, automatically, the chances of them reaching the shelf of organic food are significantly reduced. However, this practice is mainly specific to producers who have both conventional and organic food in their portfolios. They also state that such a strategy must also have the support of retailers, in the context of limited sales space.

We note a concern of small producers in the direction of building brand equity, being aware of the importance of cultivating certain values and building all actions around these values. As a rule, they do not prefer mass or aggressive communication, but rely more on personal, transparent and fair communication. Many of them exclude the possibility of producing under the retailer's private label.

5. Conclusions

Green brand positioning is an extremely complex subject, especially in the niche market, marked by several problems and a still low level of consumption. The difficulties encountered in obtaining a significant volume of sales have led many entrepreneurs/specialists to improve in the direction of finding additional attributes and benefits through which to differentiate their offer (in addition to organic certification), to succeed in "reaching" as large an audience as possible and to gain a higher place in the minds of consumers. However, important steps are still needed to develop and communicate the green brand positioning strategy through a strong adapted marketing mix. Therefore, the strategies and tactics of the marketing mix may be different, depending on the intensity of the green elements integrated into the brand positioning strategy.

In conclusion, it is essential to specify the main limits of this research. Due to the exploratory nature of this research, the results cannot be generalized to all certified organic companies that have in their portfolio an organic food brand. However, we appreciate that this research has included a significant number of specialists (relative to the size of the market), thus we believe that the results can be a solid basis for future research in this direction. Also, the researcher's subjectivity, manifested involuntarily, can have a certain degree of influence in terms of data collection, analysis and interpretation.

6. References

- Arseculeratne, D. and Yazdanifard, R., 2014. How green marketing can create a sustainable competitive advantage for a business. *International Business Research*, 7(1), pp.130-137.
- Bahl, S. and Chandra, T., 2018. Impact of Marketing Mix on Consumer Attitude and Purchase Intention towards Green Products. *Ethos*, 11(1), pp.1-11.
- Bălan, C., 2021. How Does Retail Engage Consumers in Sustainable Consumption? A Systematic Literature Review. *Sustainability*, 13(1), pp.1-25.
- Belch, G. E. and Belch, M. A., 2018, *Advertising and Promotion: an Integrated Marketing Communications Perspective*. 11th Edition. New York: McGraw-Hill Education.
- Chamorro, A., 2003. El etiquetado ecológico: un análisis de su utilización como instrumento de marketing (Eco-labeling: an analysis of its use as a marketing tool). *Doctoral dissertation*. Badajoz: Universidad de Extremadura.
- Darling, J. R., Heller, V. L. and Tablada, D. M., 2009. Positioning a firm's initial market offering: a strategic application of a consumer oriented model. *European Business Review*, 21(6), pp.516-530.
- Dean, T. J. and Pacheco, D. F., 2014. Green marketing: a strategic balancing act for creating value. *Journal of Business Strategy*, 35(5), pp.14-22.
- Doyle, P., 2008, Value-based Marketing: Marketing Strategies for Corporate Growth and Shareholder Value. 2nd Edition. Chichester: John Wiley & Sons, Ltd.
- Eneizan, B. M., Wahab, K. A. and Ahmad Bustaman, U. S., 2015. Effects of green marketing strategy 4Ps on firm performance. *International Journal of Applied Research*, 1(12), pp.821-824.
- Ginsberg, J. M. and Bloom, P. N., 2004. Choosing the right green marketing strategy. *MIT Sloan Management Review*, 46(1), pp.79-84.
- Gurau, C. and Ranchhod, A., 2005. International green marketing: A comparative study of British and Romanian firms. *International Marketing Review*, 22(5), pp.547-561.
- Hartmann, P., Apaolaza Ibáñez, V. and Forcada Sainz, F. J., 2005. Green branding effects on attitude: functional versus emotional positioning strategies. *Marketing Intelligence and Planning*, 23(1), pp.9-29.
- Huang, Y.C., Yang, M. and Wang, Y., C., 2014. Effects of green brand on green purchase intention. *Marketing Intelligence and Planning*, 32(3), pp.250-268.
- Jain, S. K. and Kaur, G., 2004. Green marketing: An attitudinal and behavioural analysis of Indian consumers. *Global Business Review*, 5(2), pp.187-205.
- Keller, K. L., 2009. Building strong brands in a modern marketing communications environment. *Journal of Marketing Communications*, 15(2-3), pp.139-155.
- Leonidou, C. N., Katsikeas, C. S. and Morgan, N. A., 2013. Greening the marketing mix: do firms do it and does it pay off?. *Journal of the Academy of Marketing Science*, 41(2), pp.151-170.
- Lin, C. J. and Chen, H. Y., 2016. User expectancies for green products: A case study on the internal customers of a social enterprise. *Social Enterprise Journal*, 12(3), pp.281-301.
- Mooradian, A. T., Matzler, K. and Ring, L. J., 2012, Strategic Marketing. New Jersey: Pearson Education.
- Ottman, J. A., Stafford, E. R. and Hartman, C. L., 2006. Avoiding green marketing myopia: Ways to improve consumer appeal for environmentally preferable products. *Environment Science and Policy for Sustainable Development*, 48(5), pp.22-36.
- Peattie, K. and Crane, A., 2005. Green marketing: legend, myth, farce or prophesy?. *Qualitative Market Research: an International Journal*, 8(4), pp.357-370.
- Percy, L., 2014, Strategic Integrated Marketing Communications. 2nd Edition. Abingdon: Routledge.
- Polonsky, M. J. and Rosenberger III, P. J., 2001. Reevaluating green marketing: A strategic approach. *Business Horizons*, 44(5), pp.21-30.
- Pomering, A., 2017. Marketing for sustainability: Extending the conceptualisation of the marketing mix to drive value for individuals and society at large. Australasian Marketing Journal, 25(2), pp.157-165.
- Pop, N. A., Andronov, E. D., Lefter, C. and Schmengler, H. J., 2000, *Marketing Strategic (Strategic Marketing)*. Bucharest: Editura Economica.
- Rex, E. and Baumann, H., 2007. Beyond ecolabels: what green marketing can learn from conventional marketing. *Journal of Cleaner Production*, 15(6), pp.567-576.
- Ries, A. and Trout, J., 2004, *Poziționarea: lupta pentru un loc în mintea ta! (Positioning: The Battle for Your Mind)*. Bucharest: Curier Marketing.
- Schiffman, L. G. and Kanuk, L., 2007, Consumer Behavior. 9th Edition. New Jersey: Pearson Prentice Hall.

- Singh, P. B. and Pandey, K. K., 2012. Green marketing: policies and practices for sustainable development. *Integral Review*, 5(1), pp.22-30.
- Sohail, M. S., 2017. Green marketing strategies: how do they influence consumer-based brand equity?. *Journal for Global Business Advancement*, 10(3), pp.229-243.
- Stoica, M., 2020. Marketing Channels for Organic Products: A Cross-National Analysis in the European Union. In: *Proceedings of the 35th IBIMA Conference* (pp.4455-4462), 1-2 April 2020. Seville, Spain.
- Stoica, M., 2021. Green Marketing Communication Strategies: An Integrative Literature Review. *The Annals of the University of Oradea. Economic Sciences*, 30(1), pp.388-396.
- Suki, N. M., 2016. Green product purchase intention: impact of green brands, attitude, and knowledge. *British Food Journal*, 118(12), pp.2893-2910.
- Vrânceanu, D. M., 2006, Politici de preţ (Price policies). Bucharest: Uranus.
- Wilson, R. M. and Gilligan, C., 2005, *Strategic Marketing Management: planning, implementation & control*. 3rd Edition. Burlington: Elsevier Butterworth-Heinemann.

The Role of the Leader and the Manager in the Organizational Changes

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Abstract

The COVID-19 pandemic has generated a series of changes in society so that we can say that this context generates a turning point in terms of management, leadership and concept of organizational culture.

Our main goal is to determine the best way to generate changes in the organizational culture of an entity in order to increase performance indicators.

In this regard, we defined the main working concepts, realized a logical model of the management system and highlighted the relational and informational links of different management levels. Moreover, we addressed the issue of the impact of management on human resources and finally over specific activities for managing the change of organizational culture.

The nature of this paper is explorative and theoretical using rational deductive approach, aiming at providing a bibliographical tool for further research.

Key words: management, human capital, diversity, firm performance, corporate culture **J.E.L. classification:** M12, M14, L25, J24, M51

1. Introduction

Within an organization, all levels of leadership (formal/informal leaders or top/middle/entry level management) can affect culture. The confusion that leadership and management are the same concept can sometimes lead to organizational dysfunctions. The management function is a more specific and stable one and has the role of planning, organizing and controlling the activities within the organization, while the leadership is more abstract. Its progressing and generates movement (Kotter, 1990). So we can say that all managers are leaders and vice versa (not all leaders are managers). Given that there are differences between the two, their impact on organizational culture can be just as strong.

Given the dynamic nature of the global economy; the inability to predict aspects that have a direct impact on the organization (such as the pandemic generated by the new Coronavirus), and the need for the organization to thrive in a volatile socio-economic context, leadership must be characterized by adaptability and emotional control. Therefore, the leadership style that will be approached must be of the adaptive type characterized by the separation of the technical aspects that imply the application of authority over the aspects related to the adaptation to the environment and situation. This type of approach has been taken, according to Heifetz et al. (2009) from the theory of biological evolutionism following three basic aspects:

- preserves the essential aspects in the survival of the species;
- eliminates the aspects that are no longer necessary or are outdated;
- changes the structure by adapting to current needs.

Defining and understanding the notions of leadership and management is vital for determining roles within organizations.

2. Theoretical background

While the manager has the role of generating progress by organizing and using the resources at his disposal, leadership is meant to provide vision and motivation to staff, so as to lead to the expected progress. Management uses as a tool to achieve objectives the functions of planning, organization, monitoring and control, as well as human and budgetary resources, while leaders use less tangible tools such as communication skills, collaboration, motivation, so "soft" skills.

The two responsibilities must coexist in an organizational system to generate performance, the dissection of the two independently can create the premises of erroneous conclusions from reality.

If we talk about an organization in which leadership defines the lead without having developed a coherent management system we can say that idealism dominates that organization, and reality can be considered a constant in terms of goals and directions set. Thus only the organizational direction and visions are defined without emphasizing the intended results. These types of organizations are characteristic of young companies that are led by inexperienced staff.

When management takes over the entire leading structure without the involvement of leadership, we can say that they are only interested in achieving the planned results, but without emphasizing the vision, motivation or development of staff. In this case, the organization is characterized by rigidity, lack of motivation and involvement of employees, and a state of collective dissatisfaction.

We conclude by saying that in an organization the roles must be well defined, and the managers-leaders ties must be closely developed to generate performance and to lead the organization in the desired direction.

Bratton et al. (2014) conclude that for a balance in the organization it's necessary for informal leaders to motivate staff, to know and support the organizational strategy and coordinate the directions of action, as well as line managers who must know how to implement and to apply the directives received for achieving the objectives.

Adaptive leadership can be characterized by the ability to detect problems at an early stage, and the debate of any aspect of the organization is encouraged. However, the environment in which the organization develops and operates is characterized by volatility, so adaptation in terms of organizational culture must be made from the perspective of chaos theory (Lorenz, 1967).

The best known aspect of chaos theory is the butterfly effect (Lorenz, 1967). The author rhetorically wondered in his paper whether the movement of a butterfly's wings in Brazil could trigger a tornado in Texas. The teacher referred to the fact that small variations related to some indicators can generate amazing results. Thus, Obolensky (1994) presents five cases in which small changes in policies have been made, but these changes have generated remarkable results. On the other hand, Obolensky (2016) presents four concepts of chaos theory that can be applied in management activities as follows: attractors, universality, factual and bifurcations.

Also, Obolensky (2016) concludes that a minor change in the activity / behavior of the leader generates a disproportionate results. It starts from the idea of repeating the behavior of the leader within the organization, as well as from the theory of chaos.

Management can be defined as a system determined by diversity, relationships and complexity that with the help of hierarchical relationships uses the available resources to achieve the set objectives. Hierarchical relationships can be categorized from a structural point of view as follows: the level of top management, the functional level of management (management superior / middle) and the operational level of management (line / entry level). Within the hierarchical structure of the managerial system, both the decision-making process and the informational one are used, a relationship presented in figure no. 8.

The role of the top management team is to establish the main objectives and to draw the direction in which the organization is heading. It usually uses limited resources, but the results of the limited work of the team are of vital importance to the entire organization. They are responsible for anticipating the environment in which the organization operates and for taking measures to synchronize actions, so that the organization (as a whole) is correlated with the existing sociopolitical and economic-financial reality.

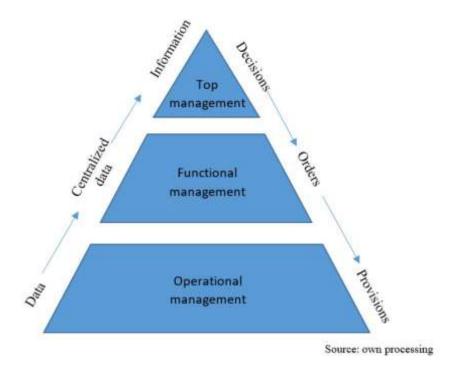


Figure no. 1 – Graphic representation of the organizational management system

The top management team is supported in making decisions by the functional management level which is composed of decision-making, informational, methodological and organizational elements. Finally, the level of operational management has the role of using most of the resources using methods and tools in order to meet the objectives set by the higher echelons.

In order to be able to form an overview of the relations between the three levels of management and to easily visualize the valences (forms of manifestation) of the same roles with respect to different echelons, we made a synthesis of them and presented them in the table. no. 9.

Năstase (2004) defines the managerial culture as part of the organizational culture responsible for the managerial processes in accordance with the variants from the internal and external environment, aiming to achieve the established objectives. Nicolescu and Verboncu (2008) consider that this type of culture has valences in terms of values, beliefs, behaviors and expectations of managers of an entity, determining the characteristics of the type of management practiced and profoundly affecting the organizational culture and its results. According to Năstase (2004), the managerial culture has the role of monitoring the internal and external environment in order to achieve the necessary changes in the organization, encouraging and supporting the involvement of leadership in all areas of management and execution.

Among the main functions defined in the literature for managerial culture we can list:

- motivates managers at all levels in order to achieve performance and achieve organizational goals
- contributes to organizational modernization by implementing technologies in the activities carried out
 - supports the strategic activity of organizational learning
- starts and leads the activities specific to the management of the change of the organizational culture in order to align the entity with the reality and the socio-economic actuality

The management principles considered by Nastase (2004) essential to lead the organization to performance are:

- the principle of concordance (keeping the organization aligned with the reality and socioeconomic topicality)
- the principle of participation (involvement in the management activity of representatives from all organizational levels)

- the principle of motivation (use of sanctions and rewards so that the interests of all parties involved are met)
- the principle of effectiveness and efficiency (organizing the entity's activities so that they have economy and an increased impact on social aspects)

Table no. 1 - Interdependence of managerial functions in relation to hierarchical levels

FUNCTIONAL MANAGEMENT	TOP MANAGEMENT	OPERATIONAL MANAGEMENT		
	- performs an overall evaluation of the activity	- performs an operational evaluation for regulatory purposes		
DECISIONAL	- sets out directions for action based on long-term objectives	- sets out directions for action based on short-term objectives		
	-implements long-term strategies and	- performs planning and establishes short-		
	action plans	term implementation measures		
	- training / motivation role	 coordination role 		
INFORMATIONAL	role of information and communication of data	- role of data collection and synthesis		
ORGANIZATIONAL	- general organization and establishment of the method of communication through synthesis and then reporting activities	- organization of operational activities through control and accounting activities		
METODOLOGIC	 definește cadrul metodologic de desfășurare a activităților 	 operaţionalizează cadrul metodologic de desfăşurare a activităţilor 		

Source: own processing

In this context, it can be seen that the emphasis is on aligning the entity with the reality and socio-economic relevance through changes in organizational culture.

Ursachi (2001) concludes that the lack of knowledge of the principles and foundations of management by managers generates a series of strictly random events and marked by errors, such as learning as a result of their own events, being very costly.

Therefore, human capital plays a decisive role in terms of the quality of the managerial act, and in order to measure the level of quality, the literature uses the rate of return on human capital.

This rate has direct implications in the sphere of organizational culture and employee motivation (Niculescu, 2016). In this context, leadership plays a key role in the organization that wants to apply a knowledge-based management. Thus, the leadership will have to instill in the followers the desire for personal development and accumulation of new knowledge that will be beneficial to the organization in the future. Moreover, the role of these leaders will be complemented by the need to be involved in the activity of changing the organizational culture and implementing visions / objectives based on innovation or collective decision-making (Senge, 2006).

In the banking financial sector, Niculescu (2016) argues that there is a need to change management style by adopting specific measures to increase transparency, but also flexibility and innovation to determine changes in attitudes and behaviors among staff on the basis of their motivation. Thus, it is recommended to be aware of the need to adapt management to the specifics and variations of the economic market and the socio-political context, to develop a performance-based organizational culture, to align management with the fundamental values and principles of promoted culture and to develop innovation as an organizational culture. Therefore, we want a series of activities based on knowledge-based management and more precisely the accumulation, development and transfer of information.

In this context, Hamel (2012) states that leaders will be responsible by creating the necessary framework that will generate innovation, value, passion, adaptability and last but not least will inspire the ideology of the organization. Given the regulatory framework of financial-banking activities as well as the strong male context generated by them, Hamel (2012) concludes that it is not necessary to enrich the skills of employees, but only a readjustment of their activities. In the absence of an accountability system, innovative capacity can be decisively affected. Thus, when an

atypical, out-of-the-ordinary situation occurs, staff may be driven by emotional reactions, such as resistance to change, fear of the unknown, denial, passivity, and so on.

The speed of development and modernization of all branches that impact the banking financial sphere undoubtedly leads to the need to adapt the organizational culture of entities, as well as the adoption of organizational measures of resilience in case of shocks or unforeseen situations, as well as continuous adaptation. To achieve this goal the only possibility is to make profound changes and develop knowledge-based management.

3. Research methodology

In order to achieve our research goals we will use the deductive method as well as the inductive one by approaching the organizational culture both from the perspective of the dependent variable and from the perspective of the independent variable. The study was approached using the rational research method (positivist approach), this being corroborated and affected by some constructivist approaches in order to impregnate the scientific approach the note of adaptability necessary for both the specifics of the organization and the socio-political context in the economy.

4. Findings

Understanding the relationship between leadership style and organizational culture becomes paramount in creating change within the organization. Change will lead to employees being willing to do what they are asked to do, rather than do it because they are asked to (Armandi et al., 2003).

The relationship between leadership and organizational culture has been studied in public and private organizations (Block (2003), Kest (2007), Walsh (2004)). The number of studies has increased and expanded to include other organizational interests, namely change and development. While leadership can influence organizational culture, organizational culture can also influence leadership behavior (Karahanna, Evaristo & Srite, 2005). Although there are many debates about the most effective type of leadership, creating change in the organizational sphere requires a change in organizational culture (Lakomski, 2001).

Many studies have shown a direct correlation between transformational leadership and organizational culture. DeBerry's (2010) work aimed to study the impact of changing the leadership style from the transactional to the transformational style or to adopt a mixed / combined style to facilitate a change in the existing organizational culture. The result determined the existence of a relationship between transformational leadership and human resource traits regarding the degree of involvement, consistency, adaptability and focus on the mission.

Bass (1999) defines two dimensions of transformational leadership, namely active exception management (MBEA) and passive exceptional management (MBEP). The first dimension refers to the fact that the leader takes measures in order to prevent the occurrence of mistakes and helps the staff in case of difficulties, while MBEP approaches the problem reactive in the sense that the leader reacts to the occurrence of mistakes and the employees are held accountable for those.

Transformational leadership determines a high positive correlation with effectiveness, extra effort and satisfaction. The contingent reward of transactional leadership had a high positive correlation, while active exception management had a low positive correlation and passive exception management had a negative correlation, thus demonstrating that transactional leadership generates lower results (Bass, 1985).

Some organizational environments are more conducive to a pure transformative atmosphere (Bass, 1985). "Leaders need to do more than manage their day-to-day activities. Leaders need to provide guidance that encourages employees to focus more on the issues and difficulties they face, to approach issues in an innovative style, and to demonstrate a spirit of sacrifice for the good of the team and the company" (Bennett, 2009, p. 2). At present, leaders need to adopt transactional techniques with a transformative mood, creating a mixed leadership behavior.

"Culture affects leadership, but so does leadership affect culture" (Bass and Avolio, 1993, p. 113). If the organization has a strong negative culture, then it can be very difficult for the leader to make essential changes that could lead the organization in a more positive direction (Lakomski, 2001). Also, the wrong leadership style can be an impediment to the necessary change in

organizational culture (Bakotic, 2008). There are different dimensions (physiological, social and behavioral) related to organizational culture that should be taken into account when seeking to align culture with the goals and direction of the organization. Each dimension affects the organizational culture individually, but concurrently.

McLaurin and Al Amri (2008, p. 18) noted that "transformational leadership can be described as complementary to the effectiveness of transactional leadership and a substitute for it". Therefore, the two types of leadership should not be viewed from the perspective of mutual exclusion. The strengths of both types of leadership can be used to produce beneficial effects for the organization.

Kest's (2007) study concluded that a transformational leadership style leads to better outcomes in terms of employee effectiveness, satisfaction, and extra effort.

Can there be gender qualities associated with transformational leadership? Mathis (2007) suggested that transformational leadership is a feminine style of leadership. She argued that "unlike more masculine forms of leadership (which emphasize tasks and efficiency), transformational style emphasizes feminine characteristics, such as relational knowledge, problem solving, and influence" (Mathis, 2007, p. 200). The film "The Divine Secrets of the Ya-Ya Fraternity" is used to explore the gender leadership role. The story "presents an example of unceasing support, trust, respect, loyalty, charisma, inspiration, stimulation and consideration that define women as leaders in both their personal and professional spheres" (Mathis, 2007, p. 200). The article presents the feminine characteristics of women leaders and links them to transformational leadership.

Tremaine (2000) followed in the article the study of the relationship between transformational and transactional leadership regarding the gender affiliation of the leader in the context of Burns' (1978) theory.

In this study, ten women in charge of City Halls were interviewed about their motivation, perception of the job and the differences between the leadership style of men and women. The results of the study showed that women invested in the position of mayor are successful, because the approached leadership tends more towards transformational than towards transactional. According to Mathis (2007), "Burns believes that women in comparison with men are more likely to adopt a transformational leadership style because they tend to see themselves as representatives of the group they lead and not independent of it". (p. 246).

Studies on transformational leadership generally have a positive impact on employee performance, job satisfaction, attitude and behavior (eg Armandi et al. (2003), Bromley and Kirschiner-Bromley (2007) and Shivers-Blackwell (2004)). Transformational leadership is presented as having several advantages, among which we can list: motivation, inspiration, charisma, promoting goals, generating change and empowerment. Tucker and Russell (2004) identified a number of potential dangers and abuses that the application of transformational leadership can generate. The authors highlighted two types of factors in this regard as follows: personal factors and organizational factors. Personal factors include: lack of integrity on the part of leaders, they may rely on deceptive, manipulative methods to influence followers; power becomes dangerous if leaders focus only on themselves rather than motivating their staff and gaining more followers, but also the obvious dangers of pride and selfishness. Organizational factors include: perpetuating conflicting relationships among people by abusively using power to their advantage and allowing bureaucracy to manipulate people to gain power.

The multitude of research on transformational leadership from the political sphere to various private organizations, non-profit organizations and governmental organizations is based on the study of Burns (1978). This type of leadership has been examined in parallel with: aspects of organizational culture (Block, 2003); best practice of 360-degree feedback (Alimo-Metcalfe & Alban-Metcalfe, 2006); Total quality management (Rago, 1996); governmental organizations (Trottier et al., 2008) and also the gender affiliation of leaders (Mathis, 2007; Tremaine, 2000). Pearce et al. (2003) conducted an exploratory study that extends the transactional-transformational model of leadership by developing four theoretical types of leadership. The study used a historical analysis of the literature regarding leadership and identified four behavioral types: directive, transactional, transformational, and delegation.

The research was built on different theories (X Theory, Initiation Structure Theory, Expectation Theory, Path-Objective Theory, Charismatic Theory and Social Cognitive Theory) which led to the following types of behavior-based leadership:

- 1. Directive leadership (excerpt from theory X, initiation structure and task-oriented behavior). Leadership is based primarily on the position of power. It includes "direction, command, assigned objectives, intimidation, and rebuke as the main mechanisms for influencing the behavior of subordinates" (Pearce et al., 2003, p. 275).
- 2. Transactional leadership (extract from the theory of expectations, the theory of the pathobjective, the theory of consolidation and the theory of exchange / equity). Leadership expects rewards as a result of performance. It is "focused on developing the effort-reward relationship using reward systems to achieve maximum motivation" (Pearce et al., 2003, p. 279).
- 3. Transformational Leadership (extracted from the sociology of charisma and charismatic theory. Leadership focuses on transforming the motivational state of followers into higher level needs. "Leader behavior included in the transformational leadership model defined by Bass: conveying a sense of mission; delegation authority, training, coaching and focusing on problem solving through the use of reasoning "(Pearce et al., 2003 p. 281).
- 4. Empowering Leadership (excerpt from behavioral self-management, social cognitive theory, cognitive behavior change and research to establish participatory goals). Leadership "emphasizes the development of followers' self-management or self-leadership skills" (Pearce et al., 2003, p. 282).

In developing a comprehensive understanding of leadership, it is important to address a comprehensive view of how leadership theories have progressed. Pearce et al. (2007) argue that "one of the major problems in the study of leadership is the existence of the tendency to abandon previous theories in order to introduce a new way of thinking" (p. 283).

5. Conclusions

The current pandemic context corroborated with the evolutions from the socio-political and economic-financial spectrum at global level, the organizations are forced to reanalyze their management and the activity carried out by the leaders within the entities, as well as all the characteristics of the promoted organizational culture. Thus, the need to determine the concordance of the three major spheres of influence with reality is realized, and the increase of organizational sustainability and the generation of performance among staff can be achieved by correlating them.

The adoption of organizational measures of resilience in case of shocks or unforeseen situations, as well as of continuous adaptation can be achieved through a series of profound organizational changes and the development of knowledge-based management.

Regarding that human capital plays a decisive role in terms of the quality of the management act but also of the results of the entity as part of the operational sphere, the managers - leaders links should be closely developed to generate performance and to lead the organization in the desired direction.

Currently, the literature considers that leaders need to adopt transactional techniques with a transformative mood, creating a mixed leadership behavior. Aspects of transformational leadership (a feminine style of leadership) lead to better results in terms of efficiency, satisfaction and extra effort of employees.

6. References

- Alimo-Metcalfe, B., & Alban-Metcalfe, J., 2006. More (good) leaders for the public sector.
 International Journal of Public Sector Management, 19(4), pp. 293-315.
 doi:10.1108/09513550610669167
- Armandi, B., Oppedisano, J., & Sherman, H., 2003. Leadership theory and practice: a "case" in point. Management Decision, 48(10), pp. 1076-1088. doi:10.1108/00251740310509607
- Bakotić, D., 2008. Leadership Styles' Specifics in Large Croatian Companies. *The Business Review*, 10(2), pp. 213-220
- Bass, B. M., 1985. Leadership: Good, better, best. Organizational dynamics, 13(3), pp. 26-40
- Bass, B. M., 1999. Two decades of research and development in transformational leadership. *European journal of work and organizational psychology*, 8(1), pp. 9-32 13.

- Bass, B., & Avolio, B. J., 1993. Transformational leadership and organizational culture. Public Administration Quarterly, 17(1), pp. 112-122
- Bennett, T., 2009. A study of the management leadership style preferred by it subordinates. *Journal of Organizational Culture, Communication, and Conflict*, 13(2), pp. 1-25
- Block, L., 2003. The leadership-culture connection: an exploratory investigation. Leadership & Organization Development Journal, 24(6), pp. 318-334
- Bratton, J., Grint, K., & Nelson, D. L., 2014. Organizational Leadership. Nashville: South-Western College Pub.
- Bromley, H., & Kirschiner-Bromley, V., 2007. Are You a Transformational Leader? Physician Executive, 33, pp. 54-57
- Burns, J. M., 1978. Leadership. New York: Harper & Row
- DeBerry, S. L., 2010. *Using transformational leadership to change organizational culture in a government agency*. PhD Dissertation. Minneapolis, United States of America
- Hamel, G., 2012. First, let's fire all the managers (how a company can operate without managers). *Human Resource Management International Digest*, 20(4). doi:10.1108/hrmid.2012.04420daa.015
- Heifetz, R., Grashow, A., & Linsky, M., 2009. The Practice of Adaptive Leadership Tools and Tactics for Changing Your Organization and the World. Brighton: Harvard Business Review Press. Karahanna, E. E., & Srite, M., 2005. Levels of Culture and Individual Behavior: An Investigative Perspective. Journal of Global Information Management, 13(2), 1-20
- Kest, R., 2007. Transformational leadership and its outcomes in a local government. Washington: Walden University PhD dissertation
- Kotter, J., 1990. A Force for Change: How Leadership Differs From Management. New York: The Free Press.
- Lakomski, G., 2001. Organizational change, leadership and learning: Culture as cognitive process. *International Journal of Educational Management*, 15(2), 68-77
- Lorenz, E. N., 1967. *The nature and theory of the general circulation of the atmosphere*. Cambridge: World Meteorological Organization.
- Mathis, A., 2007. Corporate social responsibility and policy making: what role does communication play? *Business Strategy and the Environment*, 16(5), pp. 366-385. doi:10.1002/bse.576
- McLaurin, J., & Al-Amri, M., 2008. Developing an understanding of charismatic and transformational leadership. *Allied Academies International Conference. Academy of Organizational Culture, Communications and Conflict. Proceedings*, 13(2), pp. 15-19
- Năstase, M., 2004. Cultura organizațională și managerială [Organizational and managerial culture]. Bucharest: A.S.E. Publishing House
- Nicolescu, O., & Verboncu, I., 2008. Fundamentele managementului organizației [Fundamentals of organizațion management]. Bucharest: University Publishing House
- Niculescu, D., 2016. Importanța conexiunii dintre angajați și rezultatele financiare un model al calculării ratei rentabilității capitalului uman pentru instituțiile financiar- bancare din Romania [The importance of the connection between employees and financial results a model for calculating the rate of return on human capital for financial-banking institutions in Romania]. *Amfiteatru Economic*, 18(41), pp. 78-93
- Niculescu, D. C., 2016. *Influențe ale societății bazate pe cunoștințe asupra sectorului financiar bancar [Influences of the knowledge-based society on the banking financial sector]*. Bucharest: Academy of Economic Studies PhD dissertation
- Obolensky, N., 1994. Practical Business Re-Engineering. Londra: Kogan Page.
- Obolensky, N., 2016. Complex Adaptive Leadership: Embracing Paradox and Uncertainty. Londra: Routledge
- Pearce, C., Sims, H., Cox, J., Ball, G., Schnell, E., Smith, K., & Trevino, L., 2003. Transactors, transformers and beyond: A multi-method development of a theoretical typology of leadership. *Journal of Management Development*, 22(4), pp. 273-307. doi:10.1108/02621710310467587
- Rago, W. V., 1996. Struggles in Transformation: A Study in TQM, Leadership, and Organizational Culture in a Government Agency. (Wiley, Ed.) Public Administration Review, 56(3), pp. 227-234. doi:10.2307/976445
- Senge, P. M., 2006. The Fifth Discipline: The Art and Practice of the Learning Organization (Revised and Updated Edition). New York: Doubleday
- Shivers-Blackwell, S. L., 2004. Using role theory to examine determinants of transformational and transactional leader behavior. *Journal of Leadership & Organizational Studies*, 10(3), pp. 41-50. doi:10.1177/107179190401000304

- Tremaine, M., 2000. Women mayors say what it takes to lead: setting theory against lived experience. Women in Management Review, 15(5/6), pp. 246-252. doi:10.1108/09649420010372869
- Trottier, T., Van Wart, M., & Wang, X. H., 2008. Examining the nature and significance of leadership in government organizations. *Public Administration Review*, 68, pp. 319-333. doi:10.1111/j.1540-6210.2007.00865.x
- Tucker, B. A., & Russell, R. F., 2004. The influence of the transformational leader. *Journal of Leadership & Organizational Studies*, 10(4), pp. 103-111. doi:10.1177/107179190401000408
- Ursachi, I., 2001. Management. Bucharest: A.S.E. Publishing House
- Walsh, K., 2004. Interpreting the Impact of Culture on Structure: The Role of Change. *Journal of Applied Behavioral Science*, 40(3), pp. 302–322. doi:10.1177/0021886304266845

Challenges of Executive Leaders in the Context of the COVID-19 Crisis. Aspects from the International and Romanian Environment

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Abstract

The effects of the pandemic crisis are complex, affecting all areas of activity, from global to individual

The health crisis is changing the dynamics of the market, the structures, processes and internal procedures of organizations. In the face of these new situations, leaders are forced to find ways to manage the changes that have taken place.

Starting from the context of leadership as a combination between the vision and the clear strategy that a leader has on his business, together with his ability to communicate it correctly and clearly to his employees and those who follow him, we consider that leaders have never been more stimulated to demonstrate their visionary talent and charisma, as in the new conjuncture.

The qualities of a leader are to build something new. How and in what way, the leaders overcame the obstacles of the pandemic, giving a new impetus to their business, the practical reality shows us. The study is meant to bring a better understanding of the challenges facing executive leaders in the international and Romanian environment.

Key words: leader, leadership, vision, challenge, crisis

J.E.L. classification: M10, M12, M14

1. Introduction

The COVID-19 pandemic, exceeding the limits of a global health crisis, causes unparalleled economic and social implications. It poses a threat to the global, national and organizational economy by default. In this context, at national and international level, economic and social trends have changed their trajectory.

The responsibility of the leader of an organization is significant. The leader of the organization must ensure a mix of wishes of all stakeholders. Investors want to increase profitability, employees want higher and higher salaries, along with job security, and business partners want to strengthen collaborations both upstream and downstream.

The pandemic crisis has brought a new economic context, with major differences on all levels: from the management of the organization, to the management of human resources policy and the integration of anti-video solutions.

The challenges of business leaders, generated by changes in business models, in this exceptional context, make their mission increasingly complicated.

2. Theoretical background

In recent years, the importance of leadership in the management of organizations has increased. While the prerogative of managers remains to achieve results in a systematic, predictable, repeatable and scalable way, leaders are the ones who lead through influence, inspiration and motivation.

Successful leaders know that: vision, purpose and values are the motivational impetus for successful leadership. Under the pressure of the tumultuous changes imposed by the coronavirus crisis, organization leaders must test their limits.

Challenges of executive leaders

The entire activity of the business leader is constantly challenged.

From the very definition of the leader, some of the most important challenges frequently encountered by business leaders at all times can be outlined:

- Capitalizing on the potential of employees: the most important resource of an organization, the active and determined factor, and at the same time the productive force, is its employees; the way in which they are used, distributed, involved in the activity processes of the organization, depends on its success;
- Strengthening employee confidence;
- Creating a business culture: "a system of material elements, values, norms and beliefs shared by members of an organization" to facilitate better cohesion of members of the organization in order to achieve objectives;
- Creating and implementing a business plan: for any business it is vital to be guided by an achievable plan and perspective in the future;
- Communication with business partners: good positioning and relationships with partners both upstream and downstream is essential to obtain mutual benefits.

The challenges of a leader can be grouped, depending on the influencing factors, in three categories: external, generated by people and situations; internal, determined by the personality and qualities of the leader; and contextual challenges specific to the leadership role:

- a. External challenges are part of the daily work of an executive leader, such as: providing resources and funds, easing the opposition of community forces, various interpersonal problems of members of the organization, and the influence of social, economic and global policies. The ability of a leader to manage the continuous succession of small crises and disruptions that jeopardize the fulfillment of the mission and the objectives set, is in itself an undesirable challenge to the leader.
- b. Internal challenges leaders are human beings, who have a baggage of personality traits and qualities, some innate, others cultivated through learning. In general, they stand out as strong, charismatic, bold people. The innate qualities of a person shape him as a social being. The way of manifestation, of the personal and professional qualities of a leader, materializes in the formation of a vision on the world and of the internal perception. The development of personal qualities are the result of the interference of life processes and the type of activity of individuals. Therefore, the characteristics of behavior, communication, attitude towards people, objects, work, things denote the character traits that an individual possesses. It depends on them to build the relationships, so necessary in the good functioning of the partnership leader-members of the organization, leaders-business partners, leaders-community. The real challenge is the ability of leaders to make a difference and adapt their behavior to the situation.
- c. Contextual challenges specific to the leadership role. Depending on the behavior towards business and employees, there are several types of leaders, as follows: the entrepreneur leader oriented towards action and innovation, initiates or implements new projects and pursues them simultaneously; the strategist leader emphasizes the process and innovative ideas, has an overview, is long-term oriented, develops a vision and implementation strategies; the professional leader is focused on innovation and people, he is the best in his field of expertise, his main quality is to mobilize the people around him.

Challenges of executive leaders before the COVID-19 pandemic

In the run-up to the COVID-19 pandemic, one of the biggest challenges for company leaders was how to attract and retain qualified, creative, intelligent people with superior digital skills. According to the CEO Survey (conducted by the audit and tax consulting firm PwC Romania in 2018), almost seven out of ten (68%) of leaders in Romanian organizations were concerned about the availability of people with digital skills in the industry in which they operate, and a percentage (64%) identified this as a source of anxiety among employees. Globally, three-quarters (75%) of executive leaders worldwide find it difficult to find candidates with digital skills in their industry, while a similar percentage (76%) are concerned that their employees do not have enough well developed such skills.

Challenges of executive leaders during the COVID-19 pandemic

The spread of the COVID-19 pandemic, the measures imposed by the authorities to prevent the effects on the citizens, the complete interruption of the activity, the modification of the modalities of their development, the long-term remote work, the activation of the economic crisis generated by the sanitary crisis, make quick and high-impact decisions.

- 1. Money management, the first and most impactful challenge in the pandemic, as a result of the lockdown, telework, the considerable reduction of the workload, all these considerably affected the budgets of the organizations and implicitly imposed drastic measures to reduce costs, in order to balance with declining revenues.
- 2. The health and safety of employees has become the second major challenge. This doubles the obligation to ensure employees, in addition to the conditions provided by the law on protection and safety at work by Law 319 of 2006 (Law on Safety and Health at Work OSH) updated in 2015 and the Labor Code, reorganization of processes according to restrictions distance aiming at the protection of employees within the organization.
- 3. Customer dependency. Businesses depend on their customers. The pandemic has affected the value creation chain by eliminating some partners, by reducing the client portfolio. The leaders being forced to face the pressure exerted by the reduction of the activity, to quickly find solutions to cover the breaches appeared in the supply-sales chain.
- 4. Working from home generates a double challenge for leaders. One is related to the feeling of losing control and lack of access to employees by the leader, an aspect so necessary to inspire and support them. The second challenge is to find a new discipline for collaboration within and with other teams, so as to maintain enthusiasm, passion and motivation for work and to avoid routine, fatigue and impairment of work capacity.
- 5. Digitization. The pandemic accelerated the process of digitizing the way of working, necessary for the continuation of the activity and the exchange of information. The problem is that some organizations have not been prepared to incorporate the new systems in the work process in a short time, on the one hand, and on the other hand, employees do not have the necessary skills to use digitized tools. Leaders are forced to make changes along the way, because the future of the organization depends on these decisions.
- 6. Investing in people. Training and development programs have become vital in the post-crisis period, as people need emotional support, they need to learn new work habits, collaboration and communication, the acquisition of digital skills, support in the use of training platforms, work in the virtual environment. In this context, executive leaders are faced with a double challenge: both supporting and encouraging employees to take training and professional training courses, as well as their own training in remote management, personal development, decision-making methods and management of risk in situations of uncertainty.
- 7. Communication culture. The virtual work environment has imposed new ways of communication. Thus, it is necessary to improve and adapt the channels, communication and information exchange processes in the organization. The way of connecting, the way of verifying and validating information and decisions need a different culture of communication, which falls within the responsibility of the executive leader to facilitate the exchange of information and create the right environment for communication within the organization, and from the organization to its exterior.
- 8. Keeping direction. The medium and long term vision, the strategic directions assumed, must be consolidated and calibrated according to the ongoing events. Due to the fact that it is going through a period full of uncertainty and ambiguity, it is necessary for leaders to define short-term visions, easily achievable and adaptable to all changes. We must not forget the human component, respectively the insertion within it, of the individual desires and aspirations of the employees, even if many companies are struggling to survive.
- 9. Strengthening the personal resilience of the leader. In addition to the responsibility that derives from the position that an executive leader has, during this period he must also focus on his own person. Physical and mental health, self-discipline, a balanced lifestyle are vital, all in order to maintain their ability to work in optimal conditions, so as to fulfill their personal desires and those of the position of executive leader.

3. Research methodology

The objective of this research is to identify the main issues related to the challenges of executive leaders in the context of the COVID-19 crisis, in a comparative approach between international and Romanian leaders.

In order to capture in the deepest possible way the different problems that the executive leaders face in this context, we used the qualitative research method. As a form of reasoning for the formulation of conclusions, starting from specific observations to generalization, we applied the principles of the inductive method.

The facts were examined in a logical order. The starting point was the main challenges that executive leaders faced in their daily work. Then, we identified real concerns and worries in the runup to the pandemic, which turned into new challenges. After the effects of the Covid-19 crisis, we found that the priorities and implicitly the challenges of the executive leaders have changed. All these relevant aspects are complemented by a comparative analysis between the challenges of the executive leaders from the international and the Romanian environment.

4. Findings

For a better picture on the changing challenges of executive leaders in the pendemic period, I draw attention to the results of two studies. One internationally, conducted by KPMG CEO Outlook during 2020 and which assesses changes in the priorities of executive leaders in international companies during the pandemic. A local one, conducted by Trend Consult, between July and September 2020, in order to identify the problems faced by the executive leaders of Romanian companies during this period.

The results of the KPMG study are a mix, two researches with the same purpose, conducted at the beginning of the pandemic on a sample of 1,300 executive leaders in January-February 2020, and in the midst of the rising pandemic, July 6-5 August of the same year, on a number of 315 respondents. International executives face the following challenges:

- Focus on the mission. The current situation has led the executive leaders to analyze whether the company's objectives meet the expectations of stakeholders, thus (79%) re-evaluated the goals of the organization in the context of the COVID-19 pandemic. Also, (79%) have a stronger emotional connection with the company's goals;
- Social responsability. During this period of uncertainty (63%) of the respondents paid more attention to the social component of the organization. A majority (76%) agree that leaders are personally responsible for change in social challenges;
- Environmental responsibility. As a result of the significant increase in the risks generated by climate change, (65%) of the interviewed leaders consider that only through a better management of this risk, the future survival of the business and the protection of jobs for employees can be ensured;
- Talent for business. After the onset of the pandemic, the leader's business talent became the biggest risk for coordinating a business, being considered a top priority;
- Digitization. For most respondents (80%) the digital transformation of their business accelerated during the pandemic, especially in the digital transformation of operations. It is expected that in the coming years to invest heavily in technology (67%);
- Personal resilience. The pandemic affected the health of executive leaders or their family members (39%). At the financial level (63%) they had to change their level of compensation;
- Growth prospects in the next 3 years. Low optimism among executive leaders (32%) regarding growth prospects in the next three years.



Source: made by author

The executive leaders from the Romanian environment face the following challenges generated by the pandemic crisis, as it results from the study carried out by Trend Consult by questioning 96 leaders of medium and large companies (number of employees between 50-5000), a turnover between RON 2-10 million, from various sectors of activity:

- Stress management and focus on people. Maintaining the high level of employees is considered a priority for executive leaders, considers a significant percentage of (61%);
- Increasing the authenticity of communication between managers and the team. One percent (41%) appreciate an improvement in genuine communication between leaders and the team;
- Employees' confidence in the organization's management increased during the crisis, according to (44%) of respondents;
- Teamwork and spirituality have improved in the opinion of (39%) of those interviewed, but even in these conditions a percentage of (24%) appreciate that things in this direction still require a lot of effort;
- Organizational culture based on initiative. Improving the initiative and creating a framework for implementing an organizational culture that encourages initiative should be one of the priorities of executive leaders, he said (76%);
- Resistance to change. A significant percentage (66%) of respondents consider resistance to change a major difficulty for future development;
- Investing in developing and maximizing people's potential should be another priority for the organization, estimates (47%) of those surveyed.



Figure no. 2 The challenges of the executive leaders from the Romanian environment

Source: made by author

5. Conclusions

The COVID-19 pandemic poses a crucial threat to human health and well-being, but also to the economy and business implicitly. The spread of the virus, but also the measures imposed to counteract its effects, have generated substantial changes in the way of conducting business. Being an unprecedented situation, for which there are no manuals to offer possible solutions, makes leaders

subject to new vulnerabilities and unanticipated challenges, difficult to manage. This, given that company leaders reconfigure and adjust their reactions in real time, given the rapid evolution of events.

The changes in the priorities of the executive leaders are a clear indicator that businesses have had to change their strategy very quickly to meet the challenges posed by the pandemic. The main priority in these conditions must be to protect human health and take all necessary measures to reduce the effects of the pandemic. Human capital is by far and perhaps the most affected part of this pandemic, and in this regard, it is essential that business leaders focus on measures to maintain the health and financial stability of employees. Any business exists and functions, with the help of the human factor, the original factor, active and determined on the other factors of production. Leadership is about people and their development, therefore, in these conditions the main challenges of company leaders will be the well-being of employees and job retention.

From a financial point of view, the most visible effects of the COVID-19 pandemic on business are the reduction in turnover and the impact produced by the suspension of activities. For most executives, the impact on revenue and profitability made it necessary to rethink the entire functioning mechanism of the organization.

In conditions of uncertainty, planning for the future has become more difficult, especially in terms of the future of work and problem solving, so that in order to overcome difficult times, executive leaders have to think in the short term. To support and grow business in the future, leaders focus on the importance of talent.

The impact of technology, as a support for homework absolutely necessary to ensure the continuation of activity, has redefined the way of communication in companies, creating more agile, flexible and resilient processes, and leaders are forced to adjust their means of communication, motivation and support of "remote" employees.

As a final conclusion, I would like to conclude with the assent of Bill Thomas, Global President and CEO of KPMG, I quote: "The COVID-19 crisis redefines corporate governance these elements as a guide for business decisions in unpredictable times".

6. References

- Bennis, W., Nanus, B., 2000, *Leaders. The strategies for taking the lead*. Bucharest: Business Tech International Press Publishing House.
- Business Academy, Leadership. [online] Available at: https://www.business-academy.ro/leadership [Accessed 18 November 2021].
- Johns, H., Moser, R., 2001, From trait to transformation: The evolution of leadership theories. *Education*, vol.110, p.115-122.
- KPMG 2020 CEO Outlook: COVID-19 Special Edition [online] Available at: https://assets.kpmg/content/dam/kpmg/xx/pdf/2020/09/kpmg-2020-ceo-outlook.pdf[Accessed 10 November 2021]
- Maxwell, C.J., 2005, Totul despre lideri, atitudine, echipa, relatii [Everything about leaders, attitude, team, relationships]. Bucharest: Amaltea Publishing House.
- Neagoe O., 2020, Cu ce provocari se confrunta liderii din Romania [What challenges do Romanian leaders face? [online] Available at: https://www.revistabiz.ro/cu-ce-provocari-se-confrunta-liderii-din-romania-in-pandemie/[Accessed 11 November 2021]
- Provocarile liderilor din companiile romanesti in perioada crizei sanitare [The challenges of the leaders from the Romanian companies during the sanitary crisis]. [online] Available at: https://trendconsult.ro/wp-content/uploads/2020/10/provocarile-liderilor-n-perioada-crizei-sanitare.pdf>>[Accessed 11 November 2021].
- Radulescu M., 2020, 10 provocari in pandemie pentru lideri [10 pandemic challenges for leaders].
 [online] Available at: https://life.ro/10-provocari-in-pandemie-pentru-lideri/ [Accessed 15 November 2021]
- Rosu R., 2018, Una dintre cele mai mari provocări ale liderilor din companii la ora actuală: Să atragi și să reții în organizație oamenii creativi, capabili să ia decizii și care să rezolve probleme [One of the biggest challenges for business leaders today: Attracting and retaining creative, decision-making, problem-solving people]. [online] Available at: < https://www.zf.ro/profesii/una-dintre-cele-mai-mari-provocari-ale-liderilor-din-companii-la-ora-actuala-sa-atragi-si-sa-retii-in-organizatie-oamenii-creativi-capabili-sa-ia-decizii-si-care-sa-rezolve-probleme-170>[Accessed 13 November 2021]

- Stan M., *Importanta viziunii unui lider* [*The importance of a leader's vision*]. [online] Available at: http://magnoliustan.ro/?p=270>[Accessed 22 November 2021].
- Stancu M., 2020, Talentul şi responsabilitatea corporativă, principalele preocupări ale liderilor în contextul pandemiei COVID-19 [Talent and corporate responsibility, the main concerns of leaders in the context of the COVID-19 pandemic]. [online] Available at:https://home.kpmg/ro/ro/home/presa/comunicate-presa/2020/09/talent-responsabilitatea-corporativa-preocupari-lideri-executivi-covid-ceo-outlook.html [Accessed 14 November 2021]
- Study, 2018, 8 din 10 companii românești afirmă că principala provocare este menținerea unui nivel ridicat de implicare a angajaților [8 out of 10 Romanian companies state that the main challenge is to maintain a high level of employee involvement].[online] Available at:< https://eduform.snsh.ro/bazade-date-online-cu-resurse-pentru-dezvoltarea-unui-management-institutional-antreprenorial-decalitate-in-scoli-defavorizate/leadership>[Accessed 10 November 2021]
- Tichy, N., 2000, *Liderul sau Arta de a conduce* [*The Leader or The Art of Leading*]. Bucharest: Teora Publishing House, Bucharest.
- Wildblood, P Wildblood. P., 2005, Leadership Role in Strategic Change, Peter Wildblood Enterprises.
- Yukl, G.A., 2001, Leadership in organizations, Prentice Hall.
- Zlate, M., 2004, Leadership şi management [Leadership and management]. Iasi: Polirom Publishing House.

Section V

Finance and Accounting

Performance Measurement and Characterization of Financial Indicators of Agricultural Companies in Romania

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Abstract

The performance consists of the efficiency and effectiveness with which the resources are consumed. The results are generated to ensure the development of the sphere of interest of the organization. The financial indicators provide a fundamental basis for analyzing the performance and evaluating the company's financial health. The paper's objective is to identify the characteristics of agricultural companies in terms of financial indicators. The indicators used in this paper are Accounting Value and financial indicators: Return on Assets (ROA), Return on Equity (ROE) and Return on Sales (ROS). We conducted qualitative research using descriptive analysis, correlation matrix and covariance analysis. The sample consists of 203 agriculture companies with more than 5,000,000 lei turnover in 2018-2020. The data were analyzed from the financial reports. The predominant activity was cultivation of cereals (excluding rice), leguminous plants and oilseed plants, with 181 companies. There was a positive correlation between all the analyzed indicators. The closest correlation was between ROA with ROE and ROS, and ROE with ROS, and the lowest coefficients were between AV and financial performance indicators.

Key words: Accounting value, Agriculture, financial indicators, performance

J.E.L. classification: M41, L25, Q10

1. Introduction

The Romanian rural territory has a significant agricultural potential duet o the available natural resources, so that Romania represents 7% of the utilises agricultural area of the European Union, occupying the sixth place. There is the most significant number of small farms in Romania and a low degree of technology (Bumbescu, 2020a, p. 120). Because in Romania, companies operating in agriculture are mainly small and medium-sized, they are not listed on the stock exchange.

However, external users of financial information need to determine the company's carrying amount or profitability to decide on the provision of goods or services or investing in such a company. In this research, we will identify the correlation between the profitability rates of agricultural companies and the book value of these companies. The rates of return on Return of Assets (ROA), Return on Equity (ROE) and Return on Sales (ROS) are calculated using data obtained from website datagov.ro related to the financial statements submitted by companies for the period 2018-2020.

Given the importance of this topic, the paper's objective is to study the characteristics of Romanian agricultural companies and the calculation of their financial performance indicators to perform a descriptive analysis and determine the correlation of these indicators. We decided to focus our research on Romanian companies because the Romanian rural territory has significant agricultural potential.

The methodology applied for analysis consists in grouping of data by turnover (sales), development regions, by field of activity. There will also be a descriptive analysis, a correlation matrix and covariance analysis. The originality of the research consists of a comprehensive study of Romanian agricultural companies and their financial performance. The study will contribute to the literature by analyzing the characteristics of Romanian agricultural companies and the indicators of their financial performance for the period 2018-2020.

The remaining paper is structured as follows: a theoretical background is made in the second section, followed by the applied methodology and the results obtained. The last section includes the conclusions, limitations, and future research directions.

2. Theoretical background

The performance represents a state of competitiveness of the organization that determines the achievement of results due to the achievement of strategic objectives, and on the other hand, ensures sustainable maintenance on the market (Jianu, 2007, p. 60). The performance evaluation indicators reflect the degree of capitalization of available resources to achieve the desired/planned results (Bumbescu, 2020a, p.119). The organizations' annual financial reports facilitate monitoring and evaluation of the performance with the help of financial indicators (Burja, 2015, p.85). The indicators which we used in this paper are ROA, ROE and ROS.

ROA highlights how much profit an organization makes from the investments in its assets, and it is calculated as the ratio between the net income and the total assets held by an entity (Bumbescu, 2020b, p. 120). ROA is considered the most comprehensive performance measurement indicator because it combines efficiency and effectiveness measurement (Courtis, 2003, p.20). ROE is one of the essential performances assessment indicators because it allows the general performance evaluation of the organization to be managed, and ROE is calculated as the ratio between net profit and equity. ROE measures the profitability of an organization, highlighting how much profit a company generates through the money invested by the shareholders (Bumbescu, 2020b, p. 25). ROS, the company's ratio, can achieve a profit from the sale of activities undertaken (Manoppo, 2015, p. 691).

AV represents the total value of the company's assets that the shareholders would theoretically receive if a company were liquidated. Compared to the company's market value, the carrying amount may indicate whether the shares of a listed company are overvalued or undervalued.

Previous research such as Nugroho (2001, p. 100), Rinanti (2009, p. 87) and Patriawan (2011, p. 115) examined the effect of the financial performance of the stock price of companies listed on the various stock exchanges. All studies have shown that the variables ROA, ROE, and ROS significantly impact the stock price (Manoppo, 2015, p. 692). Our research is focused on Romanian non-listed companies from agriculture.

3. Research methodology

To achieve the proposed objective, to study the characteristics of the companies from Romanian agriculture, we selected the relevant financial indicators based on the availability of data and the literature. The empirical research was qualitative. The field of agriculture includes both the plant sector and the livestock sector (Aron, 2019, p. 94). In our research, we analyzed the vegetable sector, characterized by the following NACE activity codes: 011 " Growing of non-perennial crops", 012 " Growing of perennial crops", 013, Plants propagation".

Research objectives are to describe the ROA, ROE, ROS and AV indicators from the years 2018, 2019 and 2020 distributed on the development regions of Romania, as well as to identified the correlations between ROA, ROE and ROS on the accounting value of companies. This research is a causal type of research and uses descriptive analysis. We presented the description of the analyzed indicators in table no 1.

Table no 1. Description of the variables

Variables	Code	Description	Source		
Return on equity	ROE	Net income/shareholders equity	Financial statements 2018-2020		
Return on assets	ROA	Net income/assets	Financial statements 2018-2020		
Return on sales	ROS	Net income/sales	Financial statements 2018-2020		
Accounting value	AV	Equity	Financial statements 2018-2020		

Source: Author's own work

_1; 1%

We analyze the data from the financial reports from 2018, 2019 and 2020 of 203 companies. In the three years of analysis, the selected companies had a turnover of more than 5,000,000 lei (approx. 1.000.000 euro). According to national legislation, companies with a turnover below the 10,000,000 euro (approx. 50.000.000 lei) ceiling are small and medium-sized. In figure no 1, we will present the structure of the companies studied according to the average turnover obtained in the years of analysis.

Figure no. 1. Structure companies about sales range

Sales range	No of companies	4; 2% 2; 1% 2; 1% 3; 1%
5.000.000-50.000.000	177	14; 7%
50.000.000-95.000.000	14	
95.000.000-140.000.000	4	177; 87%
140.000.000-185.000.000	3	177,6770
185.000.000-230.000.000	2	• 5000000-50000000 • 50000000-95000000 • 95000000-140000000 • 140000000-18500000
30.000.000-275.000.000	2	= 18500000-23000000 = 23000000-27500000
Total	203	365000000-410000000

Source: author's views based on datagov.ro data with Excel

Figure 1 shows that the Romanian agricultural companies are small and medium in proportion 87%. Large companies proportion 13% of the total companies analyzed. The two largest companies analyzed are SCHWAB AGRO PROD SRL from Satu Mare and AGRICOST S.A. from Braila. The structure of companies by development regions of Romania is presented in the following figure.

BUCURESTI-ILFOV; 9; 5%

WEST; 35; 17%

CENTER; 14; 7%

NORTH-EAST; 25; 12%

SOUTH-WEST; 45; 22%

SOUTH; 34; 17%

Source: author's views based on datagov.ro data with Excel

From the figure 2, the most significant number of companies operating in agriculture is present in the regions Sud-Est with 45 companies, West with 35 companies and Sud with 34 companies. In the North-East regions, there were 25 companies, North-West has 23 companies, South-West has 18 companies, Center has 14, and Bucuresti-Ilfov region has 9 companies.

The structure of the companies according to the NACE activity code is presented in the figure 3.

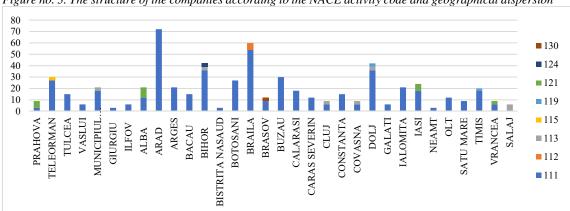


Figure no. 3. The structure of the companies according to the NACE activity code and geographical dispersion

Source: author's viewes besed on datagov.ro data with Excel

From figure no 3, it is observed that the predominant activity is activity code 0111 "Cultivation of cereals (excluding rice), leguminous plants and oilseed plants" with 181 companies located in the plain areas of Romania, respectively the counties Arad, Braila, Bihor and Dolj. The ranking is followed by activity code 0121 "Cultivation of grapes", with a number of 8 companies from Braila County.

4. Findings

In order to achieve the established research objective, in the first stage, we will present table 2, an overview of the financial performance indicators of the studied companies, presenting their average on the development regions of Romania in the period 2018-2020. The data are presented in the table in the form of an arithmetic average of the values from 2018, 2019 and 2020 for each development region of Romania. This presentation was made using the Excel pivot table function.

Table no. 2. Performance indicators on the development regions of Romania in the period 2018-2020

REGION	AV 2018	AV 2019	AV 2020	ROA 2018	ROA 2019	ROA 2020	ROE 2018	ROE 2019	ROE 2020	ROS 2018	ROS 2019	ROS 2020
BUCURESTI-ILFOV	46,111,744	58,640,298	49,178,214	0.0902	0.1322	0.0555	0.2690	0.2138	0.1255	0.1946	0.4571	0.1142
CENTER	22,449,400	25,636,644	27,651,075	0.0840	0.0552	0.0725	0.2468	0.1352	0.1661	0.1064	0.0902	0.1079
NORTH-EAST	16,018,404	19,186,142	20,297,104	0.0871	0.0687	0.0463	0.1763	0.1514	0.0547	0.0938	0.0826	0.0420
NORTH-WEST	8,906,730	9,590,761	11,161,352	0.0579	0.0445	0.0619	0.1536	0.1564	0.2129	0.0741	0.0577	0.0707
SOUTH	23,425,513	29,563,372	29,062,820	0.0516	0.0402	0.0167	0.1407	0.0841	0.0228	0.0921	0.0775	0.0038
SOUTH-EAST	22,861,561	26,432,041	28,203,658	0.0845	0.0611	0.0158	0.1550	0.1013	0.0684	0.1333	0.1159	0.0393
SOUTH-WEST	15,149,328	16,159,561	17,736,848	0.0931	0.0766	0.0771	0.1836	0.1699	0.1665	0.1571	0.1308	0.1343
WEST	18,808,655	20,209,588	23,324,759	0.0666	0.0288	0.0663	0.1649	0.0623	0.2162	0.1227	0.0658	0.1209
AVERAGE	21,716,417	25,677,301	25,826,979	0.0769	0.0634	0.0515	0.1862	0.1187	0.0927	0.1218	0.1347	0.0791

Source: author's views based on datagov.ro website

The information for table 2 highlights a significant difference between the years 2018 and 2020 for ROA, ROE and ROS. In 2020, a significant impact was generated by COVID 19 pandemic, with a lower net result among companies than in 2018 and 2019. These results are also represented by figure 4.

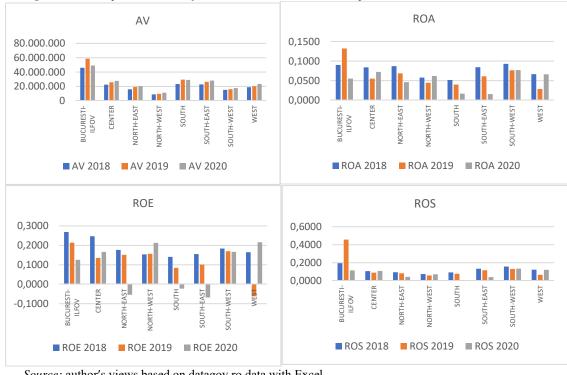


Figure no. 4. Graphic evolution of AV, ROA, ROE and ROS in the period 2018-2020

Source: author's views based on datagov.ro data with Excel

Figure 4 presents the graphic evolution of AV, ROA, ROE, and ROS in 2018-2020. It is observed that accounting value (AV) does not show a significant evolution, constant in the three years where we can conclude that agricultural companies have not undergone significant changes on the components of equity (current result, share capital, carried forward, reserves, etc.).

However, the profitability rates (ROA, ROE and ROS) have an oscillating evolution, these suffering a significant decrease in 2020 compared to 2018 in all development regions of Romania. This decrease is also due to the epidemiological situation in Romania generated by the covid pandemic 19 and other factors such as unfavorable weather conditions (rains or floods). The empirical research continued with the descriptive statistics of the analyzed indicators, presented in table 3.

Table no. 3. Descriptive statistics by performance indicators in the period 2018-2020

	AV	ROA	ROE	ROS
Mean	23,024,149	0.0583	0.1120	0.0969
Standard Error	1,802,717	0.0035	0.0172	0.0081
Median	11,135,477	0.0450	0.1217	0.0680
Standard Deviation	44,487,311	0.0852	0.4246	0.1991
Sample Variance	1,979,120,796,002,210	0.0073	0.1803	0.0396
Kurtosis	60	8.5424	82.4572	122.1588
Skewness	7	0.9954	-5.3225	7.2308
Range	575,770,339	1.0183	9.0365	4.1450
Minimum	-19,394,167	-0.3277	-5.6177	-0.7649
Maximum	556,376,172	0.6907	3.4189	3.3802
Sum	14,021,706,507	35.4803	68.1805	59.0206
Count	609	609	609	609
Confidence Level (95.0%)	3,540,308	0.0068	0.0338	0.0158

Source: author's views based on datagov.ro website

From table 3, the mean of AV is 23.024.149 lei (approx. 4.600.000 euro), which means that the average book value of the analyzed companies is 4.600.000 euro. The mean of ROA is 0,0583, which means that, on average, investments in the company's assets generate a return of 5% per year. The mean of ROE is 0,1120, which means that on average, and mean of ROS is 0,0969. Median represents splits our data in half. The median of AV is 11.135.477, the median of ROA is 0,0450, the median of ROE is 0,1217, the median of ROS is 0,0680. At this point, our data is split in half.

We analyzed the degree of correlation of the indicators both with AV and with themselves. This analysis is presented in table 4. If the correlation index is more significant than 0.25, we have a correlation relationship. In order to correlate the financial indicators, we considered it necessary to recalculate the accounting value because it was presented in absolute values and ROA, ROE and ROS are represented in percentage values between 0 and 1. In order to recalculate the accounting value we used the logarithmic function (lnx).

Table no. 4. Correlation analysis by performance indicators in the period 2018-2020

	AV	ROA	ROE	ROS
AV	1			
ROA	0.0713	1		
ROE	0.0044	0.5667	1	
ROS	0.1638	0.7563	0.3860	1_

Source: author's views based on datagov.ro data with Excel

There is a positive and a stronger correlation between ROA with ROE, ROS and a positive and moderate correlation between ROE and ROS based on data presented in table 4. Unfortunately, the correlation coefficients between AV and financial performance indicators are very low, the highest value being at ROS.

We analyzed the degree of covariance of the indicators and the results are presented in table 5.

Table no. 5. Covariance analysis by performance indicators in the period 2018-2020

	ROA	ROE	ROS	AV
ROA	0.0073			
ROE	0.0205	0.1800		
ROS	0.0128	0.0326	0.0396	
AV	0.0137	0.0020	0.0565	1.5045

Source: author's views based on datagov.ro data with Excel

According to table 5, when we analyzed the degree of covariance of the indicators, we can observe the kind of connection created between the studied variables.

5. Conclusions

This paper presented the characteristics of the agricultural companies in Romania on a sample of companies based in Romania with revenues of more than EUR 1 million in the period 2018-2020 and with at least three years of experience. We will analyze the correlation between the profitability rates of agricultural companies and the book value of these companies. The rates Return of Assets (ROA), Return on Equity (ROE) and Return on Sales (ROS) were calculated using data obtained from datagov.ro website related to the financial statements submitted by companies for 2018, 2019 and 2020.

The research objective was to describe the ROA, ROE, ROS and AV indicators from the years 2018, 2019 and 2020 distributed on the development regions of Romania, as well as to analyze the significant influence of ROA, ROE and ROS on the accounting value of companies.

We analyze the data from the financial reports from 2018, 2019 and 2020 of 203 companies that had a turnover of more than 5,000,000 lei. The predominant activity is code 0111 "Cultivation of cereals (excluding rice), leguminous plants and oilseed plants", with 181 companies.

A positive correlation was found between the analyzed indicators. The strongest correlation was between the indicators ROA with ROE and ROS, and the lowest correlation coefficient was identified between AV and ROE. One explanation would be that the variables are mainly influenced by internal factors of the companies.

Our research contribution is represented by collecting data and synthesizing them from the last three years. The research limitation consisted of qualitative analysis, but it is necessary to continue quantitative research. Future research can be oriented to study the relationship of the performance indicators and test and validate some hypotheses to achieve an econometric regression model.

6. References

- Anghelace, C., 2009, Econometrie. Teorie, sinteze și studii de caz [*Econometrics. Theory, synthesis and case studies*], Bucharest: Artiflex Publishing House
- Aron, M.P., Cuc, L., Lile, R., 2019, Convergences and divergences between the job of the accountant and the one of the agronomist engineer, *Scientific Papers Series I, Vol. 21 Issue* 2, available at: http://lsma.ro/index.php/lsma/article/view/1580, [accesed 15.11.2021]
- Bumbescu, S.S., 2020a, Performance analysis in agriculture using data envelopment analysis, *ECONFORUM*, *VOL.* 9, *Issue* 3, available at: http://www.ecoforumjournal.ro/index.php/eco/article/view/1125, [accesed 20.11.2021]
- Bumbescu, S.S., 2020b, Analysis of economic performance in agriculture using econometric modeling, *Studia Universitatis Vasile Goldis Arad, Economics Series, Vol 30*, available at: https://www.proquest.com/openview/b08059de22396f711d669b6efcd591b1/1?pq-origsite=gscholar&cbl=2006335, [accesed 18.11.2021]
- Burja, C., 2015, The financial performance of agricultural holdings in Romania-regional analysis, *Annales Universitatis Apulensis Series Oeconomica*, available at: < http://www.journals.uab.ro/index.php/oeconomica/article/view/216 > , [accesed 15.11.2021]
- Courtis, P., 2003, DuPont Ration: A comprehensive measure of business performance, European Research Studies,
 Vol.
 VI, available at: < https://www.researchgate.net/publication/46542499_DU_PONT_Ratio_A_comprehensive_measure_of_b usiness performance > , [accesed 25.11.2021]
- Jianu, I., 2007, Evaluarea, prezentarea și analiza performanței întreprinderii. O abordare din premisele Standardelor Internaționale de Raportare Financiară [Evaluation, presentation and analysis of enterprise performance. An approach based on the premises of the International Financial Reporting Standards], Bucharest: CECCAR Publishing House
- Manoppo, C. P., 2015, The influence of ROA, ROE, ROS and EPS on stock price, *Jurnal EMBA: Jurnal Riset Ekonomi*, *Manajemen*, *Bisnis dan Akuntansi*, *Vol. 3 No. 4* available at: < https://ejournal.unsrat.ac.id/index.php/emba/article/view/11493 > , [accesed 25.11.2021]
- Nugroho, B.A., 2001, *Strategi Jitu Memilih Metode Statistic Penelitian*, available at: < https://openlibrary.telkomuniversity.ac.id/pustaka/6991/strategi-jitu-memilih-metode-statistik-penelitian-dengan-spss.html>, [accesed 20.11.2021]
- Rinanti, I., 2009, Pengaruh Net Profit NPM, ROA, ROE Terdhadap Harga Saam Pada Perusahaan Tercantum Dalam Indesk LQ 45, available at: < https://ojs.unud.ac.id/index.php/Akuntansi/article/view/56530>, [accesed 20.11.2021]
- https://data.gov.ro/dataset >, [accesed 15.11.2021]

Uncertainty, Risks, and Challenges in the Accounting Profession during the COVID-19 Pandemic

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Abstract

Nowadays, the economic situation is dominated by the consequences of the pandemic, which have influenced the entire strategy and generated new approaches that have often meant the rethinking of the entire business in order to avoid bankruptcy. At other times, the entrepreneurs and employees have had to adapt, to constantly find solutions to deal with crisis situations. This paper is part of the current situation we are living in, by analyzing the extent to which the pandemic has influenced the activity of professional accountants under conditions of risk and uncertainty. Professional accountants have adapted to the changes caused by the pandemic, their activity being significantly affected, in the sense that they were forced to make changes in their work routine, facing difficulties in adapting to the new work requirements, as during this period the risk and uncertainty have been dominating the activity of both the clients and the professional accountants.

Key words: accounting profession, COVID-19 pandemic, uncertainty, challenges

J.E.L. classification: J21, F61, M41

1. Introduction

The importance of the accounting profession is even more pronounced during periods of emergency / alert, when the country's economy is exposed to risks, a context in which the state has an important contribution, by adopting support measures for companies. The pandemic is not over, the financial-accounting departments and independent professionals are still facing difficulties in managing this crisis and finding life-saving solutions for many companies, thus we can consider the next period as extremely challenging. The COVID-19 pandemic has generated unexpected challenges for the companies - financial, operational and personnel difficulties - regardless of their size and field of activity, with an impact on the course of action. In this context, the role and skills of professional accountants must evolve in response to the requirements of the external environment, given that they provide strategic advice to help companies ensure the continuity of their activity.

The coronavirus crisis poses a threat to the national economy and to the living standards of the citizens. During this health crisis, it is absolutely necessary to support not only the critical sectors of the economy, but also our assets, technology and infrastructure, the labor market being a priority.

The economic impact of the crisis varies from one sector to another and from one company to another. It depends on a number of factors, such as the possibility of becoming acquainted with the lack of continuity in the supply chain, the existence of stocks or dependence on time-bound production processes.

Inevitably, crises involve making difficult decisions, but the optimal conditions for decision-making are not enough. Countless small business owners, CEOs, government leaders and others have faced this reality in 2020. For many of them, professional accountants have been present as reliable consultants in uncertain and unforeseen times. As in the case of each trade, following COVID-19, accounting will undergo a series of changes. The capabilities of managing these changes will be sounder from now on.

Nowadays, the accounting profession has the ability to adapt to any situation - for the benefit of the businesses, government and society. Furthermore, this is an ideal time for the profession to protect existing talent and attract new one.

The changes caused by the restrictions imposed by the pandemic have forced us to reconsider the role of professional accountants: future-oriented skills can usher in a new world in which professional accountants play the role of strategic leaders.

COVID-19 will change accounting, and we will get used to digital processes we once considered impossible. We will prove our ability to manage change more accurately than ever before and the way in which we anticipate the future will be influenced by an experience many of us did not imagine they could have.

2. Theoretical background

The way in which economic activities are organized is forever changed and reality has changed the way professional accountants cooperate with the stakeholders. They are the holders of the information which influences the long-term strategy and, as companies change in order to remain relevant, professional accountants need to be at the heart of these processes.

The guiding principles for achieving this, as well as the international standards on financial reporting, are audit and assurance, ethics, public sector and it is hoped that sustainable development will soon be added. A long-term plan based on sustainable development makes it easier to maintain an organization's place in the future. Even regulators have difficulty adapting to the way accounting has changed, especially in the year 2020.

The accounting profession needs to focus more on efficiency and risk monitoring, but without neglecting the formal side, in terms of independence, confidentiality and professional transparency. The role of the accountants has evolved with the evolution of accounting, from the technique of recording trade to means of control, evidence and social stake. Over time, the delegation of responsibilities related to the production of information provided by accounting has created the preconditions for the emergence of an independent accounting profession, which is becoming increasingly important, being aimed at legitimizing the information provided by the companies (Bunget, 2005).

Promoting a direction for the future by working with regulators on the latest approach to financial reporting and auditing in a digital world is an issue that accounting firms should consider. This will be beneficial for the future of the accounting profession, as a common perspective is reached regarding information on sustainability, focusing on environmental, social and governance (ESG) issues. For the future of the profession, it is important for the sustainable development and transparency on ESG to be integrated into ways of reporting and ensuring high quality at the global level

The vision has important implications for the employed professional accountants and, in general, for the accounting profession. It requires a change in professional skills and competences, mentalities and behaviors needed to influence decisions on a larger scale and to work in multidisciplinary teams. Key priorities for the profession include involving the employed accountants and their employers; improving the accounting education; promoting the profession and professional accountants (IFAC, 2019).

3. Research methodology

The paper presents a qualitative and a quantitative research on information collected from the international statistics and from a questionnaire made by Karbon Magazine on the effects of pandemic in accountants work. The examination of the impact of Covid-19 pandemic shows how many changes, risks and uncertainty was brought in accounting profession.

4. Challenges of the accounting profession during the pandemic

With the onset of the pandemic caused by the coronavirus, accountants encountered difficulties in terms of the allocated working time, given that its volume increased significantly. About 70% of the 1,000 accountants who took part in a questionnaire conducted by Karbon Magazine answered that the workload has increased, and 23% believe that there have been no changes in this regard.

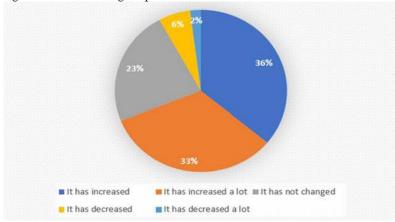


Figure no. 1 Change in workload during the pandemic

Source: Authors' processing

5. How easy was the adaptation?

Professional accountants are already dynamic thinkers with a penchant for proactive planning: they are reliable consultants in difficult times. Many debates have focused on accountants' importance in terms of developing professional skills and deepening new techniques for analyzing and interpreting data in different situations.

Professionals need to develop their storytelling skills, be able to show effectively how all the pieces fit together and how the financial function strengthens development. Although the basics of this aspect can be taught in the classroom, this skill will be largely trained in the workplace.

According to a study conducted by Karbon Magazine, it is observed that the number of accountants working remotely during COVID-19 is more than double than that of those working remotely before the virus appeared.

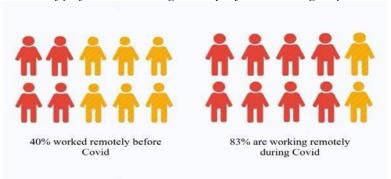


Figure no. 2 Statistics of professionals working remotely before and during the pandemic

Source: Authors' processing

A CEO of a professional accounting organization confirmed the need for agile, future-oriented skills, stating that crisis must be used as an opportunity for a change and adaption of traditional work from the office.

Following the same study conducted by Karbon Magazine, one can notice that, statistically, the measures applied by the companies affected by the health crisis varied according to object of activity and size and they had different effects. Thus:

- 6% of the companies found that there are many opportunities during this period, which has
 led to the growth of each business, whether it meant an increase in sales or the identification
 of new products launched by them or those to be launched on the market;
- For 24% of the participating companies, the crisis does not have any impact, positive or negative, as they are waiting to manage performance budgeting until the end of the current year;
- For the remaining 70%, the COVID-19 crisis has so far led to a decrease in turnover; however, their reactions to the current situation vary.

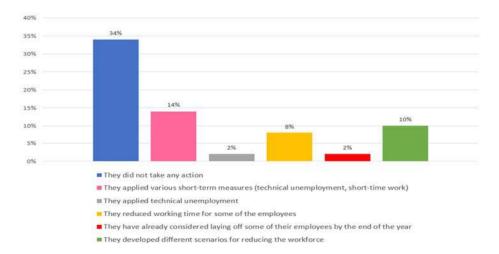


Figure no. 3 The measures applied by the companies affected by the new coronavirus

Source: Authors' processing

The periods of economic and financial crisis have shown that the reduction in losses and the economic recovery following the crisis crucially depended on the scale and quality of state interventions in the real economy. The paradigm of investing in public infrastructure and austerity have proven to be pro-cyclical rather than effective for the states which have opted for such an approach. Moreover, states with strong financial markets, through virtually unlimited access to financial resources and the lowest costs, have been able, through the favorable interest rate differential, to ensure better dynamics and profitability for domestic companies.

6. Conclusions

2020 and 2021 was years in which the world took on new dimensions in the context of the health crisis that brought additional risks and uncertainty in all areas of activity. This process will certainly continue for many years, the keywords being digitalization, innovation, and flexibility in all areas of activity.

The economic impact felt is materialized in a general economic slowdown which includes, but is not limited to, the easy disappearance of some issues and the deterioration of the financial market, worsening credit, liquidity concerns, continued increase in government intervention, rising unemployment, general decline in discretionary consumer spending, rising stock levels, declining production due to deteriorating demand, layoffs, and other restructuring activities. A negative impact

on a company's financial results and an even wider economic slowdown can be caused by the continuation of these circumstances.

Although for a year and a half humanity has been waiting for a return to the normalcy before the pandemic, the foreshadowing reality shows that we will probably never return to normalcy. This pandemic crisis will in fact be a step forward towards a digitized, flexible, and innovative profession. This crisis caused by COVID-19, but also the economic decline have almost irreparably affected many SMEs. As long as governments still provide various forms of financial support to economic sectors, they can be saved and accountants can be a great help to these struggling companies. The advice that can be offered, the certainty that the company is managed sustainably by identifying and solving insolvency risks are just some of the contributions that professional accountants can have to saving these companies in the current context.

Therefore, the year 2022 promises to be challenging, and the business environment must take all necessary measures to limit the effects of the disruptive factors and to benefit from all the facilities at its disposal.

7. References

- Bunget, O., 2005. Contabilitatea româneasca între reformă și convergență, [Romanian Accounting between reform and convergence]. Bucharest: Economica Publishing House
- Deloitte: Potential challenges within the financial-accounting departments in the context of COVID-19
 Available at: https://www2.deloitte.com/ro/en/pages/business-continuity/articles/potentialele-provocari-din-cadrul-departamentelor-financiar-contabile-in-contextul-COVID-19.html
- Deloitte: The Romanian economy at a crossroads Between the economic contraction caused by the pandemic and the opportunities offered by the financial support of the European Union [Economia românească la răscruce Între contracția economică provocată de pandemie și oportunitățile oferite de sprijinul financiar al Uniunii Europene], [online]. Available at: https://www2.deloitte.com/ro/en/pages/business-continuity/articles/economia-romaneasca-la-rascruce-intre-contractia-economica-provocata-de-pandemie-si-oportunitatile-oferite-de-sprijinul-financiar-al-uniunii-europene.html
- Deloitte: Unknowns of 2021 the factors that could influence the activity of companies next year [Necunoscutele anului 2021 factorii care ar putea influența activitatea companiilor anul viitor], [online]. Available at: https://www2.deloitte.com/ro/en/pages/business-continuity/articles/necunoscutele-anului-2021-factorii-care-ar-putea-influenta-activitatea-companiilor-anul-viitor.html)
- European Commission: Jobs and the economy during the COVID-19 pandemic [Locurile de muncă și economia în timpul pandemiei de COVID-19], [online]. Available at: https://ec.europa.eu/info/live-work-travel-eu/coronavirus-response/jobs-and-economy-during-coronavirus-pandemic ro
- IAASB: Subsequent events in the current evolving environment Audit considerations for the impact of COVID-19
- IFAC: Accountancy Skills Evolution: Impact of COVID-19 & the Path Forward, [online]. Available at: https://www.ifac.org/system/files/publications/files/IFAC-Accountancy-Skills-Evolution.pdf
- Karbon: *How accounting firms around the world have adapted to COVID-19* [online]. Available at: https://karbonhq.com/resources/accounting-firms-adapt-to-covid-19-challenges/
- Mazars: The interest of the Romanian business environment regarding the EU SURE initiative [online].
 Available at: https://www.mazars.ro/Home/About-us/News-media-and-publications/Press-releases/SURE-initiative-Romanian-business-environment

Financial Impact Accounting in Determining the Fiscal Result

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Abstract

In the present empirical study, we aimed to analyze the suggestive accounting information as relevant to the deductible expenses in the calculation of the taxable profit and the profit tax and their incidence to the deductibility of the Value Added Tax. Following the empirical study we concluded that the equipment purchased by the company, in our opinion, does not meet the conditions for classification of individual protective equipment defined by regulations, we believe that the expenses incurred by the company with their acquisition are non-deductible expense in calculating taxable profit and of the profit tax, respectively, do not meet the legal conditions and the right to deduct the value added tax was not granted during the analyzed period.

Key words: accounting information, accounting policies, taxable base, profit tax, value added tax **J.E.L. classification:** M21, M41, E62, E63

1. Introduction

Both from the evaluations of national and international bodies, and from the available public sources, it results that fraud and tax evasion has increased in Romania, especially in recent years. European accounting harmonization has had to deal with international accounting harmonization, due to the expansion of large European companies to the world's major international markets, which has made it unnecessary to develop an accounting standardization body at regional level, making it more useful to adjust European directives, according to the provisions of the IASB rules than to resort to the revision of the European Directives.

Many authors believe that the development of the European Accounting Directives has certainly been a political process.

An analysis of the accounting framework of the European Union may reveal that it indicates the structures that can be interpreted as a kind of conceptual framework, but other authors argue that the European accounting directives do not constitute a conceptual framework, not finding a coherent system and there is no consensus among Member States on giving the same magnitude to the importance of accounting development, and for selfish reasons, he considers that the harmonization of accounting has been carried out by directives.

A closer look at the development of European accounting directives seems to confirm the statements of the above authors, as harmonization has failed to eliminate the differences between Member States' accounting regulations and national approaches. In a globalizes economy, without borders for business, the process of reorganization of Romanian accounting has experienced an accelerated pace, determined by the need for information and communication in a common accounting language, to ensure comparability, credibility and relevance of information provided by situations financial services for all categories of users.

In this context, accounting as a business science must become a solid indisputable economic and legal basis that, based on the relevance, credibility and comparability of the information produced, is able to ensure compliance with the requirements of a reference accounting system for financial statements that allow communication between all categories of users.

The practical application of these accounting principles must be carried out both in the production phase of the financial information and in the supply phase, finalized with the elaboration, audit and presentation of the financial statements. In this way, the accounting principles will cover the complete set of financial statements, and not just one component of them.

The notion of true and fair view has appeared since 1947 in an English text of company law: - each balance sheet of a company must give a true picture of the company's business situation, at the end of the year, and each profit and loss account of a company, must give a true picture of the company's result for the financial year- (Feleagă, Ionașcu, 1998).

2. Literature review

Aghion (2004) uses a Schumpeterian model of growth, in which firms gradually innovate, and competition increases the profits of those who innovate, while reducing the innovation incentives of those lagging behind technologically. The deduced relationship is a U-shaped one, the Schumpeter effect being dominant for high levels of competition;

Meltiz (2003), in a model with imperfect competition and heterogeneous firms, argues that the elimination of trade barriers generates the tendency to reallocate to the most productive firms in an industry. Companies with low efficiency will leave the market, and the most competitive will expand to foreign markets;

Ristea, (2000) states, a study by the Federation of European Experts on the comparison between European Union directives and IAS recognizes the contradictions between Anglo-Saxon culture and European culture, stating: Companies and their accountants must apply IAS in the national context or be represented by the national law or by the understanding of the European directives with the respective country (Ristea, 2000).

Scarpeta (2002) showed, based on an endogenous growth model, that there is a positive relationship between market penetration and PTF change, especially in services, these gains being higher for economies near the technological frontier.

Vickers (1995) contradicts the theoretical approach to the consequences of intensified competition - market power can be reduced, which causes firms to sell at a price close to the marginal cost level. The result is rather a growing industrial concentration, companies registering higher profit margins, given the existence of non-tariff barriers to the entry of new competitors.

Willenbockel (1994) shows that a major integration program, such as the Single Market or the Economic and Monetary Union, can lead to boosting investment and increasing production as a result of intertemporal optimizations of economic agents.

3. Research methodology

In order to identify the phenomena of fraud or tax evasion based on the risk analysis, it was decided to use the documentary analysis.

For the realization of the present study, the suggestive accounting information was selected as being relevant to the deductible expenses for the calculation of the taxable profit and of the profit tax and their incidence to the deductibility of the Value Added Tax.

4. Findings

The organization and management of financial accounting within the enterprise aims to accurately reflect the financial position, performance and changes in financial position, based on principles and rules regarding consistency, recognition, evaluation, prudence, comparability in time and space of the components of financial statements, which cannot be changed on a current basis.

Instead, taxation corresponds to a different logic, it is more dynamic and has its principles and rules that respond to interests that vary over time, often in the short term, depending on fiscal policy and do not always correspond to accounting, thus excluding a strict concordance between accounting and taxation.

Hence the difficulties of reconciling the relationship between the two areas, determined by the existence of accounting principles and tax rules, which determine the increasing use among accounting practitioners of professional judgment, this approach being amplified by the fact that most of tax contributions is based on accounting information, which makes the economic space in which accounting principles meet with tax regulations to be ubiquitous.

With the emergence of new types of commercial and financial operations, the absence of precise rules on their treatment may lead to differences in the interpretation and application of generally accepted principles.

5. Case Study

The company QR SRL made various purchases of goods (textiles), registered in the expense account 60283000.

In the present study, we aimed to analyze the suggestive accounting information as being relevant to the deductible expenses when calculating the taxable profit and the profit tax and their incidence at the deductibility of the Value Added Tax.

■ Income tax

During the analyzed period, respectively, 01.01.2017 - 31.12.2020, the company QR SRL made various purchases of goods (textiles), in a total value of 355,775 lei, registered in the expense account 60283000.

The expenses with the acquisitions made were considered by the company as deductible expenses for the calculation of the taxable profit and of the profit tax.

Regarding the purchases made, we make the following clarifications:

From the fiscal point of view, for the determination of the taxable profit, only the expenses incurred for the purpose of achieving taxable income are considered deductible expenses.

According to art. 25 para. (1) of the Fiscal Code, - For the determination of the fiscal result are deductible expenses the expenses incurred for the purpose of carrying out the economic activity, including those regulated by normative acts in force, as well as registration fees, fees and contributions due to chambers of commerce and industry, employers' organizations and trade unions.

The methodological norms at point 13 par. (2) provide: -In application of the provisions of art. 25 para. (1) of the Fiscal Code, are deductible expenses for the calculation of the fiscal result and the expenses regulated by normative acts in force. For example: a) expenses incurred for safety and health at work, according to the law-.

Law no. 319/2006 on safety and health at work defines: - personal protective equipment as any equipment intended to be worn or handled by a worker to protect him against one or more risks that could endanger his safety and health at work. workplace, and any supplement or accessory designed to meet this purpose.

The equipment purchased by QR SRL, in our opinion, does not meet the conditions for individual protection equipment defined by the aforementioned regulations, we believe that the expenses incurred by the company with their acquisition, are non-deductible expense in calculating taxable profit in the analyzed period.

In conclusion, the expenses in the total amount of 355,775 lei, representing the expenses registered in account 60283000, represent non-deductible expenses when calculating the taxable profit and the profit tax for the analyzed period, respectively, 01.01.2016 - 31.12.2020, reuniting the related taxable base each fiscal period.

■ Value added tax (VAT)

In the analyzed period, respectively, 01.01.2017 - 31.12.2020, the company QR SRL made various purchases of goods (textiles), in a total value of 355,775 lei, with related VAT in the amount of 67,597 lei, representing according to the documents on the invoices (textiles), for which the

company exercised its right of deduction, respectively, the acquisition invoices are not related to income, and their acquisition is not for the purpose of economic activities carried out by the company QR SRL did not prove, with documents, that these services were provided for the benefit of its taxable operations, the invoices not being supported by appropriate documentation attesting to its necessity and usefulness and how they led to the performance of taxable operations specific to the activity society.

Thus, it is noted that the existence of a contract concluded between partners, as well as the possession of an invoice, are not sufficient to benefit from the right of deduction related to the received invoice, the company having the obligation to justify with specific documents the actual provision of services.

Intended for use for the purposes of its taxable transactions, or the company has not demonstrated by appropriate evidence that the goods/services covered by the contract have not objectively proved that the essential purpose of the transactions get a tax advantage.

At the same time, the provisions of the Civil Code under which the contract is considered the law of the parties are not relevant, since, in setting taxes, tax authorities are not bound by the content or legal form of transactions, but by their economic content, by virtue of the principle of economic prevalence. on the legal provided by art. 11 para. (1) of the Fiscal Code.

Thus, it is noted that art. 11 para. (1) of the Fiscal Code enshrines, at the level of law, the principle of economic prevalence over legal, economic reality, based on which the tax authorities have the right to analyze any operation (transaction) not only from a legal point of view, but also from a view of the economic purpose pursued by the taxpayer. In this spirit, a normal transaction from a legal point of view may not be taken into account or be reclassified from an economic point of view, for the purpose of applying the tax law.

By deducting the previously mentioned VAT, the company QR SRL, in our opinion, did not comply with the provisions, art. 297, para. (2), lit. a) of Law no. 227/2015 on the Fiscal Code with amendments and completions, fact for which the right to deduct the value added tax in the value of 67,597 lei was not granted.

6. Conclusions

In the context of the expansion of multinational companies, the users of financial information are interested in the performance of the enterprise, determined not on the basis of the accounting result but of the global result.

The idea that the result presented in the traditional profit and loss account no longer characterizes the present image of an enterprise is increasingly supported.

Following the empirical study we concluded that the equipment purchased by the company, in our opinion, does not meet the conditions for classification of individual protective equipment defined by regulations, we believe that the expenses incurred by the company with their purchase, are non-deductible expense to calculate profit taxable and profit tax, respectively, do not meet the legal conditions and the right to deduct value added tax was not granted during the analyzed period.

Furthermore, the financial statements must include presentations of all the effects of transactions or events that characterize the activity of an enterprise, including those that generate changes in equity.

In comparison with the financial statements, the purpose and objectives of tax reporting are to assess the basis of calculation.

As there is a tendency among users to give more importance -to the profit and loss account- and not -to the situation of changes in equity- when analyzing the situation of an enterprise, it is necessary to would require the preparation of a statement reflecting financial performance.

Once an accounting treatment is chosen and considered appropriate, it should not be applied only if it leads to the most prudent results.

If we consider the multitude of accounting policies and options offered by International Standards, we see how the management of fiscal structures can be influenced by their choice in different situations, depending on the optimistic or pessimistic attitude of management to maximize or minimize the result or evaluate the risk of the activity through the prism of the different events occurred in the life of the enterprise.

It is also necessary to achieve a coherent fiscal strategy, with actions on time horizons, aiming at the main purpose of the tax system, the collection of tax revenues, using as few resources as possible, imposing significantly lower administrative costs and providing conditions for development of fair tax competition.

7. References

- Aghion, Ph., Bloom, N., Blundell, R., Griffith, R. and Howitt, P., 2004. Competition and Innovation: An Inverted-U Relationship? UCL Working Paper No. 04/06
- Meltiz, M.J. 2003. The Impact of Trade on Intra-Industry Reallocations and Aggregate industry productivity, *Econometrics*, Vol. 71, no. 6.
- Ristea, M. 2000. *Methods and accounting policies of the enterprise*. Bucharest: Tribune Economics Publishing House.
- Scarpeta, S. and Tressel, T, 2002. Productivity and convergence in a panel of OECD industries: do regulations and institutions matter? *OECD Economics*, Paper, no. 342, Brussels.
- Vickers, Jh. 1995. Concepts of competition, Oxford Economic Papers, Vol. 47, issue 1.
- Willenbockel, D. 1994. Specification Choice and Robustness 'in CGE Trade Policy Analysis with Imperfect Competition, Middlesex University Business School Economics Discussion, Paper no. 105, London.

The Impact of Information Technologies on the Activity of Accountants

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Abstract

Task automation, predictive analytics, changing employee missions, new working methodologies, new digital tools, the health crisis will force organizations to adapt their working methods and accelerate their digitization projects.

The aim of this paper is to present the impact of digital technologies on the activities of companies. Its potential influence could revolutionize our economic systems: the blockchain is the bearer of profound transformations in many fields of application. It can be a threat, in its intentions or in its use, by creating trust systems based on mathematical laws that would be free from democratic requirements or an opportunity for democracy, if used properly.

The accountant of the future will need to develop interpersonal skills and data analysis skills to understand how algorithms work. This change in required missions and skills is a lever for attracting and retaining talent, as professionals will be able to devote more time to higher value-added missions.

Key words: Accounting, artificial intelligence, Blockchain, smart contracts

J.E.L. clasification: M40, M41, M49

1. Introduction

Nowadays, the business environment has become extremely dynamic due to the rapid changes in the field of information technology, determined by competition and performance. New technologies are designed to cover a wide range of economic requirements, such as Big Data, data analytics, mobile technologies and cloud computing platforms, all designed to provide flexibility, economies of scale, mobility and more accuracy. The accounting field is subject to this new era of change. The IoE (Internet of Everything) era is reshaping the accounting profession, following the current needs of organizations. Artificial intelligence and process automation take over redundant and repetitive tasks performed by professionals, creating space for more complex activities such as analysis and business consulting.

The interest of this research is thus justified on three theoretical, methodological and practical levels. At the theoretical level, in addition to contributing to the general debate on the effectiveness and efficiency of new audit technologies, this research makes it possible to identify the success factors and risk factors of using these new techniques. Also, despite the widespread use and increasing importance of these technologies, little effort has been made to determine the effects of electronic file managers on auditor performance as a dependent variable.

Methodologically, our study will support the analysis of the links between information technology and individual performance in a financial statement audit task. Performance will be measured, among other things, by productivity, but also by other measures, such as the reliability of the auditor's opinion and the quality of the service provided through this use.

At a practical level, this work should help auditors better understand the impact of the use of new information technology on the audit engagement. Specifically, we hope that auditors will find in this research a theoretical framework that will allow them to assess the impact of these tools on the performance and quality of their reasoning. Indeed, the analysis of the results of this paper will make it possible to present some recommendations that could help increase the contribution of IT

techniques to the success of audit missions by promoting a more efficient and effective use of these applications in the audit mission.

These recommendations may relate to the training of auditors, the adaptation of IT applications to the specific needs and constraints of the audit engagement. This understanding of the phenomenon, as well as the proposed recommendations, will help auditors in their audit process and allow audit firms to be more competitive, while responding more appropriately to the needs of their clients and formulating better informed opinions.

2. Literature review

The impact of information technologies on the activity of professional accountants, namely the way in which new technologies reshape the accounting and auditing profession, respectively the methods used by them, is gaining more and more ground. Artificial intelligence (AI) emerged as a result of Big Data and Data Analytics (BDA) to turn data into intelligent analysis, along with the RPA of automated robotic processes (Vasarhelyi et al., 2015). For the accounting and auditing profession, specialized publications attest to the need to know how these technologies streamline and accelerate economic processes, to simplify procedures and tests performed in audit missions, to reduce redundancy of daily activities, to improve the organizational performance of the company professional: accounting and auditing and client entities, increasing the quality of financial reporting activity and reducing the level of audit risk.

That is why it is very important to determine the strengths and weaknesses that influence accounting activities, but also the advantages that new technologies have, in order to make the most appropriate decisions regarding accounting actions.

The technology used by accountants to express an opinion has evolved considerably. Until the 1930s, they saw their work as an audit, often exhaustive, of accounting records. Practitioners then developed, in the period 1940-1960, a structured approach to auditing. This modern, more analytical approach integrates, since the 1950s, a perception of risk derived from the theory of statistical decision.

The emergence of new information and communication technologies leads practitioners and researchers to re-examine their framework and reflection in all areas of management. The financial auditor, which is at the heart of the legal and contractual framework for regulating financial information, cannot be exempted from this review. In fact, the financial audit is assigned objectives of efficiency and relevance in carrying out missions, the purpose of which is to reduce the information risks of the various actors of the company, in particular by removing the hypothesis of financial information asymmetry between managers, shareholders and third parties in general.

At the same time, market pressure over the past two decades has led audit firms to provide more competitive services. Audit firms seek to be more competitive by providing quality services and improving their overall efficiency. Thus, their growth potential depends on how well they build and maintain a quality audit: (Richard, 2000). This concern has been at the root of the search for more productive and efficient tools.

The most commonly used traditional techniques to certify the sincerity and regularity of financial statements are: statistical surveys, interviews, questionnaires, functional charts, task analysis grids, flow charts, etc. These techniques, often performed by hand, are characterized by their complexity and deficiency.

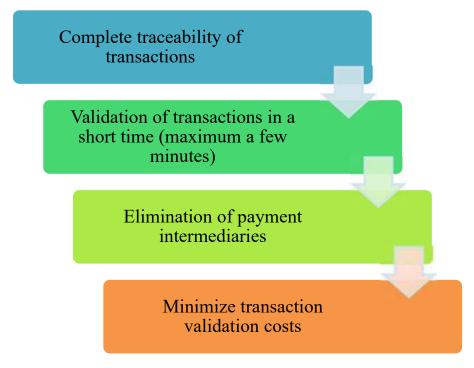
To make up for the shortcomings of traditional methods, new information technologies offer treatments and help in solving the right problems: word processing systems, database processing, electronic spreadsheets, graphics software and some specialized tools such as planning software, software statistical sampling, decision support. systems, expert systems and electronic file managers developed by the Big Four. However, the contribution of these new technologies to the formulation of the auditor's reasoning and to the quality / cost ratio of the audit engagement is worth exploring.

The evolution that has been registered in all fields of activity also affects the accounting sector, and standardization could provide answers to several problems related to digitization: interoperability, development of the Internet of connected objects, Blockchains (and their applications), big data, working conditions, cyber security and protection of personal data, support

for new regulations (eg GDPR - Payments Directive), the key role of digitization that influences the external environment (Atzori et al., 2010).

Representatives of the accounting and auditing profession in our country are encouraged to keep up with the progress of new technologies, as they have the opportunity to evolve, learn and capitalize on the already proven ability to adapt to the needs of a rapidly changing business world. The applicability of new technologies is in the development phase and still at the documentation level. For more in-depth and implicitly more accurate analyzes for small businesses and the business community, it is important to find answers to the following questions (Figure 1):

Figure no. 1 Representation of the opportunities presented by new technologies



Source: own source

With the advent of the digital age, the mechanisms of business have changed, with managers trying to constantly adapt to this world, due to the large volume of data they operate with. (Matthews, 2006).

The business is based on information. The sooner they are received, the more accurate and better they become. Blockchain is ideal for disseminating this information because it provides immediate, shared, and completely transparent information stored in an immutable registry that only authorized members of the network have access to. A blockchain network can track orders, payments, accounts, production, and more.

The evolution of the audit activity, the increase of the volume, speed and variety of data, but also the rapidly evolving technologies raise questions about the relevance and applicability of the traditional financial audit model (Appelbaum et al., 2017). These new technologies require the development of digital activities that express a need for professional training in correlation with the evolution of these technologies. The research contribution also provides guidance for future research on identifying the means and skills needed for appropriate professional training that can work with these new technologies.

3. Research methodology

The topic of the paper is the challenges and prospects of using emerging technologies such as Blockchain, with a particular focus on the factors that influence the quality of financial reporting and the new modified role of the professional accountant. The added value of the research aims to highlight the impact of the use of intelligent procedures and the quality of financial information showing how they contribute to filling the gap in the perception of the public interest on responsibilities.professionals in the financial-accounting field.

Qualitative research was used to carry out this paper, the aim of which is to develop concepts that help to understand social phenomena in natural environments (rather than experimental), giving due emphasis to the meanings, experiences and opinions of all participants. (Mays and Pope, 1995, p. 43).

Conducting qualitative research is a way of looking at social reality; data sources were used, such as observations, document analysis, images or videos, etc. In the social sciences, the use of qualitative data is also closely linked to various paradigms that seek to develop the vision of social reality, to provide an understanding of the benefits of using new technologies in a sensitive socio-economic context.

4. Findings

4.1. The digital revolution: premises for the formation of a solid accounting system

Advances in information technology (IT) have made it possible for organizations to rely more and more on information technology to carry out activities that were previously done manually. This spectacular technological revolution is taking place in a socio-economic context characterized by the globalization of trade, the accelerated pace of innovation, the growing segmentation and diversification of markets, the complexity of political and social variables and increasing ecological values, which are as many threats as opportunities. for companies. Indeed, the explosion of multimedia, the digitization of sound and then image, and the deployment of fiber-optic and satellite broadband networks are shaping the contours of the third millennium society, which is the information society. The information and immaterial society, the primary source of knowledge, becomes the source of economic strength and wealth for the individual and, subsequently, for the entire nation. This society will be built around electronic means commonly referred to as "information highways" that turn the whole world into a global village.

Today, almost all organizations use computers in their daily work. As computers become smaller, faster, easier to use, and less expensive, IT improvements have improved, and computerization of accounting work will continue. Accounting systems that were previously done manually can now be done with the help of computers. Therefore, the improvement of information technology has facilitated the use of cost management and accounting procedures. The ongoing revolution in information technology (IT) has had a significant influence on the quality of the accounting information system.

The accounting information system has undergone changes due to their computerization. All existing businesses use ICT and computers to carry out their activities, so it has facilitated the use of cost management practices.

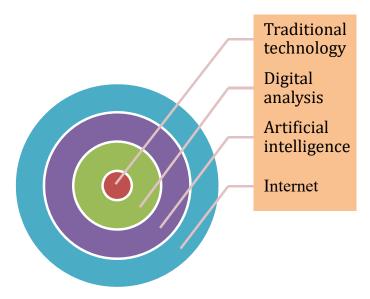
In other words, accountants are now able to do business more efficiently than ever before. The Accounting Information System (SIC) contains the components and elements of several important accounting programs, for example the banking information system aims to respond to the financial data provided through its accounting software for extracting accounting information in the form of reports, documents and statements. for all beneficiaries of the system. After the industrial revolution of the twentieth century and the development of information technology, the computer appeared on the scene as a central part of the computer revolution, which helped to highlight the information that was stored in books, large documents. In fact, the accounting activity does not differ much from one organization to another and cannot be related to a certain type of entity (public or private) or activity (department - commercial - industrial). Financial transactions performed in a company are characterized by repetitive and continuous movements, so it is necessary to centralize this financial

information in the missions carried out during the accounting periods of data entry and processing, then the transformation of this information (accounting) in the computer system in the form of analysis documents, which confirms the obvious importance of the computer as a mainstay in the accounting information system. The importance of accounting information in the decision-making process is clear by having the right time (access time) and ownership of the accuracy needed to be able to rely on decisions to help them. Accounting information useful to decision makers should be available where appropriate, including on the basis of reliability, and also include specific features of the quality of accounting information, which implies the need for timely and real availability of the various properties of accounting information.

The accounting information system plays a pivotal role in the search for the elements that contribute to the improvement of the information quality in order to achieve the objectives and purposes. The developments that have taken place in the world today through the use of information technologies have positively influenced the field of accounting and have also favored the development of research in the field of accounting, but also the measurement of the impact of these technologies on accounting information systems. At the beginning of the 21st century, most companies, especially large ones, have invested in information technology for managing financial operations, as they can discover the results of investing in information and communication technology to measure the relationship between technology and performance and its effect. on SMEs. Accounting is one of the areas that has benefited from information and communication technologies, either by entering, processing, storing data or reporting a mechanism, or by their effects on different branches, such as auditing, cost accounting, etc., information, and communications technology would also have an effect on the company's relationship with third parties as well as its financial market relations. What is certain is that accounting information systems are systems open to the external environment, so they are affected by this environment, for this purpose it has become necessary to take into account the effects that can influence accounting information systems.

Consumer preferences are constantly changing, as is the number of organizations that want to do business at the lowest possible cost. The future of these businesses is determined by the opportunities offered by the use of the Internet, of information technology, which represents the transition from manual to digital work. (figure no.2)

Figure no. 2 Traditional technology, digital analysis, artificial intelligence and the Internet, prerequisites for the future of business activities



Source: own source

The consequence of the development of the concept of electronic administration, robotics and automation in the industrial sectors and the transfer of services from the traditional area to the digital area determined the estimate that approximately 60% of existing jobs in Romania could be influenced by the digitalization of the economy. In our country there are concerns in the sense of encouraging the involvement of technology in business activities. The key concepts around which projects and actions are developed are innovation and entrepreneurship, supporting technology companies, as well as cross-sectoral collaboration, by activating working groups: e-Health, Smart City, Smart Mobility, e-Learning and Open Innovation 2.0.

4.2. Blockchain technology - improving real-time accounting services

Developed since 2008, blockchain is primarily a technology for storing and transmitting information. This technology offers high standards of transparency and security because it works without a central control body.

Specifically, the blockchain allows its users - connected to a network - to share data without an intermediary. Blockchain is a shared and unalterable registry that facilitates the process of recording transactions and tracking assets in a trading network. An asset can be tangible (a house, a car, money, land) or intangible (intellectual property, patents, copyright, trademark). Virtually anything of value can be tracked and traded on a blockchain network, reducing the risks and costs for all parties involved.

A blockchain is a register, a large database that has the particularity of being shared simultaneously with all its users, all of whom are also holders of this register, and who also have the ability to record data according to specific rules. . a very secure computer protocol due to cryptography.

In practice, a blockchain is a database that contains the history of all exchanges made between its users since its creation. There are many benefits to using the blockchain, including:

- the speed of transactions due to the fact that the validation of a block takes only a few seconds to a few minutes
- system security, which is ensured by the fact that the validation is performed by a set of different users who do not know each other. This helps to protect against the risk of intent, as the nodes monitor the system and control each other
- the productivity and efficiency gains generated by the fact that the blockchain entrusts the organization of exchanges of an IT protocol, which mechanically reduces the existing transaction or centralization costs in traditional systems (financial costs, control or certification costs, recourse to intermediaries that are remunerated for. their service, automation of certain services, etc.).

Blockchain is one of the technologies that can be said to go beyond the technical market, the financial market and regulatory challenges. New technologies have the potential to shape the nature of today's accounting and can be a significant way to automate accounting processes in accordance with regulatory requirements.

5. Conclusions

Blockchain is a transparent and secure information storage and transmission technology that works without a central control body. It is the technology at the heart of the decentralized web and its corollary, decentralized finance.

For finance and accounting, the blockchain actually appears as a reliable source to secure exchanges. Each transaction will be recorded and will not be deleted. This traceability, security and inviolability is possible by exchanging an encryption key between two recipients and recording the transaction in a chain.

The blockchain will make it possible to speed up the audit once we have real-time data, reliable, reliable data, and therefore be able to perform thorough checks and do so in near real-time, so a faster audit with a higher opinion and a higher level of assurance.

Accountants will become the guarantors of the proper functioning of the system and will have to ensure its maintenance. This also implies the need to change information systems. Monitoring technological developments, in particular through working groups, will soon become part of the accountant's work.

Whether you are an accountant, manager or auditor, changes in roles and professional practices will not take place without new skills and without the reorganization of accounting departments and audit firms.

Blockchain skills are now easy to identify: knowledge of computer languages and computer security systems. This observation raises a question: should accountants, managers, and auditors be trained in these techniques, or should we consider associating them with an IT algorithm and development expert? If the answer is difficult today and depends on the importance that the Blockchain can take in companies' practices, it seems at least inevitable that these functions can read and understand the code of a Blockchain, which involves a change in initial training and the creation of new offers. continuous training. Thus, the audit profession itself could slip into information systems with the birth of an area of audit expertise dedicated to verifying the code and structure of the Blockchain.

This first point involves the second: a reorganization of accounting services and audit firms. Indeed, this reorganization is based primarily on the emergence of a new competence essential for carrying out the activity in these services. Thus, it is very possible to imagine that audit firms and corporate accounting departments see a large part of their employees becoming "computer accountants". Today, such functions already partially exist. For example, management software experts (ERP, SAP, etc.) navigate between these two worlds, but at a higher level (manager, expert).

Previous developments suggest possible ways to develop accounting and auditing practices and professions. Will it be a transformation of trades or the creation of very different trades, but still their replacement? It seems difficult to answer this question, until the evolution materializes, by first going through phases of experimentation and a thorough examination of the advantages and disadvantages of technology implementation.

The technology, widely implemented, is likely to drastically change the organization of accounting and auditing firms. Then the problem of resistance to change will certainly arise, a phenomenon observed in the process of leading a change. This phenomenon will probably be a brake on the adoption of Blockchains and studies in this direction will be relevant.

Beyond this question, the creation of new accounting and auditing services through the Blockchain is very plausible. This last possibility is in our opinion a promising and strategic development perspective for companies, which deserves a concrete examination of its application in the field. Apart from the technical challenges, regulatory uncertainty is now the main obstacle to the adoption of the blockchain, as the regulatory framework is uncertain. The issue of compliance with privacy standards in the General Data Protection Regulation (GDPR), for example, raises questions.

In practice, a blockchain is a database that contains the history of all exchanges made between its users since its creation. There are many benefits to using the blockchain, including:

- the speed of transactions due to the fact that the validation of a block takes only a few seconds to a few minutes
- system security, which is ensured by the fact that the validation is performed by a set of different users who do not know each other. This helps to protect against the risk of intent, as the nodes monitor the system and control each other
- the productivity and efficiency gains generated by the fact that the blockchain entrusts the organization of exchanges of an IT protocol, which mechanically reduces the existing transaction or centralization costs in traditional systems (financial costs, control or certification costs, recourse to intermediaries that are remunerated for their service, automation of certain services etc.).

6. References

- Appelbaum, D., Kogan, A., Vasarhelyi, M. A., 2017. Big Data and Analytics in the Modern Audit Engagement: *Research Needs. Auditing: A Journal of Practice and Theory*, 36(4), pp.1-27.
- Atzori, L., Ieri, A., Morabito, G., 2010. The Internet of Things: A Survey. Computer Networks, 54, pp.2787-2805.

- Cokins, G., Oncioiu, I., Türkeş, M.C., Topor, D.I., Căpușneanu, S., Paștiu, C.A.; Deliu, D., Solovăstru, A.N., 2020. Intention to Use Accounting Platforms in Romania: A Quantitative Study on Sustainability and Social Influence. Sustainability, 12(15), pp.6127.
- Coyne, J.G., McMickle, P.L., 2017. Can Blockchains Serve an Accounting Purpose? *Journal of Emerging Technologies in Accounting*, 14(2), pp.101-111.
- Dai, J., Vasarhelyi, M. A., 2017. Towards Blockchain-based Accounting and Assurance. *Journal of Information Systems*, 31(3), pp.5-21.
- Farcane, N., Deliu, D., 2020. Stakes and Challenges Regarding the Financial Auditor's Activity in the Blockchain Era, *Financial Audit (Audit Financiar)*, vol. XVIII, no. 1(157), pp.154-181.
- Farcane, N., Deliu, D., 2020. Use of Emerging Technologies in Financial Audit Activity. The Impact of Blockchain on the Activity of the Financial Auditor. *Continuous Professional Development Training and Course for Financial Auditors, Chamber of Financial Auditors of Romania.*
- Mays, N., & Pope, C., 1995. Qualitative Research: Rigour and qualitative research, *BMJ*, 311(6997), pp.109-112.
- Matthews, D., 2006. From Ticking to Clicking: Changes in Auditing Techniques in Britain from the 19th century to the Present, *The Accounting Historians Journal*, 33(2), pp.63-102.
- Radu, F., Radu, V., and Croitoru, G., 2011. February. The advantage of the new technologies in learning. In 10 th international conference on Artificial intelligence, knowledge engineering and data bases pp.150-155.
- Radu, F., 2016. XBRL—The business Language in the Digital Age. *Ovidius University Annals, Economic Sciences Series*, 16(2), pp.589-594.
- Richard, C., 2000. Contribution à l'analyse de la qualité du processus d'audit: le rôle entre le directeur financier et le commissaire aux comptes, Thèse de doctorat en sciences de gestion, Université de Montpellier II.
- Rozario, A. M., Vasarhelyi, M. A., 2018. Auditing with Smart Contracts. The International Journal of Digital Accounting Research, 18, pp.1-27.
- Tapscott, D., Tapscott, A., 2016. Blockchain Revolution. 1st ed. New York: Portfolio-Penguin.
- Vasarhelyi, M. A., Hoitash, R., 2005. Intelligent Software Agents in Accounting: An Evolving Scenario. The Evolving Paradigms of Artificial Intelligence and Expert Systems: *An International View*, 6.
- Vasarhelyi, M. A., Kogan, A., Tuttle, B. M., 2015. Big Data in Accounting: An Overview, *Accounting Horizons*, 29(2), pp.381-396.

Outsourcing of the Accounting and Financial Function

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Abstract

Accounting and financial outsourcing consists of the full or partial transfer of administrative, financial and accounting functions to an external service provider as part of a service contract. Because accounting and financial functions are standardized and coded by nature, they are particularly suitable for outsourcing. Using the services of an accountant is one of the oldest practices of functional business outsourcing.

The aim of this paper is to determine the important role of outsourcing accounting services for better flexibility, this practice remaining more relevant than ever. Thus, companies outsource mainly for cost control reasons, to reduce them, and then to turn fixed costs into variable costs. Thus, outsourcing will allow a strategic concentration of the company's structural resources on its core business. A rigorous internal analysis precedes the outsourcing process. This strategic thinking will define the framework of the tasks to be outsourced on a time and financial scale.

Key words: outsourcing, company, accounting function, services

J.E.L. classification: M40, M41, M49

1. Introduction

Finding the skills that are best suited to provide customer service requires moving beyond the previous area of business. Therefore, the company needs to find more specialized technical and human knowledge from the outside in order to better manage the critical functions internally, with skill. At the same time, it must increase its efficiency by seeking to reduce or stabilize its management or production costs. This is how a new form of organization emerged: "Outsourcing". The outsourcing of the accounting function can be defined as the outsourcing of an external service provider who is responsible for the processing of all or part of the administrative and accounting function and for the production of results. The contract may provide, at the request of the customer, for the total or partial takeover of the staff and the operating instrument in question. This practice, also known as outsourcing, is common for critical activities. But it comes as an innovation when it comes to the accounting and financial function. Thus, outsourcing is the act of entrusting an activity and its management to an external provider or service provider, rather than carrying it out internally. The reorientation of the accounting function led to the rebirth of accounting firms specialized in providing audit and accounting services. The increasing complexity of accounting standards and the constraints on business costs and performance are leading more and more managers to consider outsourcing accounting. In order to meet the requirements and achieve their purpose, the implementation of collaboration policies is strongly considered by most companies. These policies are primarily based on outsourcing. Several factors explain the rapid development of this phenomenon. The most relevant seems to be the optimization and control of operating costs, which considerably strains companies' revenues. Executing outsourcing contracts through the practice of accounting assistance as a management practice has both advantages and disadvantages for executors. These disadvantages are a significant source of risk and therefore likely to have serious consequences for companies. Therefore, there is a risk management issue associated with the execution of outsourcing contracts signed with companies, which is a function of the performance of the accounting firm in general. Among these consequences we have, among others, the loss of accounting data, the preparation of financial statements that are not sincere and do not reflect the true image of the client's activity. These consequences are a source of poor performance for the company and a poor image of the customer. There are many root causes of these problems that explain the company's declining performance in outsourcing its accounting function.

Among the causes, we can cite:

- Poor choice of companies both in terms of outsourcing function and in terms of service provider;
- Poor customer appreciation of the role of the service provider;
- Lack of short-term reporting by the service provider to allow the client to see the progress of the work:
 - The overly large portfolio of the company, which often has a limited staff in this mission;
- Poor definition of the objectives to be achieved when signing the contract between the two parties;
- Lack of a procedure manual setting out the various steps and actions to be taken when receiving supporting documents for the preparation of financial statements.

In the face of this problem, solutions must be found to reduce the high risks and therefore optimize both the performance of the activity and the satisfaction of the parties.

2. Literature review

Given the scale of the outsourcing movement in recent years, many researchers have proposed an analysis of the phenomenon.

In the managerial literature, the concept of outsourcing has been the subject of much research, and the definitions given are numerous and varied (Ivanajet Masson-Franzil, 2006). Outsourcing is above all a strategic movement born in the United States in the 1970s and takes various names such as the English word Outsourcing which has three meanings "outside-ressourceusing" to mean "use of external resources", or "obtaining goods" or contracting from sources outside a company or area, according to The Oxford English Dictionary.

Barthélemy (2006, p.7) defines outsourcing as "the use of a service provider or an external provider to carry out an activity that had previously been carried out within the company. Outsourcing is often accompanied by a transfer of material and / or human resources to a service provider that replaces internal services".

However, the definition proposed by Quélin (2003, p.16) incorporates the notion of duration and contract, stating that: "outsourcing also includes the fact that, in the medium term, the entrustment of a service the environment of a service provider; it is long-term, it requires a contractual framework." In this regard, some authors consider that outsourcing can be understood as a contract between a service provider and a customer. In such a case, the service provider is responsible for replacing the internal services in a contractual relationship with the client company. Thus, we remember that all the company's functions can be outsourced. One of the main reasons for companies to outsource one or more of their activities is the desire to refocus on the core business. In this context, outsourcing should not affect core value-creating activities.

Norbaya (2010, p.6) states that: "Organizations should only outsource activities that do not give organizations a lasting advantage and do not directly support core activities". Each company must therefore focus most of its resources on basic functions in order to master its field of activity. For these two authors, companies waste their financial resources when they do not outsource all the activities that are not part of their core business. The notion of core business of an organization includes several meanings which are: - activities traditionally carried out within the company for a long time; - activities crucial for the company's performance; - activities that create current and potential competitive advantages; - activities that have prospects for future growth, innovation or rejuvenation of the organization. We understand then that the closer an activity is to the core business, the more its outsourcing risks failure. Carrying out the functions that belong to the core business would be a "mistake" that threatens the sustainability of the company. However, companies may be interested in outsourcing certain core business functions in certain (transient) contexts, especially when a company is lagging behind its competitors in a field or when launching into a emerging market. Outsourcing is facing a new boom today; it goes so far as to reach functions closer to the

core business (research and development, after-sales service management, information system, accounting, etc.). Therefore, it is increasingly acquiring a real strategic dimension, which falls into the category of strategic outsourcing with resource transfer (Quélin, 2003). If we go back to the many recent studies that have dealt with the outsourcing of certain functions, we immediately see that there are certain functions that occupy a special place in the issue of outsourcing.

According to Huynh and Tondeur (2011, p. 24), the outsourcing of the accounting function consists in "entrusting an external service provider with one or all of its accounting activities that until then were carried out internally".

Based on a study by Fimbel (2003) among multiple studies that have reached almost exclusively the same results, in general, five functions are outsourced: computer systems, logistics, after-sales service, accounting and maintenance. The most common outsourcing practice is the accounting function (Chanson and Véronique, 2014). The organization of the accounting function requires compromises which mainly concern two aspects. The first issue concerns a choice between the decentralization of accounting services or the regrouping of administrative and accounting activities within a central function. The second question is whether it is better to keep an internal accounting department or outsource accounting production. All this necessarily depends on the importance of making organizational choices for the accounting function in order to mobilize adequate resources and thus streamline accounting systems. Outsourcing is seen by managers as a way to improve the quality of accounting information production. This is in line with Duganier's view that more than half of managers who have outsourced one of these functions believe that it "improves governance", "improves transparency of information and process" and "increases the visibility of controls". (Duganier, 2005, p.40). The companies are looking for quality assurance in outsourcing the accounting function due to the standardized nature of this activity. Outsourcing is part of the DIOCO (Doing in House Or Contracting Out) issue or more precisely of "To continue doing or getting done". In this context, there is outsourcing when a company, faced with the choice to do or be done, opts for the second term of the alternative and delegates part of its total system of activities to a partner company. The choice includes both service and production activities as in the case of subcontracting.

Three main factors explain the outsourcing movement:

- outsourcing allows the transfer to service providers of additional cost risks, related to overinvestment or underinvestment;
 - outsourcing allows cost reduction;
- Outsourcing makes it possible to reap the benefits of the vertical division of labor between companies and the specialization of service providers.

The research of Tondeur and Villarmois (2003), which documented the phenomenon, is pioneering. Using an approach based on contingency theories, they highlighted the influence of the environment on the increasing centralization of the accounting function. This centralization has led to two recent phenomena for the accounting function: outsourcing and shared service centers. They then used (Huynh and Tondeur in 2011) the theory of transaction costs, a traditional theory of outsourcing, to explain the use of one or the other of these two forms.

The accounting function is unique among all the functions within a company: it has the particularity of producing information that allows fund providers to control the company. Beyond the cost and skills of the accounting function, this information problem will naturally weigh on managers' outsourcing decisions.

Outsourcing one of the accounting and financial functions improves the transparency of information and the process and increases the visibility of controls.

Outsourcing of the accounting and financial function is a frequently mentioned approach (by service providers), but rarely implemented. The aim of this paper is to define this practice, which, in the case of the accounting and financial function, is often confused with subcontracting and identifying the factors that explain this decision. Outsourcing and the creation of shared service centers are proven organizational changes for many functions. However, they seem to be innovations for the accounting function. This movement is part of the more general context of the emergence of new forms of organization that are reflected, among other things, in the development of networked organizations (Desreumaux, 1996). Outsourcing and the creation of a shared service center consist in reorienting the exercise of the accounting function, either by entrusting it to an external service provider, or by carrying it out "in-house", within a specialized branch. This similarity of processes

makes it possible to identify the common causes and objectives of such reorganizations. The starting point is the inefficiency of the service or, in the worst cases, its inability to meet the expectations of general management (inefficiency). However, our thinking will be limited to outsourcing. After trying to define outsourcing, we will present the main theories that explain the choice of this form of organization.

3. Research methodology

The aim of the paper is to understand why companies decide to outsource their accounting function. In the sense of Yin (1994), the chosen method "is an empirical investigation that invests in a contemporary phenomenon in its real context, especially when the boundaries between phenomenon and context are not clear." The research topic is the outsourcing of the accounting function, a strategic movement, a topical issue that has gained momentum in recent years. As Yin (1994) explains, our study is based on the contemporary phenomenon in certain real-life contexts, being the most appropriate strategy for investigating the phenomenon, because it is explanatory and descriptive.

As a basic method for this article, qualitative research using the documentary collection was used, making it possible to collect information from existing writings on the subject of research (external documents: websites, brochures, internal documents, activity reports, organization charts, etc.).

The chosen qualitative research is generally interpretive: it is not about testing theories, but rather about understanding a given phenomenon based on interpretations, testimonies or opinions gathered.

4. Findings

The choice of a particular organization should answer the following question: What is the arrangement that makes the best possible contribution to the company's control strategy? costs, flexibility, decision support, information quality and knowledge production? Beyond intraorganizational arrangements, the company is faced with a choice between what it does (internally) and what to do, especially through outsourcing. In general, contingency theories and transaction costs are often mentioned to justify the choice to carry out an in-house or outsource an activity or function. However, once we set ourselves the goal of analyzing the content of outsourcing (contract development, implementation, relationship management) these theories are no longer enough. To position outsourcing in a theoretical framework, we need to return to its definition (Lacity and Hirschheim, 1993): "Outsourcing can be conceived as the acquisition of a good or service that was previously provided internally. It represents a significant transfer of assets, property and personnel to a seller who is responsible for profit and loss." This definition allows us to distinguish the exteriorization of a certain number of practices and to broaden the theoretical framework for explaining the phenomenon. Outsourcing differs from outsourcing in that it involves entrusting a service provider with an activity or function that has been performed in-house.

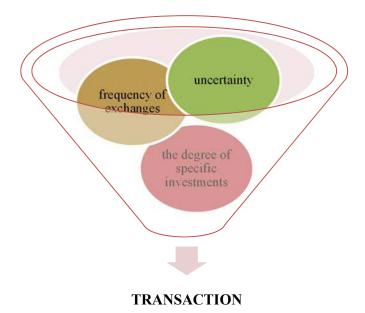
Outsourcing refers to activities necessary for the operation of the company that will be the subject of a contractual relationship that provide in particular the conditions of exit from the relationship, ie the internalization of the activity or change of service provider. Outsourcing, as a particular form of inter-organizational cooperation, comprises two aspects: on the one hand, the reallocation of existing resources, which can be explained in particular by the analysis of transaction costs and, on the other hand, the establishment of the contractual relationship and the production of knowledge. -how that requires the use of other theoretical frameworks. Thus, the most commonly used theories to explain the outsourcing decision are transaction cost theory and resource theory (Barthélémy, 2004). However, theories as diverse as institutional theory and contingency theory offer a complementary perspective on the decision-making phase.

A. Transaction cost theory

Transaction cost theory makes it possible to explain the choice of outsourcing by reversing the analysis of organizational optimization by using vertical integration. The optimal organizational form for carrying out a transaction must allow the minimization of production and transaction costs. There

are three fundamental dimensions that characterize a transaction and determine the optimal organizational form: uncertainty, frequency of exchanges, and the degree of specific investment required to complete the transaction. (figure no.1)

Figure no. 1 The dimensions that characterize a transaction



Source: own source

These three characteristics will influence the organizational behavior of the economic agents and will influence the transaction costs. Regarding outsourcing:

- uncertainty is related to the customer's dependence on his service provider. Uncertainty can also be analyzed through ex-post dependence and moral hazard: through outsourcing, the client is exposed to a loss of control;
- the frequency is to be related to the repetitiveness of the tasks and their degree of complexity. The more repetitive and complex the tasks, the more they can be part of an outsourcing;
- the specificity of the assets (tangible and intangible) is the most important dimension related to the decision on the choice of the governance structure. It determines whether or not to redistribute the asset in other economic contexts, without changing the value of production and therefore to transfer it to another economic agent who will handle the transaction.

In reality, the solution adopted is not always rational, ie it is not necessarily based on the criterion of efficiency. It is also influenced by institutional logic, especially for regulated activities such as accounting. The company, the market, the bureaucracy are embedded in the institutional environment.

B. Institutional theory

Meyer and Rowan (1977) analyze the impacts of institutional environments on organizations. The arguments allow a deeper understanding of the outsourcing of the accounting function. It would be a way to gain some legitimacy, to follow the rules.

When the environment is uncertain and the goals are ambiguous, the organization tends to imitate the model of other organizations that it perceives as successful. Following the same line of thinking, Roberts and Greenwood (1997) analyze the institutional environment distinguishing two types of constraints: - "pre-conscious" constraints: these are factors that actors do not perceive because they seem obvious. For example: social rules or guidelines ... - "post-conscious" constraints: in this case, the actors are aware of the need for change and the factors that condition their solution. However,

environmental pressures prevent any change. For example, we will talk about "post-conscious" constraint if an organization does not choose to outsource due to the lack of references when this is the most effective solution. The process of choosing to outsource the accounting function in Roberts and Greenwood's (1997) analysis called "constrained efficiency" can be outlined as follows: (Figure no.2)

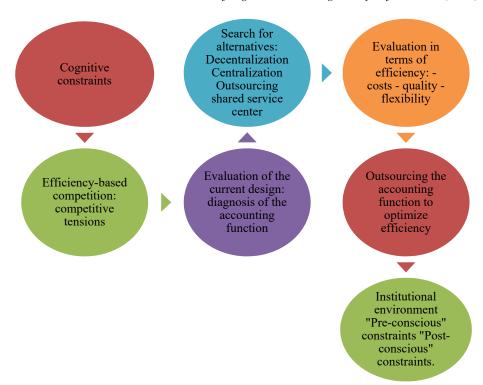


Figure no. 2 Roberts and Greenwood's choice of organizational design analysis framework (1997)

Source: own source

Efficiency-based competition leads the organization to diagnose its current situation. Then, the solutions are identified and evaluated to choose the most effective ones. The criterion of efficiency is present at all stages, but the novelty of Roberts and Greenwood's (1997) vision is the introduction of the institutional environment. Indeed, throughout the process, organizational choice is influenced by multiple constraints: cognitive, "pre-conscious", and "post-conscious" constraints. Transaction cost theory has provided a widely used theoretical framework in outsourcing analysis regardless of the function being analyzed. However, as this theory is attached to the analysis of the phenomenon of vertical integration, which is an organizational form of optimizing transaction costs, it has some limitations, especially in its contribution to the development of contracts that allow recourse to the market while limiting costs. as well as its failure to address the management of the initial transfer and the future management of resources and competencies from the company to the service provider with the compulsion to allow a possible reintegration. In addition to transaction cost theory, the resource approach is the most commonly used theoretical framework to explain the outsourcing decision (Barthélémy, 2004).

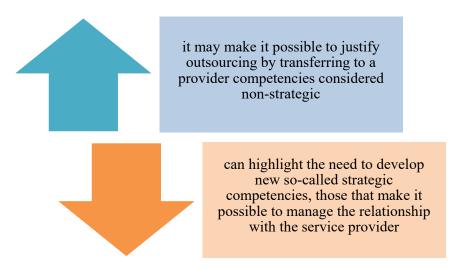
C. Theory of resources and knowledge

The theory of resources and knowledge makes it possible to explain the use of outsourcing as a means of optimizing the use of its resources for core business and recourse to the complementarity of external service provision to providers, as soon as this is considered more efficient than internally

provided service. In addition, the issue of skills management is at the heart of the issue for companies when it comes to managing the restoration of the outsourced function.

The resource and skills approach approaches the company as a collection of productive resources whose goal is to create and allocate these resources (Quélin, 1997). The company is not a tool for organizational optimization as opposed to the market, but a tool for creating resources. Resources, although defined in different ways, can be considered, according to Barney (1991), as "all assets, capabilities, organizational processes, company attributes, information, knowledge, etc., controlled by a firm that allow it to design and develop implementation. strategies to increase its effectiveness and efficiency. "In terms of competencies, these are all individual and collective resources that make it possible to carry out an activity consisting of routines or organizational processes. These skills will be strategic when they are the basis of a competitive advantage and when they are durable, non-transparent, difficult to transfer. In the context of outsourcing, which consists in the transfer to a third party of an activity carried out internally through the transfer of both physical and human goods, the notion of transfer and management of resources and skills is at the heart of the relationship between two parties to the contract. This is why this theory is useful at different levels to shed light on the phenomenon of outsourcing: (figure no.3)

Figure no. 3 Theory of resources and knowledge



Source: own source

- may make it possible to justify outsourcing by transferring to a provider of skills considered non-strategic (not having the qualities mentioned above) in order to reorient the use of resources over skills considered strategic;
- can highlight the need to develop new so-called strategic competencies, those that make it possible to manage the relationship with the service provider due to the incomplete nature of contracts, in particular the creation of resources and skills needed to reintroduce functions.

The "theory" of organizational learning aims to build "an organization that is expert in creating, acquiring and transferring knowledge, as well as changing its behavior in ways that reflect their new knowledge and strategic thinking" (Garvin, 1993). In a turbulent and uncertain environment, this allows the organization to transform at least as fast, if not faster than the waiting environment. This theory provides a framework for analyzing the outsourcing of the accounting function by studying the learning process of the company at the establishment of outsourcing and during the course of the service. A similar analysis can be developed by the supplier.

D. Contingency theory

Contingency theory provides an analytical framework for outsourcing, in the case of the accounting and financial function. Indeed, this theoretical current has never been used to explain the decision to outsource. Contingency theorists, according to Desreumaux (1997, p.3165) "[refer] to a kind of impersonal process that is reflected in the actions of individuals, but which is largely separate from their intentions. The explanatory principle of reference here becomes that of contextual determinism; the context imposes on individuals who create or modify the structure of an organization such a degree of constraint that they can only adapt that structure accordingly ". Thus, it will appear that the outsourcing of the accounting function is associated with unique organizational structures.

5. Conclusions

In the age of market globalization where competitiveness is no longer just about prices, the company must be able not only to produce at a lower cost, but also to be very receptive and able to offer quality products and services. Managers have no choice but to make relevant decisions to ensure the sustainability of their companies. The constant search for profitability based on good performance leads the economic life of companies. To do this, several companies have opted to reduce costs by outsourcing certain functions, including accounting. Outsourcing thus appears as a cost-cutting alternative, allowing the company to refocus on its core business. Regular accounting has the advantage of producing adequate accounting and financial information for decision making. Very rarely, the accounting information system has been considered a strategic tool.

In the accounting literature, the strategic objectives of accounting data management are numerous, but in most cases remain supported by information asymmetry in the managerial context. Most companies do not always manage to reflect the faithful and sincere image of the company's activity in the exercise of the accounting profession. Several reasons explain this state of affairs: lack of administrative, financial and accounting procedures, lack of a reliable information and management system, incompetence of internal accountants, concealment of certain information; poor accounting. Companies face difficulties in applying the new framework in terms of accounting for certain transactions, the content of certain accounts, the interpretation of standards, and also difficulties in processing and presenting financial statements. Implementing the requirements of the new discipline is therefore not easy for companies. Accounting, legal and financial standards are not being met and this is all the more accentuated as the informal sector seems to be gaining an advantage over the sector. Unfortunately, experience has shown that piloting at sight can only bankrupt companies. Moreover, the importance of taxation in the national economy, either due to the magnitude of budgetary needs or the concern for interventionism, can no longer be demonstrated. It affects everything, especially business. But if companies have a lot of taxes to pay, they also have options, allowing them to look for the most advantageous tax treatment.

Accounting and tax information are essential for decision making and business survival. For the reliability of accounting information, outsourcing the accounting function seems to be a solution for shareholders against the strategy of rooting the company's manager by managing the accounting results. In view of these various difficulties, several promotion and supervision structures have been set up to provide assistance to businesses, the nature of which may be financial, commercial, technical, social, accounting, fiscal, etc. These include accounting firms that assist companies in general in auditing, legal advice, taxation and accounting. Accounting is the memory without which the proper functioning of the business could be called into question. Accounting and tax assistance will require better organization to meet the requirements of collection, maintenance, control, presentation, communication, verification and implementation of regulatory methods and procedures.

6. References

- Anderson, S.W., 1995. A framework for assessing Cost Management System Changes: the case of activitybased costing implementation at general motors 1986-1993. *Journal of Management Accounting Research*, Vol.7, pp.1-51.
- Barney, J. B., 1991. Firm Resources and Sustained Competitive Advantage, *Journal of Management*, Vol.17, no.1, pp.99-120.
- Barthélémy, J., 2004. Stratégies d'externalisation, Dunod.
- Barthelemy, J., 2006. La renégociation des contrats d'externalisation: une analyse empirique, *Finance-Contrôle-Stratégie*, Volume 9, no.2, pp 6-29.
- Barthelemy, J., et Donald, C., 2007. L'externalisation: un choix stratégique, Revue Française de Gestion, Octobre 2007, numero 176, pp.97-100.
- Barthelemy, J., et Donald, C., 2007. Décision et gestion de l'externalisation: une approche intégrée, *Revue Française de Gestion*, Octobre 2007, numero 177, pp.101-112.
- Chanson, G., et Veronique, R., 2014. L'externalisation de la fonction comptable à l'épreuve de la théorie du signal. in *Revue des Sciences de Gestion* vol 1, pp.95-107.
- Desreumaux, A., 1996. Nouvelles formes d'organisation et évolution de l'entreprise, *Revue Française de Gestion, janvier février*, pp.86-108.
- Desreumaux, A., 1997. *Structures de l'entreprise*, in Simon, Y., Joffre, P., Encyclopédie de gestion, *Economica*, pp.3147-3173.
- Duganier, B.J., 2005. Finance and Accounting Outsourcing Can Improve Control, *Bank Accounting & Finance, June-July*, pp.39–42.
- Fimbel, E., 2002. Externalisation: discriminants et facteurs de succès, *L'expansion Management Review*, Numero 104, Mars, pp.60-69.
- Garvin, D.A., 1993. Building a Learning Organization, *Harvard Business Review*, pp.78-91.
- Ivanaj, V., et Masson-Franzil, Y., Externalisation des activités logistiques: Analyse conceptuelle et propositions testables dérivées de la théorie des couts de transaction, *Cahier de recherche*, no.2006-03, Université de Nancy2.
- Lacity, M., Hirschheim, R., 1993. The Information Systems Outsourcing Bandwagon, Sloan Management Review, Autumn, pp.13-25.
- Meyer, J.W., Rowan, B., 1977. Institutionalized Organizations: Formal Structure as Myth and Ceremony, *American Journal of Sociology*, Vol.83, no.2, September, pp.340–363.
- Norbaya, A., 2010. Decision Making In Outsourcing, Support Services In The UK Public.
- Quélin, B., 1997. L'outsourcing: une approche par la théorie des coûts de transaction, Revue Réseaux, no.84, pp.91-93.
- Quélin, B., 2003. Externalisation stratégique et partenariat, Revue Française de Gestion, vol. 29, no. 143, pp.13-26.
- Pătrașcu, D., Radu, V., and Radu, F., 2017. The accounting profession in SMEs. Pro University.
- Radu, F., 2011. Globalization of information systems and influence on accounting. Library.
- Roberts, P. W., et Greenwood, R., 1997. Integrating transaction cost and institutional theories: toward a constrained-efficiency framework for understanding organizational design adoption, *Academy of Management Review*, Vol. 22, no.2, pp.346-373.
- The Oxford English Dictionary
- Tondeur, H., de La Villarmois, O., 2003, L'organisation de la fonction comptable Quelle forme de centralisation: centre de services partagés ou externalisation, Comptabilité, Contrôle, Audit, Tome 9, Vol.1, mai.
- Yin, R. K., 1994. Case study research: Design and Methods, Sage Publications.

The Romanian Education Budget: Financing Pre-University Education (2001–2020)

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Abstract

Although the economic crisis has not been as substantial to Romania as it has been to Greece or Ireland, it has still had an impact on the education system. The Romanian education budget underwent significant changes in the periods 2001-2020. The budgetary policies for secondary education were affected by the periods of economic crisis. When the economy is recession, the government is more likely to reduce the public expenditure, which includes education. The Economic Crisis of 2008 led to the government reducing the budget for education in Romania in order to balance spending. This meant that there were budget cuts for secondary education in Romania in the period 2001-2020. This paper will review literature on Romania's pre-university budgetary allocation and conduct a regression analysis to establish the relationship between GDP on the hand and GNI index and Government expenditure on secondary education between 2000 and 2020.

Keywords: economic crisis, pre-university budget, recession, education budget, budget cuts **J.E.L. classification:** H52, P44, P43, H61, I22, M48, H75

1. Introduction

Romanian educational budget has not always shown stability in the past decade. From an accounting perspective, Romania has seen many swings in the educational budget due to periods of economic crises. The 2001-2020 has had three significant economic crises, which may have affected the budgetary policies, but the economy is currently recovering with education funding likely to increase. With this change, it is possible for the budgetary policies to become more stable in the future. The period 2001-2020 saw the budgetary policies for secondary education get changed to meet the needs of the changing economy. The main point of change was switching to a tuition-free system (Lut, 2018). This change has been effective in reducing the number of days lost in Romanian universities for lack of funding. However, it has also led to a decrease in quality and efficiency. The long-term effects of this lack of government support and participation in the education system, however, remains to be seen. The Romanian education budget frequently overlaps with the economic policies due to the fact that education is one of the major expenditures in the country. A study done by the OECD showed that the education budget had a decline in the periods of economic crisis (Laperche, Lefebvre, and Langlet, 2011). It is surmised that the decline has been due to the conservative policies adopted by the government. This can be attributed to the fact that the government had to make trade-offs and would like to spend less on education. However, this is not feasible as it will lead to sustainability issues.

The relationship between education and GDP is a well-known statistic. Teodorescu and Mandela (2018) note that education positively affects GDP. The authors mention that the knowledge society is a world of opportunities and the future is bright. They insist that Romania is

no exception and that it is just as possible for the country to achieve its global potential. Schooling can be seen as a predictor of the GDP. The correlation between education and GDP is a major factor in the Romanian economy. Romanian government tries to invest more in secondary education, unlike primary education, which is supported by the private sector. In Romania, secondary education is funded by both private and public sectors. The private sector invests in secondary education through tuition fees and so does the public sector via the taxes paid by individuals and corporations. In a period of economic crises, a government can decide to invest more in the public sector and less on the private sector. This could be because during difficult times, education levels and job prospects for high school and college graduates may be low and the government wants to help these people by providing funding. On the other hand, the private sector could also be feeling the pinch and will be able to maintain its level of investment more easily than the public sector.

2. Literature Review

The Romanian economy has enjoyed growth in the last few years, but the budgetary policies for secondary education were not affected. Leontina (2019) state that the economic growth has generated the resources required for the education budget, but there has been a problem with the funds generated by taxes. In 2008, public spending on education in Romania (% GDP) was 4.3 %, which dropped to 3.8% in 2009. This rate had reduced sharply from 5.2% in 2007 (Leontina, 2019, p. 248). Scholarships and grants as well as other social benefits were removed as a result of the economic crisis. There is also the issue that there were not enough jobs, which meant that they could not pay for the education. The Romanian government responded by creating a freeze on new teachers and recruiting teachers by reducing the salary and by reducing the benefits and allowances for teachers. All secondary education institutions in Romania were not able to cover their expenditures. The 2009 austerity measures and the 2010 austerity measures have also had a deep impact on secondary education institutions in Romania. The Romania's government measures to decrease their deficit and debt had an impact on the country's education budget. Funding for university education has been decreased and access to university education has become more difficult due to tough admission requirements.

Although the state was trying to work towards improving the state of Romanian education during the periods of economic crisis, this objective faced many obstacles. First, when an economic crisis is in place, the state needs to decide which of its projects are of more priority- or when spending less money is of more priority than spending more money. Given the fact that the educational sector in Romania is one of the biggest costs in the budget, in times of economic hardships, it is often cut in order to save the most money possible (Androniceanu and Ohanyan, 2016).

Miricescu and Ţâţu (2014) used a SWOT analysis to show how pre-university education is going through a slow period of evolution, covering the possible future changes that could intervene. They use data from the Ministry of Regional Development and Public Administration and Ministry of Public Finance and come up with the statistics as show in Table 1. Miricescu and Ţâţu (2014) argue that the education system is highly centralized as the Central Government as a whole has control over the education system. In addition, funding for higher education is coming from a funding formula that requires the Central Government to receive certain funds from re-allocations. The article also mentions that the pre-university education expenditures accounted for 23.1%% of total local expenditures in 2012, which is a significant drop from 36.5% in 2001 (Miricescu and Tâţu, 2014, p. 23).

There is no question that an adequate educational system is an integral part of economic development. The quality of education that a country offers is crucial for determining the future of its economy. Romania, like many of its Eastern European counterparts, has taken some strides to create a competitive education system (Tiitset al., 2008). The Romanian government has made an effort to decentralize many of the pre-university expenditures to municipal governments, which may help to create an environment where the municipalities are more engaged with the education system. The government must now provide financial support to the institutions, especially the poorest ones. Financial support could come in the form of direct grants to institutions (Carothers,

2013). This would be a more effective strategy than the current strategy which utilizes loans. The government should make necessary changes to the current system and also focus on improving and providing more financial transparency and accountability.

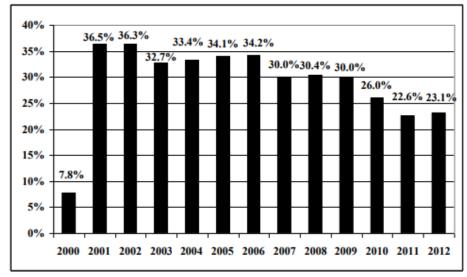


Figure no. 1: Pre-university education expenditures as ratio to total local expenditures

Source: Miricescu and Tâţu, 2014

The article by Togoe (2010) discussed about the Romanian pre-university education financing. As a European Union Member, Romania has to follow to EU's educational directives. In these directives, education is placed as a national priority, should be universal and compulsory, and access to it should be free of charge. The second serious periods of economic crisis appeared during the economic crisis of 2009, which led to a significant reduction in the number of pupils. From an accounting perspective, there were consequences for pre-university students because there was less money available to offer to them. In Romania, the government made a decision that secondary education should be free within the public schooling system (Gavurova et al., 2017). They acknowledged that these schools were struggling with being able to provide a quality education. In order to provide a higher quality of education, the government funded a small percentage of the costs for these schools. When they were experiencing periods of economic crisis, they included supplementary funding as a means to maintain as many schools as possible.

The Romanian budget for secondary education has been altered considerably by periods of economic crisis. The factors are most noticeable in the most recent years, most notably over the last six years, which have seen cuts to both teachers and facilities (Amariei, 2020). These cuts are one of the most visible ways in which the effects of the economic crisis are most acutely felt in public education. The employment of recent graduates in the EU public schools reached the lowest point in 2013 (75.4%), but the rate has since been increasing. The 2008 pre-crisis rate reached 82% (Ştefănescu, 2021). After the 2000-2009 period of economic growth, Romania experienced a long period of economic stagnation that led to budget deficits and imposed austerity measures (Dachin and Burcea, 2013). Subsequently, the 2008-2009 period was one of recession, which had a significant impact on the Romanian education budget. The educational budgets of Romania were significantly reduced during this period. Some of the budget cuts that have taken place have been in the area of staff cuts. The personnel cuts were being used to, for example, provide more grants for students. Schools had to work hard to keep the school open and maintain their daily activities.

3. Research methodology

In the midst of a national crisis, a country's pre-school budget will be heavily influenced by a number of factors (White & Skogstad, 2017). One of the most important factors is the degree of the country's financial crisis. In a full-blown crisis, it will be hard for a country to allocate much

money to pre-school programs. In a less severe crisis, the country may be able to invest more into pre-school programs. In addition to the degree and severity of the crisis, it is also important to consider the country's GDP and GINI coefficient to see how the country fares economically (Islam, 2004). GINI is the degree of inequality of income distribution (Mehran, 1976). It ranges from 0 to 1, where 0 corresponds to perfect equality and 1 corresponds to perfect inequality. Generally, the higher the degree of inequality, the higher the GINI value. A low GDP and high GINI coefficient could indicate an uneven distribution of wealth and a country may not

For the purpose of this project, we are going to hypothesize that a country's GDP is directly correlated with economic crisis. In that case, we shall use GDP as the dependent variable representing the effect of different economic crisis between 2001 and 2020. Due to lack of the most recent data (which will be collected from the World Bank database), we are going to reduce our window to 2001-2018. The independent variables will be GINI and Government expenditure on education, total (% of GDP). The raw data is presented in the Appendix I. Our model will apply linear regression to establish whether our dependent variables is correlated with the independent variables. Our model will apply linear regression to establish whether our dependent variables is correlated with the independent variables. Linear regression is a statistical modeling procedure that uses a linear equation to relate dependent variables and independent variables (Kumari and Yadav, 2018). For example, the dependent variable in our model will be Gross domestic product during 2001- 2018 in US\$, and the independent variables will be GINI index during 2001-2018 as well as Government expenditure during the same period. The purpose of the model is to establish whether GDP is correlated with the independent variables.

4. Results and Analysis

Table no. 1: Summary output

Regression Statistics						
Multiple R		0.169811536				
R Square		0.028835958				
Adjusted Square Standard Error Observations	R	-0.186978274 1336.562045				

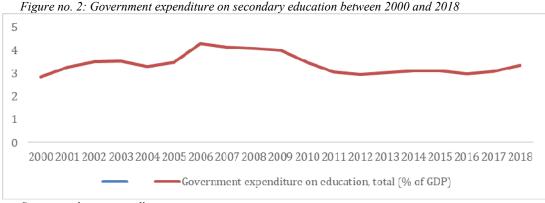
ANOVA

	df	SS	MS	F	Significance F
Regression	2	477378.1575	238689.1	0.133615	0.876630695
Residual	9	16077582.89	1786398		
Total	11	16554961.05			

	Coefficients	Standard Error	t Stat	P-value
Intercept	15729.8551	19303.37821	0.814876	0.436175
GE	-315.3067548	946.6371064	-0.33308	0.746701
GINI	-142.2727253	560.089698	-0.25402	0.80519

The coefficient of the regression is 315 for government expenditure and 1427 for GINI Index. P-value for the model is 0.87. The dependent variable is GDP. National wealth is linked to certain key factors in a country. These factors can be seen through data and analyzed through regression. Data from the graph shows that there is no significant relationship between GDP and the independent variable because the p-value is less than 0.05. This is evident in the equation of y = 316x + 1427. To understand the reasoning behind Romania's GDP statistics, one has to first dive

into the Gini index and the expenditure on education. The Gini index is a measure of income inequality. A high Gini index value suggests that the income distribution among the population is unequal. The expenditure on education shows increase and decrease of government spending on education from 2000 to 2018, with a sharp decline during 2009 financial crisis. Since the years of the economic crisis, the GDP seems to be correlated with economic spike. From the chart, GDP has been quickly increasing since 2010, but the government expenditure on secondary education has been declining, showing that the expenditure on secondary education by the government of Romania neither follows trends on the GDP not Gini index.



Source: authors proceeding

Figure no. 3: GDP between 2000 and 2018

Source: authors proceeding

5. Findings

The Romanian economy has been affected significantly during the past few years and the government has been affected in many ways. The government has declared a fiscal crisis and has implemented a series of fiscal measures to help get the country out of the crisis. One such measure has been to reduce the public budget, which has had consequence for Romanian pre-schools (Gustafsson and Deliwe, 2020). While government funding for pre-school programs has been reduced, these programs still exist and continue to provide quality care and education to children. They have reduced the number of teachers and reduced teacher hours (by reducing working hours and cutting salaries and other benefits) (Vaughan-Whitehead, 2013). They also have reduced the number of hours for each child while still maintaining the same level of quality.

The Romanian government has had to come up with ways to deal with their troubled economy. One of these ways is to cut back on expenditures, especially in the pre-school education sector (Alesina and Giavazzi, 2008). The. An accounting view of this is that, in tough economic times,

one has to cut back everywhere they can. This is one of many areas in which to save, but it is also one of the most impactful.

6. Conclusion

Romanian educators and policymakers have had to rethink and adjust the public education system so it is able to meet the needs of the country and its citizens. For more than a decade, Romania has had to grapple with the economic crisis and so it has made some adjustments to the education budget. Romania's education budget is financed through the State Budget and all revenues from taxes and contributions on salaries. From 2001 through 2020, the budget for secondary education has been affected by the periods of economic crisis. From an accounting perspective, this budget has increased significantly due to the financial support from international organizations and European Union.

While there are various factors that could be taken into account when determining the implications of Romania's pre-school budget, there are some factors that are more pertinent when looking at the effects of the crisis that has taken place over the last decade. It is important to look at the consequences on the investments in education in Romania, as well as how it affects the future workforce in the country. The pre-school budget will likely be in jeopardy in the coming years in Romania. This is because pre-schools in Romania are typically government funded, which means that with the economic crisis, there will likely not be enough money to fund these institutions. With less money to go around, the quality of the education provided by the government could be compromised.

Recently, Bucharest has been unable to provide for enough pre-school education, and the Romanian budget has been unable to meet this demand. The cutbacks in pre-school education has been life-changing for students and their families. It has also changed how two-parent households raise their children. The effect is felt long before children enroll in public schools.

7. References

- Alesina, A. and Giavazzi, F., 2008. The future of Europe: reform or decline. Mit Press.
- Amariei, V., 2020. The Forecast of the Number of Teachers in Pre-University Education in Romania. Revista Economia Contemporană, 5(2), pp.6-17.
- Androniceanu, A. and Ohanyan, G., 2016. Comparative approach on education and healthcare in Romania and Bulgaria as beneficiaries of the IMF financial assistance. *Administratie si Management Public*, (26), p.25
- Carothers, T., 2013. Assessing democracy assistance: The case of Romania. Brookings Institution Press.
- Dachin, A. and Burcea, F.C., 2013. Structural changes and productivity in the crisis period in Romania. The industry case. *Theoretical and Applied Economics*, XX, 6(583), pp.139-148.
- Gustafsson, M. and Deliwe, C.N., 2020. RESEP WORKING PAPER.
- Islam, R., 2004. The nexus of economic growth, employment and poverty reduction: An empirical analysis (Vol. 14). Geneva: Recovery and Reconstruction Department, International Labour Office.
- Laperche, B., Lefebvre, G. and Langlet, D., 2011. Innovation strategies of industrial groups in the global crisis: Rationalization and new paths. *Technological Forecasting and Social Change*, 78(8), pp.1319-1331.
- Leontina, P.M.A., 2019. Financing of pre-university public education in Romania. Economic and Social Development: Book of Proceedings, pp.247-250.
- Lut, D.M., 2018. The Analysis of Romanian Education and Training System in Accordance with European Requirements. *Quaestus*, (13), pp.173-184.
- Mehran, F., 1976. Linear measures of income inequality. *Econometrica: Journal of the Econometric Society*, pp.805-809.
- Miricescu, E.C. and Ţâţu, L., 2014. A SWOT analysis of the financial decentralization strategies for the Romanian pre-university education. *Romanian Journal of Fiscal Policy (RJFP)*, 5(1), pp.20-28.
- Ștefănescu, A., 2021. The Education System in Romania Today. *Strategies XXI-National Defence College*, 1(72), pp.171-177.
- Teodorescu, S. and Mandela, N., 2018. On The Positive Correlation between Education and GDP in Romania. *Challenges of the Knowledge Society*, pp.936-94.

- Togoe, D., 2010. Romanian Pre-University Education Financing. Ideal vs. Reality. *Annales Universitatis Apulensis: Series Oeconomica*, 12(1), p.495.
- Vaughan-Whitehead, D. ed., 2013. *Public sector shock: The impact of policy retrenchment in Europe*. Edward Elgar Publishing.
- White, L. A., & Skogstad, G. (2017). 8 Institutional 'Stickiness' and Ideational Resistance to Paradigm Change: Canada and Early Childhood Education and Care (ECEC) Policy. In *Policy paradigms, transnationalism, and domestic politics* (pp. 202-236). University of Toronto Press.

Appendix I: Raw Data

		Government expenditure on education	on,
Year	GDP	total (% of GDP)	GINI INDEX
2000	1,659.9	2.868629932	
2001	1,825.2	3.266289949	
2002	2,119.9	3.504129887	
2003	2,679.4	3.543970108	
2004	3,494.9	3.312730074	
2005	4,617.9	3.500390053	
2006	5,757.5	4.306509972	39.6
2007	8,360.2	4.149539948	37.5
2008	10,435.0	4.097199917	36.4
2009	8,548.1	4.002130032	35.6
2010	8,214.1	3.493609905	35.5
2011	9,099.2	3.061369896	35.9
2012	8,507.1	2.963799953	36.5
2013	9,547.9	3.051739931	36.9
2014	10,043.7	3.121220112	36
2015	8,969.1	3.109630108	35.9
2016	9,548.6	2.979890108	34.4
2017	10,807.0	3.095390081	36
2018	12,399.0	3.344749928	35.8

Cash-Flow Of The Horeca Sector In Romania Under The Impact Of Covid-19

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Abstract

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The appearance of the pandemic generated by COVID - 19 meant a turning point for many sectors of activity, the problem not being encountered only in our country but worldwide. One of the sectors affected by the pandemic is the hospitality sector, by presenting the paper making an analysis of the cash flow potential in this sector during the pandemic. We will make a comparison having as reference the cash flow potential of each company in the first half of 2020 compared to the first half of 2019. In the paper we not only aim to analyse the impact of the pandemic on cash flow potential but we will also an economic-mathematical modelling having as dependent variable the cash-flow potential and as independent variable the impact created by the pandemic. The regression model will be a binary logit type and will be obtained with the statistical program SPSS.

Key words: COVID-19 impact, HoReCa, cash flow, correlation, binary regression

J.E.L. classification: M21, Z23, G0, C50

1. Introduction

The current world economy is facing one of the financial crises, a crisis triggered by the COVID-19 pandemic, and is different from other crises in history by the "shutdown effect" (Iancu Guda, 2020) or the effect of locks on the door, an effect that was felt simultaneously in most economic sectors. The measures taken by the authorities forced the partial or total closure of economic activities as well as the isolation of people.

One of the sectors most affected by the crisis is the hotels, restaurants and bars sector, the sale of food and closed spaces being banned in many countries, malls being closed in many countries.

The critical situation of the hotels and restaurants sector was discussed during this period by economic analysts, an article in the Business Magazin noting that over 100,000 jobs were lost in this sector, some businesses being unable to be relaunched in the economy (Business Magazin, 2020).

Another study by Next Root Management System showed that before the occurrence of the pandemic in the hotel and restaurant sector there were about 400,000 employees, a few months after the pandemic their number decreasing by over 30%. Moreover, the study claims that at the end of the pandemic the number of unemployed in this sector will rise to several hundred thousand, 30-40% of restaurants that previously operated never opened again (Next Root Management System, 2020).

These aspects vis-à-vis the hotel, restaurant and bar industry represented the decisive point of the research paper, the analysis of their cash-flow potential under the influence of COVID-19 being the main objective of the paper.

2. Literature review

Although economic specialists announced from the first half of 2019 a deterioration of certain macroeconomic indicators, the reasons that proved to be the basis of economic decline proved to be others, in the first semester of 2020 appearing a virus that confused the normality of economic and social life (Băhnăreanu C, 2020).

The negative impact of the pandemic can be seen in terms of global GDP, which fell by about 19% in April 2020, while global trade fell by 25%. Globally, the value added of the accommodation and food services industry is said to have fallen by 47% (Heyer E and all, 2020).

Some authors view the period after COVID-19 as a new era, this being similar to that after the Second World War, the way society works changing massively (Defraigne J.CH, 2020).

As we can see from the previous reports, the specialists talk about a global impact generated by COVID-19, and in this paper we refer to an important economic sector in our country, the hotel and restaurant sector.

The negative effects of SARS-CoV-2 were also highlighted by Turnea E.S and the authors, who demonstrated through a case study on Romanian companies that the demand for products/ services and the cash flow from companies decreased significantly, the labor force being affected by redundancies and temporary leave/extensions. In addition, the average linear income of companies decreased due to insufficient cash flow, higher absenteeism of workers, affected customers and the demand decreased (Turna E.S and all, 2020).

Gross operating surplus (GOS) or the cash flow potential is defined by specialists as "the result obtained by an entity from the operating activity, result not influenced by the depreciation and provisions policy (Achim M.V and all, 2017).

From the point of view of how to determine the GOS indicator, there are presented two ways, but the one we chose is given by the relationship (Siminica M, 2010):

$$GOS = VA + Se - IT - CP(1)$$

where: VA - operational added value

Se - operating subsidies related to turnover

IT - taxes and fees less profit tax

Cp - Staff costs

Thus, considering the calculation relationship of GOS, we determined its level for the first semester of 2019 and 2020.

3. Research methodology

The analysis of the impact of COVID-19 on the cash-flow potential of companies in the hotel and restaurant industry is the main objective of the paper. Thus, in order to highlight this impact, we took over from the BVB website a number of 10 companies from the hotels and restaurants sector and we took over from these companies the financial information from the first semester of 2019 and 2020.

Although we initially intended to extract a larger sample of companies, the lack of half-yearly financial information reduced us to those specific to this sample. The companies selected in order to carry out the analysis are: Youth Tourism Office SA; Summer Whale 2002 SA; SIF Hotels SA; Dorna Tourism SA; Neptun Olimp SA; Palace SA; PARC SA; Baile Tusnad SA; Tourism Felix SA și Toursim Hotel Black Sea SA.

Based on the data presented by the financial-accounting documents, we determined the level and dynamics of the gross operating surplus (GOS). We calculated the GOS dynamics using the index.

For the analysis of the correlation between GOS and the impact of COVID-19 we used the binary system as follows: if the GOS index is with values above 100% we assigned the value 0 to the dynamics and if the GOS index is below 100% we allocated level 1. GOS being the dependent variable, in order to achieve the binary logistics regression model, it is not allowed to have values other than 1 and 0.

The independent variable used in the regression model is the impact of COVID-19 which was evaluated as follows: by 0.25 if the GOS index was with values above 75% up to 90%, the difference of 10% being a normal fluctuation of the indicator; by 0.5 if the GOS index has values between 50 - 75%; by 0.75 if the index indicates values between 25 - 50%.

If the index has values below 25% then the impact was evaluated with 1 and if the index had values above 90% the impact was considered zero, thus allocating the value 0 (Cesar Perez, 2012).

The analysis of the correlation between the cash-flow potential and the impact of COVID-19 as well as the binary logistics regression model was performed using the SPSS statistical program.

The form of the logit binary regression equation resulting from the statistical processing will be:

$$E = \frac{e^{\alpha + \beta x}}{1 + e^{\alpha + \beta x}} (2)$$

where: α – the constant

B - the coefficient of the independent variable

x - the independent variable.

The paper is based on the following hypotheses:

H1 - the cash-flow potential of companies in the hotel and restaurant industry was affected by the COVID-19 pandemic, this being observed since the first half of 2020;

H2 - between the cash-flow potential and the impact of SARS-CoV-2 there is a significant direct correlation;

H3 - out of the sample of companies in the hotel and restaurant industry, more than half of them demonstrate a decreasing cash flow potential.

Applying the research methodology mentioned above, methodology specific to binary logit regression, we conducted a case study on companies in the hotel and restaurant sector in our country, companies listed on the Bucharest Stock Exchange, and following the study we can also validate or invalidate research hypotheses.

4. Findings

Starting from the financial statements of the first half of 2019 and 2020 of the companies in the hotel and restaurant industry, we performed, according to the research methodology presented, an analysis of the binary correlation between cash flow potential and COVID-19 impact, as well as a logit binary in which GOS appears as a dependent variable and the impact of COVID-19 as an independent variable.

The analysis of the correlation between the variables is reflected in the following table:

Table no. 1 Analysis of the correlation between GOS and the impact of COVID-19

Variables	Binary correlation coefficient	GOS	COVID-19 impact
GOS	Pearson Correlation	1	.776(**)
	Sig. (2-tailed)		.008
	N	10	10
COVID-19 impact	Pearson Correlation	.776(**)	1
	Sig. (2-tailed)	.008	
	N	10	10

Source: Table taken from SPSS

The analysis of the data in the table reflects a significant direct correlation between the cash-flow potential of companies in the hotel and restaurant industry and the pandemic caused by COVID-19, the Pearson correlation coefficient being 0.776, with a significance threshold of 0.008. Along with the correlation analysis we can validate hypothesis 2 of the research (H2). Correlation analysis is the starting point for achieving binary regression. Thus, we coded with 0 and 1 the dependent variable and with values in the range 0 - 1, according to the principle presented in the methodology, in the case of the independent variable.

The first resulting table is the table that reflects the number of variables taken into account as well as the percentage allowed of the total variables in the processing method, these aspects being summarized in the following table:

Table no. 2 Case Processing Summary

Unw	reighted Cases(a)	N	Percent
Selected Cases	Included in Analysis	10	100.0
	Missing Cases	0	.0
	Total	10	100.0
Unselected Cases		0	.0
Total		10	100.0

Source: Table taken from SPSS

The analysis of the data in the table shows us that the number of variables taken into account is equal to 10 accepted by the model in proportion of 100%, which allows us to go through the following steps to obtain the regression equation.

The coding of the variables taken into account is illustrated in the following table:

Table no. 3 Dependent Variable Encoding

Original Value	Internal Value
Negative impact	0
Positive impact	1

Source: Table taken from SPSS

Using the codings established according to the research elaboration methodology, we obtained the following statistical analysis:

Table no. 4 Categorical Variables Codings

		Frequency	Parameter coding		ling
		(1)	(2)	(3)	(1)
COVID impact	0	1	1.000	.000	.000
GOS	0	1	.000	1.000	.000
COVID impact	1	3	.000	.000	1.000
GOS	1	5	.000	.000	.000

Source: Table taken from SPSS

The frequency of values 0 and 1 indicates the number of companies in the hotel and restaurant industry affected by the pandemic generated by COVID-19, so that 8 of the 10 companies showed unfavourable situations in terms of cash flow potential 1st Semester of 2020 compared to the 1st Semester of the year 2019. This analysis allows us to validate research hypothesis 1 (H1), most companies in this industry being affected by the pandemic.

The next step in obtaining binary regression is to perform tests on the validation or invalidation of the regression model. Thus, in the following table the first test performed with the method -2 Log likelihood can be seen:

Table no. 5 Iteration History (a, b, c)

Iteration		-2 Log likelihood	Coefficients	
		Constant	Constant	
Step	1	10.066	1.200	
	2	10.008	1.377	
	3	10.008	1.386	
	4	10.008	1.386	

a Constant is included in the model.

b Initial -2 Log Likelihood: 10.008

c Estimation terminated at iteration number 4 because parameter estimates changed by less than .001.

Source: Table no. 5 was taken from SPSS

The values resulting from the first test of the regression model allow us to go through the following steps. Thus, we determined the percentage of dependent variables influenced by the independent variable:

Table no. 6 Classification Table (a, b)

	Observ	Observed			Predicted			
				ynamics	Percent Correct			
			0	1	0			
Step 1	GOS dynamics	0	0	2	.0			
		1	0	8	100.0			
	Overall Percentage				80.0			

a Constant is included in the model.

Source: Table taken from SPSS

The analysis of the data in the table shows that 80% of the dependent variables were influenced by the independent variable, thus having representativeness in the analysed sample and can go to obtain the variables from the regression equation.

At the same time, the fact that 8 companies have level 1 indicating a decrease in GOS in the 1st Semester of 2020 compared to the 1st Semester of 2019, allows us to validate research hypothesis 3 (H3).

The variables of the regression equation are reflected in the table below:

Table no. 7 Variables in the Equation

		В	S.E.	Wald	df	Sig.	Exp (B)
		Lower	Upper	Lower	Upper	Lower	Upper
Step 1	Constant	1.386	.791	3.075	1	.080	4.000
	Covid impact	2.045	.807	6.421	1	.011	.629

Source: Table taken from SPSS

The form of the resulting regression equation is:

$$E = \frac{e^{1,386+2,045*ipmactCOVID-19}}{1 + e^{1,386+2,045*ipmactCOVID-19}}$$
 (3).

Once the logit binary regression model was obtained, we can say that the objectives of the research paper were fully achieved, being at the same time allowed to draw relevant conclusions from the analyses performed.

5. Conclusions

The analysis of the hotels and restaurants sector on a sample of 10 companies from those listed on the Bucharest Stock Exchange, having as informational support the financial statements of the first semester of 2019 and 2020 leads us to the following conclusions:

- although Covid-19 has proven to be a factor with negative effects on many economic sectors, the hotel and restaurant industry has proven to be the hardest hit by this pandemic;
- the cash-flow potential of companies in the hotels and restaurants sector proved to be decreasing in the 1st Semester of 2020 compared to the 1st Semester of 2019 in 8 out of the 10 companies being notified this aspect;
- the Pearson correlation coefficient showed us the existence of a significant, direct link between the cash-flow potential and the Covid-19 impact, its level being 0.776 with a significance threshold of 0.008;

b The cut value is .500

- the binary regression model obtained, in which we have as a dependent variable the cash-flow potential and as an independent variable the impact of Covid-19, showed us an accuracy of 80%, which leads to the certification of econometric analyses performed.

The pandemic generated by the SARS-CoV-2 virus has become the trigger for a financial crisis, which in the opinion of specialists may be higher than in 2008-2009, precisely through the "shutdown effect", most economic sectors being forced to put the lock temporarily or permanently on doors as a result of measures taken by governments to combat its effects.

6. References

- Perez C, 2012. Econometria Basica, Aplicaciones con Eviews, STATA, SA y SPSS. Madrid: Garceta Publicaciones, Madrid, pp. 284 – 286
- Guda I, 2020. Economy in the times of coronavirus. Bucharest: Publica Publishing House, pp. 18 19
- Achim M.V, Borlea S. N., 2017. *Guide for Analysis-Diagnosis of financial condition*. Cluj-Napoca: Risoprint Publishing House
- Siminica M, 2010. Financial diagnosis of the company. Craiova: Sitech Publishing House
- Băhnăreanu C, 2020. THE ECONOMIC IMPACT OF COVID-19 PANDEMIC AT THE BEGINNING OF 2020, *Impact strategic*, No. 2/2020 [online] Available at: https://www.ceeol.com/search/article-detail?id=894641
- Turnea E. S., Neştian S. A, Tiță S. M., Vodă A. I., Guță A. L., 2020. Dismissals and Temporary Leaves in Romanian Companies in the Context of Low Demand and Cash Flow Problems during the COVID-19 Economic Lockdown. Sustainability 2020, 12(21), 8850 [online] Available at: https://doi.org/10.3390/su12218850;
- Heyer E, Timbeau X, 2020. Évaluation de l'impact économique de la pandémie de COVID-19 et des mesures de confinement sur l'économie mondiale en avril 2020 [online] Available at : https://ideas.repec.org/p/spo/wpmain/infohdl2441-3g5s54jjti9bsaup3vps1hdumo.html
- Defraigne J. C., 2019. L'impact géoéconomique de la COVID-19 sur l'économie généralisée [online] Available at : https://www.cairn.info/revue-outre-terre-2019-2-page-23.htm#
- https://www.businessmagazin.ro/cover-story/drama-patronilor-si-angajatilor-din-industria-hotelurilor-19067439, accessed on 20 July 2020;
- https://www.zf.ro/eveniment/dragos-panait-horeca-next-root-management-systems-fara-sprijinul-financiar-al-statului-mai-mult-de-jumatate-din-localurile-din-bucuresti-se-vor-inchide-18992079 accessed on 15 July 2020.
- www.bvb.ro

The Importance of Internal Audit In Public Sector Research - A Bibliometric Study -

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Abstract

The scope of our research is to present the current development stage of the public sector internal audit research worldwide; the examined database is Web of Science Core Collection. This choice is due to the database representativity and importance in indexing high profile publication, either journals, books, or Conference proceedings. This bibliometric study incorporates two main objectives, firstly we have undertaken the objective of achieving the performance analysis, presenting the results of our research in terms of performance for different parameters such as: authors, research domains, institutions, journals, and countries; secondly, we have assumed the objective of realizing a scientific mapping of the outcome of the public sector internal audit research in relations to research topic, research teams and research facilities; based on the occurrence or co-occurrence of a term. The main results shows that there are four points of inflexion in the chronological evolution of the public sector internal audit research publication and the science mapping undergone identified certain networks and behaviour as well as identified four research clusters.

Key words: Internal audit in public sector, research, performance analysis, mapping **J.E.L. classification:** H83, M42

1. Introduction

The interest of the academic community and professionals in the study of internal audit is on an upward trend. An unassuming search on the specialized online databases on the Internet such as google academic, results an astonishing number of results (2.270.000 in 0,07 seconds), the abovementioned number composed of papers, articles, and studies in academic journals and not only. For this research, we choose to investigate a specific part, namely the function of internal audit in public sector, so being, the aim of our research is to present the current development stage of the public sector internal audit research worldwide.

We chose to examine the Web of Science Core Collection database, due to its representativity, longevity (the indexing of journals starting with 1900, and the indexing process of books starting with 2005), and importance. According to the official website the Web of Science Core Collection database includes 21.894 items, comprised of journals that have over 82 million records (with an acceptance rate of "10-12% for the three core indices - Science Citation Index Expanded, Social Science Citation Index and Arts & Humanities Citation Index - rates for the Emerging Sources Citation Index are generally higher"); over 126.00 books and finally, above one fifth million conferences covered.

The environment in which internal auditors operate worldwide and at European Union level is constantly evolving. Since the beginning of the appearance of the internal audit in the offices of the managers of enterprises and institutions with a certain training in accounting and other related fields such as engineering, mathematics, information technology, it has been outlined the idea that the audit is addressed in its entirety to the entire organization, by accepting all the internal components, which

work together, are a unitary whole, which in the end will be integrated into the decisions of the management.

At the Romanian national level, the approaches of the internal public audit came as a response to the traditional methodologies of financial accounting in accordance with the Policies and Strategies of the European Union in the major areas of interest. They are oriented towards a clear and rigorous planning, which, however, have sometimes encountered certain obstacles in the implementation in the case of public institutions as well as private firms. Thus, audit missions were carried out in accordance with the legislative framework and appropriate to the concrete, current possibilities of internal development in each economic entity. The common characteristics of the internal audit activity adapted to the policies and strategies of the European Union can be found in a set of harmonized principles and legislative documents, issued by the Romanian Parliament and the Ministry of Public Finance.

The universality of the internal audit function applied to the spectrum of each organisation, regardless of its field of activity and performance, monitors most of the activities carried out. Incipient, internal control is its main object of activity. Given that the internal audit aims to improve the internal control system through the recommendations made, it has a universal character hence the characteristic of universality. Consequently, internal audit is a function of assisting management factors through which auditors effectively support the monitoring of the activities carried out to contribute to the increase in performance. Given that in each entity there is and applies the function of "top management" and the assistance provided to it by the internal audit has expanded in all areas.

In this context, the internal audit practitioners of most European states note its rapid and pertinent development, clearly perceived by everyone, even in the situation of inherent confusions and dysfunctions that sometimes occur; audit objectives are achieved, and it becomes an uneasy aid to managers and management structures. The internal audit will achieve its objectives if there is an organized, formalized internal control system of management, consisting of: adequate operational procedures, development and application of standards and professional system rules, clear deontological codes, which would efficiently contribute to the independence of the internal auditor and his activity. That is why internal auditors and management structures must be seen as partners and not as adversaries, having the same objectives, to effectively achieve the act of management and corporate governance by achieving the assumed performance indicators. The management teams, through their role and attributions, must assume and apply the recommendations formulated by the internal auditors, to perceive the support they receive for the identification and evaluation of risks. The synergy of the audit process has an increased entropy determined by societal changes, these are reflected in the first instance in the external systems and then in the internal ones of the European Union.

2. Literature review

Regarding the internal audit in the public sector, we have identified in the literature several topics of study and consequently research directions regarding the importance of this field of study and the support provided to management at all levels, in the content of the four major study directions.

The first area of interest that we chose to present refers to the review of the work of internal auditors from a practical point of view, several authors recognized the *major roles that the internal auditors* perform two key roles: a) a role of protector, further subdivided into two roles, protective shield and keeper of secrets and b) a helping role, also subdivided into two roles, namely supporting organizational performance and guide in the work carried out (Roussy, 2013), some other authors allocated the role of internal auditors similarly (Ferry et all, 2017).

In the research carried out by M. Roussy (2013), the authors develop an innovative model that describes the roles of internal auditors in public sector organizations in the corporate governance process. Through 42 semi-structured interviews that have been addressed to experienced internal auditors working in Quebec public administration are described and analyzed.

The author therefore presented an expert opinion on the independence of internal auditors in the public sector in Quebec. The findings generally suggest that the internal audit, now, is not the supervisory body of the governance envisaged by the regulation given the subjectivity, transparency, and methodological rigor of the internal auditors. The conclusion of the specialists is associated with

the determinants of the organizational change in the public sector, which results from the conduct of the internal audit and the way in which the internal auditors carry it out according to the legal regulations.

As public sector reform continues, some authors such as Omoteso & all (2012) it is considered that a deepening of this area is needed, namely in the second direction of study identified: the increasing use of information *technology is also generating a study interest* in the modern business world while also creating increased pressure on auditors to play an increasingly effective role in the governance and control of firms.

This paper aims to review the main research efforts and current debates on the use by auditors of expert management systems and expert databases, to forecast future directions of software research and development. The process of developing artificial intelligence systems in audit emphasizing the identified advantages and disadvantages are exposed and critically analyzed. It also reviews previous research advances on the use of expert systems and neural networks in auditing and their implications.

In this second research area identified there are several authors (Cangemi M., 2016) who consider that the use of automated monitoring and data analytics has been a major expansion, but as the internal audit process continues to raise, there is room for enhancement. They advocate for the use of these technologies to increase the efficiency of internal audits and their impact to the entities activity towards a more important role of the internal audit.

The summaries of previous studies have revealed certain research vacuums that in the light of future research should be restated: achieving a balance between the use of artificial intelligence versus the related costs, assessing the impact of artificial intelligence on the design and monitoring of internal control systems, as well as on audit committees, the efficiency of committees and the implications of the use of such systems for the operations of audit firms small and medium-sized, the survival of audit firms, audit education, audit of public sector organizations, the independence of auditors, gaps between expectations and performance achieved.

The third research area identified focuses on *internal audit quality*; if so far in the specialized literature most of the studies have focused mainly on a single perspective on Internal Audit Quality (IAQ), Roussy M, Brivit M,(2016) respectively highlighting the qualitative contrast existing between the way in which those who, according to the normative acts in force in each country, fulfill an internal audit mission (internal auditors) and those who mandate (members of the audit committee), those who use the results of audit missions (members of the audit committee and external auditors) and normalization of the audit function (Institute of Internal Auditors). The study is based on in-depth analysis of the existing literature on the 'quality of internal audit' (IAQ) by compiling results from interviews with internal auditors and members of the public sector audit committee or organizations in Canada and archival documents published by the Institute of Internal Auditors (IIA) because so far research has mainly focused on a single perspective on the IAQ, that of the external auditors. They suggest radically different perspectives on how internal audit quality (IAQs) should be defined and controlled (through input, exit, related costs and training controls).

The final research area identified presents the *uncertainties specific to the analysis of the internal audit in the public sector*, who were also analyzed by Van Dooren W. & all (2015). Starting from the premise that public institutions are the basic elements of governments, through their formal and informal role, it is the easiest to observe and quantify in the public bureaucracy. Their performance may also be since some of them have hierarchical subordinations that can be controlled less or on the contrary, they can have an extended autonomy. Therefore, if researchers want to understand how governments work, a very good place to start studying this book is the level of public institutions that are service providers. In their work re expressed opinions and points of view based on research that refer to various levels of organization in the public sector such as: the autonomy of the public sector, information networks and their analysis; bureaucratic policy; staff rotation and management; methodologies for studying their operation.

At national level, we appreciate that regarding the management of the internal audit activity in the public sector in Romania, by adopting the Code of internal management control of public entities (Order of the General Secretariat of the Government no. 600/2018) a hierarchical organizational model is established, within which the head of each public entity is at the first decision-making level, being responsible for ensuring performance monitoring for each activity, by means of indices and

performance indicators. Beyond their value as people, internal auditors must be and act as a team of professionals extremely involved in the work they carry out. Consequently, internal audit in the public sector is a function of assisting management factors through which auditors effectively support the monitoring of the activities carried out for them to contribute to the increase in performance. By continuously/periodically identifying certain malfunctions that have occurred (which are obviously inherent), several elements necessary for the continuous improvement of the monitoring of the performance of the public internal audit activity in the public sector in Romania can be quantified.

3. Research methodology

As mentioned beforehand, we have undergone research on the main dedicated database, google academic, our query about "internal audit in public sector" with an astounding number of results (2.270.000 in 0,07 seconds), the abovementioned number composed of papers, articles, and studies in academic journals and not only. Furthermore, we choose to investigate a specific part, namely the internal audit in public sector, in another database Web of Science Core Collection, with the main characteristics presented beforehand in our article.

In order to reach the aim of our study, we have established two main objectives:

- (1) the *performance analysis*, presenting the results of our research in terms of performance for different parameters such as: authors, research domains, institutions, journals, and countries.
- (2) secondly, we have assumed the objective of realizing a *scientific mapping* of the outcome of the public sector internal audit research in relations to research topic, research teams and research facilities; based on the occurrence or co-occurrence of a term.

The research plan employed for carrying out our bibliometric research involved several steps, firstly we have retrieved the necessary data, secondly, we examined the bulk data and prepared for processing, thirdly we have processed the data through VOSviewer software, analysed it and realized the mapping and finally visualisation.

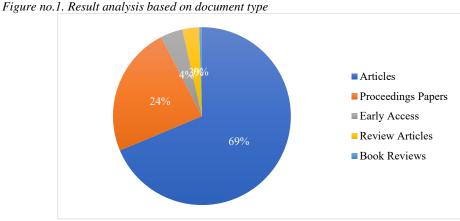
The research plan assumed firstly the retrieval of data, and so the query of Web of Science Core Collection on the 20th of November 2021 and followed the protocol:

- 1. Database: Web of Science Core Collection
- 2. Search on group of word advanced search: ("public sector internal audit" in Topic *OR* "internal audit in public sector" in Topic *OR* "internal auditing" + "public sector " in Topic *OR* "internal auditing" + "local governments" in Topic *OR* "internal auditing" + "central governments"
- 3. Timespan: All years

The indexed scientific literature about the public sector internal auditing research emerges in 1978 with the article: *Public-sector auditing - new opportunities for CPAS* – author Pomeranz, F. in *Journal of accountancy* 145 (3), pp.48-54, the final search query counted 189 publications.

4. Findings

The identified research papers, as it is shown in Fig.1 include 136 articles (71,96%), 47 proceedings papers (24,87%), 8 early access papers (4,23%), and 6 revie article and also 1 book review. Thus, we can identify as main source for dissemination for the internal auditing in public sector research WOS indexed is research articles, either published in journals or in conference's proceedings, and unexpectedly just one book.



Source: own generation based on WOS database

The research undertaken, in terms of chronological performance analysis, as shown in Figure no.2, has result in identifying four inflexion points, namely 2001, as that year the number of publications surged, just beforehand the publication in 2002 of SOX Act, the second inflexion point is 2008, because in 2009, the number of publications quadrupled and it can be attributed to the international crisis, but also to the publication of International Standards for the Professional Practice of Internal Auditing (Standards), the revised edition of the aforementioned standards published in 2012 generates in our opinion the third inflexion point and the fourth and final inflexion point is in 2017, in the smooth evolution of publications regarding the topic of internal auditing in public sector research.

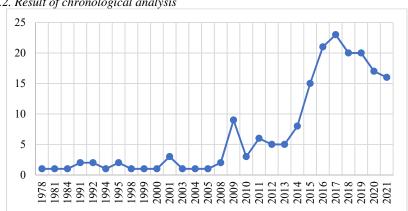
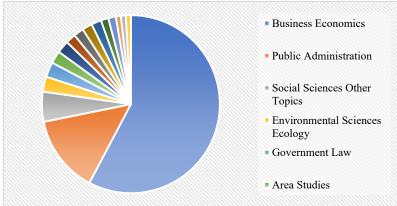


Figure no.2. Result of chronological analysis

Source: own generation based on WOS database

We were also interested in presenting the research areas for the publications topic of internal auditing in public sector research, as shown in Figure no3. Research areas, the main with 127 publication, being Business Economics, followed by Public Administration with a quarter of publications (31), Social Sciences other topics (12), and the following research areas publication numbers being a single digit one.

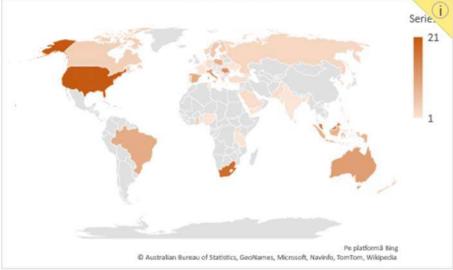




Source: own generation based on WOS database

The publication analyzed by country or region, shown in Figure 4. Publication by countries is one that it shows accurately two main trends in research, firstly the unbiased conclusions that anglosaxon system that originated the internal audit still leads in the field of the internal auditing in public sector research (USA- 21 publications, South Africa – 18 publications, Australia - 11), however there can be identified a raising interest in European countries as well, and in the latest entries within the European Union mainly an increased number, due, mostly to the new introduction of internal audit function (Romania – 13, Latvia-9, Poland-8).

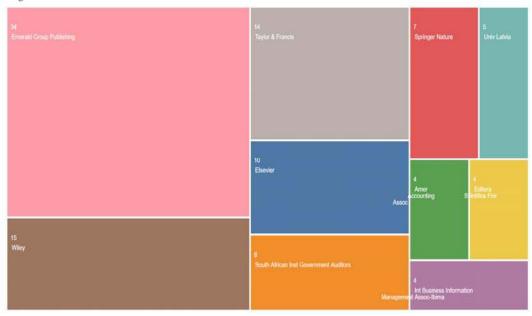
Figure no. 4. Publication by countries



Source: own generation based on WOS database

Finalizing our performance analysis, we will present the main publishers of the research undertaken in the internal auditing in public sector area (Figure 5), the main publisher with 17% of the total number of publication is Emerald Group Publishing through several journal, second in line comes the Wiley and Taylor&Francis with 7,40%/7,93% publishing houses, Elsevier coming thirdly. In the first ten publisher we can identify two main Professional Bodies, namely: South African Inst Government Auditors with 8 publications, and American Accounting Association- AAA (4 publications).

Figure no. 5 Publishers



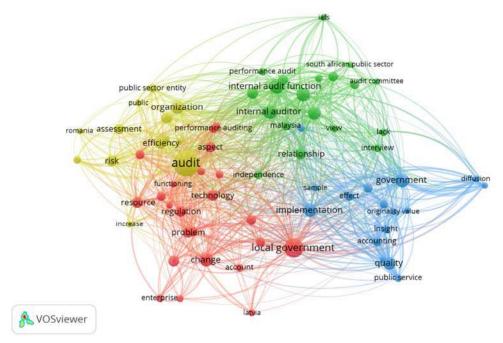
Source: own generation based on WOS database

In order to accomplish the second objective of realizing a *scientific mapping* of the outcome of the public sector internal audit research in relations to research topic, research teams and research facilities; based on the occurrence or co-occurrence of a term, we have proceeded to a bibliometric analysis using singular technics for science mapping (co-word analysis) and bibliometric analysis augmentation technics (clustering, network system of measurement and finally visualisation) within the VOSviewer software (version 1.16.17), by Nees Jan van Eck and Ludo Waltman

As it is presented by its authors: "VOSviewer allows the analysis of the keywords in the documents existing in the WOS database, one of the purposes of this analysis being to highlight the links between these keywords. VOSviewer offers the possibility of making a map that graphically represents the links between the words that appear most frequently in the documents for which the query was made in the WOS database". We have followed the workflow as described by (Cobo et al., 2011) examined the bulk data and prepared for processing, thirdly we have processed the data through VOSviewer software, analysed it and realized the mapping and finally visualisation.

The search query counted 189 publications, following this we have exported both in *Other reference software* - RIS file and in plain text format- TXT file, *Full records and cited references*, for all 189 items to be processed with the VOSviewer software. Using the VOSviewer software we have processed the exported data and we created a co-occurrence map, based on text data, the counting method was *full counting*, the minimum number of occurrences of a word was 10 and out of 3620 terms, 125 meet the threshold. Furthermore, for each of the 125 terms, a relevance score was calculated. Based on this score, the most relevant terms were selected, and we took into consideration the recommended 60% most relevant ones. The number of terms finally selected was 75, afterwards out of the 75 - 6 terms were eliminated due to their status of unbiased commonness for this topic of research: concept, field, term, aspect, article, author, the final result is shown in figure no. 6.

Figure no. 6 VOSviewer network visualization map – internal audit in public sector research Association strength of on WOS platform.



Source: own generation based on VOSviewer processing

As shown above - figure number 6 - VOSviewer network visualization map — internal audit in public sector research -association strength of on WOS platform, it is a co-word network visualization map using VOSviewer; according to the Manual of the software: "each node in network represent an entity, respectively in this case a keyword, where (i) the size of the node represents the occurrence of the keyword (the number of times that the keyword occurs), (ii) the link between the nodes represents the co-occurrence between keywords (keyword that co-occur together in multiple situations in different settings (studies), (iii) the width of the link indicates the occurrence of co-occurrence between keywords (namely the number of times that co-occur or occur together), (iv) the bigger the node the bigger the larger the occurrence of the keyword, and (v) the thicker the link between the nodes the greater the occurrence of the co-occurrence between keywords. Each colour represents a thematic cluster, wherein the nodes and links in that cluster can be used used to explain the them's (cluster) coverage of topics (nodes) and the relationships (links) between the topics (nodes-keywords) manifesting under that theme (cluster)".

The processing of the data through VOSviewer showed that internal audit in public sector in terms of co-occurrence is linked with the following concepts: local government (83), change (43), internal audit function (50), value (43), implementation (43), government (45), quality (38), organization (40), efficiency (31) as shown in table number 1.

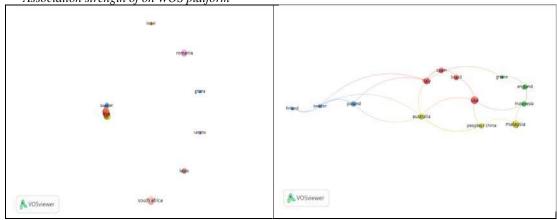
Table no.1 Co- occurrence terms – clusters

No	Term	cluster	No. Occ	No	Term	cluster	No. Occ
1	local government	1	83	41	government	3	45
2	change	1	43	42	implementation	3	43
3	resource	1	29	43	quality	3	38
4	corruption	1	27	44	effect	3	22
5	regulation	1	27	45	accounting	3	20
6	technology	1	26	46	adoption	3	20
7	problem	1	23	47	recommendation	3	17
8	public sector auditing	1	21	48	public service	3	15
9	state	1	21	49	insight	3	14
10	number	1	19	50	diffusion	3	11
11	evaluation	1	18	51	respondent	3	11
12	performance auditing	1	18	52	sample	3	11
13	outcome	1	14	53	accrual accounting	3	10
14	supreme audit institution	1	14	54	indonesia	3	10
15	account	1	13	55	originality value	3	9
16	enterprise	1	13	56	design methodology approach	3	8
17	latvia	1	12	57	audit	4	153
18	scope	1	12	58	organization	4	40
19	china	1	11	59	efficiency	4	31
20	functioning	1	10	60	entity	4	28
21	time	1	10	61	risk	4	28
22	internal audit function	2	50	62	assessment	4	24
23	internal auditor	2	46	63	public sector entity	4	16
24	value	2	43	64	internal control	4	15
25	internal auditing	2	37	65	public	4	12
26	function	2	28	66	poland	4	11
27	relationship	2	26	67	increase	4	10
28	difference	2	25	68	public sector organization	4	10
29	perception	2	21	69	romania	4	10
30	internal audit effectiveness	2	18				
31	malaysia	2	18				
32	independence	2	17				
33	interview	2	17				
34	performance audit	2	15				
35	south africa	2	14				
36	view	2	14				
37	lack	2	13				
38	iafs	2	12				
39	audit committee	2	10				
40	south african public sector	2	9				

Source: own generation based on VOSviewer processing

We have used all the utensil at our disposal from the VOSviewer software and we consider interesting in terms of mapping the science to underline the networking of the researchers, namely, in Fugure no. 7, from the 17 countries with more than 5 publications, only 11 countries as presented in the next figure pertain to a network.

Figure no. 7 VOSviewer network visualization map – internal audit in public sector research- countries Association strength of on WOS platform



Source: own generation based on VOSviewer processing

The next enquiry lead by the former analysis output, was whether this type of networking is relevant within the authors occurrences network; and at a science mapping analysis, we could observe that the authors laid within the countries behavior, moreover, even then, we could identify some of them singled out as lonely researchers, as the case of Romania (Hlaciuc E.), or a group of researchers without connections abroad (Neamtu E., Stefanescu A., Mocanu M., Dudian M.).

5. Conclusions

The research undertaken, in terms of chronological performance analysis, has resulted in identifying of four inflexion points, namely 2001, 2008, 201, and 2017 in the smooth evolution of publications regarding the topic of internal auditing in public sector research. In terms of research areas, the publication is clearly dominated by those who pertain to Business Economics one. The analysis of publication by countries is one that it shows accurately two main trends in research, firstly the unbiased conclusions that anglo-saxon system that originated the internal audit still leads in the field of the internal auditing in public sector research (USA- 21 publications, South Africa – 18 publications, Australia - 11), however there can be identified a raising interest in European countries as well, and in the latest entries within the European Union mainly an increased number, due, mostly to the novelty of the internal audit function (Romania – 13, Latvia-9, Poland-8)

After performing a bibliometric analysis on the material retrieved from the WOS platform (189 records) on the most frequently used terms in internal audit in public sector, the co-occurrences map of terms generated in VOSviewer revealed that there are four main topics of research (clusters). The first one centres around the public sector auditing its performance in local governments mainly, the second one is focused on the link between the audit committee, the independence of internal auditor in terms of internal audit effectiveness, the third clusters identified showed the intercorrelation in the research of implementation of internal audit, government, quality effect and accrual accounting, and finally the fourth one emphasis on internal control in public sector organization through risk assessment and efficiency. One of the limits of our research is further detailed analysis necessary, in connection with other terms proven to be relevant, as: internal audi effectiveness risk assessment and independence.

6. Acknowledgment

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7. References

- Donthu, N. & all. 2021, *How to conduct a bibliometric analysis: an overview and guidelines*, Journal of Business Research, 133(2021), 285-296;
- Ellegaard, O., Wallin, J.A. .2015, The bibliometric analysis of scholarly production > How great is the impact? Scientometrics, 105(3), 1809-1831.
- Ferry, L., 2017, Watchdogs, helpers or protectors? Internal auditing in Malaysian Local Government, Accounting Forum .http://dx.doi.org/10.1016/j.accfor.2017.10.001
- Michael P. Cangemi (2016) Views on Internal Audit, Internal Controls, and Internal Audit's Use of Technology, EDPACS, 53:1, 1-9, DOI: 10.1080/07366981.2015.1128186
- Omoteso K., 2012. The application of artificial intelligence in auditing: Looking back to the future, Expert Systems with Applications 39, 2012
- Roussy M., Brivot M. 2016, *Internal audit quality: a polysemous notion?*, Accounting, Auditing & Accountability Journal, Vol. 29 Iss 5 pp.;
- Roussy M., 2013. *Internal auditors' roles: From watchdogs to helpers and protectors of the top manager*, Critical Perspectives on Accounting, 24(s 7–8):550–571;
- Van Dooren W., Bouckaert G., Halligan J. 2015., *Performance Management in the Public Sector*, Routlegde, 2015;
- Van Eck, N. J., & Waltman, L. 2010. Software survey: VOSviewer, a computer program for bibliometric mapping. Scientometrics, 84(2), 523–538.
- Van Eck, N. J., & Waltman, L. 2011. Text mining and visualization using VOSviewer. ISSI Newsletter, 7(3), 5.
- *** VOSviewer software tool, downloaded from: https://www.VOSviewer.com/, downloaded on 1 November 2021.
- ****Web of Science Core Collection: Web of Science: Summary of Coverage available at: https://clarivate.libguides.com/woscc/coverage, accessed on October 2021-November 2021.

Aspects Regarding Mergers and Acquisitions in the Pandemic Context

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Abstract

Mergers and acquisitions have affected and are affecting a large number of industries in all geographical areas, with the ability to transfer very quickly both positive and negative impulses from one economy to another, so that there can be no more areas. unaffected by economic booms or economic and health crises. The aim of this research is to analyze the impact of the pandemic on mergers and acquisitions in Europe, on country risk low and country risk very high.

Key words: M&A, COVID-19, GDP, Inflation, Public debt

J.E.L. classification: G34, E44,

1. Introduction

Experienced strategic and financial investors are no strangers to crises, they have sailed through several, from the collapse of the stock market in 1987 to the financial crisis in 2008.

When the Covid-19 pandemic hit, those with a long history in the mergers and acquisitions industry had the advantage of experience, but only to a certain extent, because this pandemic created a real sense of panic and there was no manual for it.

The pandemic has shut down many corporations and kept most of the people all over the globe in their homes for health and safety reasons.

The ability of companies to cope with the new business environment has been severely tested by compliance with new sanitation standards and government restrictions. The restructuring operations have become key in this new context for companies that want to align their strategic plans to compete better, and of course be able to rescue.

Nearly two years after the start of the pandemic, it has been observed that some companies have restructured and taken advantage of the health crisis (some companies have started making protective masks or producing disinfectants) while other companies have not been able to survive and was closed. Although the global M&A market has slowed, it has never reached zero volume.

Given that the economic crisis caused by the health crisis was a surprise that tested the resilience of companies in the context of the interconnected world, the study is based on research into the impact of Sars-cov2 on mergers and acquisitions demand at European level.

Understanding mergers in today's economy is very important due to the fact that many mergers and acquisitions are doomed to failure due to the lack of knowledge of the people involved in this restructuring strategy.

The paper is structured as follows: Section 2 includes a review of the literature, Section 3 is based on research methodology, research results are presented in Section 4 and finally, Section 5 contains the following research findings.

2. Literature review

Most studies investigating mergers and acquisitions focus on markets in micro economically developed countries. This study is relevant because it investigates the impact of the pandemic context on mergers, at the macroeconomic level, in both developed and underdeveloped countries.

The goal of carrying out these mega-transactions is as follows: to successfully conquer a giant market, such as the global market, giant companies are needed, as example of companies that have the power to supply products in a huge market. Even if an annual increase is obvious and the merger is a strategy preferred by companies, it is not invulnerable in times of economic crisis or health crises.

GDP rate is considered a standard macroeconomic measure for national wealth as well as a macroeconomic indicator of a country's economic development level.

The authors Uddin and Boateng investigated the impact of macroeconomic variables on M&A volumes in UK from the period 1987 to 2006. The article shows that a 1% increase in real GDP will decrease the volume of M&A by -2.9%. Also, Erel, Liao and Weisbach in 2012 investigated the determinants of mergers and acquisitions volumes with a sample covering 56978 deals from 48 countries between 1990 and 2007 and they found that GDP growth is statistically significant in a panel regression analysis. Other authors investigated the cross-country determinants of M&A an found that GDP has a positive influence (at 1% level) on the number of M&A deals (Rossi and Volpin, 2004). In addition, other authors that investigated the major factors that determine M&A activities in nine emerging countries between 2000 and 2012 found the coefficient is not statistically significant (Deng and Yang, 2014).

GDP rate is expected to have a considerable influence on the number of M&A transactions because larger economic markets with more opportunities and are more capable of absorbing foreign direct investment.

Inflation rate is considered one of the most relevant macroeconomic factors that could significantly affects the decision of investors when making an investment but a few existing studies have done research in investigating the relationship between inflation and mergers and acquisitions activities.

Other authors found a negative relationship between inflation variable and the evolution of M&A in UK entities (Boateng et. al. 2014). Black (2000) also investigated the link between inflation and M&A and found a negative link between the variables studied.

Inflation rate is expected to have a positive impact on the number of M&A deals. A high inflation rate does not only make the domestic targets more expensive, but also decreases the return on investments, therefore, investors will seek targets from foreign countries instead, which will increase the volume of mergers and acquisition operations.

Public debt is the amount owed by a country to creditors outside it. Governments often take on too much debt to give benefits to the population, making them popular with voters. To see a country's level of risk, investors compare public data with gross domestic product. Thus, the value of public debt can provide a perspective on a country's ability to meet its payments. When public debt reaches a critical level, no investment is attracted.

The study of Modigliani's (1961) show that fiscal policy uncertainty is an important mechanism through which increases in national debt depress mergers and acquisitions.

National debt dampens mergers and acquisitions operations because it increases policy uncertainty and the value of the option to delay acquisitions (Bloom 2010; Gulen, Ion 2016). Policy uncertainty can harm economy.

3. Research methodology

The aim of the research is to investigate the influence of the current economic and health crisis, on mergers and acquisitions. The data source is the COFACE Institute of Economic Studies and the Vienna Institute of Mergers and Acquisitions. The analyzed period is 2018-2020.

The analysis was performed on two groups according to the classification of the COFACE Institute, namely: high risk countries and low risk countries, so the analysis is carried out in 13 countries in Europe. The hypotheses are:

Hypothesis 1 (H1): There is an important relation among mergers and acquisitions and real GDP growth.

Hypothesis 2 (H2): There is an important connection among public debt rate and mergers.

Hypothesis 3 (H3): Among Inflation and mergers and acquisitions there is a considerable link. The equation of the statistical model is as follows: $M&A_n = \beta 0 + \beta 1*GDP + \beta 2*INF + \beta 3*DEBT$ TO GDP + $\sum \beta j$ * Controls + ϵ

4. Results and Discussion

Figure 1 shows that ESG factors impact on evolution of mergers and acquisitions. For countries with low risk 89% of the variation of M&As number can be explained by the influence of macroeconomic variables. There is a smaller but significant link between independent variables and the activity of mergers and acquisitions in countries with extreme risk (85%).

Figure no. 1. The relation between M&A and macroeconomic factors during COVID-19

Model Summary b,c										
	R				Change Statistics					
	Country									
	risk low =									
	1			Std. Error						
	(Selected		Adjusted R	of the	R Square				Sig. F	
Panel 1)	R Square	Square	Estimate	Change	F Change	df1	df2	Change	
M&An	0,893 ^a	0.86	0.82	161.39	0.84	34.54	3.00	20.00	0.00	
	R				Change Statistics					
	Country									
	risk									
	extrem =			Std. Error						
	1		Adjusted R	of the	R Square				Sig. F	
Panel 2	(Selected)	R Square	Square	Estimate	Change	F Change	df1	df2	Change	
M&An	0,852 ^a	0.71	0.67	73.64	0.71	16.38	3.00	20.00	0.00	

Source: processed by the author

Figure 2 shows the following ideas presented below.

For cases where country risk is low, between the dependent variable mergers and acquisitions activity and the independent variable public debt there is the most significant link, a strong indirect link because the value of the correlation coefficient is equal to - 0.904, with a Sig. value less than 0.05 and the same influence is found in cases where country risk is extreme only slightly smaller, namely 0.681.

Inflation consumer production index is an important influencing factor mostly in cases which country risk is extrem.

The countries where the public debt influences the number of mergers and acquisitions, are: Luxemburg, Olanda, Norvegia and Elvetia. The countries where the gdp rate influences the evolution of mergers and acquisitions, are: Bulgaria, Croatia, Cipru, Italia, Romania. In the cuntriea: Albania, Belarus, Bosnia and Turcia, public debt and inflation consumer production index are the most influencing factors.

Figure no. 2. Pearson Correlation during COVID-19

Officiation during COVID-1	,	
Pearson Correlation	a. Selecting only cases for which Country risk low = 1	c. Selecting only cases for which Country risk extrem = 1
M&An	1.000	1.000
GDP	.109	.108
INF	097	674
PD	904	681
N	39	39
Sia < 0.05		

Source: processed by the author

The equations of the regression model according to the data presented in figure 7 are the following:

M&An – Country risk low = - 460,77 + 61,87*GDP – 34,18*INF – 27,49*DEBT_TO GDP + ε (1.1),

M&An – Country risk extreme = $119,43 + 17,17*GDP - 14,29*INF - 3,3*DEBT_TO_GDP + ε$ (1.2),

Figure no. 3. Regression coefficients

Regression coefficients		c. Selecting only cases for which Country risk extrem = 1
M&An - Constant	-460.77	119.43
GDP	61.87	17.77
INF	-34.18	-14.29
PD	-27.49	-3.33
N	39.00	39.00
Sig.<0.05		

Source: processed by the author

Based on the regression equations, the following ideas are drawn:

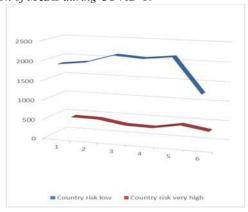
At Country risk low level

- a percentage increase in gross domestic product rate generate an increase in the mergers and acquisitions number rate by 61% and with 11% the mergers and acquisitions value rate;
- a percentage increase in inflation consumer production index generate a decrease in the mergers and acquisitions number rate by 34% and with 14 % the mergers and acquisitions value rate;
- a percentage increase in public debt generate a decrease in the mergers and acquisitions number rate by 27% and with 4% the mergers and acquisitions value rate.

At Country risk extreme level

- a percentage increase in gross domestic product rate generate an increase in the mergers and acquisitions number rate by 17 % and with 1 % the mergers and acquisitions value rate;
- a percentage increase in inflation consumer production index generate a decrease in the mergers and acquisitions number rate by 14% and with 0,29 % the mergers and acquisitions value rate;
- a percentage increase in public debt generate a decrease in the mergers and acquisitions number rate by 3% and with 0,15% the mergers and acquisitions value rate.

Figure no. 4. Evolution of M&As during COVID-19



Source: processed by the author

Based on figure 4 it can be seen how on high risk markets, characterized by low economic growth (2.66), high inflation (5.45) and above average public debt (72.92), companies are reserved to enter and to expand in these markets (the number of mergers and acquisitions is very small - 86 - and the trading value is minimal - 3.27).

Stable markets, with low risk characterized by above average economic growth, low inflation and below average public debt, cause an expansion of companies in these markets.

5. Conclusions

The current economic and health crisis is also likely to continue to have a huge global impact on mergers and conditions.

On a large scale and in a very short period of time, many companies have closed or significantly reduced their operations, many workers have been laid off or laid off, supply chains have been disrupted, and oil demand has low.

Mergers and conditions have withstood and recovered from economic crises every time, but this time the uncertainties of the current health crisis have led to a drastic reduction in these operations.

The number of mergers and acquisitions in the unpredictable business environment in high-risk countries was very small.

And yet the current pandemic has its advantages. This has caused many companies to go through a digital transformation that would otherwise have taken about 10 years.

Companies also had to adapt their business models to comply with the new social distancing measures, and this situation gave companies an insight into their current weaknesses and gaps should fill in for a successful future.

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7. References

- Amankwah-Amoah, J., Khan, Z., Wood, G., 2021, COVID-19 and business failures: The paradoxes of experience, scale, and scope for theory and practice, *Eur. Manag. J.*, volume 39, pp. 179–184.
- Aminian, N. and Campart, S., 2005, Macroeconomic Determinants of Cross-Border Mergers and Acquisitions European and Asian Evidence, *International Conference at the University of Le Havre*, pp. 2-15.
- Boateng, G., Hua, X., Uddin, M., Du, M., 2014, Home country macroeconomic factors on outward cross-border mergers and acquisitions: Evidence from the UK, *Research in International Business and Finance*, vol. 30, issue C, pp. 202-216.
- Doytch, N., Cakan, E., Upadhyaya, K., 2011, Sectoral growth effects of Untied States mergers and acquisitions: a time series analysis, *Journal of Applied Economics & Business Research*, Vol. 1, Issue 1, pp. 4-11.
- Doytch, N., 2012, Linkages between mergers and acquisitions (M&A) and economic growth, *Business Review*, Vol.1, No.3, pp. 75-80.
- Healy, B., 2021, M&A in 2021: Recovery and Acceleration. Morgan Stanley, available online: https://www.morganstanley.com/ideas/mergers-and-acquisitions-outlook-2021-rebound-acceleration accessed on 20 June 2021.
- Kamaly, A., 2007, Trends and Determinants of Mergers and Acquisitions in Developing Countries in 1990s, *International Research Journal of Finance and Economics*, vol. 8, pp. 16-30.
- Kummer, C., 2006, Mergers & acquisitions in the pharmaceutical industry in South America: activity and strategic intentions, *The institute for Business and Finance Research*, Vol. 1, No. 1, pp. 169-172.
- Kyrkilis, D, Pantelidis, P., 2003, Macroeconomic Determinants of Outward Foreign Direct Investment, *International Journal of Social Economics*, 30/7, pp. 827-836.
- LaBerge, L., O'Toole, C., Schneider, J., Smaje, K., 2021, How COVID-19 Has Pushed Companies over the Technology Tipping Point—And Transformed Business Forever. McKinsey & Company, Available online:https://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-

<u>insights/how-covid-19-has-pushed-companies-over-the-technology-tipping-point-and-transformed-business-forever</u>, accessed on 13 august 2021.

- Levy, M., Lloyd, M., Jackson-Moore, W., 2020, Global M&A Industry Trends, available online: https://www.pwc.com/gx/en/services/deals/trends.html, accessed on 7 June 2021.
- Martynova, M., Renneborg, L., 2008, A century of corporate take-overs: What have we learned and where do we stand?, *Journal of Banking & Finance*, pp. 2148–2177.
- Shleifer, A., Vishny, R.W., 2003, Stock market driven acquisitions, *Journal of Financial Economics*, pp. 295–311.
- Martynova, M., Renneborg, L., 2008, A century of corporate take-overs: What have we learned and where do we stand?, *Journal of Banking & Finance*, pp. 2148–2177.
- Xiaoxuan, Ji, 2016, How the GDP will affect M&A deals in US, Southern Illinois University Carbondale, *OpenSIUC*, pp. 1-23.

The Impact of Access to Finance on the Performance of the SME Sector

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Abstract

In this research paper we aimed to analyze the impact of access to finance on the performance of SMEs. The aim of the research is to evaluate empirically and analyze the effects of changes in the macroeconomic environment, in particular the access of bank loans to companies on the performance of SMEs. In order to reflect a more realistic picture of the influence of macroeconomic factors on the performance of the SME sector, the analysis covered a period of 10 years (2009-2018). Overall, the empirical study reveals that the main determinants of SME sector performance are gross capital formation and real GDP growth rate.

Key words: access to finance, SME performance, macroeconomic environment, added value **J.E.L. classification**: C33, L25

1. Introduction

The importance and timeliness of this issue is highlighted by the position of SMEs in the private sector for both developed and developing countries. The main aim of the research is to investigate whether the performance of small and medium-sized enterprises in the EU28 is influenced by access to finance. Thus, we investigated the extent to which macroeconomic variables directly or indirectly influence the performance of SMEs.

Currently, small and medium enterprises constitute 99.8% of the total number of existing companies in the European Union and over 99% of the total number of existing companies in Romania. SMEs are considered to be the engine of the economy due to the generation of new jobs and the contribution to creating value added and reducing unemployment. SMEs are considered a very important source of job creation, growth, innovation, competitiveness, dynamism and flexibility. I also consider that the performance of SMEs is a very important topic to study due to the fact that they have a major influence on gross domestic product and unemployment. Given the constant changes taking place in the economy, I consider it vital to analyze the performance of SMEs, a performance that is influenced by a number of macroeconomic factors. Therefore, the main alternative indicators that measure the performance of small and medium enterprises are: the number of SMEs, the added value created by SMEs and the number of employees in SMEs.

2. Literature review

The performance achieved by small and medium enterprises is influenced by certain economic factors, factors that can be grouped into the following categories:

- > General structural factors: long-term unemployment rate, the process of digitalization of the economy, labor force, indicators that measure competitiveness in business;
- > Cyclical factors: such as the production deficit encountered at national level, the long-term interest rate, the unemployment rate;
 - Macroeconomic policy variables: such as the real short-term interest rate;
- Factors that refer to the specific challenges faced by SMEs in this category we can include the issue of accessing funding sources and finding new customers.

The main alternative indicators that measure the performance of small and medium enterprises are: the number of SMEs, the added value created by SMEs, the number of employees in SMEs

Cicea, Popa, Marinescu and Ștefan (2019), use a series of macroeconomic indicators, which also refer to the economic aspects of SMEs with an impact on their performance. Thus, among the analyzed indicators are added value, corruption perception index, absorption rate of funds, GDP, general public expenditures, inflation rate, life expectancy at birth, population by level of education, unemployment (annual average). The inflation rate can influence the cost of capital, which causes an increase in the cost of producing goods and providing services. Another indicator used in the analysis was the average life expectancy at birth which indirectly generates information about the health of employees, a very important element in increasing the performance of SMEs. Of the variables analyzed as having an influence on the performance of SMEs, only four of them resulted in one-way causal relationships with them, namely: the corruption perception index, GDP, unemployment (annual average) and the absorption rate of funds.

The performance of SMEs is an important topic to study due to the fact that they have a major influence on gross domestic product (GDP) and unemployment. Thus, both at the level of the European Union and at the global level, SMEs have an important share in GDP and in terms of reducing unemployment, aspects that do not apply in the case of centralized economic systems. Factors influencing the increase of the added value of SMEs in the countries of Central and Eastern Europe were analyzed by Rusu and Roman (2017). The results obtained showed that the total tax rate, exports of goods and services and private final consumption are statistically significant and have a strong influence on the performance of SMEs. Roman, Rusu and Stoica (2018) researched from an empirical point of view how the factors specific to the institutional environment influence the dynamics of new business creation, depending on the degree of economic development of the country. The results of the study showed that the formation of new businesses in the member countries of the European Union is significantly related to the institutional environment. Thus, the effects of institutional variables on setting up new businesses are different, depending on the economic stage of development of the countries studied. Similarly, Roman and Rusu (2018) analyzed how macroeconomic changes and the quality of institutions affect the level of entrepreneurial activity in 18 member states of the European Union.

The literature on entrepreneurship (e.g., Ipinnaiye, Dinnen, & Lenihan, 2016) considers that the performance of SMEs is influenced by internal factors as well as macroeconomic factors (unemployment rate, inflation rate, competitiveness, exchange rate for exchange credit granted to the private sector, etc.). The mentioned authors consider that the importance and implementation of a correct strategy for SMEs is influenced by the existing macroeconomic conditions and therefore the enterprises modify their strategies according to the changes in the environment in which they operate. Empirical analysis has found that the macroeconomic environment directly influences the growth and development of SMEs (they register a higher growth when aggregate production increases).

The analysis of the effects of macroeconomic factors, including GDP growth and inflation in terms of sales growth, was performed by a small number of studies. *Beck, Kunt, and Moximovik* (2005) analyzed the effects of firm size, financial, legal, and corruption barriers on the growth rates of SME performance, given GDP per capita, GDP in millions of dollars, and inflation as control variables.

The key factors influencing the establishment of a new business were analyzed by *Roman, Bilan and Ciumaş (2017)*. Thus, the effects of some macroeconomic, demographic, individual and business environment factors on the dynamics of creating new companies were evaluated. The results of the study showed that macroeconomic and demographic variables are the most significant determinants, followed by the individual characteristics of entrepreneurs and the business environment. Also, *Rusu and Roman (2017)* analyzed which are the possible determinants of entrepreneurship in the member countries of the European Union, by testing the relationship between a series of indicators and total entrepreneurial activity. The results of the study showed that the inflation rate, foreign direct investment, access to finance and the total tax rate are the main macroeconomic determinants of entrepreneurship.

3. Research methodology

In order to reflect a more realistic picture of the influence of macroeconomic factors on the performance of the SME sector, the analysis covers a period of 10 years (2009-2018), and the variables included in the study are represented by domestic credit to the private sector by banks (% of GDP), the annual growth rate of real GDP, the unemployment rate, the inflation rate, the tax rate, the gross capital formation, foreign direct investment.

The performance of SMEs at country level is expressed by three indicators, namely: *number of SMEs, number of employees, added value*, and in this research we aimed to investigate the performance of the SME sector in EU countries under the impact of indicators macroeconomic, performance measured by added value. It should also be noted that the macroeconomic environment can be defined by the indicator of the share of bank loans in GDP, a variable that can be used to measure the availability of credit to improve this sector.

In this paper we will perform an empirical application research, using Panel data. The data used in carrying out this research work are taken from Eurostat and the World Bank, the analysis being performed for the period 2009-2018. The sample for which this study was conducted consists of the 28 member states of the European Union, the analysis using country-level data. The *dependent variable* used in this research paper is the *added value* and the *independent variables* are the *internal credit granted to the private sector by banks* (% of GDP), the annual growth rate of real GDP, the unemployment rate, the inflation rate, the tax rate, gross formation capital and foreign direct investment (see Table no 1). We chose these variables, taking into account the representativeness and availability of data for all 28 member states of the European Union.

Table no. 1. Description of the variables included in the study

Variable name	Variable symbol	Description	Unit	Data source	Previous signs
Added value	AV	Added value	%	Eurostat	
Internal credit	Domestic_credit	Internal lending to the private sector by banks	% GDP	World Bank	+
The economic activity	Gdp_growth	Annual real GDP growth rate	%	Eurostat	+
Unemployment	Unemp	Unemployment rate	%	World Bank	+/-
Inflation	Inf.	Inflation rate (average annual rate)	%	World Bank	+/-
Tax rate	TAX	Total tax and contribution rate	%	World Bank	-
Investment level	GCF	Gross capital formation (annual growth)	%	World Bank	+
Foreign direct investment	FDI	Foreign direct investment	% GDP	World Bank	- /+

Source: (own processing according to the specialized literature)

The dependent variable is the value added created by the SME sector, an indicator that is expressed as an annual percentage change. Thus, out of the three indicators that measure the performance of SMEs, we chose to increase the added value, according to several studies we analyzed (Rusu and Roman, 2017).

Numerous studies (Moscalu, Girardone and Calabrese, 2020; Nizaeva and Coskun, 2019; Rusu and Roman, 2017;) have indicated that easy access to finance is one of the most important problems for SMEs. In European countries, the financial system being focused on banks, the most important resource for bank financing of companies is bank loans. Thus, in the study we took into

account the share in GDP of domestic credit granted to the private sector by banks. This indicator is a proxy for access to bank financing and can be positively correlated with SMEs.

Beck, Demirgüç-Kunt, Laeven and Maksimovic (2006) have shown that access to finance and credit costs are the most important barriers for small and medium-sized enterprises, as well as factors affecting the performance of this sector. Thus, the importance of the SME sector in the economy highlights the need to ensure access to finance. Internal credit to the private sector may reflect companies' access to financial resources.

Given the impact that the macroeconomic environment has on the SME sector, Bekeris (2012) considers that it influences the profitability of SMEs, a very important indicator in obtaining a bank loan as a source of external financing. Studies show that financial constraints significantly influence the growth of SMEs, and among the factors that cause this is bank credit to the private sector (expressed as a share of GDP). Internal credit granted to the private sector by banks refers to the financial resources provided to the private sector by other depository corporations, through loans, acquisitions of securities and commercial loans, for which a request for repayment is established. It is measured as total loans to the private sector as a percentage of GDP. We chose this indicator as a proxy for access to finance, an indicator that can be positively correlated with entrepreneurship, as it reflects the increase in credit flows to the private sector. Thus, studies have shown that increasing this indicator can represent better access to finance, which can lead to the creation of new businesses. As a result of the analysis performed in this study, we consider that we will obtain a positive relationship between the availability of internal credit and the studied dependent variable. Nizaeva and Coskun (2019) investigated the relationship between domestic credit and the performance of the SME sector, as a result of the issue of access to finance, and concluded that there is a positive relationship between them.

The economic growth rate is measured by the indicator of the annual growth rate of real GDP, which expresses the value of goods and services produced in a country during a year, but in which prices are expressed in the prices of a reference year. The main elements that characterize the economic cycles are the dynamics of production, unemployment and inflation. Klapper et al. (2014) analyzed that in increasing the performance of an economy, a very important role is played by real GDP growth and job creation.

The inflation rate can be defined as the general increase in prices (expressed as a percentage) over a certain period of time. Bareika (2012) considers that the high inflation rate and the unemployment rate at macroeconomic level generate negative consequences on the profitability of the SME sector, because due to the decrease in the number of employees the market will become less solvent.

The unemployment rate is defined as the population that is able to work and is looking for a job, but cannot find work in a certain period. Bareika (2012) investigated whether there is a correlation between stock prices and macroeconomic indicators, concluding that the highest correlation coefficient was identified for GDP and the unemployment rate. A high unemployment rate will generate less income taxes, taxes collected from the state budget, and the state will have to support the growing budget of the unemployed.

The total tax rate (TAX) measures the amount of taxes and compulsory contributions paid by businesses as a percentage of commercial profits. Rusu and Roman (2016) investigated the relationship between the total tax rate and employment in the SME sector, obtaining a negative coefficient between this indicator and employment in the SME sector.

The level of investments is measured by the gross capital formation (GCF) indicator, an indicator that includes all investments made by companies with fixed assets and that influence the performance of enterprises. Rusu and Roman (2016) investigated the relationship between gross capital formation and performance of SMEs and concluded that this indicator has a strong influence on the SME sector. In their study, it was observed that the highest standard deviation is given by gross capital formation.

Foreign direct investment is defined as the net investment flows required to obtain a sustainable management interest in a firm operating in an economy other than that of the investor. Foreign direct investment can have an impact on setting up new businesses. According to some empirical studies (Albulescu and Tămăşilă, 2016; Lee, Hong and Sun, 2014), they can positively or negatively influence internal entrepreneurship.

For each dimension of the transverse structure we will have the same number of observations, so that our panel is balanced.

4. Results and discussions

Next we will analyze the data that we will use in the descriptive statistics, in the correlation analysis and in the regression analysis. The calculations were performed using EViews econometric software. Table no 2 presents descriptive statistics of the independent variables, and this table shows that the largest standard deviation is observed for domestic credit, which demonstrates that the financial instability generated by the global economic crisis has severely affected private sector lending by banks, in member countries of the European Union. Also, given the fact that among the macroeconomic factors, the share of domestic credit to the private sector in GDP, registers the largest standard deviation, thus demonstrating considerable differences from the financial point of view between the analyzed countries. Foreign direct investment registered significant variations, registering an increase from -40.41% in Hungary in 2018 to 280.13% in Cyprus in 2013. The most stable indicator is the inflation rate, as it is the indicator that recorded the lowest standard deviation. The negative value for the minimum is found in almost every variable (except unemployment rate, domestic credit and tax rate) and shows the negative impact of the financial crisis on these indicators that influence access to finance and the performance of SMEs. The negative minimum value for the real GDP growth rate shows that in the EU countries, in the period 2009-2018, there was a reduction in economic development.

The maximum value is recorded by indicators such as foreign direct investment and domestic credit which have a significant impact on the issue of access to finance faced by the SME sector. Within the EU28 countries included in the sample, the average value of domestic credit is 91.89%, and the lowest value is 25.73%. A very important obstacle affecting entrepreneurship is the tax regimes, so that the very high values of tax rates in some countries are considered a very important impediment to the development of entrepreneurship. The lowest inflation rate was recorded in Ireland in 2009 (-4.48), and the highest was recorded in Romania in 2010, which demonstrates the impact of the economic crisis and recession of that period. Regarding the unemployment rate, it should be noted that the most affected country was Greece, in 2013 (registering the value of 27.47%), at the opposite pole being the Czech Republic, in 2018, with a value of 2.24%.

Table no 2. Descriptive statistics of the independent variables included in the study

Variable	Min.	Max.	Mean	Median	Standard deviation	Skewness	Kurtosis	Number of observations
Domestic credit to the	25.73	255.19	91.8923	87.18	45.3478	1.2489	4.7562	288
private sector (% of GDP)								
Annual real GDP growth	14.80	25.20	1.3906	1.90	3.7339	-0.2922	11.1056	290
rate Unemployment	2.24	27.47	9.4084	8.16	4.6212	1.5329	5.5578	290
,	,	,	. 1.1210	1.35	1.5097	0.2115	3.6265	290
Gross capital		72.17	0.8685	2.41	12.2028	0.0308	2.5967 8.0377	288
Foreign direct investment	54.33 - 40.41		10.5333	2.5839	32.3103	5.3289	37.1875	290

Source: (own calculations based on Eviews econometric software)

The descriptive statistics of the dependent variable show that at the level of the European Union, the performance of the SME sector, measured by the increase of the added value is positive (see table no 3). Following the analysis of the minimum value, we note that in all countries (except

Belgium), the added value created by the SME sector has decreased significantly. The largest decrease was recorded in 2009 compared to 2008 (see Figure no 1), as a result of the outbreak of the financial crisis. The highest growth was recorded in Slovakia, Lithuania and Malta. The largest standard deviation was recorded in Slavacia, Lithuania and Latvia, which shows that the changes in value added in these countries registered the largest changes in the period analyzed (2009-2018).

Table no 3. Descriptive statistics of the change in value added created by SMEs (by country, as an annual percentage change)

The country	Number of observations	Min.	Max.	Mean	Standard deviation
AT	10	-5.3242	6.9077	3.0984	3.3679
BE	10	0.0852	5.3276	3.6783	1.4799
BG	10	-9.8920	15.0851	5.6910	7.7157
CY	10	-12.0391	9.9790	-0.1421	7.3830
CZ	: 10 :	-14.5010	: 10.2036	2.2341	7.3002
DE	: 10 :	-1.6617	9.2525	3.9475	3.4013
DK	10	-9.3550	6.7094	1.7103	4.5403
EE	10	-22.2555	19.3895.	5.9087	10.9004
EL	10	-19.3878	13.6749	-4.6430	10.0108
ES	10	-14.5731	6.9915	-1.5145	6.7228
FI	10	-7.6210	7.0101	2.6169	4.2072
FR	10	-7.6637	6.1174	0.8526	4.4504
HR	: 10 :	-10.1032	8.5757	0.5697	7.4590
HU	10	-15.2138	: 13.2020	3.3961	7.9368
ΙE	10	-17.4921	16.7468	4.6032	11.2396
IT	10	-15.0467	11.1003	0.5416	6.8044
LT	10	-34.9248	26.7759	6.4482	15.8832
LU	10	-3.8954	9.0962	4.4727	4.8357
LV	10	-35.0243	18.3380	3.0170	14.2540
MT	10	-4.6531	22.2934	9.8365	6.7163
NL	10	-4.2861	6.0580	2.4588	3.5397
PL	: 10 :	-21.3670	10.9568	2.5518	9.6095
PT	10	-9.5796	8.2076	0.7844	6.3917
RO	10	-23.6871	14.7183	3.4123	11.2490
SE	10	-13.3539	17.5652	3.6127	8.2800
SI	10	-16.1486	9.6875	2.7563	7.8651
SK	10	-15.8832	68.1702	6.7039	23.1518
UK	10	-18.0166	12.9566	2.6834	10.2633
UE	10	-9.6615	5.3464	1.9358	4.4755

Source: (own calculations based on Eviews econometric software)

Thus, there are large differences between the performance of SMEs (expressed by value added, in the form of increasing the annual percentage change), depending on the country in which they operate, these differences being determined by the specific activity and economy of that country.

Figure no 1 shows the evolution of value added created by the SME sector and it can be seen that the largest decrease in value added created by the SME sector was recorded in 2009, as a result of the outbreak of the financial crisis. However, in the following years there was an increase in this value in the market, but this increase was too small to compensate for the impact of the crisis.

5.35 6.00 4.29 4.13 3.84 4.00 1.64 2.00 0.92 0.00 2009 2011 2012 2013 2014 2015 2016 2017 -2.00-4.00-6.00-8.00 -10 00

Figure no. 1. The evolution of value added created by SMEs (as an annual percentage change), in the EU28, in the period 2009-2018

Source: (own processing based on data provided by Eurostat)

Table no 4 shows the results of the correlation analysis, and it is observed that domestic credit is positively related to the performance of SMEs, having a significant effect on it, with a statistically significant value, as shown by the p value which is less than 0.01. The highest value obtained exists between gross capital formation and the growth rate of real GDP, which indicates a strong correlation between these variables. Due to the fact that there are many values below 0.3, there are no relationships/correlations between these variables studied (between inflation and real GDP growth, the tax rate and inflation and the unemployment rate and the tax rate).

Table no 4. Correlation matrix

	VA	Domesti c credit	FDI	GCF	Gdp_gr owth	Infl	TAX	Une mp
VA	1.0000							:
Domesti c_credit	- 0.2666***	1.0000						
FDI	-0.0764	0.4797** *	1.0000					
GCF	0.6111***	- 0.1550** *	-0.0439	1.0000				:
Gdp_ growth	0.6794***	- 0.2651** *	-0.0183	0.7357* **	1.0000			
Infl	0.0269	- 0.1574** *	-0.0997*	-0.0056	-0.0341	1.0000		
TAX	-0.0435	- 0.2418** *	- 0.3208** *	-0.0186	- 0.1043*	0.0837	1.0000	
Unemp	0.1855***	0.1950** *	0.0120	-0.0856	- 0.2445* **	- 0.1672***	0.0633	1.00 00

^{*, **} and *** indicate that the coefficients are significant at 90%, 95% and Level 99%

Source: (own calculations based on Eviews econometric software)

Table no 5 presents the results of the regression analysis and by performing it we want to determine which of the macroeconomic indicators are the main determining factors for the performance of the SME sector in the European Union countries. According to the data presented in this table, the constant, gross capital formation and the annual growth rate of real GDP are statistically significant.

Based on statistical results and statistically significant coefficients, we can conclude that gross capital formation and real GDP growth rate are the main determinants of value added creation in EU member states. As a dependent variable for the model we chose the performance of SMEs, expressed by the added value.

Table no 5. Regression results

Variable	Coefficient	Standard Error	T-statistic	p-value
Constant	3.7423	1.9859	1.8843	0.0606
Domestic_credit	-0.0175	0.0097	-1.7880	0.0749
FDI	-0.0040	0.0132	-0.3009	0.7637
GCF	0.1708***	0.0424	4.0251	0.0001
Gdp_growth	1.1105***	0.1650	6.7283	0.0000
Infl	0.1394	0.2474	0.5634	0.5736
TAX	-0.0130	0.0318	-0.4096	0.6824
Unemp	-0.0515	0.0836	-0.6170	0.5377
R-squared	0.5005		Adj. R-squared	0.4879

^{*} and *** indicate that the coefficients are significant at 95% and 99% level

Source: (own calculations based on E-views econometric software)

The results of the regression show that the internal credit granted to the private sector by banks highlights an inverse relationship between access to finance and the performance of SMEs. Our results show that a decrease in loans to the private sector by banks is not an obstacle for entrepreneurs. The result obtained in the research is not in line with the expected sign, given however it is similar to the results of previous empirical studies (Sayed and Slimane, 2014; Osakwe, Verter, Becvarova and Chovancova, 2015).

Foreign direct investment (FDI) has a negative coefficient and is not statistically significant, the result being consistent with the results obtained in other empirical studies (Danakol, Estrin, Reynolds and Weitzel, 2017; Djankov and Hoekman, 2000), because when investors we enter a country, the activity of the opportunity-oriented entrepreneur will increase, and the activity based on needs will decrease.

The variables gross capital formation and real GDP growth rate statistically significantly influence the performance of the SME sector, so that the results obtained are in agreement with other studies (for example, *Rusu and Roman*, 2016).

The inflation rate coefficient is positive, but not statistically significant. This indicator is not in line with the results obtained in other empirical studies (eg Roman and Rusu, 2016; Perotti, Volpin and Entry, 2017), where this indicator has a negative effect on entrepreneurship, as inflation increases the costs of starting a business and reduces companies' access to capital. However, regarding the changes in the level of the tax rate, it negatively influences the performance of SMEs, being in agreement with the expected sign (for example, Rusu and Roman, 2016). Also, this indicator is not statistically significant.

The unemployment rate has a negative relationship with the performance of the SME sector. These results are similar to the results obtained in other econometric studies (Roman, Rusu and Stoica, 2018; Vivarelli, 2013; Bekeris, 2012). Both the gross capital formation and the real GDP growth rate significantly influence the performance of SMEs, an aspect demonstrated by the positive coefficients, the relationship being statistically significant at the level of 1%. Thus, a 10% increase in gross capital formation can lead to a 1.70% increase in the performance of this sector. In terms of domestic credit, foreign direct investment, changes in the level of taxation and the unemployment rate, negatively influence the performance of SMEs (the last three indicators being in line with the expected sign). It should also be noted that these coefficients are not statistically significant in this context. The changes in the inflation rate do not have a statistically significant coefficient.

According to the **R-squared** value (see table 5), we find that 50.05% of the variation of the dependent variable (the added value created by the SME sector), is explained by the variations of the independent variables. Thus, we can conclude that the independent variables analyzed in this paper have an important impact on increasing the performance of the SME sector, as shown by the

results obtained: *R-squared* (50.05%) and *Adj. R-squared* (48.79%). To summarize, we can confidently say that the vast majority of selected factors (domestic credit, foreign direct investment, inflation, taxation and unemployment rate) are not statistically significant and do not have a strong correlation with the performance of SMEs. The descriptive statistics of the dependent variable show that at EU level, the performance of the SME sector is positive. The largest increase in this variable was recorded in Slovakia, Malta and Lithuania. As a result of the research conducted, we found that gross capital formation and the growth rate of real GDP are the main determinants of increasing the performance of the SME sector. Although not a new problem in the empirical field, the analysis performed is subject to shortcomings. Thus, the short period of data analysis is due to the unavailability of data on the dependent variable. As a result of these deficiencies, our analysis refers only to a period of 10 years (2009-2018). As a future research direction, we aim to empirically analyze the key determinants of SME performance, as measured by the number of employees and the total number of enterprises. It would also be interesting to include in the analysis the candidate and potential candidate countries for the European Union.

5. Conclusions

Numerous studies have shown that access to finance is one of the most important problems facing the SME sector. As a result of studying the literature, we found that access to finance and credit costs are the biggest obstacle for the SME sector, these factors affecting their performance. Given that in European countries, the financial system is oriented towards banks, the most important resource for external financing of companies is bank loans. Therefore, in the study we took into account the variable share of GDP of domestic credit granted to the private sector by banks. Thus, this indicator is a proxy for access to bank lending, considering that it can be positively correlated with SMEs. The results of the correlation matrix have shown that domestic credit can be positively correlated with the performance of SMEs. Studies show that the growth and development of SMEs is facing the problem of insufficient sources of financing, and especially bank credit, being one of the biggest problems facing this sector.

During the analyzed period, the performance of the SME sector registered a decrease in all the analyzed countries (except Bulgaria), the biggest decrease being registered in 2009, as a result of the outbreak of the financial crisis. The highest growth was recorded in Slovakia, Lithuania and Malta, with significant differences between the performance of SMEs in EU countries, due to the specific activity and economy of that country. The value obtained by R-squared, demonstrates that 50.05% of the variation of the dependent variable is explained by the variations of the independent variables. As a result of the statistical results obtained, we can conclude that gross capital formation and the growth rate of real GDP are the main determinants of increasing the performance of the SME sector.

Given that the SME sector is one of the sectors most affected by the COVID-19 pandemic, I believe that the measures taken at national level have contributed to the survival of this sector. Among the most important measures adopted by the state to save this sector, I consider that they include state aids, the adopted programs (IMM INVEST, IMM FACTOR and AGRO IMM INVEST) and the support of the production for export through guarantees and counter-guarantees. In conclusion, we consider that easy access to finance has a significant impact on the performance of the SME sector, and an appropriate macroeconomic environment can increase the performance of this sector. We also appreciate that the growth markets for SMEs offer them the opportunity to diversify their sources of financing. Given that SMEs are the engine of any economy, we argue that both public authorities and banks must pay special attention to this sector and adopt a series of measures to facilitate access to finance and stimulate the business environment.

6. Reference

- Abbasi, W, A, Wang Z., 2017. Potential Sources of Financing for SMEs and Role of Government in Supporting SMEs. *Journal of Small Business and Entrepreneurship Development*, Vol. 5, No. 2.
- Abdulsaleh, A., & Worthington, A., 2013. Small and Medium Sized Enterprises Financing: A Review
 of Literature. International Journal of Business and Management.

- Albulescu, C., Tămășilă, M. (2016). Exploring the role of FDI in enhancing the entrepreneurial activity in Europe: a panel data analysis. *Springer*.
- Beck, T., Demirguc-Kunt, A., Laeven, L., Moksimovic, V., 2006. The determinants of financing obstacles. World Bank Policy Research Working Paper;
- Bekeris, R., 2012. The impact of macroeconomic indicators upon SME's profitability. *Economika*, Vol. 91.
- Cicea, C., Popa, I., Marinescu, C. & Ştefan, S., 2019. Determinants of SME's performance: evidence from European countries. *Economic Research*;
- Erhan, L., 2010. Modalități de finanțare a întreprinderilor mici și mijlocii [Ways to finance small and medium enterprises]. Scientific Journal of the State University of Moldova.
- Ipinnaiye, O., Dineen, D., Lenihan, H., 2016. *Drivers of SME performance: a holistic and multivariate approach.* The article is published with open acces at *Springerlink.com*;
- Moscalu, M., Girardone, C., Calabrese, R., 2020. SME's growth under financing constraints and banking merkets integration in the euro area. Journal of Small Business Management, Vol. 58;
- Muscalu, M., 2020. Impactul pandemiei COVID 19 asupra unor activități economice din domeniile servicilor și întreprinderilor mici și mijlocii [Impact of the COVID 19 pandemic on economic activities in the fields of services and small and medium enterprises]. Romanian Academy.
- Nanu, M., Spulber, C., Buziernescu, R., 2008. Considerations regarding growing financing capacity of sme's. *Annals of the University of Oradea, Economic Science Series*.
- Nizaeva, M., Coskun, A., 2019. Investigating the Relationship Between Financial Constraint and Growth of SMEs in South Eastern Europe. *SAGE*.
- Rocha, E., 2012 a. The impact of Business Environment of Small and Medium Enterprise Sector's Size and Employment: a Cross Country Comparison. *Kobe Universiy, Japan*.
- Roman, A., Bilan, I., Ciumaş, C., 2017. What Drives the Creation of New Businesses? A Panel Data Analysis for EU Countries. *Emerging Markets Finance and Trade*.
- Roman, A., Onofrei, M., 2015. Accesul la credite bancare al întreprinderilor mici şi mijlocii din ţările
 UE 28: experințe recente şi provocări post criză [Access to bank credit for small and medium-sized
 enterprises in EU-28 countries: recent experiences and post-crisis challenges]. Faculty of Real,
 Economic and Environmental Sciences, Bălţi;
- Roman, A., Rusu, V., 2011. Constraints on Bank Lending to SMEs from Romania and Supportive Measures. *EuroEconomica*, Issue 5 (30).
- Roman, A., Rusu, V., 2018. Macroeconomic and institutional drivers of entrepreneurial activity. A
 cross-country empirical assessment. International Scientific Conference Business and Management.
- Roman, A., Rusu, V., 2012. The access of small and medium size enterprises to banking financing and current challanges: the case of EU countrie. *Annales Universitatis Apulensis Series Oeconomica*.
- Roman, A., Rusu, V., Stoica, O., 2018. Institutional environment and economic development in UE countries: the impact on new business formation. Transformations in Business Economics, Vol. 17.

The External Public Audit of the Budgetary Programs – Preparatory Activities

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Abstract

Although performance audit allows greater freedom in choosing themes, The Supreme Audit Institutions select only those themes and entities which are likely to significantly contribute to performance improvement. When choosing the budget program that makes the object of the audit, we must take into consideration an analysis of the entire system or area of which it is part, in order to be able to make the most appropriate decision in terms of the efficiency of the audit work. The paper aims to research the functions of external audit by providing relevant information on financial and economic activity in the public sector. We tried to highlight the information that need to be taken into consideration when referring to the preparatory activities (preliminary stage) of an external audit and we made a case study regarding the preliminary activities of the audit for the National Agency for Fiscal Administration from Romania.

Key words: public audit, budget program, preliminary activities, external audit, budgetary programs **J.E.L. classification:** E62, G28, G38, H6, M21, M42

1. Introduction

At present time, there is insufficient information related to the "public audit" topic. Public audit is usually being presented as a derivate branch of private audit. The legitimacy of the public audit can be achieved by promoting transparency, taking into account that it benefits from important resources. Also, one of its roles is to find justifications on how to use and assign public money (Heald, 2018).

The purpose of the paper is to present the external audit process in the public sector, ensuring an improvement of the decision-making process, documented on evidence, establishing recommendations for selecting appropriate decisions, correcting non-conformities discovered within the public institution, the result being optimal for all interested parties as well as for the society as a whole. Also the purpose of the paper is to analyze the legal basis on which the external audit is being practiced in the Romanian public sector. The responsibilities of the public authority were taken into account in order to produce a significant impact on the economic and social well-being.

The external audit for public sector institutions is performed by SAI (Kontogeorga, 2019). The Court of Accounts, as the supreme audit institution in Romania, performs the activity of external public audit. Its function is considered to be indispensable, guaranteeing the responsibility related to the administration of public money in legal and efficient conditions established by the budgetary laws (Bobes, 2010). Transparency related to government's performance can increase confidence, but it can also have adverse effects, when the reported performance has not reached the goal initially set, the interpretation of results having unsatisfactory impact. This should not lead the public audit institutions to abandon their transparency objective, but to demonstrate their independence from the executive.

2. Literature review

The present research is based on academic works, published by the Institute of Scientific Information (ISI) Web of Knowledge data base in August 2021. We filtered the information guided by 2 key terms: "external audit" and "public sector". Thus, by reading the introductions of the initially found works, a number of articles outside of our research area were excluded, and the selected ones were systematized according to the chosen research topic.

We have also studied the legal regulations and websites of SAI (Supreme Audit Institutions). The literature analysis was performed by synthesizing information related to external auditing in the public sector, whose objective is the recognition of omissions, offering possible research directions in approaching external auditing in the public sector. The financial management of the efficiency and quality in a country is realized with the help of the decisive contribution of the SAI, which have acquired new approaches of the governmental audit with a significant impact on the control of public finances (Kontogeorga, 2019). Within the SAI, the legal regulation of the public sector audit has the capacity to present original approaches on public audit institutions, approaches that involve their independence and function.

As evidenced by a specialized study, the population confidence in its own government deteriorates as time passes, reaching 45% in most OECD (The Organization for Economic Cooperation and Development, 2021) countries and 65% in EU countries, this being an alarming signal considering that the private sector responds to public policies and contributes to the sustainable economic development of the country (Heald, 2018).

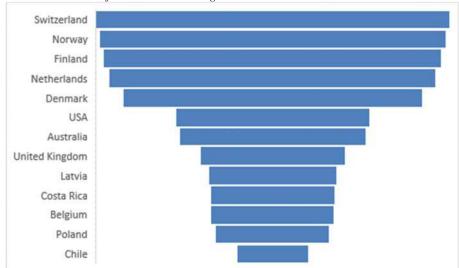


Figure no. 1. Citizens' confidence in their own government

Source: (processing after OECD, 2021 and European Commission, 2020)

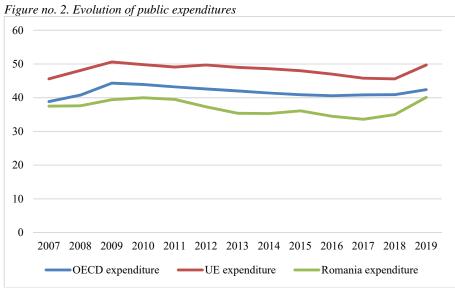
Thus, in figure 1 we summarized the situation of the countries according to the degree of trust of the population in the government of the country. As we can see, the most credible governments are those of countries such as Switzerland, Norway, Finland, Netherlands and Denmark, with over 70% points of trust, and at the opposite pole with a weight of about 30% are countries such as: Chile, Poland, Belgium and Costa Rica. Romania has a score of about 30%, far below the European average, next to Serbia and Montenegro, Bulgaria etc.

The integrity of public management is affected by inappropriate behaviors, among which we can mention: conflicts of interest, fraud, influence peddling, erroneous financial statements, bribery, etc., all with a significant impact on the society as a whole. This situations arise the need to eradicate these phenomena from the base.

A study conducted at European level indicates that the local sector allocates public spending on average of about one fifth of GDP (Gross Domestic Product), public procurement being more relevant given the budget constraints, high transparency and minimization of governmental

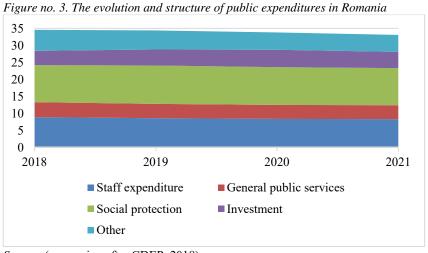
dimensions. As also stated by Marques central administration functions have been delegated to municipalities so the existence of an external audit is fundamental to be able to certify the relevance and correctness of the information provided by the municipalities.

In 2019, the public expenditures in Europe represented approximately 45% of the GDP, as seen in figure 2, almost half of these being made for the intelligent and favorable growth of inclusion, followed by sustainable growth and administration.



Source: (processing after OECD, 2021 and European Commission, 2020)

In Romania, the government has made public expenditures in proportion of 35% of GDP, and it is expected that by 2021 they will reach 33.1% of GDP. The structure of these expenditures is summarized in figure 3.



Source: (processing after CDEP, 2018)

Heald (2018) highlight that the public audit is only part of this topic, given that government decisions are made internally. Public audit can only bring an interpretation of government performance. Thus, the confidence generated can be interpreted as an effect, but the promotion of transparency should be an aim we must achieve.

The auditor has the task of verifying the accuracy of the financial statements, proving the results achieved with the planned ones, also the compliance audit involves researching the existence of the authorized value and its use for the purposes provided above, while the performance audit implies the implementation of the government policy so that the taxpayers can obtain value for taxes paid (Isaksson et al. 2012).

Among the attributions of the audit we can also mention the ease of optimizing the results of the public administration, by using the effective measures made through creativity and cooperation to remedy the public difficulties (Meyer et al. 2019). The identification of areas characterized by high risk is interpreted different in specialized literature. This gives us reason to think that special attention should be paid to the audit of government departments characterized by hazard or the evaluation of certain programs, regardless of the departments involved, which may be the subject to certain excesses (Isaksson et al. 2012)

Within the public sector, efficiency is an essential necessity, given that government agencies must use public funds to provide goods and services to the private sector. Thus, in order to guarantee the efficiency and effectiveness of the public sector expenditures, monitoring mechanisms such as internal and external audit are necessary (Pilcher et al. 2013)

3. The external public audit

In the specialized literature there are countless studies related to the connections established in the activity carried out by the internal and external auditors and how the result of their reports is affected, in terms of quality, professionalism, independence and efficiency.

Thus, opportunities are created for the cooperation between the external and internal audit, considering the increase of the present internal audit function, even the ISA (International Audit Standard) emphasizes the fact that the EA (external audit) can use the audit evidence of the IA (internal audit) being able to request assistance from them both, carrying out activities whose objectives are identical and thus the fruitful cooperation is justified.

The problem is, on one hand, the increase of efficiency by excluding the duplicated activities and implicitly the decrease of the cost related to the external audit activity, and on the other hand the quality of the external audit can be significantly affected by this collaboration. The decision from the point of view of cooperation is taken by the external audit so as not to affect the purpose of the activity carried out to provide adequate information to the interested institutions and to the general public (Argento et al. 2018).

At the level of the public sector, however, there is little research that shows the connections between internal and external audit. The external audit requires greater trust in the activity of internal audit. Thus, in terms of efficiency, the dependence of the external audit on the internal one consists in: removing the duplication, managing the multiple stakeholders, performing the audit without exceeding the established deadlines, declaring the established objectives. The researchers observed that from the point of view of the links between internal and external audit, a significant communication and consultation between them have a significant importance. The lack of communication between the two types of audit may indicate a lack of confidence which is not communicated, and thus these information barriers cannot be overcome (Pilcher et al. 2013). Compared to the audit in the private sector, the public sector audit is much more complex given the multitude of entities involved such as parliament, ministries, public sector agencies and also the public itself – entities which have distinct interests, but whose political and economic objectives coincide.

In any market economy, external audit holds a function of major importance, which may be applied differently, depending on the degree of development of the country, so that in developing economies governments establish stricter regulations for these activities in order to increase credibility and confidence in order to absorb more foreign investment (Phuong et al. 2017). From a social point of view, the audit has a significant role considering that it facilitates the understanding of information contained in the audit report based on which decisions with economic impact on the whole society were taken (Lungeanu, 2015).

As stated by Nikolovski et al. (2016), the external audit is performed in the interest of the general public, ensuring economic growth and efficiency, preventing any kind of abuse, financial fraud and corruption.

Pikhotskyi et al. (2019), highlight in its paper that in the public sector, the major concern is the financial control, considering that the support of the unquestionable standards within the budgetary sector has a significant contribution on welfare and social stability, as well as economic security. Thus, the trust of the population in the state and government depends on the efficiency of the financial control. Unlike control, which is a study of inconsistencies through which corrective measures are applied to improve adverse situations, the audit sets out an opinion and a proposal to solve the identified problem, both of which are key factors in supporting the management of an institution. Thus we can affirm that the external audit represents a technique for optimizing the use of public money, through which errors can be identified and optimal solutions can be found to solve them, providing correct information for managing public resources.

With the help of audit directives, the funds for achieving the goals in the public interest can be accessed much faster, through an optimal monitoring of the risks and a use of the financing sources in conditions of maximum efficiency.

Thus, the external public audit represents a process of control and monitoring of public money by carrying out much improved economic and financial activities, which leads to accelerated development and performance of public institutions.

For the existence of an efficient economy based on great objectives, the indispensability of the integrated public audit must be taken into account. Integrated public audit will ensure the identification at the right time of the inconsistencies that may appear related to the established performances and can propose solutions to remedy the non-compliant situations.

The main problem that Romania has faced lately is corruption – a problem that the external audit should permanently highlight in order to prevent the deterioration of the financial discipline, the public order and the waste of public resources, affecting both public institutions as well the population. Thus the main priorities should be aligning the audit standards with those existing at the international level, adapting the audit methodologies to the requirements of the market, as well as propagating the cross-border cooperation as stated by Lungeanu (2015).

External public audit activity in a modern economy is vital to ensure an adequate report on the use of public money. Thus, the external audit should perform independent analyzes related to certain government programs under conditions of maximum efficiency for the use of public resources, presenting their impact and the level of achievement of the set objectives, identifying and evaluating the areas and errors in which the results are below expectations, offering support to the institution or the government for the improvement of inadequate phenomena and formulating directives based on the results obtained by carrying out the audit activity, offering support to the interested parties for maximizing the results of the use of public funds (Ciochin et al. 2007).

After selecting the budgetary program and after approving the audit mission within The Governing Body of the Supreme Audit Institution (Romanian Court of Accounts Plenum), informs the unit that manages the program, the intention to initiate such an audit mission, followed by another stage that includes a series of activities called "preliminary activities" or "analysis of the state of program affairs" and which, on the one hand, implies the realization of the preliminary activities themselves and, on the other hand, the preparation of a report (summary) of the preliminary activities.

4. Research methodology regarding the preliminary activities of an external audit of budgetary programs

When referring regarding the preliminary phase, the auditors must develop several activities that are considered the initial step that should be taken when conducting an audit process. Within this paper we used as research methodology the specific analysis of the most important tools of a system or area of an audit, in order to be able to make the most appropriate decision in terms of the efficiency of the audit work.

These activities aim at establishing the working documents necessary for a good knowledge of the audited field. In the picture below are presented the preliminary activities develop carried out during the external audit.

In order to perform an external audit one of the most important activity is regarding the working tools, the documents that concern the budgetary program and the entity that makes the object of the audit. There may be used a large pile of documents, such as: Organizational Chart, the working rules and regulations used in the application of the program, the organization and functioning regulation of the entity, job descriptions for the staff employed, internal acts regarding the organization and functioning of internal control and internal public audit, the orders by which the powers of preventive financial control and other delegations of competences are assigned, program budget, the financial accounting documents (accounting and reporting), management reports, controlling reports, internal audit plan and audit reports, the control documents drawn up by the control bodies, any other document drawn up at the level of the audited structure that aims to run the program or correspondence (the communications) between the structures responsible for running the program.

Establishing the levels of responsibility in achieving the program's objectives Adequate knowledge of the subject Identification of the main management and control systems that makes the object of the audit PRELIMINARY Establishing the working Identification of activities ACTIVITIES OF THE regarding any other evaluation: **EXTERNAL AUDIT** Preliminary analysis of the Identification of the applicable program legislation

Figure no. 4. The preliminary activities develop carried out during the external audit

Source: (authors' own contribution)

At the same time as requesting these documents, the auditors proceed to elaborate questionnaires regarding the risk assessment on audit areas and make visits to the audited entities, as the case may be, and can organize interviews. Based on the study of the documents, the questionnaires addressed and the organized interviews, there will be obtained information that will allow the formation of an image regarding: the functioning of the budget program from the perspective of pursuing the objectives and achieving the proposed results and the organization and functioning of the entity. For a clearer image, a diagram will be drawn up that will contain the organizational structures, as well as a relationship of decisional and financial nature between them.

The diagram can be divided into sub-diagrams by processes, activities and financial flows involved in the program (for example: human resources management and payroll, acquisitions, heritage management, own revenues). After the identification of the main management and control systems there will be highlight the structures and attributions in the management program and in the internal control process. There will also be identified the procedures and methods with which the internal control operates, as well as the data processing systems, with the explicit indication of how the controlling function is exercised.

One of the most important preliminary activity that should be develop involves the analysis of the external and internal audit reports (including the controlling ones), the financial statements drawn up during the audited periods. There also should be considered the normative acts, the ministerial orders and other regulations regarding the audited program. Carrying out the preliminary analysis of the program, involves performing a first evaluation regarding the objectives and the indicators of the program and if there are not, they must be identified them during the audit execution phase, based

on the information obtained from: interviews, questionnaires or documentation. Also there should be establish a specific system needed for the audit report. After the completion of the activities presented above, the auditors prepare a report that will be the basis for the preparation of the audit plan.

5. Case study on the preliminary activities of the audit for the National Agency for Fiscal Administration

To establish compliance and performance within the National Agency for Fiscal Administration from Romania once every 5 years the once every 5 years goes through an evaluation at the territorial public internal audit structure. Through the specific activities of the audit, the aim is to evaluate the quality of the internal audit, to verify the compliance with the instructions, the norms of the Code of Ethical Conduct and also to issue recommendations in the event of correcting the dysfunctions detected to optimize activities.

The fiscal inspection of individuals and legal persons is carried out according to the legislation, regulations and instructions of the procedures regarding the planning, development and reporting of the activity in order to combat tax fraud and evasion, increase the efficiency and dynamics of collection, as well as optimize voluntary compliance. The people in charge are appointed in the procedures elaborated by the audited structure and by the National Agency for Fiscal Administration, being presented to them the stages, methods and rules that they must follow in order to carry out the activity.

The objectives specific to the fiscal inspection activity are established annually and aim at increasing the efficiency of the activity, of the preventive function, of the effectiveness of the sanctions and also of the degree of responsibility in achieving the established goals.

Thus, the fiscal inspection activity is monitored with the help of performance indicators such as: decrease of fiscal loss on an inspection, share of contributions following the change of the tax base in total verified contributions, additional net value collected per inspector following fiscal inspection, number of inspections performed by an inspector or the level of debt collection following the application of precautionary measures through fiscal inspection.

At the level of the fiscal inspection activity, the audit team identified and monitored the following operational risks: breach of the procedure analysis of the payroll form, performing the electronic control inspection, performing the inspection, document analysis, archiving the action file, communication of fiscal administrative acts, non-compliance with the VAT settlement deadline, impossibility to institute precautionary measures, inadequate performance of coordination, planning, examination and management of inspection activity, alienation of shares/patrimony, entry into insolvency/dissolution until the beginning of the fiscal inspection.

As can be seen from in figure 5, for the audited period, the activity of fiscal inspection of individuals and legal persons was not influenced by significant changes in terms of staff within the structure, registering insignificant fluctuations of staff.

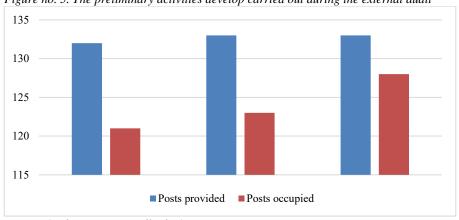


Figure no. 5. The preliminary activities develop carried out during the external audit

Source: (authors' own contribution)

6. Findings

We can highlight that within the fiscal inspection activity, a series of processes take place: conducting tax inspections in order to investigate the legality and concordance of tax returns, the correctness and accuracy of taxpayers' obligations, compliance with accounting and tax legislation, research/assessment of tax bases, establishing differences in payment obligations and related accessories; realization, approval and supervision of the activity program for the structures with fiscal inspection attributions; reporting the fiscal inspection activity by making notifications, reports and summaries regarding the fulfilment of the tasks according to the activity programs.

7. Conclusions

The audit areas mentioned above are generic in nature, being specific to a regular program on which during the preliminary activities no distinct risks have emerged from area to area. Normally, however, within any program there must be some activities that carry a much higher risk for errors than others, as well as the risk of the program registering greater dysfunctions in some areas than others, so there is a need for approach orders given the importance of each area in the audit. As we highlight within our case study, we can conclude that the preliminary activities of the audit for public institution (the national agency for fiscal administration in our case) are very important to establish compliance and performance.

When choosing the budget program that makes the object of the audit, we must take into consideration an analysis of the entire system or area of which it is part, in order to be able to make the most appropriate decision in terms of the efficiency of the audit work.

8. References

- ACCA, 2014. Breaking out: Public audit's new role in a post-crash world. London: Association of Chartered Certified Accountants. Retrieved from https://www.accaglobal.com/ab107
- Achim, M.V., Borlea, S.N. & Anghelina, A.M., 2018. The impact of fiscal policies on corruption: A
 panel analysis. South African Journal of Economic and Management Sciences 21(1), a1970.
 https://doi.org/10.4102/sajems.v21i1.1970
- Argento, D.; Umans, T.; Hakansson, P.; et al., 2018. Reliance on the internal auditors' work: experiences
 of Swedish external auditors. *Journal of Management Control*, Volume: 29, Issue: 3-4, Pages: 295-325,
 https://doi.org/10.1007/s00187-018-00272-7
- Appelbaum, Deniz A.; Kogan, Alex; Vasarhelyi, Miklos A., 2018. Analytical procedures in external auditing: A comprehensive literature survey and framework for external audit analytics. *Journal of Accounting Literature*, Volume: 40, Pages: 83-101
- Anessi-Pessina, E., Barbera, C., Sicilia, M., & Steccolini, I., 2016. Public sector budgeting: a European review of accounting and public management journals. *Accounting, Auditing & Accountability Journal*, Vol. 29, Iss 3, pp. 491 - 519
- Batova Vera; Volkov Andrey; Krugliak Lyudmila; et al., 2019. Independent auditing of public expenditure as a tool to improve the state financial control, *Revista Praxis Educacional*. Volume: 15, Issue: 34, Special Issue: SI, Pages: 608-623
- Bucharest Court of Accounts, 2017. Audit standards [online] Available at http://www.curteadeconturi.ro/
- Bucharest Court of Accounts, 2018. The audit guide of budgetary programs, [online] Available at: http://www.curteadeconturi.ro/
- Bobes F.M., 2010. The financial and the performance audit successful alternatives in managing the public financial resources. Conference: 17th International Economic Conference (IECS) Location: Sibiu, Romania, 2010, Economic World Destiny: Crisis and Globalization? Section Iv: Banking, Accounting and Financial Systems from The 21st Century Perspective Pages: 72-75
- Ciochin G.; Grigorescu S., 2007. External Audit Activities Within Supreme Audit Institutions. Conference: International Economic, Sibiu, Romania, 2007, Romania Within the EU: Opportunities, Requirements and Perspectives, Vol III, Pages: 112-116
- Cumbe, L., Inácio, H., 2018. The impact of external audit on the accountability of the common fund of the Mozambique National Institute of Statistics. *Managerial Auditing Journal*, Vol. 33 No. 6/7, pp. 538-557. https://doi.org/10.1108/MAJ-01-2017-1500

- CDEP, 2018. Raport buget 2018, [online] Available at: http://www.cdep.ro/pdfs/buget/2018/raport/Raport buget 2018.pdf
- Espinosa, F. X. A., & de los í ngeles Torres, 2017. Comprehensive forensic audit as the basis of an efficient management in opposition to corruption and other illicit acts in the public administration. *Revista Publicando*, Volume: 4, Issue: 12, Pages: 848-865, Part: 2
- European Commission, 2020. Budget data, [online] Available at: https://ec.europa.eu/budget (accessed on April 2020).
- Farooq, O., Satt, H., & El Fadel, B., 2020. Political uncertainty and the choice of external audit: international evidence from private firms. *International Journal of Managerial Finance*. Economic policy uncertainty in banking: a literature review.
- Gonzalez B.; Lopez A.; Garcia R., 2008. Supreme Audit Institutions and their communication strategies. *International Review of Administrative Sciences*, Volume: 74, Issue: 3, Pages: 435-461, DOI: 10.1177/0020852308095312
- Gamboa P., Jinsop E.; Ortega H., Xavier; Zea Jimenez, Segundo Ramon, 2017. Reliability of the audit report and decision making in public companies. *Revista Publicando*, Volume: 4, Issue: 12, Pages: 334-347, Part: 2
- Heald D., 2018. Transparency-generated trust: The problematic theorization of public audit. *Financial Acc & Man.* 2018; 34 Pg:317–335. https://doi.org/10.1111/faam.12175
- Isaksson A.; Bigsten A., 2012. Institution Building with Limited Resources: Establishing a Supreme Audit Institution in Rwanda. *World Development*, Volume: 40, Issue: 9, Pages: 1870-1881
- Jansons, E., & Rivza, B., 2017. Legal aspects of the supreme audit institutions in the Baltic Sea region, Conference: 23rd Annual International Scientific Conference on Research for Rural Development, Location: Latvia Univ Agr, Jelgava, LATVIA, Research for Rural Development 2017, Vol 2, Book Series: Research for Rural Development, Pages: 112-117
- Jin, Q., Jin, Y., Tian, G. G., & Xuan, Y., 2021. Does internal corporate governance complement or substitute for external auditing? Evidence from China's anti-corruption campaign. *Abacus*, 57(1), 153-182. https://doi.org/10.1111/abac.12215
- Kontogeorga G. N., 2019. Juggling between ex-ante and ex-post audit in Greece: A difficult transition to a new era, *International Journal of Auditing*, Volume: 23, Issue: 1, Pages: 86-94
- Legea 672/2002 republicata privind auditul public intern
- Lungeanu E., 2015. Considerations regarding the external public audit of reimbursable funds. 7th
 International Conference on Globalization of Higher Education in Economics and Business
 Administration (GEBA), Romania, Book Series: Procedia Economics and Finance,
 Vol: 20, Pages: 358-364
- Marcu N., 2018. Principles and Ethical Values in Public External Audit Activity. Current Issues in Corporate Social Responsibility: An International Consideration Book Series: CSR Sustainability Ethics and Governance, Pages: 185-194
- Marques A., Pinto A., 2019. Procurement Practices and the Municipality Auditing Market. *Journal of Accounting Auditing and Finance*, Volume: 34, Issue: 4, Pages: 524-545,
- Meyer R., Gunther H., 2019. External auditing in public policies of urban mobility: the case of the Florianopolis metropolitan area. *Revista Gestao Organizacional*, Volume: 12, Issue: 4, Pages: 43-62
- Munoz-Izquierdo N., Camacho-Minano M.; Segovia-Vargas M.; Pascual-Ezama D., 2019. Is the external audit report useful for bankruptcy prediction? Evidence using artificial intelligence. International Journal of Financial Studies, Volume: 7, Issue: 2, Article Number: 20, DOI: 10.3390/ijfs7020020
- Mzenzi S., Issa G., Abeid F., 2015. External auditing and accountability in the Tanzanian local government authorities. *Managerial Auditing Journal*, Volume: 30, Issue: 6-7, Pages: 681-702, *DOI:* 10.1108/MAJ-04-2014-1028
- National Agency for Fiscal Administration, 2020, [online] Available at:
- https://www.anaf.ro/anaf/internet/ANAF/despre_anaf/Strategii_ANAF/Rapoarte_studii/
- Nikolovski, P.; Zdravkoski, I.; Menkinoski, G.; Dicevska, S.; Karadjova, V., 2016. The concept of audit risk. *International Journal of Sciences Basic and Applied Research (IJSBAR)*, Volume: 27, Issue: 3, Pages: 22-31
- Nguyen, P. T., & Kend, M., 2017, The perceived motivations behind the introduction of the law on external audit in Vietnam, *Managerial Auditing Journal*, Volume: 32, Issue: 1, Pages: 90-108
- OECD, 2021. Trust in government (indicator). doi: 10.1787/1de9675e-en (Accessed on 23 September 2021)
- OECD, 2017. OECD Guidelines on Measuring Trust, OECD Publishing, Paris. http://dx.doi.org/10.1787/9789264278219-en

- OECD, 2020. Statistics https://stats.oecd.org/index.aspx?queryid=60703
- OMFP nr.1702 din 14.11.2005 pentru aprobarea Normelor privind organizarea si exercitarea activitatii
 de consiliere desfasurate de catre auditorii interni din cadrul entitatilor publice, publicat in Monitorul
 Oficial al Romaniei nr.154 din 17 februarie 2006 [OMPF no.1702 of 14.11.2005 for the approval of the
 Norms regarding the organization and exercise of the counseling activity carried out by the internal
 auditors within the public entities, published in the Official Monitor of Romania no.154 of 17 February
 2006]
- OMFP nr.768/2003 pentru aprobarea delegarii unor atributii din competenta Unitatii Centrale pentru Armonizarea Auditului Public Intern in competenta compartimentelor de audit public intern ale Directiilor Generale ale Finantelor Publice judetene si a municipiului Bucuresti [OMPF no.768 / 2003 for the approval of the delegation of some attributions from the competence of the Central Unit for Harmonization of the Public Internal Audit in the competence of the internal public audit departments of the General Directorates of the County Public Finances and of the Bucharest municipality]
- OMFP 3055/2009 din 29 octombrie 2009 pentru aprobarea Reglementarilor contabile conforme cu
 directivele europene [OMPF 3055/2009 of October 29, 2009 for the approval of the Accounting
 Regulations compliant with the European directives]
- Pikhotskyi V; Rysin V; Lyubenko A., 2019, Effectiveness of financial control and state audit in providing the financial and economic stability of the state, *Financial and Credit Activity-Problems of Theory and Practice*, Volume: 1, Issue: 28, Pages: 205-215
- Pilcher R.; Gilchrist D.; Singh H., 2013. The Interface between Internal and External Audit in the Australian Public Sector. Australian Accounting Review, Volume: 23, Issue: 4, Pages: 330-340, http://doi.org/10.1111/auar.12032
- Porras-Gómez, A. M., 2020. The control pyramid: A model of integrated public financial control. *Financial Accountability & Management*, Volume: 36, Issue: 1, Pages: 73-89
- Rodriguez Puerta, M. J., 2017. External control of financial and economic activities of political parties in Spain: issues up for debate. *Revista General De Derecho Penal*, Issue: 28, Article Number: 419427
- Standardele Institutului de Audit Intern IIA.
- Tušek, B., Ježovita, A., & Halar, P., 2021. The importance and differences of analytical procedures' application for auditing block chain technology between external and internal auditors in Croatia, Economic Research-Ekonomska Istraživanja, 34:1,1385-1408, DOI: 10.1080/1331677X.2020.1828129To
- Williams, T., Klakegg, O. J., Magnussen, O. M., & Glasspool, H., 2010. An investigation of governance frameworks for public projects in Norway and the UK, *International Journal of Project Management* 28, Pages: 40–50

The Fintech Industry in Romania - Assessing the Level of Acceptance for the Financial Services Consumers

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Abstract

The article explores the potential of Fintech for the Romanian financial market, assessing the real value added for the Romanian clients. The methodological approach is based on a customercentric questionnaire related to the digital transformation of the financial industry in Romania and was completed by an analysis through the SPSS software. The research aims at finding how are the financial solutions of the FinTech companies perceived by the public and what are the major concerns related to the FinTech industry in Romania. The research hypotheses are willing to clarify the relationship between the plethora of financial services used, the online banking frequency and the FinTech affinities, suggesting that the early adopters of FinTech are digitally active banking clients. However, the paper outlines an embryonic phase of the FinTech development in Romania, where the respondents were most impacted by the FinTech industry in a passive way.

Key words: FinTech, customer, innovation, banking services

J.E.L. classification: G21, G24

1. Introduction

The entirely process of financial globalization is currently passing a reorganization phase through the financial technology (FinTech), describing a more sophisticated customer in terms of required features, purchasing budget and personal involvement. The financial activity can no longer be viewed on algorithmic basis to achieve optimal returns due to the pressure of some innovative FinTech companies that raised the clients' standards in a more provocative way: they need digital solutions to their financial issues, personalized credit opportunities, reduced costs for their payment transfers or wider investment opportunities. "FinTech is basically the composition of companies or group of companies providing the modern, innovative and financial services through technologies" (Dorfeitner et al., 2017). Considering this definition, the first scope of the present paper is to explore the financial literacy of the Romanian public regarding the distinction between different financial entities (banks and FinTech companies), whether they are aware of the advantages/risks associated to the accessed financial services and how are the Fintech companies perceived by the Romanian population.

The first section includes an overview of the Romanian financial market, identifying the prerequisites of the Fintech development in our country: the number of people that are financially excluded, the Fintech network in Romania, the access to the internet, the technological progress, etc. Another critical point that will be discussed refers to the regulatory framework, in an attempt to provide a balanced relationship between customer protection requirements and technological innovation, as an efficient alternative to the conventional financial services. Starting from the idea that "FinTech firms may pose threats to the profitability of traditional banks as a result of the opening of new financial markets and new financial options" (Manta, 2018, p. 93), our endeavour is to identify the public perception regarding the online banking services, on the one hand, and the

Fintech companies, on the other hand.

In this context, the research hypotheses are willing to clarify the reasons that strengthen the customers' affinities for the Fintech companies, exploring the customer behavior in many ways, from the level of awareness on the FinTech subject to the current satisfaction with the services offered by the banks. The questionnaire provides a good insight into the customers' perspective on the Fintech industry by testing three main research hypotheses:

- H01: There is a strong relationship between the plethora of financial services used by the respondents and their Fintech affinities.
- H02: There is a direct relationship between the online banking use frequency and the willingness to try another financial option, including Fintech.
- H03: There is an indirect relationship between the satisfaction level of the banking clients and their interest for the FinTech services, as a primary determinant to embrace the change.

2. Literature review

The current technological development has impacted the consumer behavior in a progressive way, strengthening its ability to survive in a digitalized world with a plus of benefits: the financial transactions are currently less time consuming, cheaper, and faster. When these features are in line with the security needs derived from the very sensitive nature of the financial services, the process has more chances to become a key direction for disruptive technologies and FinTech opportunities. Until now, the financial services market is still the core of both traditional and innovative financial services providers, blurring the distinction line between competition and cooperation among these actors, especially in a time where the regulatory framework is clearly disproportionate.

Analyzing the FinTech ecosystem in Romania, Bălţoi (2020) has mentioned the good internet connectivity as one of the main factors of the rapid adoption of the FinTech services by the Romanian users. Focusing on the digital challengers as main growth engine in the next period, Novak et al. (2018) identify two potential growth scenarios for Romanian digital economy by the 2025 horizon (Fig. 1.): (1) the business as usual scenario estimates an increase by the percentage of GDP reached by the digital economy to 12% by 2025, from 7% in 2016, the market expanding by EUR 18 billion; (2) the aspirational trajectory of the digital economy in Romania translates into a growth of EUR 42 billion, reaching approx. 20% of GDP (2025). To achieve the second goal, there must be a mixed effort to embrace the innovative technologies for both public/private organizations and individuals, exploring their digital capabilities, investing in the digital infrastructure and developing advanced digital skills. The same study suggests that more than 50% of the working time in Romania is spent on processes that could be made through automation technologies.

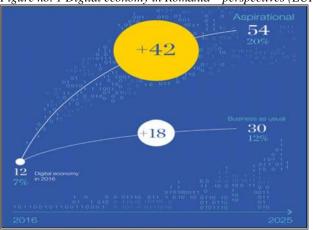


Figure no. 1 Digital economy in Romania – perspectives (EUR billion; share of GDP, %)

Source: https://www.mckinsey.com/

Another critical point is related to the regulatory dilemma: clear rules that often limit the innovation process due to the involved costs or a more flexible regulatory framework that raise the associated risks. The financial regulatory environment was developed before the emergence of the FinTech companies as key financial players and has structural differences among the countries, being both underinclusive and outdated by the magnitude of the phenomenon. In this context, scholars have introduced the term regulatory sandbox to design an optimal solution for the new financial entities, that refers to "a controlled space in which they can test innovative FinTech solutions with the support of an authority for a limited period of time, allowing them to validate and test their business model in a safe environment" (EBA, p. 7).

The traditional financial institutions must comply with the rules established by the authorities and the supervisory organizations, while the FinTech ecosystem is still soft regulated. According to Navaretti et al. (2017), less stringent bank regulation is related to higher investment volumes in FinTech, while Buchak et al. (2018) have concluded that the regulatory burden on the traditional banks from the US mortgage market leads to the FinTech growth. In fact, Fintech is a result of the global economic crisis and of the authorities' failure to protect its citizens, being considered a proper interface for transparent transactions, without a constraint linked to a third-party regulator. The Fintech companies are operating on a very sensitive market, with high systemic risks, potential speculative bubbles and challenging structural shifts that requires a new regulatory framework that place the Fintech companies on the most urgent agenda.

3. Romania on the Fintech map

The internet infrastructure in Romania is highly competitive, the data provided by the Ookla through the Speed test Global Index suggesting the top position of Romania in the ranking. Thus, according to the fixed broadband connection, the download speed in Romania is about 175.39 Mbps, while the global average is about 84.33 Mbps. Moreover, the upload speed data available for August 2020 strengthen the Romanian performance (123.50 Mbps), exceeding more than twice the global average (44.10 Mbps). According to the Figure 2, Romania occupies the third place by download speed for fixed broadband connection, after Singapore (218.07 Mbps) and Hong Kong (SAR) - 205.69 Mbps. The COVID-19 pandemic crisis has highlighted the fundamental role of the internet network for supporting the economy including the educational needs, the remote working or the social requirements. The National Authority for Management and Regulation in Communications (ANCOM) statistics revealed an increase of the average fixed internet data traffic/inhabitant by 14% in 2019 compared to the previous year and a national fixed internet penetration rate of 64%. Moreover, approx. 74% of the total households with fixed internet connection from Romania were high-speed connections, while the structure of the penetration rate was 75% for the urban area and 49% for the rural area.

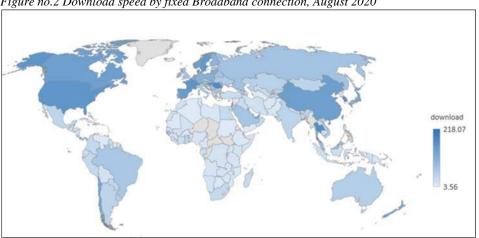


Figure no.2 Download speed by fixed Broadband connection, August 2020

Source: https://www.speedtest.net/global-index#mobile

This context favors the Fintech development in Romania, which is still in its infancy, offering complex financial solutions in an accessible and creative design in order to expand the market and to rise the financial digital technology to a more diversified portfolio. Romania has the potential to strengthen its FinTech ecosystem and to sustain the first Romania's Fintech Map (Figure 3) through visionary companies able to shape not only the local financial environment, but also the global one. At the present, this map includes 46 Fintech companies divided into the following categories: (1) payment and wallets, (2) lending and crowdfunding, (3) investments and wealth management, (4) InsurTech, (5) personal finance, (6) financial infrastructure and (7) Enablers. First, the development of the Fintech industry in Romania can support the financial inclusion engagement of the banking institutions, by targeting a large addressable market in a more innovative way. Even if the Europe's banking population continues its upward trend, the unbanked population in Romania remains low in 2019, with less than half of the population banked (48,27%) compared to the Europe average (77,74%). In fact, Romania ranks last according to this indicator, under Bulgaria (60%) or Hungary (62,33%), while Luxembourg ranks first (85,25%).

Most of the Fintech included on the map have the headquarters in Bucharest, followed by Cluj-Napoca, being also identified Fintech companies that were launched abroad by Romanian entrepreneurs (UK, US, Moldova, Gibraltar, Luxembourg). Approx. 38% of the total number of Fintech companies were on the growth stage of development, 36% on the seed stage, 21% on the pre-seed stage and 5% on the scale-up development stage. The last category includes businesses that operates in Romania, UK, Netherlands, Austria, Denmark, US, Switzerland, Singapore and Middle East. The Fintech companies were founded mainly after 2014, with a boost in 2018 (15 companies) from only 5 Fintech companies founded in the 2017. The last year included in the analysis suggests a decrease in number of the new-entry Fintech companies to 60% of the level reached in 2018. Most of the initiatives were designed only for B2B clients (27 companies), while only 22% were directed to more diverse groups of clients (B2B, B2C, P2P, B2P, B2B2C).

Figure no.3 Romania's Fintech Map 2019

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Source: https://www.futurebanking.ro/fintechedition 2019/front/assets/download/WSRO-Fin Tech Map-v1.0.pdf

The best-known Fintech in Romania (53.20% of the respondents) is Revolut, a London-based Fintech unicorn that offers to its users a profitable foreign exchange, direct debit services, Savings Vaults, a pre-paid card, and an accessible app to facilitate the transactions. Founded by two Russians (Nik Storonsky and Vlad Yatsenko) in 2015, Revolut was launched in Romania in May 2018, with more than 25.000 Romanian users and obtained at the end of the same year a European banking license to protect the money under the European Deposit Insurance Scheme (EDIS) and to provide personal loans or overdrafts. After only a year from its entrance on the Romanian market, Revolut announced its first milestone, 250.000 users, and one of the fastest growth rates in Europe. One of the main drivers of the successful adoption was the peer-to-peer network based on recommendations.

The Romanian user profile of Revolut revealed an average age of 32 years, living in one urban center like Bucharest, Cluj, Timișoara, Iași, Brașov and Constanța. We have focused our analysis on Constanța county and on the young segment of the population in order to obtain a more authentic profile of the Fintech services user and to strengthen the research hypotheses. The most respondents were from the segment of 18-25 years, divided in 22.1% male and 77.9% female. Thus, the starting point of the study was Revolut, as reference Fintech for the 4.0 industry, offering us the opportunity to explore the large area of Fintech companies through the client's perspective. A Revolut analysis revealed that more than 47% of the Romanian young people (aged 18 to 38) save money regularly by using savings accounts (47.95%) or cash (23.22%), while most of the Millennials have declared that are happy to manage their personal budget. Revolut has also launched the stock trading service in Romania, offering the possibility to invest in more than 300 companies listed on the New York Stock Exchange and NASDAQ, providing real-time quotations and data, but also free transactions on a limited trading basis.

Revolut has reached over 1 million accounts in February 2020 on the Romanian market, becoming the second market for the unicorn after UK, with a total value of transactions (ecommerce transactions, foreign exchange, POS and bank transfers) of approx. EUR 3,8 billion. According to the figures, Revolut has surpassed some traditional top 10 banks in terms of the number of cards issued. The recent data also suggest a structural change of Romanian's preferences: Revolut has transformed from a travel card to an every-day financial tool, with more than 60% of transactions executed in country. The investments facility was also accessed by the Metal Revolut card, totalizing over EUR 12 mil., while the main targeted companies were the following: Tesla, Apple and Microsoft. At the global level, Revolut reported more than 10 mil. users in 2019 and revenues of GBP 162.7 million, while losses tripled in the same period due to the large investments in product portfolio and international network expansion.

However, the Fintech regulation is still unclear in Romania and is tangentially touched by the authority bodies, following the European guidelines to introduce them in the national legal framework and is based on the Second Payment Services Directive (PSD2). This directive was transposed in the Romanian legislation by the Law no. 209/2019 establishing the access procedure for third-party payment service providers and creating the Romanian environment for open payment services. First of all, the law extends the action area in order to also cover the one-leg transactions, but also introduces the following third-party providers (TPPs): (1) PISP – a payment service provider that, after the request of payment service user that holds a payment account at another payment service provider, will initiate a payment order; (2) AISP - which is a payment service provider that has the role of an information aggregator, offering information about one/more accounts of an user with either more than one payment service provider or another payment service provider; (3) CBPII – with the main functionality of issuing card-based payment tools. Moreover, the same law distributes the liability when PISPs process transactions, without offering sufficient guidance to solve the problematic aspects in practice. Finally, the Law no. 209/2019 requires a better payment transaction security through the authentication process, which is based on: (1) knowledge, (2) possession and (3) inherence.

The industry is also regulated by the Law no. 93/2009 regarding the non-banking financial institutions, which provides the main access conditions to the credit activity in Romania for the non-banking financial institutions to maintain the financial stability. In the same extent, the Government Ordinance no. 99/2006 defines the specific rules that are applicable to the credit institutions in Romania. The instructions provided by the National Bank of Romania (NBR) on

governance issues referring the retail banking products, which are based on the European Banking Authority (EBA) guidelines, define the implementation requirements for remuneration policies and practices according to the offer of credit products, deposits, payment services, electronic money, etc., while the Government Ordinance no. 113/2009 regulates the payment services. The entities issuing e-money are regulated by the Law no. 127/2011, the e-commerce is subject to the Law no. 365/2002 and the accepted foreign currencies for payment transaction in Romania are included in the NBR Regulation no. 4/2005. There cannot be neglected the consumer protection laws, along with the Law no. 129/2019 on anti-money laundering measures, that complete the regulatory framework in Romania, which is still a general one with few dedicated references to Fintech. In this context, the Romanian legislation on this subject considerably limits the Fintech companies' expansion by offering them few possibilities for long-term investment plans and generating a high regulatory instability that postpone the Fintech maturation process.

3. Research methodology

To achieve the main goal of the paper, a semi-structured questionnaire was conducted to the banking clients from Constanta County, including yes/no questions (Have you heard of the term FinTech?), multiple choice (Which of the following FinTech innovations have you heard about?) or scaled questions (What is your trust level in the FinTech companies?). There were also used matrix questions to determine the frequency in using the online banking payment methods. The questionnaire was distributed in the online version (Google form) through the internet (e-mail) in the period August – September, 2020, being obtained 312 valid questionnaires. The sample was structured on gender basis (77,88% women and 22.12% men) and by residence (35.25% rural population and 64.75% urban population). The data was processed by using the SPSS software, version 26. The questionnaire was considered the most efficient research instrument to collect primary data to analyze the customer's perception regarding the Fintech services providers, their attitudes towards both traditional banks and Fintech companies, along with an effective means of measuring the satisfaction in digital banking used to address the current Fintech accessibility issues.

The questionnaire design was focused on the customers' perceptions related to the financial technology (FinTech), starting from the factual questions (e.g. Which of the following FinTech innovations have you heard about? or Are you currently using a FinTech application?) in order to lay the ground for exploring the feelings (e.g. What is your main concern about using FinTech products?). The closed questions included in the google form were both dichotomous (yes/no questions) and polytomous, offering a wide list of alternatives for the respondents (e.g. FinTech companies, advantages of using the financial technology or the digital banking). Moreover, some closed questions were ranked using a rating scale in order to measure the strength of emotions (e.g. from strongly disagree to strongly agree). There were also employed open questions, allowing respondents to express what they know about Fintech by using their own words (e.g. How would you define the FinTech term?).

4. Findings

To confirm the research hypotheses, we have identified the client's perceptions related to the digital transformation of the financial system based on the customer habits and behavior. According to the data included in the Figure 4, most respondents have owned only basic products (current account + debit card – 59,93% or current account + credit card – 18,58%). The same figure suggests that 5,12% of the total sample own a current account + deposit, while only 16.34% of them own more than two financial products. From this extent, there is still a low level of financial inclusion in Romania, and this can be a sufficient reason to mark the client's behavior regarding the Fintech industry as rudimentary. However, the situation cannot be underestimated, taking into consideration the plethora of financial services used by some customers that access more than two banking services.

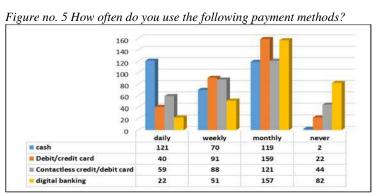
The customer sophistication is more emphasized by the means used to access the service: (1) at the bank's headquarters, (2) internet banking and (3) mobile banking. The results of the questionnaire reveal the mobile banking prevalence, with 46.23%, followed by the internet banking (30,75%) and finally, the physical access at the bank's headquarters (23%). Thus, the new barriers for financial inclusion exclude the internet/mobile connectivity, especially that the previous section has demonstrated the favorable position of Romania according to these indicators. The data provided by the National Institute of Statistics for 2019 strengthen this result, considering that 75.7% of the total Romanian households had access to the internet from home. The structure of the mobile devices used by people aged 16-74, in the last three months, to access the internet, was the following: 97.9% smartphones and mobile phones, 38.2% laptop and 19.1% tablet. Unfortunately, on the top reasons for accessing the internet are not the banking services, the most frequent purposes for which the internet was accessed being those related to communication: social networks (81.7%), voice or video calls (66.9%), correspondence by e-mail (58.5%) or instant messaging (51.3%). The e-commerce has a relatively lower representation compared to other purposes for which the internet is used (42.4% of the total people that have ever used the internet), being used mainly by the young persons between 16 and 34 years (52.4%), employees (49.7%) and students (48.8%).

 current account + credit card current account + credit card, current account = current account + credit card + debit card credit + deposit current account + credit card + debit card + deposit current account + debit card current account + debit card, current account + deposit current account + credit, current account + deposit

Figure no.4 What financial products do you currently own?

Source: author's compilation using the questionnaire

In the same context, the National Institute of Statistics figures suggest that only 11,3% of the people aged 16-74 that have used the internet for personal purposes in the last three months have accessed the internet banking, from which 16.8% employees, 7.6% self-employed people, 5.5% students and 2% were retired. According to the training levels, only 1.5% of the individuals that have used the internet banking were less educated, while 32.7% of them were associated with the higher education level and 7% with medium education. The results of the questionnaire highlight that cash is still preferred on daily transactions, while those based on contactless credit/debit card are gaining ground. However, 82 of the respondents have never used the digital banking services and only 22 of them use digital banking daily. Comparing the payment methods included in the Figure 5, it can be noticed that cash is mainly used in daily transactions, while contactless credit/debit card and digital banking are used on a monthly frequency.



Source: author's compilation using the questionnaire

According to the Table 1, several research hypotheses were tested to clarify the relationship between the plethora of financial services used, the online banking frequency and the respondents' FinTech affinities.

- H01: There is a strong relationship between the plethora of financial services used by the respondents and their Fintech affinities. A Pearson correlation coefficient was used to test the relationship between the two variables, No_products and Fintech_user. The results revealed a slight positive correlation between the two mentioned variables: r = 0.114, N = 312, p = 0.044. The null hypothesis was confirmed.
- H02: There is a direct relationship between the online banking frequency and the willingness to try another financial option, including Fintech. The Pearson correlation coefficient was used to test the relationship between the two variables, Digital_banking and Fintech_user. The results also revealed a slight positive correlation between the two mentioned variables: r = -0.135, N = 312, p = 0.017. The null hypothesis was confirmed.

The results suggest that the Fintech affinities are in line with the number of financial services accessed, the plethora of financial services used by the respondents causing a more focused activity for finding efficient methods to access the banking accounts without the physical presence at the bank's headquarters. The new result was emphasized by the Pearson correlation between the variables No_products and Digital_banking. The results revealed a slight positive correlation between the two mentioned variables: r = 0.132, N = 312, p = 0.020.

Table no. 1. Correlation between Fintech_user, Digital_banking and No_products

		Fintech_user	Digital_banking	No_products		
Fintech_user	Pearson Correlation	1	.135*	.114*		
	Sig. (2-tailed)		.017	.044		
	N	312	312	312		
Digital_banking	Pearson Correlation	.135*	1	.132*		
	Sig. (2-tailed)	.017		.020		
	N	312	312	312		
No_products	Pearson Correlation	.114*	.132*	1		
	Sig. (2-tailed)	.044	.020			
	N	312	312	312		
*. Correlation is significant at the 0.05 level (2-tailed).						

Source: author's compilation using the questionnaire

• H03: There is an indirect relationship between the satisfaction level of the banking clients and their interest for the FinTech services, as a primary determinant to embrace the change. The Pearson correlation coefficient was used to test the relationship between the two variables, Satisfaction and Fintech_knowledge. The results revealed a slight positive correlation between the two mentioned variables: r = 0.113, N = 312, p = 0.046. The null hypothesis was not confirmed. Thus, there is a direct relationship that suggests a slight influence of the satisfaction level with the digital banking and the interest for the Fintech industry, considering that the client's involvement in the online banking make them aware of the Fintech opportunities, training in the same time their capacity to adjust to new disruptive technologies. Thus, the traditional banking and the Fintech industry are perceived rather as innovation enhancers than competitors on the market.

5. Conclusions

The COVID-19 pandemic crisis has highlighted the importance of the internet network for supporting the economy through the innovative technology. Fintech has the potential to disrupt the existing financial market structure, according to the results revealed by the customer-centric questionnaire. The current financial evolution favours the Fintech development in Romania by

shaping a map based on the Romanian initiatives, sustained by the digital capabilities, the infrastructure and the advanced digital skills acquired by the public. However, the Fintech industry in Romania is still in a rudimentary phase, being enhanced by the digital tools development and by the access to the internet, designing a passive role of the customers on the market, more related to the understanding stage. Revolut is, as far, the best-known international Fintech unicorn recognized by the Romanian people, reaching the milestones in an accelerate movement through a peer-to-peer mechanism based on recommendations. The results emphasize the perceptual distinction between traditional and innovative financial institutions, revealing a more sophisticated customer in terms of personal involvement in the purchasing process, the required features of the services and the familiarity with the digital banking options.

According to this study, the Romanian population is aware of the Fintech terminology, identifying at the same time the main advantages and the risks associated, placing the security issues on the top priorities. Exploring the Romanian public awareness towards the Fintech industry, we have found the emergence of a new type of customer that is more interested of the current features of disruptive technologies on the financial market. The customer-centric questionnaire reveals that the client's sophistication is doubled by a more nuanced relationship between the plethora of financial services used (No_products), the online banking frequency (Digital_banking) and the FinTech affinities (Fintech_user), suggesting that the early adopters of the FinTech services on the Romanian market are primarily digitally active banking clients, with multiple financial needs. At the same time, the relationship between the satisfaction level with the digital banking and the interest for the Fintech services suggests that the traditional banking institutions and the Fintech companies are perceived rather as innovation enhancers by the respondents than competitors, widening the market.

The results suggest that there is still a low level of financial literacy in Romania, most of the respondents accessing only basic products and having a limited knowledge about innovative financial services as other studies regarding the level of financial education in Romania showed (Drugă, 2021). This situation affects in a negative way the Fintech industry understanding, due to a poor financial education pattern. The context is improved by the favourable data related to the internet connectivity, that has significantly changed the customer's habits on the means used to access the banking service, with a clear focus on mobile and internet banking. In terms of payment methods, cash is still preferred on daily transactions, while contactless credit/debit card and digital banking are used mainly on a monthly frequency, suggesting an embryonic stage more related to customer segmentation by age or educational background. From the legislative framework, the Fintech current is slowed down by the unclear regulation in the field, which is tangentially touched by the Romanian authority bodies. The current regulatory instability on the subject postpones the Fintech maturation process and limits the Fintech expansion in Romania due to the negative effects on the investment plans, requiring transparent models of functional approach and an active attitude of financial supervisors.

6. References

- Bălţoi, I.C.M., 2020. The fintech ecosystem in Romania. *Proceedings of the International Conference on Business Excellence* 14 (1), 273-281
- Buchak, G., Matvos, G., Piskorski, T., Seru, A., 2017. FinTech, regulatory arbitrage, and the rise of shadow banks. NBER Working Papers 23288 [online] Available at: https://www.nber.org/system/files/working-papers/w23288/w23288.pdf
- Dorfleitner, G., Hornuf, L., Schmitt, M., Weber, M., 2017. Definition of FinTech and description of the FinTech industry. *FinTech in Germany*, 5-10
- Drugă, R.I., 2021. Financial Education, a Challenge for the South and Eastern European Countries Case Study: Romania. Proceedings of the 9th ASECU Youth International Conference and Summer
 School & 10th Jubilee Summer School of the Faculty of Economics Skopje, UKIM, 87–96
- European Banking Authority, 2017. Discussion Paper on the EBA's approach to financial technology (FinTech). [online] Available at:
 <a href="https://eba.europa.eu/sites/default/documents/files/documents/10180/1919160/7a1b9cda-10ad-4315-91ce-d798230ebd84/EBA%20Discussion%20Paper%20on%20Fintech%20%28EBA-DP-2017-02%29.pdf?retry=1

- Manta, O., 2018. Financial Technologies (Fintech), Instruments, Mechanisms and Financial Products. Internal Auditing & Risk Management 4, 78-102.
- National Institute of Statistics, 2019. Accessul populatiei la tehnologia informatiilor si
 comunicatiilor [Population access to information and communication technology] [online]
 Available at:
 - https://insse.ro/cms/sites/default/files/field/publicatii/accesul_populatiei_la_tehnologia_informatiei_si comunicatiilor romania 2019.pdf
- National Authority for Management and Regulation in Communications (ANCOM) [online]
 Available at: https://www.ancom.ro/en/
- Navaretti, G.B., Calzolari, G., Pozzolo, A.F., Mansilla-Fernandez, J.M., 2017. FinTech and Banks: Friends or Foes?. European Economy: Banks, Regulation, and the Real Sector. [online] Available at: https://blog.iese.edu/xvives/files/2018/02/EE_2.2017.pdf
- Novak, J., Spiridon, D., Purta, M., Marciniak, T., Ignatowicz, K., Rozenbaum, K., Yearwood, K., 2018. The rise of Digital Challengers. How digitization can become the next growth engine for Central and Eastern Europe Perspective on Romania. *Digital McKinsey* [online] Available at: https://www.mckinsey.com/~/media/McKinsey/Featured%20Insights/Europe/The%20rise%20of%20digital%20challengers%20Perspective%20on%20Romania/Rise-of-Digital-Challengers Perspective-on-Romania.pdf
- https://www.mckinsey.com/
- https://www.speedtest.net/global-index#mobile
- https://www.futurebanking.ro/fintechedition2019/front/assets/download/WSRO-FinTechMap-v1.0.pdf

Trends of the Energy Market Reflection on the Capital Market in Romania

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Abstract

The study focuses on the implications of the changes occurring on the energy market, specifically on the electricity market, over the performances of the stocks of companies from the energy and utilities sector listed at the Bucharest Stock Exchange. The objective of the paper is to determine if there is a short-term correlation between electricity consumption and price, and the Bucharest Exchange Trading Energy and Related Utilities Index (BET-NG).

After performing a quantitative analysis of the competitive segment of the electricity retail market in Romania, and of the evolution of BET-NG, we used the Pearson's correlation test to find if electricity consumption and price influence the trend of BET-NG.

Our findings suggest that there is a statistical correlation between the consumption on electricity and BET-NG. Electricity price also influences the index, but only in the case of non-household clients, while the price paid by households in not correlated to BET-NG.

Key words: electricity market, capital market, BET-NG, electricity price, Bucharest Stock

Exchange

J.E.L. classification: G10

1. Introduction

Energy market, especially electricity and gas market, has been the topic of interest in the news for the last months. The media concentrated on the increasing price of utilities and its impact on the economy and on households. Our paper will try to look at the other side of the problem: the impact that the developments of the energy market, specifically of the electricity market, has on the stock market performances of the companies from the energy and utilities sector.

We formulated the following research question: does electricity consumption and price influence the stock market performances of energy and utilities companies?

To determine the answer to this question, after taking a short look at the previous writings related to the relationship between energy prices and the stock market, we choose four variables that characterize, in our opinion, the competitive sector of the electricity retail market and a variable for the evolution of the energy and utilities sector of the Bucharest Stock Exchange, and we used the Pearson's correlation test to determine if there is a correlation between each electricity market variable and the stock market variable.

The results of the statistical correlation are discussed in the fourth part of the study. This chapter also includes a quantitative analysis of the electricity market in Romania and of the performances of the energy and utilities companies listed on the Main Market of the Bucharest Stock Exchange.

The conclusion that we reached after our research is that electricity consumption by non-household and household clients that have contracts for the supply of electricity on the competitive market, as well as the price of electricity for non-household clients on this market are statistically correlated in a positive way to the evolution of BET-NG, the Bucharest Stock Exchange index for the energy and utilities companies, while the price of electricity for households in not correlated to BET-NG.

2. Literature review

Energy prices, especially oil prices, play an important role on the evolution of the economy, because energy is used in all economic activities. Therefore, the impact of energy prices over the economy in general is an important research topic for a lot of authors. In the last decades, economists also became preoccupied with the impact of energy prices on the capital market's evolution.

Some studies concentrate on the relationship between energy price and the evolution of macroeconomic indicators in different regions. This studies mainly consider the link between crude oil price and gross domestic product. Oil price changes and macroeconomic indicators are considered to have an indirect relationship (Mussa, 2000, Lardic and Mignon, 2008, Jones et al., 2004), or an asymmetrical relationship (Anton, 1989; Clements and Krolzig, 2002). Other studies identify a positive or negative impact of oil price over the economy depending on whether the economy is oil exporting, oil importing or oil refining (Ha Le and Chang, 2015; Kilian and Park, 2009).

Another research direction that the literature shows is establishing the influence of oil price over the stock market. Some authors demonstrate the impact of energy prices over non-oil or non-gas stock returns. Studies such as Arouri and Nguyen (2010) suggest a negative and week influence of oil price over stock returns of non-oil and non-gas companies. For oil and gas companies, the influence is positive, as shown by Papapetrou (2001). Other authors focus on the connection between oil price movements and stock market indices. Apergis (2009) states that no statistical link between the two indicators can be establishes, so the stock market as a whole is not influenced by the changes of oil price, while Papapetrou (2001) considers that oil price movements can be used to explain the evolution of the stock market.

Other types of energy prices (gas and electricity) are considered to have a long-term effect on the capital market, the data series moving together. On short-term, gas price also affects the stock market, while electricity price is not corelated to stock market indices (Nakhipbekova et al., 2020).

In the next chapter, we will try to verify the existence of a correlation between electricity price and the energy sectoral index of the Romanian capital market.

3. Research methodology

Our study focuses on determining if there is a relationship between the evolution of the electricity price and consumption in Romania and the performances of the energy sector companies on the capital market, on a short-term. In this context, we first conducted a quantitative analysis of the evolution of the competitive segment of the retail electricity market and on the performances of companies from the energy and utilities sector on the Bucharest Stock Exchange.

The data that we use cover the period between January 2019 and October 2021. For the electricity market indicators, we use the average monthly selling prices to final clients on the competitive market (broken down into non-household and household clients) and the monthly consumption of electricity by final clients on the competitive market, data provided by the Romanian Energy Regulatory Authority. For the capital market evolution, we use the monthly average BET-NG, the energy sector index of the Bucharest Stock Exchange, data taken from the Bucharest Stock Exchange monthly reports.

We considered the following variables:

- Non-household clients consumption (NHCC);
- Household clients consumption (HCC);
- Average selling price for non-household clients (APNHC);
- Average selling price for household clients (APHC);
- BET-NG monthly average (BET-NG).

In order to achieve our research objectives, we tested the following research hypotheses:

- H1: there is a positive correlation between BET-NG and NHCC;
- H2: there is a positive correlation between BET-NG and HCC;
- H3: there is a positive correlation between BET-NG and APNHC;
- H4: there is a positive correlation between BET-NG and APHC.

The Pearson's correlation test was performed to check these hypotheses using the SPSS version 21 statistical software.

4. Findings

The competitive retail electricity market in Romania consists of two types of suppliers: competitive and last resort, and two types of final customers: supplied according to law provisions and supplied on the competitive market. Also, customers are separated into non-household and household clients, each category being divided into sub-categories based on the electricity consumption.

The number of suppliers ranged between 80 and 89 monthly for non-household clients, and between 44 and 50 for household clients, from January 2019 to October 2021. From a competitive point of view, the non-household clients segment can be considered a competitive one, based on the values of the Herfindahl-Hirschman Index (HHI), while the household clients segment appears to be have moderate to high levels of market concentration. Figure no. 1 presents the evolution of the number of suppliers for non-household and household clients and the evolution of the HHI for both segments between January 2019 and October 2021.

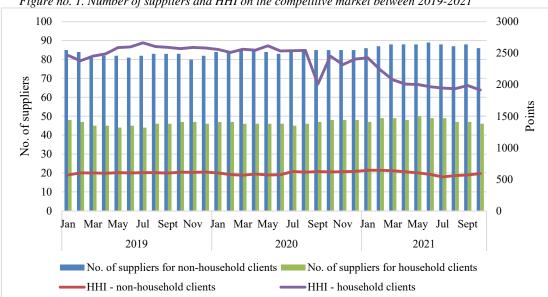


Figure no. 1. Number of suppliers and HHI on the competitive market between 2019-2021

Source: Monthly reports of the Romanian Energy Regulatory Authority 2019-2021

The degree of concentration of the non-household segment remained relatively constant around 600 points, a level that shows the existence of a competitive market. For the household segment of the market, the values of HHI show the existence of a moderately concentrated market until April 2019, then a highly concentrated market until August 2020, and once again a moderate level of concentration from September 2020 until the end of the analyzed period. The process of market liberalization may lead to a more competitive market for household clients, as the trend of HHI shows.

Since January 1st, 2021, the Romanian electricity market was completely liberalized, in accordance with the UE Rules (2019/943). However, a competitive segment of the electricity market existed in Romania before 2021, the number of clients supplied under a competitive regime increasing every month. Figure no. 2 shows the evolution of the number of non-household clients supplied under a competitive regime since January 2019.

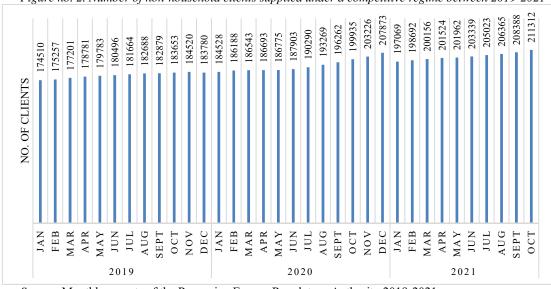


Figure no. 2. Number of non-household clients supplied under a competitive regime between 2019-2021

Source: Monthly reports of the Romanian Energy Regulatory Authority 2019-2021

The number of household customers that have a contract for the supply of electricity on the competitive market also increased during the analyzed period. At the end of July 2021, 4.9 million of such customers existed, representing 56% of the total number of clients, according to the Romanian Energy Regulatory Authority.

The consumption of electricity by non-household clients on the competitive market averaged around 3000 GWh monthly in the analyzed period (figure no. 3).

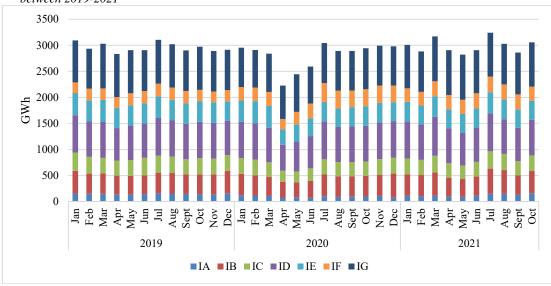


Figure no. 3. Monthly consumption of electricity by non-household clients on the competitive market between 2019-2021

Source: Monthly reports of the Romanian Energy Regulatory Authority 2019-2021

As we previously mentioned, non-household clients are divided into seven categories based on their annual electricity consumption, according to the provisions of EU Regulation no. 2016/1952 (IA – less than 20 MWh, IB – between 20 and 500 MWh, IC – between 500 and 2000 MWh, ID – between 2000 and 20000 MWh, IE – between 20000 and 70000 MWh, IF – between 70000 and 150000 MWh, and IG – more than 150000 MWh). Companies in the fourth and in the last category had the biggest electricity use during the analyzed period. In 2019, a total of 35.202 GWh were

sold to non-household clients on the competitive market. In 2020, we can note a decrease in the value of electricity consumption to 33.777 GWh, and in the first ten months of 2021, non-household clients used 29.879 GWh.

As expected, during the COVID-19 lockdown period, electricity consumption by non-household clients dropped, because a lot of businesses were closed. In April 2020, the lowest consumption was registered, followed by a minor comeback in the next months.

The electricity consumption of household clients on the competitive market on the other hand, manifests an upward trend during the analyzed period (figure no. 4). House-hold clients are divided into five categories, according to the same EU Regulation no. 2016/1952: DA – less than 1000 kWh, DB – between 1000 and 2500 kWh, DC – between 2500 and 5000 kWh, DD – between 5000 and 15000 kWh and DE – more than 15000 kWh per year.

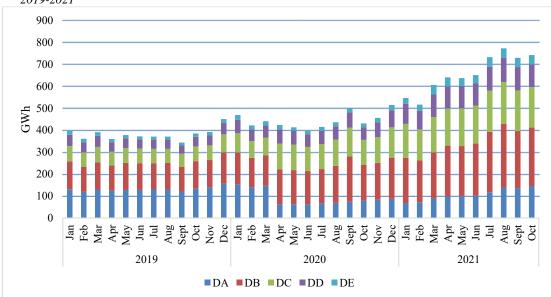


Figure no. 4. Monthly consumption of electricity by household clients on the competitive market between 2019-2021

Source: Monthly reports of the Romanian Energy Regulatory Authority 2019-2021

Consumption of household clients on the competitive market increased in the analyzed period, based on two factors: the increasing number of clients that switched from the universal service regime to the competitive market, and the increasing number of persons working from home during the pandemic.

Regarding the evolution of the average price for non-household and household clients on the competitive market between 2019 and 2021, we can note the existence of an upward trend, as showed in figure no. 5.

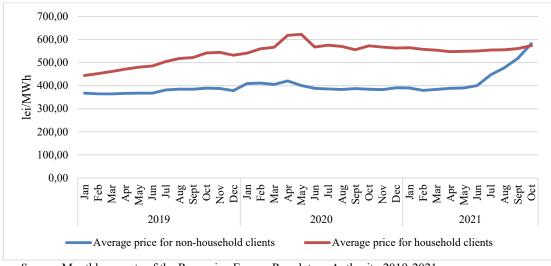


Figure no. 5. Average price of electricity for non-household and household clients on the competitive market between 2019-2021

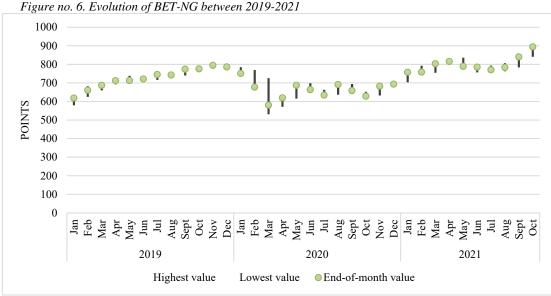
Source: Monthly reports of the Romanian Energy Regulatory Authority 2019-2021

The selling price for household clients has been significantly higher than that of non-household clients during the analyzed period. For non-household clients, the price ranged between an average of 364.29 lei/MWh, in March 2019, and an average of 582.24 lei/MWh in October 2021, when, for the first time, it was higher than the price for household clients. A significant increase in the price for non-household clients appeared starting from June 2021, when the growth rate accelerated, compared to the previous periods. For household clients, the price of electricity on the competitive market increased from an average of 444.20 lei/MWh in January 2019 to a maximum of 622.80 lei/MWh in May 2020, then fluctuated around 560 lei/MWh until October 2021. In October 2021, the average selling price of electricity for household clients on the competitive market was 573.81 lei/MWh.

To conclude our quantitative analysis of the retail competitive electricity market in Romania, we can remark that at the time of the study we have differences between the non-household segment and the household one. The non-household part of the competitive market is a competitive one, with many active suppliers. As expected, the consumption of electricity by non-household is bigger than that of households while the selling price is lower. Competition on the household segment is smaller, with fewer suppliers and higher concentration, but we can note a decrease of the HHI to levels indicating moderate concentration at the end of the period. Market liberalization plays an important part in this trend, as consumers are now allowed to change their suppliers at any time. In terms of consumption and price, the household segment of the competitive electricity market registered an increase both in consumption and in price during the analyzed period.

We will now focus our attention to the performances of the companies from the energy and utilities sector listed on the Main Market of the Bucharest Stock Exchange, and for that we will use the BET-NG index. BET-NG reflects the evolution of the companies from the energy and related utilities sector, listed on the main market of the Bucharest Stock Exchange. It was launched on July 1st, 2008, and it is composed of a variable number of companies, ten at present.

Figure no. 6 presents the evolution of BET-NG between January 2019 and October 2021. For each month, we consider the lowest, highest, and end-of-month value.



Source: Monthly reports of the Bucharest Stock Exchange 2019-2021

At the beginning of the analyzed period, in January 2019, BET-NG fluctuated between 579.37 points and 631.15 points and had an upward trend until the end of 2019. The uncertainties related to the COVID-19 pandemic influenced the evolution of the index in 2020, March 2020 representing the month with the biggest difference between the lowest and the highest value of the index (from 531.25 points to 725.78 points). The year 2020 was characterized by a sinuous evolution of BET-NG. In the first six months of 2021, the index increased its value, then declined in the summer months and increased again in September and October. At the end of October 2021, BET-NG had a value of 894.36 points.

The second part of our study tested the correlation between the evolution of the electricity market and the performances of the energy and utilities companies listed on the Bucharest Stock Exchange. The results of the Pearson's test for each hypothesis are presented bellow.

In case of H1 the result of the test indicates a positive correlation between BET-NG and NHCC, which was statistically significant (r=.348, n=34, p<0.05).

The test result for H2 shows a strong positive correlation between the two considered variables, that was also statistically significant (r=.614, n=34, p<0.01).

For the third hypothesis (H3), the result (r=.500, n=34, p<0.01) is statistically significant and suggest also a strong positive correlation between BET-NG and APNHC.

In case of the fourth hypothesis (H4) the result (r=.048, n=34, p>0.05) reveals that there is no statistically significant correlation between BET-NG and APHC. In this case, the hypothesis is rejected, and the null hypothesis is confirmed.

5. Conclusions

The competitive segment of the retail electricity market in Romania is increasing in size, both for non-household and household clients, due to regulations that allow clients to find the supplier that meet their price expectations. On the other hand, the price of electricity is at a record high level, following the international trend. After considering the evolution of the electricity market in the last two years and that of the performances of energy and utilities companies on the Romanian capital market, we can conclude that there is a statistically significant and positive correlation between electricity consumption and the evolution of the sectoral index for energy companies listed at the Bucharest Stock Exchange. In other words, stock market performance of energy and utilities

companies is influenced by the electricity consumption of both non-household and household final clients. The study also revealed a strong positive correlation between the price of electricity for non-household clients and the evolution of BET-NG, but no correlation between the price of electricity for household clients and the energy index. We believe that a reason behind this statistical result is that the companies comprised in the calculation of BET-NG have stronger connection to the non-household segment of the market, their financial performances being influenced more by the consumption and price of electricity for non-households. Also, there is a significant weight difference between consumption by non-household clients and household clients, therefore, profits from selling electricity to non-households are more significant.

Our study partially confirms the existing findings that the stock market is influences more by oil and gas prices than by electricity prices, but we must note that the focus of our research was set on the energy and utilities companies and not on the entire stock market.

Finally, we consider that the short-term analysis that we conducted can represent a limitation for the study, as well as the use of average monthly data for the variables. Our future research will try to solve these limitations.

6. References

- Anton, M.K., 1989. "Oil and the macroeconomy when prices go up and down: an extension of Hamilton's results," *Journal of Political Economy*, vol. 97, pp. 740–744
- Apergis, N., Miller, S.M., 2009. Do structural oil-market shocks affect stock price? Energy Econ. 31, 569–575.
- Arouri, M.E.H., Nguyen, D.K., 2010. Oil prices, stock markets and portfolio investment: evidence from sector analysis in Europe over the last decade. *Energy Policy* 38, 4528–4539
- Clements, M.P. and Krolzig, H.M. "Can oil shocks explain asymmetries in the US business cycle?" *Empirical Economics*, vol. 27, no. 2, pp. 185–204, 2002.
- Ha Le, T., Chang Y., (2015) Effects of oil price shocks on the stock market performance: Do nature
 of shocks and economies matter? Energy Economics 51, pp 261-274
- Jones, D.W., Leiby, P.N., Paik, I.K., 2004. Oil price shocks and the macroeconomy: what has been learned since 1996. *Energy J.* 25, 1–32.
- Kilian, L., Park, C., (2009) The impact of oil price shocks on the US stock market, *International Economic Review* 50(4), pp 1267-1287
- Lardic, S., Mignon, V., 2008. Oil prices and economic activity: an asymmetric cointegration approach. *Energy Econ.* 30, 847–855.
- Mussa, M., 2000. The impact of higher oil prices on the global economy. International Monetary Fund (8 December. http://www.imf.org/external/pubs/ft/oil/2000/).
- Nakhipbekova, S., Baibosynova, G., Batyrova, N., & Kulbayeva, A. (2020). Analysis of the Relationship between Energy Price Changes and Stock Market Indices in Developed Countries. *International Journal of Energy Economics and Policy*, 10(6), 169–174. Retrieved from https://www.econjournals.com/index.php/ijeep/article/view/10048
- Papapetrou, E., 2001. Oil price shocks, stock market, economic activity and employment in Greece. *Energy Econ.* 23, 511–532.
- Bucharest Stock Exchange monthly reports (2019-2021) available at www.bvb.ro
- Romanian Energy Regulatory Agency monthly reports (2019 2021) available at <u>www.anre.ro</u>

The Analysis of the Local Budgets' Contribution in the Formation of the Public Financial Resources

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Abstract

In Europe, the concept based on which is built the local development theory is represented by the economic and social cohesion. This can be translated in a fundamental principle, namely, the fact that economic and social development should be based on a balanced spatial structure. In this regard, the local budget becomes an important tool of budgetary-financial policy through which the state interferes in the economy at the local collectivities level.

This research paper aims to present an impact analysis of the local budgetary resources on the economy at a national level in conjunction with the public financial resources' formation. The resources of the local budgets are used to finance some economical and socio-cultural objectives and actions, for the coverage of maintenance costs and functioning of the local administrative-territorial units.

Key words: local budget, budgetary resources, local autonomy

J.E.L. classification: H71, H72

1. Introduction

This paper is intended to be a research whose main objective is to highlight the significant impact of the local budgets' resources on the economy, following the decentralization process from Romania.

The hypothesis from which the research starts is the following: the relationship between local budgets and the General Consolidated Budget at the level of the public financial resources has a significant impact on economic development.

The public financial resources are represented by all the monetary means used for achieving economic and social objectives in a set time interval. These resources are assigned by the public authorities, based on a regulation, to carry out the state's tasks, ensuring on a financial plan its proper functioning.

The local public finances have their origin inside the autonomy degree of the administrative territorial authorities regarding the administration of the local community. This is a condition of the financial autonomy because the local autonomy wouldn't be possible without the financial autonomy, which ensures the financial support of the operation. The concept of local autonomy is defined by the European Carta of Local Autonomy as being:" the *right and the effective capacity of the local public administration authorities to solve and manage, within the law, in own name and in the interest of local population, an important part of the public affairs*" (Council of Europe, 2020, p. 12).

The financial relations of constitution of the local budgets' funds take place between the state, on one side and economical agents, public and private institution as well as population, on the other side. Financial decentralization starts to function across the limit from which the use aria of goods and public services of national interest starts to shrink, and the comparative cost of taking decisions at a central level becomes too high.

2. Theoretical background

The local budget represents a document through which are laid down and approved the incomes and expenses of the administrative territorial units for each year.

As a legal act, the local budget emphasizes its quality of main component of the local public finances and of achievement tool of the local autonomy. "From the perspective of local economic and social dynamics, the local budget represents the main tool of the authorities of the public administration from the territory in order to select the financing priorities from the economic and social development strategies of the localities" (Oprea and Cigu, 2013, p. 33).

On the other hand, the local budget represents "the main tool which ensures the decisional autonomy of the authorities of local public administration, which capitalizes efficiently the local resources and improves the use of local funds" (Mosteanu, 2013, p. 72).

Overall, the budgets are raising several supplementary political challenges: the loans, including those multiannual, the funding of the investment projects and the election between the competing projects (Ulbrich, 2011, p. 90).

The General Consolidated Budget represents "the whole of the component budgets of the budgetary system" (Law no. 69, 2010). The General Consolidated Budget reflects all the public financial flows of forming the fiscal and nonfiscal revenues and of their distribution by destination in strict correlation, both with the social needs, as with financial policy objectives specific to the period to which it relates. There is a close link between the General Consolidated Budget and the local budgets in terms of transfers in the form of quotas and deducted amounts from some state budget revenues (like Value Added Tax and income tax).

The distinct organization of public finances based on financial decentralization allows the creation of a clearer imagine of how national public finances are managed (Dogariu, 2010, p. 67).

For the local budget, the property taxes are usually the main source of revenue (Ulbrich, 2011, p. 42). They are included in the category of own revenues together with fees, contributions, other payments, other revenues, and quotes broken down from the income tax (Law no. 273, 2006).

Another important financial resource for the local budgets is represented by the subsidies from the state budget, nominated by destinations (for development of the energy system, pavement of the communal roads, the water supply of the villages, construction of airports of local interest, and so on).

Donations and sponsorships represent another possible income of the local budgets which have a special regime in that it must be respected the destination for which those have been received.

The integration of Romania inside the European Union has offered opportunities to procure the financial resources for the financing of the projects of public local development from the structural funds, without training the increasing of the ordinary budgetary resources and without affecting the level of the consolidated budgetary balance.

Where the proceeds are not equal to the amount of the payments, the deficit of the local budget is to be covered from loans which have been contracted by the local public authorities and from the amounts deducted from some revenues of the state budget, ordered by the law of state budget (Moşteanu et al., 2007, pp. 41-44).

3. Research methodology

The paper is based on both theoretical research and empirical research. The starting point of the research was that of theoretical documentation by going through the literature and various studies specific to the field as well as legislative regulations. An important aspect in the theoretical research approach was the legal framework of local public finances.

The analysis of the local budgets' contribution in the formation of the public financial resources as an approach is based on the data provided by the executions of the General Consolidated Budget and of the centralized local budgets.

The analysis of the financial autonomy of the administrative-territorial units was based on the indicator known in the specialized literature as the degree of financial autonomy or the self-financing capacity of the local authorities. The mathematical relation of calculation is:

 $D_{FA} = OR_{LA} / TR_{LA} \times 100$

 D_{FA} = Degree of financial autonomy OR_{LA} = Own revenues of local authorities TR_{LA} = Total revenues of local authorities

4. The legal framework of the local public finances

At European level, the general regime of the local autonomy, as well as organization and functioning of the authorities of the local public administration are provided by the European Union Treaty and by the European Carta of the Local Autonomy, which has been ratified by Romania on 28th of January 1998.

In Romania, the way of organizing and functioning of territorial administrative units is provided by the administrative Code (Emergency Ordinance of the Romanian Government no. 57, 2019), which regulates the organization and functioning of the local public authorities closely related to the socio-economic realities and with the complexity and dynamics of the activities related to providing essential public services for citizens. It is based on the principle of subsidiarity established by the European Union Treaty and by the European Carta of the Local Autonomy. Adopted in 1985, the European Carta of the Local Autonomy has become a reference treaty regarding safeguarding the rights of the regional and local authorities.

In accordance with the Romanian Constitution republished, "the public administration from the administrative-territorial units is founded on the principle of decentralization, local autonomy and deconcentrating of the public services" (Romanian Constitution, 1991 revised by Law no. 429, 2003).

The principles, the general framework, the procedures related to forming, administrating, hiring, and using the local public funds, as well as the responsibilities of the local public administration and of the public institutions in the field of local public finances in Romania are regulated by the *Law regarding the local public finances* (Law no. 273, 2006).

According to the autonomy of the county, communal and city councils, their budgets are autonomous from one another just as from the state's budget. Also, preserving the individuality of the territorial-administrative budgets in all the local budgets, do not exclude the existence of some relations between these budgets and neither between these budgets and the state's budget.

The State Budget Law for 2021 (Law no. 15, 2021) presents the level of quotas distributed to each administrative territorial unity from income tax to be cashed to the state budget in 2021.

The fiscal regulations with regards to local taxes and duties are laid down in the *Fiscal Code*, chapter Title IX - Fiscal aspects related to local taxes and fees (Law no. 227, 2015).

5. Findings - the relationship between the local budgets and the general consolidated budget from the perspective of the public financial resources.

5.1. Analysis of total revenues of local budgets

The revenues of the local budgets consist of taxes, fees, quotas, and amounts deducted from some revenues of the state budget, subsidies and amounts received from the European Union on account of the payments made and pre-financings.

The analysis of the data from Figure 1 and 2 reveals the random trend registered at the level of the total revenues of the local budgets in the analyzed period. In the period 2013-2015, the total revenues of the local budgets had an increasing trend of 27.80%. In 2016 there was a decrease of 3.16% compared to 2015. In 2017 the trend becomes upward, the increase being 5.48% compared to 2016 and in 2018 there was a decrease of 8.93% compared to 2017. The period 2018 - 2020 was characterized by a 25.91% increase in total revenues of local budgets.

Total own revenues of the local budgets in the period 2013-2017 had an upward trend, the increase being 31.23%. In 2018, total own revenues decreased by 6.58% compared to 2017. The increasing trend is resumes in the period 2018-2020, the total own revenues registering an increase of 25.39%.

The amounts deducted from Value Added Tax registered a random trend in the period 2013-2020. The period 2013-2015 was characterized by an increase of 39,28%. In 2016, the revenues from Value Added Tax decreased by 3.32% compared to 2015. In 2017 there was a significant increase of 14.76% compared to 2016, followed by a significant decrease of 34.73% in 2018 compared to 2017. The ascending trend is resumed in the period 2018-2020, this being 37.11%.

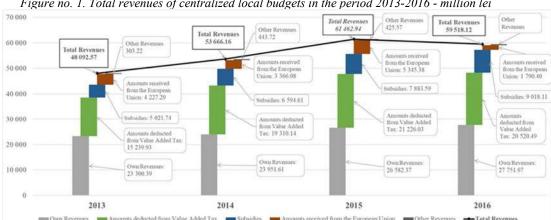


Figure no. 1. Total revenues of centralized local budgets in the period 2013-2016 - million lei

Source: Own processing of data taken from (Ministry of Development, Public Works and Administration - Government of Romania, 2021) and (INS, 2021)

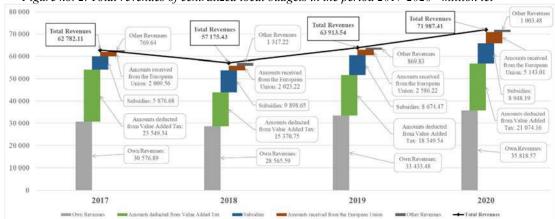


Figure no. 2. Total revenues of centralized local budgets in the period 2017-2020 - million lei

Source: Own processing of data taken from (Ministry of Development, Public Works and Administration - Government of Romania, 2021) and (INS, 2021)

There is also a random trend in the case of subsidies in the analyzed period. Thus, in the period 2013-2018 the trend was upward (by 97.12%), except for 2017, when there was a decrease of 34.83% compared to 2016. In 2019 compared to 2018, subsidies decreased by 12.37%, in 2020 registering an increase of 3.16% compared to 2019.

The amounts received from the European Union had a random trend in the analyzed period. In 2014, compared to 2013, there was a decrease of 20.37%, followed by an increase of 58.80% in 2015 compared to 2014. During the period 2016-2020 at the level of the amounts received from the European Union a significant increase of 187.25% is observed.

Table no. 1 Structure of total revenues of centralized local budgets [%]

Year	Total Revenues	Own Revenues	Amounts deducted from Value Added Tax	Subsidies	Amounts received from the European Union	Other Revenues
2013	100.00%	48.45%	31.69%	10.44%	8.79%	0.63%
2014	100.00%	44.63%	35.98%	12.29%	6.27%	0.83%
2015	100.00%	43.25%	34.53%	12.83%	8.70%	0.69%
2016	100.00%	46.63%	34.48%	15.15%	3.01%	0.73%
2017	100.00%	48.70%	37.51%	9.36%	3.20%	1.23%
2018	100.00%	49.96%	26.88%	17.31%	3.54%	2.30%
2019	100.00%	52.31%	28.71%	13.57%	4.05%	1.36%
2020	100.00%	49.76%	29.27%	12.43%	7.14%	1.39%

Source: Own processing of the data from Figure no. 1 and Figure no. 2.

Amounts Other Revenues received from the European Union Subsidies Amounts deducted from Value Added Tax Own Revenues Own Revenues Amounts deducted from Value Added Tax Subsidies Amounts received from the European Union Other Revenues

Figure no. 3. Structure of total revenues of centralized local budgets

Source: Own processing of data from Table no. 1

The structure of total revenues of centralized local budgets in the period 2013-2020 is presented in Table no. 1 and looks like in Figure no. 3. The share of own revenues in total revenues had values between 43.25%, respectively 52.31%. The share of amounts deducted from Value Added Tax in total revenues had values between 31.69% and 37.51% in the period 2013-2017. Starting with 2018, there is a decrease below 30% of the share of amounts deducted from Value Added Tax in total revenues. Subsidies had a share in total revenues of the local budgets between 10.44% and 15.15% respectively in 2013-2016, followed by a decrease in 2017 (at 9.36%). The highest value was registered in 2018 (17.31%). In the period 2018-2020, the trend was a decreasing one. The share of amounts received from the European Union in total revenues of the local budgets recorded values between 3,01%, respectively 8,79%.

5.2. Analysis of own revenues of local budgets in 2013-2020

The evolution of the own revenues of the local budgets in the period 2013 - 2020 is presented in Figure no. 4.

The own revenues of the local budgets registered a random trend in the period 2013-2020. In the period 2013-2017 own revenues increased by 31,23%. The year 2018 marks a decrease in own revenues, by 6.58% compared to 2017. In the period 2018-2020, the receipts related to these revenues registered an ascending trend of 25.39%.

Figure no. 4. The evolution of the own revenues of the local budgets in the period 2013-2020 - million lei

		Pi	roperty tax	es and fe	es	Taxes	Tax on	Amounts		Non-
Year	Total Own Revenues	Total	Building taxes	Land taxes	Other property taxes	on the use of goods	income, profit and capital	deducted from income tax	Other taxes	fiscal revenues
2013	23 300.39	4 352.20	2 991.00	1 093.70	267.50	1 244.00	3 304.25	11 575.35	612.59	2 212.00
2014	23 951.61	4 499.80	3 158.10	1 139.60	202.10	1 278.90	3 478.65	11 892.95	445.71	2 355.60
2015	26 582.37	4 567.50	3 215.70	1 158.40	193.40	1 340.90	3 976.02	13 502.18	658.37	2 537.40
2016	27 751.97	4 846.80	3 229.40	1 408.50	208.90	1 355.00	4 143.43	14 133.17	325.97	2 947.60
2017	30 576.89	5 267.30	3 473.90	1 501.90	291.50	1 484.40	4 626.05	15 870.45	366.99	2 961.70
2018	28 565.59	5 465.50	3 646.60	1 426.10	392.80	1 648.40	3 328.95	14 344.75	549.69	3 228.30
2019	33 433.48	5 844.30	3 932.40	1 494.10	417.80	1 859.30	6 666.07	15 072.43	587.68	3 403.70
2020	35 818.57	no data	no data	no data	no data	no data	no data	17 154.81	no data	no data

Source: Own processing of data taken from (Ministry of Development, Public Works and Administration - Government of Romania, 2021) and (INS, 2021)

Remark: For the year 2020, the information sources did not present complete data at the time of elaboration of this paper; these will be published later.

The property taxes had an increasing trend by 34.28% in the period 2013-2019. At the level of the building tax, there was an increase of 31.47 % in the period 2013-2019. The land tax had an upward trend in the period 2013-2017, of 37.32 %. In 2018 there is a decrease of 5.05 % compared to 2017, while in 2019 compared to 2018, the land tax revenues increased by 4.77 %. The amounts collected from other property taxes registered a decreasing trend in the period 2013 - 2015, of 27.70%, in the period 2016-2019 registering an increase of 100%.

The receipts from the taxes on the use of goods had an increase of 49.46% in the period 2013-2019.

Tax on income, profit and capital gains registered an upward trend in the period 2013-2017 by 40.00%, followed by a decrease of 28.04% in 2018 compared to 2017. In 2019, the receipts from the tax on income, profit and capital gains registered a significant increase of 100.25%, compared to 2018.

The amounts deducted from the income tax had an increasing trend of 37.11 % in the period 2013-2017. In 2018, these revenues decreased by 9.61% compared to 2017, followed by an increase of 19.59 % in 2018-2020.

Non- fiscal revenues had an upward trend in the period 2013-2019, of 53.87 %.

Table no. 2 Structure of own revenues of local budgets in the period 2013 - 2020 [%]

Year	Total Own Revenues	Taxes on the property	Taxes on the use of goods	Tax on income, profit and capital gains	Amounts deducted from income tax	Other taxes	Non-fiscal revenues
2013	100.00%	18.68%	5.34%	14.18%	49.68%	2.63%	9.49%
2014	100.00%	18.79%	5.34%	14.52%	49.65%	1.86%	9.83%
2015	100.00%	17.18%	5.04%	14.96%	50.79%	2.48%	9.55%
2016	100.00%	17.46%	4.88%	14.93%	50.93%	1.17%	10.62%
2017	100.00%	17.23%	4.85%	15.13%	51.90%	1.20%	9.69%
2018	100.00%	19.13%	5.77%	11.65%	50.22%	1.92%	11.30%

Year	Total Own Revenues	Taxes on the property	Taxes on the use of goods	Tax on income, profit and capital gains	Amounts deducted from income tax	Other taxes	Non-fiscal revenues
2019	100.00%	17.48%	5.56%	19.94%	45.08%	1.76%	10.18%
2020	100.00%	no data	no data	no data	47.89%	no data	no data

Source: Own processing of the data from Figure no. 4.

Remark: For the year 2020, the information sources did not present complete data at the time of elaboration of this paper; these will be published later.

The structure of own revenues of local budgets in the period 2013-2020 is presented in Table no.

2. From the analysis of

From the analysis of the structure of own revenues of local budgets in the period 2013-2020 (Table no. 2) resulted the following conclusions:

- the amounts deducted from the income tax had the highest share in the own revenues of the local budgets, with values between 45.08% and 51.90%
- the taxes on the property had a share between 17.18% and 19.13% in total own revenues
- the tax on income, profit, and capital gains as a share in total own revenues was between 11.65% and 19.94%
- taxes on the use of goods were between 4.85% and 5.77%
- non-fiscal revenues ranged from 9.49% to 11.30%
- the revenues of other taxes ranged from 1.17 % to 2.63 %

5.3. Analysis of the contribution of local budget revenues to the total revenues of the general consolidated budget

Tables no. 3 and 4 presents the share of own revenues of local budgets in the total revenues of the General Consolidated Budget. These data are of great importance because they show the contribution that these revenues have to the formation of public financial resources at national level.

Table no. 3 The contribution of local budget revenues to the total revenues of general consolidated budget - million lei

Year	Total Revenues of the General Consolitaded Budget	Taxes on the property	Taxes on the use of goods	Tax on income, profit and capital gains	Amounts deducted from income tax	Other taxes	Non- fiscal revenues
2013	200 045.70	4 352.20	1 244.00	3 304.25	11 575.35	612.59	2 212.00
2014	213 833.60	4 499.80	1 278.90	3 478.65	11 892.95	445.71	2 355.60
2015	233 554.30	4 567.50	1 340.90	3 976.02	13 502.18	658.37	2 537.40
2016	223 721.90	4 846.80	1 355.00	4 143.43	14 133.17	325.97	2 947.60
2017	251 819.70	5 267.30	1 484.40	4 626.05	15 870.45	366.99	2 961.70
2018	295 118.20	5 465.50	1 648.40	3 328.95	14 344.75	549.69	3 228.30
2019	321 131.40	5 844.30	1 859.30	6 666.07	15 072.43	587.68	3 403.70
2020	322 518.10	no data	no data	no data	17 154.81	no data	no data

Source: Own processing of data taken from: (Ministry of Development, Public Works and Administration - Government of Romania, 2021) and (INS, 2021)

Remark: For the year 2020, the information sources did not present complete data at the time of elaboration of this paper; these will be published later.

Based on the data from Table no. 3, was calculated the contribution of each category of local budget revenue to the total revenues of the General Consolidated Budget.

From the data presented in Table no. 4 resulted the following conclusions regarding the contribution of the revenues of the local budgets to the formation of the public financial resources of the General Consolidated Budget:

- Taxes on the property had a contribution between 1.82% and 2.18%.
- The contribution of the amounts deducted from the income tax was between 4.69% and 6.32%.
- The tax on income, profit and capital gains had a contribution between 1.13% and 2.08%.
- The contribution of non-tax revenues was between 1.06% and 1.32%.
- Taxes on the use of goods and other taxes had the lowest contributions, being situated below 1%.

Table no. 4 The contribution of local budget revenues to the total revenues of general consolidated budget [%]

Year	Taxes on the property	Taxes on the use of goods	Tax on income, profit and capital gains	Amounts deducted from income tax	Other taxes	Non-fiscal revenues	Total
2013	2.18%	0.62%	1.65%	5.79%	0.31%	1.11%	11.65%
2014	2.10%	0.60%	1.63%	5.56%	0.21%	1.10%	11.20%
2015	1.96%	0.57%	1.70%	5.78%	0.28%	1.09%	11.38%
2016	2.17%	0.61%	1.85%	6.32%	0.15%	1.32%	12.40%
2017	2.09%	0.59%	1.84%	6.30%	0.15%	1.18%	12.14%
2018	1.85%	0.56%	1.13%	4.86%	0.19%	1.09%	9.68%
2019	1.82%	0.58%	2.08%	4.69%	0.18%	1.06%	10.41%
2020	no data	no data	no data	no data	no data	no data	no data

Source: Own processing of the data from Table no. 3.

Remark: For the year 2020, the information sources did not present complete data at the time of elaboration of this paper; these will be published later.

5.4. Analysis of the evolution of the degree of financial autonomy of the units administrative territorial

The evolution of the degree of financial autonomy of the units administrative territorial is presented in Table no. 5.

Table no. 5. The degree of financial autonomy - period 2013-2020

Year	Total Revenues of Local Budgets (Million Lei)	Total Own Revenues of Local Budgets (Million Lei)	The Degree of financial autonomy (%)
2013	48 092.57	23 300.39	48.45
2014	53 666.16	23 951.61	44.63
2015	61 462.94	26 582.37	43.25
2016	59 518.12	27 751.97	46.63
2017	62 782.11	30 576.89	48.70
2018	57 175.43	28 565.59	49.96
2019	63 913.54	33 433.48	52.31
2020	71 987.41	35 818.57	49.76

Source: Own processing of the data from Table no. 3.

The degree of financial autonomy of the units administrative territorial had a random trend (Figure no. 5). The values of this indicator were between 43,25% and 52,31% during the analyzed period. A higher level of the share of own revenues in total revenues ensures a better satisfaction of public needs, which denotes a wide financial autonomy.

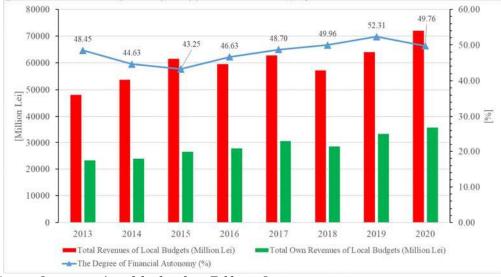


Figure no. 5. Evolution of the degree of financial autonomy - period 2013-2020

Source: Own processing of the data from Table no. 5.

6. Conclusions

Local budgets are instruments that facilitate the correct choice of priority funding, by local public administration bodies, of the development expenditures of local communities. These funding priorities and other options to be financed from the local budget it is done by elaboration and adopting the local budget.

In the same time, the option for a certain distribution of the public revenues reflects the way of distribution of powers between public institutions placed at different levels. Within the budgetary process, from the state budget are approved funds for financing some decentralized expenses, but also for balancing the local budgets. Along with own sources of financing, the local budgets are financed also from amounts from the state budget, in the shape of deducted amounts from some incomes of the state budgets (from Value Added Tax).

The own revenues of the local budgets had an oscillating evolution caused in general by the legal changes interfered at the fiscal Code level. Thereby, starting with 1st of January 2018 the quota of salaries tax and other incomes of individuals has dropped significantly from 16% to 10%. Also, starting with 1st of January 2016 at the level of tax on buildings there were a series of significant fiscal changes, while the percent from the tax on income received at the level of administrative territorial units as own income of the local budget has recorded numerous changes.

At the same time, the more the decentralization degree is higher, the more the local budgets role is more important.

The local budgets have an important role in what concerns the intake to the forming the financial resources of the General Consolidated Budget, this being placed between 9,68% and 12,40%. The revenues provided by the administrative territorial units have recorded a balanced trend, no matter the economic development period crossed.

The analysis of the financial resources of the local budgets through correlation with the financial resources of the General Consolidated Budget presents a special importance both for emphasizing some potential financial resources, as well as for the highlighting the strategy on medium and long term at the level of administrative-territorial units.

The role of the local budgets within the General Consolidated Budget, reflects both the efficiency with which the local public administrations constitute—their own budgets, as well as the own sustainability of the local budgetary costs and the way in which the General Consolidated Budget is affected by the actions of the local public administrations.

7. References

- Council of Europe, 2020. Carta europeană a autonomiei locale (English edition: European Charter of Local Self-Government), Congress of Local and Regional Authorities of the Council of Europe, Printed at the Council of Europe, June 2016, Reprinted October 2020, [online] Available at: https://rm.coe.int/european-charter-of-local-self-government-ron-a6/16808d7afd [Accessed 20 October 2021].
- Dogariu, E., 2010. Study on local financial autonomy in Romania, *Theoretical and applied economics*, Volume XVII (2010), No. 6 (547), [online] Available at: http://store.ectap.ro/articole/478_ro.pdf [Accessed 22 October 2021], pp. 65-73.
- Emergency Ordinance of the Romanian Government no. 57 from July 3, 2019 regarding The Administrative Code, published in the *Official Gazette of Romania*, Part I, no.555 from July 5, 2019.
- INS, 2021. Anuarele Statistice ale României (Statistical Yearbooks of Romania), National Institute of Statistics [online] Available at: https://insse.ro/cms/ro/content/anuarele-statistice-ale-romaniei [Accessed 20 October 2021].
- Law no. 15, 2021, regarding The State Budget Law for 2021, from March 8, 2021 published in the *Official Gazette of Romania*, part I, no. 236 of March 9, 2021.
- Law no. 227, 2015, regarding The Fiscal Code, published in the *Official Gazette of Romania*, Part I, no. 688 of September 10, 2015 with subsequent amendments and completions.
- Law no. 69, 2010, regarding The Budgetary Fiscal Responsibility, republished in the *Official Gazette of Romania*, Part I, no. 472 of June 4, 2020 with subsequent amendments and completions.
- Law no. 273, 2006, regarding The Local Public Finances, from June 2006, published in the *Official Gazette of Romania*, Part I, no.618 of July 18, 2006 with subsequent amendments and completions.
- Ministry of Development, Public Works and Administration Government of Romania, 2021. Situația veniturilor şi cheltuielilor unităților administrativ-teritoriale în perioada 1999-2019 (The situation of incomes and expenses of the administrative-territorial units in the period 1999-2019), Directorate for Local Fiscal and Budgetary Policies, [online] Available at: http://www.dpfbl.mdrap.ro/sit_ven_si_chelt_uat.html [Accessed 20 October 2021].
- Moşteanu, T., 2013. Public Finances, *Course notes and applications for the seminar*, 3 rd Edition, Bucharest: University Publishing House.
- Moșteanu, T., Vuța , M., Campeanu, E., Attila, G., 2007. *Budget and public treasury*, Bucharest: University Publishing House.
- Oprea, F., Cigu, F., 2013. Local Public Finances, Bucharest: C.H. Beck Publishing House.
- Ulbrich, H., 2011. Public Finance in Theory and Practice, second edition, Abingdon: Routledge.
- The Romanian Constitution published in the *Official Gazette of Romania*, part I, no. 233 of November 21, 1991, revised by Law no.429/2003.

Study on the Need to Regulate the Audit Profession and the Determinants of the Improvement of the Internal Managerial Control and the Internal Audit in Relation to the External Audit

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Abstract

The study aims to analyze the personality and career-related factors that influence the choice of auditor profession, aspects that have enjoyed relatively little attention in the literature, especially in our country.

The hypotheses debated in this study that could be part of the vision of the internal and external auditors interviewed from the public entities proposed to be analyzed from Bucharest (participants in the questionnaire) on the debates regarding the future of the auditing profession, as well as the connections with education.

Key words: Auditor, Internal audit, External audit, Frequencies, Regression

J.E.L. classification: H83, M42

1. Introduction

The public internal audit and the internal managerial control system represent essential components for regulating the *metabolism* of a public entity regardless of its positioning in the hierarchy of the Romanian political power regime, as a central public authority or local public authority.

In addition to these internal components, which act and interact within the public entity, the entity considered as a living organism, a third component is exercised, which this time, manifests itself from outside the public entity, represented by the external public audit and which, by in fact, it acts on the entire public sector, with the sole purpose of controlling the formation, administration and use of financial resources.

2. Theoretical background

The continuous improvement of the internal public audit and internal managerial control processes in Romania is a topical issue in the scientific analysis, especially in the post-integration process of Romania in the European Union, in order to harmonize and make compatible the processes in the field with the European Union. with those in Romania.

The role of the public internal audit is to ensure the management on the fact that the internal control exists, is functional and sufficient or insufficient, its value reflecting its capacity to improve the internal managerial control system of the public entity (Dascălu et. al, 2016, pp. 35).

Starting with the most recent report published in August 2019 by the Directorate of Internal Managerial Control and Interinstitutional Relations (DCIMRI) from the Secretary General of the Romanian Government on the implementation of CIM in Romania, our goal is to highlight the problems identified in the practice of implementation of CIM standards and judge the results in terms of expectations.

In the context, internal control is currently associated with a broader meaning, which is seen more as a managerial function and not as a verification operation.

3. Research methodology

This research is a process of choosing from a large population of a group whose opinions we wanted to know.

Thus, each part of the study has an equal probability of being selected. In this study, the population consists of internal and external auditors from the analyzed public entities within the municipality of Bucharest.

The accomplishment of the mission of public entities depends on the objectives set as a final result of the strategies developed and the planned activities and, at the same time, on the climate created within a public entity that must be favorable to ensure the performance and quality of services provided.

From this point of view, the main objectives of this study are:

The main objectives of the research

Objective no. 1. The future of the auditing profession and connections with education

Hypothesis no. 1: How is the perceived negative behavior of internal and external public auditors perceived?

Hypothesis no. 2: Is there a positive reputation in the auditing profession?

Hypothesis no. 3: What are the requirements of the auditing profession? and

Hypothesis no. 4: How is the image formed about the audit profession perceived in the context of evaluating the link between internal managerial control and internal audit in relation to external audit?)

Objective no. 2. Analyzing the process of improving the internal managerial control system

Hypothesis no. 1: Are the functions and duties of the internal managerial control system fulfilled in an economical, efficient and effective way?

Hypothesis no. 2: Is there a way to comply with legal regulations and management provisions?

Hypothesis no. 3: Are there measures to protect resources against abuse, loss or fraud?

Hypothesis no. 4: Can measures be taken to develop, maintain and provide accurate and complete financial information?

These hypotheses that could be part of the vision of internal and external auditors interviewed from public entities proposed to be analyzed within the municipality of Bucharest (participants in the questionnaire) on debates on the future of the auditing profession and connections with education.

The questionnaire was sent to 82 internal and external auditors, only 50 questionnaires were returned with complete data, obtaining a response rate of 60.97%.

Before distributing the questionnaire to the respondents, fifty employees from public entities in Bucharest were asked to provide feedback on the requested articles to ensure the adequacy and clarity of the articles.

After taking into account all the recommendations given, a pilot test was performed on the sample of the 50 internal and external auditors.

In this study we used a dependent variable, which is represented by the auditor profession in the context of assessing the link between internal management control and internal audit in relation to external audit and 4 independent variables reflected in terms of perception topics discussed, the country being Romania.

The statistical model developed to reflect the image of the audit profession is:

$$PAi = \mu_0 + \mu_1 CCi + \mu_2 Ri + \mu_3 Ci + \mu_4 Ii$$

Where: PAi = Profession of auditor

CCi = Behavior and conduct

Ri = Reputation of the audit profession

Ci = Requirements of the auditing profession

Ii = The image formed regarding the audit profession in the context of evaluating the link between the internal managerial control and the internal audit in relation to the external audit

The four hypotheses presented were approached in order to reproduce the future image of the auditing profession, which had on average a value lower than 3.

The regression model is presented as follows:

$$SCIMi = \mu_0 + \mu_1 Fi + \mu_2 Ri + \mu_3 PRi + \mu_4 DIFi$$

Where: SCIMi = Improving the Internal Management Control System;

Fi = Performing functions and duties in an economical, efficient and effective manner;

Ri = Compliance with legal regulations and management provisions;

PRi = Protecting resources against abuse, loss or fraud;

DIFi = Development, maintenance and provision of accurate and complete financial information.

4. Findings

The first set of questions in the data collection tool analyzes the perception of both internal auditors and external public auditors regarding their vision of the future of the audit profession and its effects on education, taking into account the positive and negative aspects.

Out of the 50 valid answers regarding the question "Do you perceive positively the objectives of the internal audit function?", the auditors expressed a negative perception regarding the professionals in the field. Most respondents believe that the field of accounting and auditing, as a profession, should do more to improve its overall image. In addition to negative and positive perceptions of internal auditors and external public auditors, respondents may have a positive or negative image of the auditing profession. Usually, the choice of profession is determined by the image formed. On the other hand, career advantages could be represented by opportunities for career advancement, professional fulfillment, recognition and prestige, among others.

In order to emphasize the model used, it highlights the dependent variable, for example, the profession of auditor, being necessary to be tested with the help of compliant statistics, to ensure the statistical adequacy of the model based on conformity measurement and rendering the results of the regression (Table no. 1).

Table no. 1 Regression analysis of the perception method regarding the perception of the future of the auditing profession

Variable	Coefficient	T- statistic	Probability
Constant variables	1.645	2.265	3.317
Behavior and conduct in the auditing profession	-0.236	-1.307	0.129
Reputation of the auditing profession	0.211	0.854	0.694
The requirements of the auditing profession	0.099	0.676	0.395
Image of the audit profession in the context of assessing the link between internal managerial control and internal audit in relation to external audit	0.077	0.488	0.378

Source: (own conception)

Taking into account the highlighted values, the multiple regression line is described by the following regression equation:

$$PA = 1.645 - 0.236*CC + 0.211*R + 0.099*C + 0.077*I$$

In this study, the results of the findings are explained and discussed based on the analysis performed based on the data collected. The results are discussed by relating the different sources.

For the application of the second objective, the study analyzed a dependent variable based on a regression model, which is represented by the improvement of the internal management control system and 4 independent variables reflected in terms of perception topics discussed, the country being Romania, resulting in different perceptions regarding these aspects (Table no. 2).

Table no. 2 Regression analysis of the perception method regarding the improvement of the internal managerial control system

Variable	Coefficient	T-statistic	Probability
Constant variables	2.216	1.968	4.542
Performing functions and duties in an economical, efficient and effective manner	-0.217	-0.672	0.425
Compliance with legal regulations and management			
provisions	0.058	0.248	0.555
Protecting resources against abuse, loss or fraud	-0.186	-1.151	0.139
Develop, maintain and provide accurate and complete	-0.045	-0.169	0.539
financial information			

Source: (own conception)

Taking into account the highlighted values, the multiple regression line is described by the following regression equation:

$$SCIM = 2.216 - 0.217*F + 0.058*R - 0.186*PR - 0.045*DIF$$

Based on the results obtained, we notice positive relationships between the dependent variable (SCIM) and most independent variables, this emphasizing the fact that most hypotheses are supported.

4. Conclusions

In the present study, in connection with the first research objective (The future of the auditing profession and connections with education) analyzed, it was highlighted that:

It could be reflected that based on the results we notice negative relationships between perceptions of the future of the audit profession and the effects on education in the context of assessing the link between internal managerial control and internal audit in relation to external audit and most independent variables, are not supported.

Both auditors and accountants are also perceived as rigid, too rigorous people who are guided by normative regulatory requirements.

Some of the perceptions it refers to the fact that the profession of auditor is quite demanding, requires a lot of mental energy, intelligence, education and improvement and is a continuous activity that can be monotonous in practice and characterized by routine.

Respondents' can have their roots in childhood experiences, school education and improvement, but also in past work experiences.

To achieve the second objective, there is a significant correlation (fulfilling functions and duties in an economical, efficient and effective way, protecting resources against abuse, loss or fraud and development, maintenance and provision of accurate and complete financial information) and the dependent variable for example, Improving the internal management control system.

5. References

- Bonollo, E., 2019. Measuring supreme audit institutions? Outcomes: current literature and future insights, Public Money & Management. Vol. 39, Issue 7, p. 468.
- Ciak, J. M., 2017. Internal Audit as an Instrument of Support for the Public and Private Sector, Torun Business Review, 15(4), p. 17.
- Dascălu E. D., Marcu N., Hurjui I., 2016. Management and performance monitoring in the internal audit for the public sector in Romania, published in "Economic Amphitheatre" Vol. 18, Nr. 43, August.
- Jacabus, O.J.R., Philna, C. 2016, Internal Audit Public Sector Capability: A Case Study, Journal of Public Affairs, 16, p.182.

- Nicolae, C., Badea, D., 2017. The importance of a project level risk management methodology for EU Structural and Investment Funds accession in Romania, de Gruyter, Proceedings of the International Conference on Business Excellence, p. 26.
- Popescu, M., Popescu, M., Gâlcă, D., 2017. The Internal Control Management Development Strategy in Romania, Conference Proceedings "Globalization - economic, social and moral implications", p. 39.
- Reichborn-Kjennerud, K., 2014. *Performance audit and the importance of the public debate*, Evaluation, 20(3), p. 373.
- State, V., Tănase, L.C., Voinea, C.M., 2017. The Perception of the Internal Managerial Control System the Case of the Romanian Public Entities, "Ovidius" University Annals, Economic Sciences Series, XVII(2), p. 641.
- Stegăroiu, I., Pleşa, I. T., Panagoreț, O., Mubben, Ş., 2015. Issues regarding the management of internal control/managerial and combating some negative effects in Romanian public institutions' activity, International Conference "Risk in Contemporary Economy, XVIthEdition, 2015, Galați, România, "Dunărea de Jos" University of Galati Faculty of Economics and Business Administration, p. 39.
- Trincu-Drăguşin, C.P., 2018. *Landmarks Regarding the External Public Audit in Romania*, Annals of the "Constantin Brâncuşi" University of Târgu Jiu, Economy Series, Issue 1/2018, p. 200.

Improving the Internal Managerial Control and the Internal Audit in Relation to the External Audit

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Abstract

In order to verify the management of the various operations present in order to emphasize the objectives, the management of the public entity needs to present outstanding information about the events and actions carried out.

From this point of view, we considered that the establishment and applicability in public entities of the Internal Management Control System is fundamental.

To this end, we conducted a research based on both the analysis of specialized works and the applicable regulations in force at the level of public entities, research followed by the applicability of a study that would indicate the importance of the subject debated.

Key words: Audit, Management, Control, Entity, Performance

J.E.L. classification: H83, M42

1. Introduction

The feasibility of a task of public entities is related to the goals set as the final response of the strategies applied, as well as the planned activities and including the ambiance founded within a public entity that needs to be favorable in order to guarantee the quality of services performed.

In order to achieve its objectives, it is necessary for its management to implement appropriate mechanisms in accordance with applicable laws and regulations.

Such a mechanism is an internal managerial control which, based on specific instructions, leads both to the measurement and to the management and supervision of resources in order to perform favorable premises that reflect the objectives of the entity concerned.

2. Theoretical background

According to Bonollo (2019), *internal audit* is an independent, objective assurance and consulting activity aimed at adding value and improving an organisation's operations.

Looking forward, audits answer the question: What policies or implementations will need to be reviewed in the future and what is the risk?

As the public sector audit focuses on trends, it helps to make decisions. Auditors also help managers understand and initiate risk assessment. Even the own risk assessment of the audit ensures that audit resources are also used efficiently in areas with higher risk exposures. Through these roles, auditing protects core public values.

By providing an overall audit, evaluation of prospective activities for entities, public sector auditors contribute to the transparency, integrity and fairness of the activities conducted by managers and officials.

However, internal audit may have an advantage in the organization due to the understanding and familiarity of operations, but may also influence and increase public confidence due to the fact that its independence cannot be maintained or established with certainty.

3. Research methodology

The research units are represented by internal and external auditors, from the central public entities at the level of Bucharest.

Of the 687 questionnaires distributed at the level of central public entities in Bucharest, a total of 377 questionnaires were returned, obtaining a response rate of 54.8%, in January-February 2020, the analysis being finally performed on 175 questionnaires valid.

The analysis for the survey for internal auditors was based on 370 usable questionnaires (usable response rate = 53.8%) returned at the beginning of January 2020.

The analysis for the survey of external auditors was based on 180 questionnaires out of 210 questionnaires sent to external auditors, obtaining a response rate of 85.7%.

Table no. 1 contains the description and response rate for the sample in both the internal auditors and the external auditors.

Table no. 1 Response rate

SURVEY FOR INTERNAL AUDITORS	Number	Usable response rate
Total number of questionnaires distributed	687	100.00%
Total number of questionnaires received from respondents	377	54.8%
Less:		
Public entities that have outsourced their AI function	(5)	
Retirement of the head of the public entity	(1)	
Impossible to answer	(1)	
Total usable questionnaire	370	53.8%
SURVEY FOR EXTERNAL AUDITORS		
Total number of questionnaires distributed	210	100.00%
Total number of questionnaires received from respondents	180	85.7%
Less:		
The external auditor withdrew	(1)	
He is no longer appointed external auditor for the public entity	(4)	
Total usable questionnaire	175	83.3%

Source: (own conception)

After excluding five unusable questionnaires, 175 questionnaires were used for analysis (usable response rate = 72.9%).

The main objective is to present the results of the questionnaire addressed to both internal and external auditors and the results of testing the proposals made for the study.

The data analysis is structured separately for surveys addressed to internal auditors and external auditors.

Part I highlights the descriptive statistics that refer to all the variables involved in Model no. 1, the results of the analysis of multiple regression and ordinal regression for Model no. 1 (level of perception of internal and external auditors regarding the profession of auditor).

Part II presents the descriptive statistics that refer to all the variables involved in Model 2, the results of the analysis of the statistics of Pearson correlation coefficients and the results of multiple regression and binary logistic regression for Model no. 2 (level of perception of internal and external auditors regarding the improvement of the Internal Management Control System).

Data analysis for testing proposals for Model no. 1 and the proposals within Model no. 2 of this study is based on a multiple regression analysis, and the dependent construct of both models is scaled on a 5-point Likert scale.

However, there are some proposals underlying the multiple regression model that need to be checked to see if the errors in the predictions are caused by data characteristics that are not suitable for multiple regression analysis.

The proposals were tested using Model no. 1 in the following equation:

$$PAIi = b_0 + b_1 CCi + b_2 Ri + b_3 Ci + b_4 Ii + e$$

Where: PAi = Profession of auditor:

CCi = Behavior and conduct;

Ri = Reputation of the audit profession;

Ci = Requirements of the auditor profession;

Ii = the image formed regarding the audit profession in the context of evaluating the link between the internal managerial control and the internal audit in relation to the external audit;

b0 - b4 = Multiple regression coefficients;

e = Residual error term.

The main research objectives were tested using Model no. 2, based on an equation, as follows:

$$SCIMi = b_0 + b_1Fi + b_2Ri + b_3PRi + b_4DIFi + e$$

Where:

SCIMi = Improving the Internal Management Control System;

Fi = Performing functions and duties in an economical, efficient and effective manner;

Ri = Compliance with legal regulations and management provisions;

PRi = Protecting resources against abuse, loss or fraud;

DIFi = Development, maintenance and provision of accurate and complete financial information;

b0 - b4 = Multiple regression coefficients;

e = Residual error term.

4. Findings

The content analysis process is one of the formal procedures to clarify the meaning and interpret qualitative data using the location of key themes, models and ideas within the data.

Statistical analysis was not performed because the interview data obtained in this study were only to clarify and further explain the survey responses. Moreover, the small number of participants in the interview was insufficient to perform statistical analyzes.

Four hypotheses were examined as possible influences on the level of perception of internal and external auditors regarding the future of the auditing profession. The possible influence of each of these constructs is discussed below.

Model no. 1 is an exploratory research and therefore a series of research proposals for each construct is presented, rather than a list of hypotheses.

Results Model no. 1 investigated the perception of internal and external auditors in relation to the audit profession.

In relation to the dependent variable, the level of perception related to the profession of auditor (PAi), internal auditors report that they had a degree of positive perception of the profession of auditor, unlike external auditors, which was higher than the average point value of 3 on the five-point scale.

Table no. 2 Validation of hypotheses - Research objective no. 1

Objective	Hypotheses	Hypothesis validation
1. The future of the	1. How is the perceived negative behavior of internal and external public auditors perceived?	Yes
auditing profession	2. Is there a positive reputation for the auditing profession?	Yes
and connections with	3. What are the requirements of the auditing profession?	Yes
education	4. How is the image formed about the audit profession perceived in the context of evaluating the link between internal managerial control and	Yes
	internal audit in relation to external audit?	

Source: (own conception)

Model no. 1 used in this study is considered a unique model because it has never been tested before and therefore the findings cannot be compared with previous research.

From the analysis, it is found that both internal and external auditors within the central public entities in Bucharest perceive that there is a positive level of perception related to the audit profession.

Model no. 2 investigated the factors that lead to the improvement of the Internal Managerial Control System.

Table no. 3 Validation of hypotheses - Research objective no. 2

Objective	Hypotheses	Hypothesis validation
2. Analysis of the process of	1. How is the perceived negative behavior of internal and external public auditors perceived?	No
improving the Internal	2. Is there a way to comply with legal regulations and management provisions?	Yes
Management Control	3. Are there measures in place to protect resources against abuse, loss or fraud?	No
System	4. Can measures be taken to develop, maintain and provide accurate and complete financial information?	No

Source: (own conception)

Most of the findings from Model no. 2 are in contradiction with the results of previous studies.

These contradictory findings may be due to the context of the study, as previous studies have focused on the private sector and the current study focuses on the public sector. The findings may also differ due to the research methods used.

Most previous studies used experimental case studies, while the current study used the questionnaire (survey) for research methods.

4. Conclusions

The implementation of the internal managerial control system, through its own human resources, ensures both their continuous professional improvement and the elimination of additional counseling expenses in the field.

Given the benefits mentioned above, it is considered that the entrustment of third parties to carry out activities on the implementation and development of the internal management control system of the public entity is not adequate to fulfill the mission of the public entity.

At the level of the empirical framework, the results of the findings are explained and discussed based on the analysis performed based on the data collected.

The results are discussed by relating the different sources. The accumulated data were analyzed using descriptive statistics, frequency distribution, correlation analysis and multiple linear regression.

The approach tried to achieve the objectives of the study, to answer the research questions and to test the hypotheses.

5. References

- Bonollo, E., 2019. Measuring supreme audit institutions? Outcomes: current literature and future insights, Public Money & Management. Vol. 39, Issue 7, p. 473.
- Dittmeier, C., Casati, P., 2014. Evaluating Internal Control Systems A Comprehensive Assessment Model (CAM) for Enterprise Risk Management. The Institute of Internal Auditors Research Foundation, Florida, pag. 51.
- Matiş, D., Gherai, D.S, Vladu, A.B., 2014. A European Analysis Concerning the Compliance of Information Disclosed by Supreme Audit Institutions. Audit Financiar, vol. XII, no. 109, pag. 23.
- Nicolae, C., Badea, D., 2017. The importance of a project level risk management methodology for EU
 Structural and Investment Funds accession in Romania, de Gruyter, Proceedings of the International
 Conference on Business Excellence, p. 41.
- Popescu, M., Popescu, M., Gâlcă, D., 2017. The Internal Control Management Development Strategy in Romania, Conference Proceedings "Globalization - economic, social and moral implications", p. 62.
- State, V., Tănase, L.C., Voinea, C.M., 2017. The Perception of the Internal Managerial Control System the Case of the Romanian Public Entities, "Ovidius" University Annals, Economic Sciences Series, XVII(2), p. 635-636.
- Trincu-Drăguşin, C.P., 2018. Landmarks Regarding the External Public Audit in Romania, Annals of the "Constantin Brâncuşi" University of Târgu Jiu, Economy Series, Issue 1/2018, p. 215.

Bibliometric Analysis on the Recent Trends in Dividend Policy Research

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Abstract

The topic of the dividend policies and their impact on company value is a hot topic in economics, being one of the few unanswered questions in the field of finance. Lately, many researchers are adding their contributions to the body of research on this topic, using new, modern methods of research and going beyond the classic financial influence factors on dividend policy, studying the influence of socio-political factors such as corporate governance and new composite financial indicators. The aim of this paper is to summarize the recent trends in research on the topic of dividend policies and emphasize the development of new research areas by employing a bibliometric analysis on the body of research from the recent years. The results of the analysis show that many classical dividend policy theories still stand, and that new influence factors on the reason why firms pay dividends have been discovered.

Key words: dividend policy, financial performance, bibliometric analysis

J.E.L. classification: G35, G32, E44

1. Introduction

Dividends represent one of the most important topics in modern corporate finance. More than this, the reasons why companies pay dividends are a hot research topic for finance scholars since the dividend problem was first postulated by Lintner in 1956. The methods of establishing the value of dividends to be paid, the frequency of payments and the overall dividend related strategy of the company is called dividend policy. The dividend payout of a company can take many forms, such as cash dividends, share repurchases or bonus shares. Due to the importance of dividends for investors, the payout policy of the companies is one of the core factors of importance in the activity of the finance departments of listed corporations. A stable, investor-oriented dividend policy facilitates the accessibility of financing through stock market share issuance, the issuance of bonds and also ensures the liquidity of the existing stocks. Because of this, researchers already found evidence on dividend policies related to the signaling effect, smoothing of dividends, the clientele effect, free cashflow theory of dividends, catering theory of dividends and so on. For a long time research revolved around these topics, finding financial performance related influence factors on the reason why firms pay dividends, but only recently, in the past years, the research moved towards new composite financial indicators, corporate governance indicators and other social-political factors of influence. In addition to this, new more modern financial analysis methods appeared, such as panel GMM models, which together with the beforementioned new influence factors can shed new light on the problem of dividend policy impact on firm value.

The objective of the paper is to review the recent studies on the topic of dividend policies with the aim of highlighting new methodologies, influence factors and research approaches used by researchers from 2015 onwards, in order to continue previous work of Pinto (2019).

The remainder of the paper is organized as follows. Section 2 reviews the theoretical background around dividend policies, Section 3 describes the methodology used for the bibliometric analysis, Section 4 presents the findings of the literature analysis and Section 5 presents the conclusions of the study.

2. Theoretical background

The first author to tackle the topic of dividend policies was (Lintner, 1956), who performed interviews with finance executives from top firms and fount that managers dislike to reduce dividends and that they prefer to set a target dividend payout ratio and adjust it based on investors' expectations and the financial performance of the company. The discussion was followed by the seminal paper of (Miller and Modigliani, 1961) who found that under the perfect market theory, dividends are irrelevant and that there is no need for dividend policies.

(Miller and Rock, 1985) emphasized the existence of asymmetric information on the financial markets, which in turn give dividends informational value, due to the message the dividends transmit about the financial wellbeing of the company. Further research steps were taken by (Jensen, 1986) who found the free cash flow dividend theory, stating that companies with free cash flow don't invest in projects with NPV's lower than their borrowing costs, thus reducing the agency costs as well.

Another influence factor found by many researchers is the size of the company, meaning that large, mature companies pay more dividends due to the lack of new investment opportunities. This factor was linked to the lifecycle dividend theory, as discovered by (Fama and French, 2002) and (DeAngelo *et al.*, 2006). Besides the size of the company, authors found that opportunities of growth and financial performance are important factors for the determination of the dividends to be paid (Fama and French, 2002; Ferris *et al.*, 2006; Rennebook and Trojanowski, 2007).

Starting with the 2000's more researchers approached Asian markets as well, testing the validity of the dividend theories on those markets as well. (Narasimhan and Vijayalakshmi, 2002) found that insider ownership in Indian firms is an important determinant in the amount of dividends paid while (Kumar, 2006) found the same result and added that the impact is different for corporate ownership and director ownership. (Hamill and Al-Shattarat, 2012) found that institutional/insider ownership alongside firm size and the financial performance of the company are the most important influence factors on the dividend policies employed. Comparisons between developed and emerging markets also appeared, such as the comparison made by (Aivazian *et al.*, 2003) who compared the dividend policies of 100 companies from the US and 8 emerging markets. He found that in developed countries, such as the US, the dividend policy is based on the financial health of the company, as compared to emerging markets where unpredictability is high and the main influence factors are the needs of shareholders and the objectives of corporate executives. (La Porta *et al.*, 2000) performed a similar comparison and found that investors from emerging countries prefer constant and consistent cash dividends because in this way they can limit the misappropriation of assets and liquidity by insiders from corporations.

Most of researchers use empiric analysis in order to reach their conclusions, while few of them used the interview method, first used in this research area by (Lintner, 1956). (Brav et al., 2005) followed up on Lintner's research and performed an interview analysis on Canadian and US companies and found that the executives interviewed don't like to cut dividends, which is consistent with what Lintner found, and additionally, paying more dividends don't necessarily attract institutional investors.

3. Research methodology

Literature review is an important step in research because it lays the ground for current and future research by giving the researcher an insight into what was already examined in previous studies. Bibliometric analysis tends to extend classic literature review into more systematic literature review by showing concise metrics on the existent body of literature on a specific topic. (Pinto, 2019) performed a thorough bibliometric analysis on literature surrounding dividend policies and covered the 2000-2015 timeframe.

Our study aims to extend this research in the 2015-2021 period. The body of literature was trimmed in order to include only the most relevant papers, based on criteria such as the geographic area and methodology used. The search was performed on "Web of Science" and "Google Scholar" based on the "dividend policy" and "payout policy" keywords. Out of the results obtained, after applying the trimming filters, the relevant body of literature on which the analysis was performed is composed of 33 papers on the topic of dividend policies which fit in the 2015-2021 timeframe, which will be analyzed in the following section.

4. Findings

The papers selected were analyzed based on the type of analysis performed, dependent variables used, independent variables used, countries analyzed and influence factors on dividends found.

4.1 Type of research methodology

The type of research methodology encountered falls into 3 categories: empirical research, interview method and theoretical discussion. The papers analyzed were structured as follows:

Table no. 1 Research methods encountered

Research Method	Frequency
Empirical research	90.91%
Interview method	6.06%
Theoretical discussion	3.03%

Source: Own making

As table no. 1 shows, empirical research is the most used research methodology, followed by the interview method which was introduced by Lintner in 1956 in regard to dividend policies.

4.2 Dependent variables used

The selection of an appropriate dependent variable is an important task for any researcher engaging in empirical analysis. Our literature review yielded a number of dependent variables used by researchers in their pursuit for finding new influence factors on dividend policies.

Table no. 2 Dependent variables used by researchers:

Variable	Frequency
DIV	50%
DPR	27%
DEBT_CAP	3%
MARKET_CAP	3%
SOCIAL_CAPITAL	3%
COST_STICKYNESS	3%
DPS	7%
DIV YIELD	3%

Source: Own making

Table no. 2 shows that the main dependent variable used is the natural logarithm of dividends paid by the company (DIV) while the dividend payout ratio (DPR) is the second most used. Other measures of dividends such as dividend per share (DPS) or dividend yield are also encountered. Some researchers introduced new concepts into the dependent variable section such as social capital, cost stickyness, which are worth pursuing in new papers.

4.3 Independent variables used

The selection of independent variables is the cornerstone of determining new influence factors on dividend policies, due to the fact that they are interconnected with economic principles and concepts which once studied can shed new light on the problem of dividend policies.

Table no. 3 Independent variables encountered

Variable	Frequency	Variable	Frequency
SIZE	13.37%	RURAL	0.58%
LEV	12.79%	ESG	0.58%
ROA	9.88%	TANGIBILITY	0.58%
AGE	5.23%	CR	0.58%
P/B	4.65%	Common Law	0.58%
FCFE	4.65%	INFLATION	0.58%
GROWTH	4.65%	Money Supply	0.58%
RISK	2.33%	WC	0.58%
ROE	2.33%	Div_Prem	0.58%
TAX	2.33%	CEO Incentive	0.58%
CASH	2.33%	TA	0.58%
CAPEX	2.33%	Operating Income	0.58%
OWNERSHIP	2.33%	SPREAD	0.58%
RETE	1.74%	Interest_Coverage	0.58%
EPS	1.74%	LARGE SHAREHOLDERS	0.58%
Investment	1.74%	SGR	0.58%
DIV	1.16%	GDP	0.58%
CSR	1.16%	LAW	0.58%
TQ	1.16%	Board_Reform	0.58%
Corporate_Governance	1.16%	TA	0.58%
Board_Size	1.74%	GOV	0.58%
Gender Diversity	0.58%	Discolsure	0.58%
FCF	0.58%	Foreign_Board	0.58%
DPR	0.58%	LEF	0.58%
EA	0.58%	MTB	0.58%
R&D	0.58%	Board Characteristics	0.58%
POPULATION	0.58%	Managerial Characteristics	0.58%

Source: Own making

The classic financial analysis indicators such as firm size measured through the natural logarithm of total assets, return on assets (ROA), leverage (LEV), price to book ratio (P/B) and free cashflow to equity (FCFE) account for more than half of the total independent variables encountered. We must note that a new class of variables from the field of corporate governance emerged and are encountered in papers close to the 2020-2021 period, such as board size, gender diversity, governance, corporate governance, board characteristics and so on. These indicators are computed by large data processors such as Sustainalytics and are starting to be incorporated in research methodologies with the hope of discovering new influence factors on dividend policies.

4.4. Influence factors on dividend policies

The interaction between the dependent variables and independent variables yields results which are interpreted by the researchers in connection to economic theory and existent dividend theories, which are tested for their relevance.

Table no. 4 Influence factors on dividend policies

Influence Factor	Frequency	Influence Factor	Frequency
Lifecycle theory	22.37%	Market Power	1.32%
Signalling theory	13.16%	Regulation - Semicompulsory Dividend	1.32%
Free-cashflow theory	11.84%	Inflation	1.32%
Catering theory	11.84%	Tax theory	1.32%
Agency theory	6.58%	Regulation - Semicompulsory Dividend	1.32%
Board Size	5.26%	Ownership	1.32%
Corporate Governance	3.95%	Cost of Debt	1.32%
Board Gender Diversity	1.32%	Existence of large shareholders	1.32%
Growth	1.32%	Risk	1.32%
Investment	1.32%	Board Independence	1.32%
Language spoken	1.32%	Foreign Ownership	1.32%
Bird in the hand theory	1.32%	Foregin Board Representation	1.32%
Dividend irrelevance theory	1.32%	CSR	1.32%

Source: Own making

As table no. 4 shows, the classical dividend theories such as the lifecycle theory, signalling theory, free-cashflow theory, catering theory, agency theory, bird in the hand theory and dividend irrelevance theory are still the most encountered in modern research performed on dividend policies, but some new influence factors were found by researchers, which stem from the fact that new independent variables were introduced from the field of corporate governance. Findings show that board gender diversity, board size, language spoken, ownership type, board independence and CSR involvement has an impact on dividend policies. The area of corporate governance has only recently been linked to the study of the influence factors on dividend policies, and it can be seen that research is already performed on these areas, as board related impact factors are already well represented in the research papers examined.

4.5 Countries examined

The geographical areas examined in the research papers are also important because they show the propensity of research towards those areas. The developed markets were thoroughly covered by pre-2015 research and now the emerging markets are getting into the spotlight.

Table no. 5 Countries examined

Country	Fr.%	Country	Fr.%	Country	Fr.%	Country	Fr.%
		Country	11.70	Country	F1./0	Country	11.70
United		_					
States	8.03%	Spain	2.19%	Chile	1.46%	Zimbabwe	0.73%
China	3.65%	Finland	2.19%	Denmark	1.46%	Bahrain	0.73%
Australia	2.92%	Germany	2.19%	Greece	1.46%	Kuweit	0.73%
United							
Kingdom	2.92%	France	2.19%	Hong Kong	1.46%	Oman	0.73%
Sweden	2.92%	Holland	1.46%	Israel	1.46%	Qatar	0.73%
Turkey	2.92%	South Africa	1.46%	Japan	1.46%	Saudi Arabia	0.73%
Egypt	2.92%	Russia	1.46%	Mexico	1.46%	Tunisia	0.73%
Indonesia	2.19%	Jordan	1.46%	Netherlands	1.46%	UAE	0.73%
Morocco	2.19%	Hungary	1.46%	Peru	1.46%	Ireland	0.73%
Malaysia	2.19%	Argentina	1.46%	Philippines	1.46%	Sri Lanka	0.73%
India	2.19%	Austria	1.46%	Poland	1.46%	New Zealand	0.73%
South							
Korea	2.19%	Belgium	1.46%	Portugal	1.46%	Taiwan	0.73%
Pakistan	2.19%	Brazil	1.46%	Singapore	1.46%	Vietnam	0.73%
Norway	2.19%	Canada	1.46%	Thailand	1.46%	Colombia	0.73%
Italy	2.19%	Switzerland	1.46%	Iran	0.73%		

Source: Own making

As expected, developed countries are well represented in the table above, but there are emerging countries as well which start to become a regular fixture in the databases of researchers of dividend policies, such as BRICS countries (Brazil, Russia, India, China, South Africa). Research trends include countries from the Middle East and also many Asian countries such as Thailand, Singapore, China, Sri Lanka, India. The new trend in making comparisons between developed and emerging markets made researchers study these countries more often in their empirical models, which opens new possibilities in solving the dividend puzzle.

4.6 Empirical methods used

The classic empirical models used by researchers, such as the OLS regressions and the fixed/random effects regressions are starting to be used together with more modern panel regression tools such as the GMM model.

Table no. 6 Methodology used

Methodology	Occurences
Fixed effects regression	23.26%
OLS	23.26%
Multivariate regression	13.95%
GMM Method	9.30%
Univariate regression	9.30%
Pooled OLS regression	9.30%
Logit regression	4.65%
Random effects regression	2.33%
Heckmann Estimation	2.33%
Panel regression	2.33%

Source: Own making

As table no. 6 shows, the main empirical research methodology used remains the OLS regression together with the fixed effects regression, but there is a strong presence of GMM models as well. Logit regressions and pooled OLS regressions are also used, together with multivariate and univariate regressions.

4.7 Relationship with ROA

The interaction between ROA and the amount of dividends paid is of utmost importance in the analysis of dividend policies. Because of this, it is important to check what kind of impact ROA, as a proxy for financial performance, has on the amount of dividends paid.

Table no. 7 Sign of ROA

Sign of ROA	Frequency
Positive	72.22%
Negative	27.78%

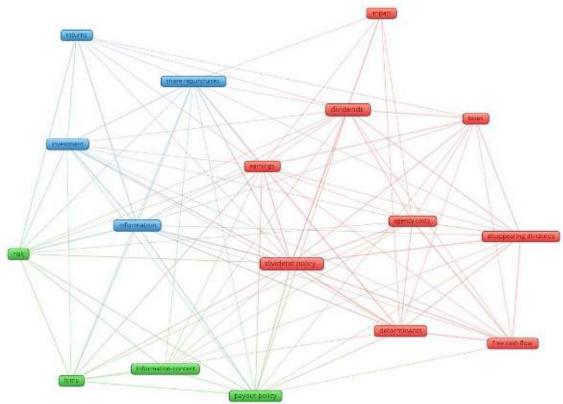
Source: Own making

As table no. 7 shows, most researchers found a positive impact of ROA on the level of dividends paid. However, there are instances when ROA has a negative impact on the level of dividends paid. The reason behind this occurrence is that companies that obtain a high ROA from their operational activity engage in further development and investment in their activity, eating the liquidity available for the payment of dividends, and also the reaction of the markets towards high ROA can be a strong appreciation of the share price of the firm, leading to a satisfaction high enough to compensate the lack of dividends if the main shareholder is an institutional investor.

4.8 Other keywords found in research

Many authors got their work highlighted in search results based on other keywords. There are many occurrences for "share repurchases", "earnings", "agency costs" and "determinants" as well. Figure no.1 below shows the map of keywords used by authors in the period analyzed.

Figure no. 1 Map of keywords used by authors



Source: Own working through the VOSViewer Tool

5. Conclusions

As the body of research on the topic of dividend policies and their influence factors grows, new instruments and research methodologies are used, new geographical areas are examined and new influence factors are found. The newest trends in research include corporate governance indicators into the independent variables mix, use modern empirical methods such as GMM models and approach emerging markets, often in comparison with the developed markets. Such research approaches are meant to get the research effort closer to solving the dividend puzzle.

The main gaps in scientific literature on the topic of dividend policies are related to the predilection of researchers to approach the dividend problem only through the financial perspective. Most independent variables used are referring to balance sheet related items, while research areas like sustainability and corporate governance are only recently included in the models. Other gaps in literature refer to the orientation towards the classic regression models and the inclusion of developed countries in the models instead of emerging countries or a mix between developed and emerging markets.

For future research authors will have to approach new empirical models such as GMM models and cover more emerging markets and geographical areas which were not thoroughly covered by existent research. ESG variables and socio-political variables will have to be included together with

the classic financial variables in the class of the independent variables in order to generate new interactions with the dividends paid that could get us closer to finding the solution to the dividend problem.

6. Acknowledgment

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7. References

- Aivazian, V., Booth, L. and Cleary, S, 2003. Dividend policy and the organization of capital markets, *Journal of Multinational Financial Management*, Vol. 13 No. 2, pp. 101-121.
- Al-Najjar, B. and Kilincarslan, E., 2017, Corporate dividend decisions and dividend smoothing: new evidence from, *International Journal of Managerial Finance*, Vol. 13 No. 3, pp. 1-38."
- Bae, K., El Ghoul, S., Guedhami, O., & Zheng, X., 2021. Board Reforms and Dividend Policy: International Evidence. *Journal of Financial and Quantitative Analysis*, 56(4), 1296-1320.
- Baker, H.K., Kapoor, S. and Jabbouri, I., 2018. Institutional perspectives of dividend policy in India, *Qualitative Research in Financial Markets*, 10(3), pp. 324–342"
- Benlemlih, M., 2018, Corporate Social Responsibility and Dividend Policy, *Research in International Business and Finance*, Vol. 47, pp. 647-671
- Brav, A., Graham, J.R., Harvey, C.R. and Michaely, R., 2005. Payout policy in the 21st century, *Journal of Financial Economics*, Vol. 77 No. 3, pp. 483-527.
- Chen, Y. and Zhou, Y., 2016. The Effect of the Semi-mandatory Dividends Policy on the Listing Companies Cash Dividend Policy, *Advances in Economics, Business and Management Research*, Vol.16, pp. 241-247.
- Davaadorj Z., 2019. Does social capital affect dividend policy? *Journal of Behavioural and Experimental Finance*, pp.116-128
- De Jong, A., Fliers, P., & van Beusichem, H., 2019. Catering and dividend policy: evidence from the Netherlands over the twentieth century, *Financial History Review*, Vol. 26(3), pp. 321–358
- DeAngelo, H., DeAngelo, L. and Stulz, R., 2006. Dividend policy and the earned/contributed capital mix: a test of the life-cycle theory, *Journal of Financial Economics*, Vol. 81 No. 2, pp. 227-254.
- Di Giuli, A., Karmaziene, E., Sekerci, N., 2020. Common Ownership and Firm Dividend Policies, *Finance Research Letters*, Vol. 40
- Driver, C., Grosman, A., Scaramozzino, P., 2019, Dividend policy and investor pressure, *Economic Modelling*, Vol. 89, pp. 559-576
- Eryomin, Ivan & Likhacheva, Olga & Chernikova, Lyudmila, 2021. Impact of Dividend Policy on the Market Value of the Company. SHS Web of Conferences. 91.
- Fama, E.F. and French, K.R., 2002. The equity premium, *The Journal of Finance*, Vol. 57 No. 2, pp. 637-659.
- Farooq, O. and Jabbouri, I., 2015. Cost of debt and dividend policy: evidence from the MENA region, *Journal of Applied Business Research*, Vol. 31 No. 5, pp. 1637-1644."
- Ferris, S., Sen, N. and Yui, H., 2006. Are fewer firms paying more dividends? The international evidence, *Journal of Multinational Financial Management*, Vol. 16 No. 4, pp. 333-362.
- Fliers, P. T., 2019. What is the relation between financial flexibility and dividend smoothing? *Journal of International Money and Finance*, Vol. 92, pp. 98-111.
- Guoying Deng, Shaoyang Zhao & Nanmiao Zhu (2015) Does Refinancing Incentive Affect Cash Dividends Policy? Evidence from the Semimandatory Dividend Policy in China, *Emerging Markets Finance and Trade*, 51:6, 1099 1116"
- Gyapong, E., Ahmed, A., Ntim, C.G., Nadeem, M., 2021. Board gender diversity and dividend policy in Australian listed firms: the effect of ownership concentration, *Asia Pacific Journal of Management*, Vol. 38, pp. 603–643
- H. Kent Baker & Rob Weigand, 2015. Corporate dividend policy revisited, *Managerial Finance*, vol. 41(2), pages 126-144, February.
- H. Kent Baker Imad Jabbouri, 2016. How Moroccan managers view dividend policy, *Managerial Finance*, Vol. 42 Iss 3 pp. 270-288
- Hamill, P.A. and Al-Shattarat, W. 2012. What determines the dividend payout ratio for Jordanian industrial firms?, *Journal of Emerging Market Finance*, Vol. 11 No. 2, pp. 161-188.

- Hauser, R., Thornton, J.H., 2017. Dividend policy and corporate valuation, *Managerial Finance*, Vol. 43, I.6, pp.663 678
- He, J., Xuan, T., Yang H., Zuo, L., 2020. Asymmetric Cost Behavior and Dividend Policy, *Journal of Accounting Research*, pp.989-1021,
- Hidayati Nur Rochmah and Ardianto Ardianto, 2020. Catering dividend: Dividend premium and free cash flow on dividend policy, Cogent Business & Management, Vol. 7:1
- Hyunmin, O., Park, S., 2021. Corporate Sustainable Management, Dividend Policy and Chaebol, Sustainability, 13, no. 13: 7495.
- Jensen, M.C., 1986. Agency cost of free cash flow, corporate finance, and takeovers, *The American Economic Review*, Vol. 76 No. 2, pp. 323-329.
- Kadochnikova E.I., Lisogor G.I., 2017. Modeling of Dividend Policy Determinants, Turkish Online Journal of Design, Art and Communication
- Kanojia, S., Bhatia, B.S., 2021. Corporate governance and dividend policy of the US and Indian companies, *Journal of Management and Governance*
- Kumar, J., 2006. Corporate governance and dividends payout in India, *Journal of Emerging Market Finance*, Vol. 5 No. 1, pp. 15-58
- La Porta, R., et al., (2000). Agency problems and dividend policies around the world, The Journal of Finance, Vol. 55 No. 1, pp. 1-33.
- Laurence Booth and Jun Zhou, 2015. Market power and dividend policy, *Managerial Finance*, vol. 41(2), pages 145-163, February.
- Lintner, J., 1956. Distribution of Incomes of Corporations among Dividends, Retained Earnings, and Taxes, *The American Economic Review*, Vol. 46, Nr.2, pp.97-113.
- Mbulawa,S., Okurut, N.F., Ntsosa, M.M., Sinha, N., 2020. Determinants of Corporate Dividend Policy under Hyperinflation and Dollarization by Firms in Zimbabwe, *Journal of Applied Finance & Banking*, vol. 10(2), pp. 1-24
- Miller, M. and Modigliani, F., 1961. Dividend policy, growth, and the valuation of shares, *The Journal of Business*, Vol. 34 No. 4, pp. 411-433.
- Miller, M.H. and Rock, K., 1985. Dividend policy under asymmetric information, *The Journal of Finance*, Vol. 40 No. 4, pp. 1031-1051.
- Munzhelele, N.F., Wolmarans, H. & Hall, J., 2021. Corporate life cycle and dividend payout: A panel data analysis of companies in an emerging market, *Journal of Economic and Financial Sciences*, Vol. 14(1), a617.
- Narasimhan, M. and Vijayalakshmi, S., 2002. Impact of agency cost on leverage and dividend policies, *The ICFAI Journal of Applied Finance*. Vol. 8(2), 16–25.
- Neves, M.E.D., Cunha, M.M., Vilas, J., 2020. Determinants of Dividends in the Telecommunications Sector. Revista Brasileira de Gestao de Negocios, Vol. 22(3), pp. 669-685
- Nishikawa, Y., Hashemi, M., Parhizgari, M.A., 2021. Languages and Dividend Policy, Journal of Behavioral Finance
- Renneboog, L. and Trojanowski, G., 2007. Control structures and payout policy, Managerial Finance, Vol. 33 No. 1, pp. 43-64.
- Shehata, Nermeen F., 2021. Board National Diversity and Dividend Policy: Evidence from Egyptian Listed Companies, *Finance Research Letters*
- Sheikh, M.F., Bhutta, A.I., Rehman, B., Bazil, M. and Hassan, A., 2021. Corporate social responsibility and dividend policy: a strategic choice in family firms, *Journal of Family Business Management*
- Tamimi, M. Takhatei, N. Malchi, F., 2014. Relationship between Firm Age and Financial Leverage with Dividend Policy. *Asian Journal of Finance & Accounting*. Vol. 6
- Thompson, E.K. and Adasi Manu, S., 2021, The impact of board composition on the dividend policy of US firms, Corporate Governance, Vol. 21 No. 5, pp. 737-753.
- Yarram, S.R., 2015. Corporate governance ratings and the dividend payout decisions of Australian corporate firms, *International Journal of Managerial Finance*, Vol. 11 No. 2, pp. 162-178.
- Yusof, Y. and Ismail, S., 2016, Determinants of dividend policy of public listed companies in Malaysia, *Review of International Business and Strategy*, Vol. 26 No. 1, pp. 88-99.

The Impact of Investments in Intangible Assets and Implications on SMEs' Performance. A Systematic Literature Review

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Abstract

Investments in intangible assets have become a strategic approach that has led to numerous benefits and boosts the firms' performance. Academics have studied the process, but there is no complete picture of how intangible resources impact SMEs' performance, this being the main motivation of the paper. The methodology applied is a systematic literature review and it consisted in applying a pre-selected criterion for retrieving the articles from the Web of Science database. The analysis showed that the impact of investments in intangible assets and implications on SMEs existing literature can be divided into six general lines of research. Scholars can use the study as a starting point to fill in research gaps relating to the relationship between intangible assets and SMEs' performance, while practitioners can use the data to determine the effects of this type of investment and how to use efficiently SMEs' resources.

Key words: intangible assets; systematic literature review; SMEs; performance; intangible resources.

J.E.L. classification: E22, G32, M20, O34.

1. Introduction

Intangible assets have become in the latest decades one of the most important factors in increasing profitability, developing innovation, and creating a competitive advantage for companies to stand out for the consumers (Ivanov and Mayorova, 2015; Khan et al., 2018; Ocak and Findik, 2019; Piekkola, 2020). The value of intangible assets has increased due to technological evolution, the boost of brands' importance, the need for differentiation and the globalization process. Definitions and classifications of intangible assets are diverse, but the common theory presents them as non-monetary assets, without physical substance, that bring internal economic advantages, respectively increasing market value (McClure, 2009).

The importance of intangible assets can be easily observed in various statistical research conducted both in the United States of America and Europe. In 2019, Aon and Ponemon Institute LLC showed the evolution of intangible versus tangible assets market value from top 5 S&P 500 companies, the timeframe selected being 1975 – 2018. The results show a clear change, starting in 1975 with a value of 0.122 \$T intangibles and 0.595 \$T tangibles versus 2018 with a value of 21.03 \$T intangibles and 4 \$T tangibles. Also, in 2020, Ocean Tomo conducted a study that showed the changes in the weight of intangibles assets, considering the market value, from companies included in the S&P 500 over the last 45 years. In 1975, 17% of the total market value was represented by intangible assets and in 2020 they weighted 90%, highlighting how relevant are in todays' business (see Figure 1).

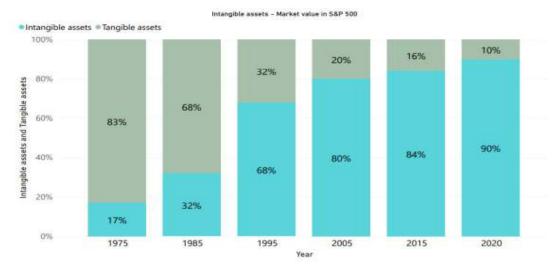


Figure no 1. Intangible assets – Market value in S&P 500

Source: Ocean Tomo, LLC Intangible Asset Market Value Study, 2020

The evolution of investments in intangible assets, both in public and private companies, was observed also in European states. In 2018, Eurostat and European Central Bank led a study that analyzed the growth of investments in intangible assets; one of the results showed that during the last 20 years, the investments in intellectual property exceeded the total investments in tangible assets.

Intangible assets have always been a complex and controversial topic both for accountants and economists, but also for national and international institutions that are in charge of managing and evaluating them. Since the 1920s', when assets were recorded according to their estimated value, intangible assets have become an object of attention. After the severe worldwide economic depression that started in 1929, the accountants have changed the recording method of assets, respectively the new criteria for recognizing them were pre-existing transactions. Once the IT industry and the technological field has advanced so rapidly and the focus shifted from the production area to services, companies have built and developed strong competitive advantages based on intangible assets.

Analyzing the accounting regulations, we can observe that the main types of intangible assets are goodwill, brand equity, intellectual property (trademarks, patents, copyrights), research and development. Considering this perspective, Stolowy and Jeny-Cazavan (2001) present two ways of defining intangible assets: a conceptual approach by developing a definition and a practical approach, by creating a list of assets that can be recognized in the future. Most of the countries use a combined method designed to offer more clarity by using a definition and a list.

This paper aims to analyze the existing literature regarding investments in intangible assets and how they influence SMEs' performance. To address the research goal, we investigated the papers indexed on the Web of Science database under a specific criterion and developed a systematic literature review. As such, this study provides a new perspective of the current state of literature and numerous research opportunities.

The study is structured as follows: theoretical background, the methodology applied in the paper selection, the findings and the theoretical and practical implication of the findings.

2. Theoretical background

Two of the most important international accounting standards-setting bodies, the International Accounting Standards Board (IASB) and the U.S Securities and Exchange Commission (SEC) developed different sets of accounting and financial standards: IFRS, respectively U.S. GAAP. The first set of standards is used in more than 120 countries; for example, all public companies from European Union are compelled to apply these rules in any financial report or presentation. The second set of standards applies only in the U.S., where all public and private firms are forced to respect them,

except private, foreign companies that can apply IFRS. Numerous specialists analyzed these regulations and observed both similarities and differences, including the topic of interest of this article, intangible assets. Over the last decades, these entities are working together to adapt and to align the standards, to avoid misunderstands and to offer more clarity.

Under IFRS, intangible assets are regulated accordingly to the standards from IAS 38, issued by IASB. They are illustrated as non-monetary assets, without physical substance, identifiable either as separate or as a result of contractual or other legal rights. U.S GAAP presents a similar definition, without the identifiable characteristic, but it is mentioned in the recognizing criteria.

One of the first efforts to create an international accounting standard regarding intangible assets was the issue of IAS 9 in 1978 which stated that research and development costs should be recorded as expenses unless the outcome of these activities is an asset. Since that moment, numerous modifications were made to clarify different aspects like amortization and depreciation or businesses combination.

According to IAS 38, intangible assets are classified from numerous perspectives: how they were acquired (bought - by separate purchase or as a part of a business combination or internal generated), by lifetime (determined – license or unlimited – reputation) and by content and use (intellectual capital, intellectual property, technological applications). Many researchers proposed other methods of classification. For example, Lev (2001) recommended an economic approach that separates intangible assets based on innovation, human resources and organization, explaining their value for the companies. In a subsequent study, Lev (2005) changes slightly the presented classification: he shifts the focus from innovation to other categories focused on products/services and relations with clients, highlighting the importance of customers loyalty and the value of the brands. Another perspective, based on value-added, is presented by Mortensen et al. (1997) by dividing intangible assets into four categories: innovation capital (research and development), structural capital, contracts, market capital, and goodwill.

Criteria for recording financial investments in an intangible asset as an expense is respecting the above-stated definition, the certification of a future economic advantage and correct identification of the cost. IAS 38 presents some challenging examples where the cost is difficult to be determined: internally generated brands, internal clients list, etc. Usually, companies divide the process of generating internal intangible assets into two stages: the research phase and the development phase. If there is no clear distinction between these two stages, all inquired expenses are recorded into the research phase.

The debates and the interest in intangible assets have been in a constant evolution, numerous authors focusing on the competite advantages they bring into the companies. Mehta and Madhani (2008) analyzed the existing literature review on intangible assets and they concluded that there is a direct, positive relation with companies' performance, being reliable sustianbility indicators. For public companies, investments in non-physical assets improve financial performance (Salamudin et al., 2010; Quan et al., 2020), increase the market value (Leliuc, 2018) and influence positively the liquidity ratios (Mendoza et al., 2017). Hintzmann et a. (2021) published a study where they analyzed the implications of intangible assets on work productivity, the sample consisted in data from 18 European countries with a time-frame of 22 years. The results showed that intangible assets, especially R&D and marketing have a strong impact on increasing work productivity. In countries from Northern Europe, intangible assets have a stronger impact than tangible assets, in Central Europe the results are opposite and in the Southern Europe, the impacts are comparable.

Considering both the interest of national and international regulating bodies on intangible assets, and also the effort invested in numerous studies that focused on this topic, we intend to make sense of the current research landscape and highlight many promising areas for future-related analysis by evaluating the current body of literature.

3. Research methodology

Numerous studies confirm the development and the importance of intangible assets by conducting a comparative analysis between the market value and the book value of the companies. For example, McClure (2009) selected 3.500 U.S. large businesses and showed that the book value is only 28% from the market value, in contrast to the year 1975 when deviation was only 5%. The same

conclusion was made by Ocean Tomo (2010) when they analyzed the value from financial reports, which was only 20% of the market value. Despite numerous articles related to intangible assets and companies' performance, there remain several gaps in the literature, one of them being if and how investments in intangible resources influence small and medium-sized enterprises (SMEs) economic results.

The choice of interest in small and medium-sized enterprises (SMEs) is based on the fact they are a core part of economies around the world, especially for the emerging and developing countries in which they generate important financial revenues and contribute to job creations, respectively reducing the unemployment (Bell, 2015). The World Bank states that 90% of worldwide businesses are SMEs and they sustain more than 50% of the employment, in emerging economies contributing by 40% to the GDP. In addition, their research estimates an increase in job demand that will be partly covered by SMEs. The World Bank emphasizes the role of SMEs and why they should be a top priority for governments, themselves offering important financial support for creating and developing this economic area. There are numerous financial support programs designed for SMEs; for example, European Union provides access to many resources for implementation and development, considering that 99% of registered businesses are SMEs.

The motivation of this paper is to assess the existing literature on investments in intangible assets and the implications on SMEs' performance, to examine the current state of specialized literature development and to discover future research opportunities. To the best of our knowledge, a detailed literature review on the impact of investments in intangible assets and implications on SMEs' performance doesn't exist up to date.

The methodology selected for rigorously analyzing the research conducted on the above-stated topic is a systematic literature review. This approach has been used mainly in medical science, but it is increasing in the economic field due to its advantages that imply a transparent, efficient, and objective (Snyder et al., 2016; Fombelle and Kristensson, 2016). By conducting a systematic literature review, it can be determined if there is a constant across articles, if there are different results and what may be the source and to detect possible directions for expanding a certain subject. In order to answer a clearly articulated objective, a systematic literature review (SLR) identifies, selects, and critically assess information (Dewey and Drahota, 2016). Before the systematic review is undertaken, the criteria should be explicitly outlined in a clearly defined methodology or plan. It's a transparent, thorough search that spans several databases and grey literature and can be replicated by other academics. It entails devising a well-thought-out search strategy that focuses on a certain topic or answers a specific topic. Within established timeframes, the review indicates the sort of information searched, criticized, and reported. The review must include the search terms, search tactics and limits.

Papers selection was conducted in two phases. The first part was based on retrieving papers related to intangible assets and SMEs from Web of Science, a complex citation database that contains more than 80 million records from 256 disciplines. In the research process, there were used several expressions (intangible assets, SMEs, small and medium-sized enterprises, small and medium enterprises, intangible resources) in order to discover relevant articles and to minimize redundancy. Papers had to meet the following criteria for inclusion: (a) written in the English language & published in a peer-reviewed academic journal; there were excluded books, book chapters, non-refereed publications, and discussion papers.

The second phase of the selection process is to select the papers with high scientific quality, by ranking the journals based on SJR score and H index score. This information is retrieved from the website http://www.scimagojr.com; SJR (Scimago Journal Rank) score is a quality measure of a journal and the H index shows the number of articles and the number of citations. The Journal Citation Reports published by Thomson Reuters gives annually rankings of science and social science journals named Impact Factor (IF) data. Quartiles are used for rankings: Q1 denotes the top 25% of the IF distribution, Q2 for the middle-high position (between top 50% and top 25%), Q3 middle-low position (top 75% to top 50%), and Q4 the lowest position (bottom 25% of the IF distribution).

4. Findings

The first phase of the selection process produced 100 articles. The second part consisted in ranking the journals of the 100 papers and selecting only the ones with SJR score above 1 and included in Q1 & Q2 (68 articles - Table 1) in line with Grimaldi et al. (2017), Torres-Carrión et al. (2018) and Nichita (2019).

Table no. 1 Journals of the articles selected in phase 1

Source Title	SJR Best Quartile	SJR	H index	Count of Articles
JOURNAL OF INTELLECTUAL CAPITAL	Q1	1,26	89	7
SUSTAINABILITY	Q1	0,61	85	5
SMALL BUSINESS ECONOMICS	Q1	2,20	131	5
INTERNATIONAL MARKETING REVIEW	Q1	1,20	89	2
JOURNAL OF KNOWLEDGE MANAGEMENT	Q1	1,84	113	2
BRITISH FOOD JOURNAL	Q2	0,51	80	2
QUALITATIVE MARKET RESEARCH	Q2	0,65	54	2
ECONOMIA POLITICA	Q2	0,47	13	2
AMFITEATRU ECONOMIC	Q2	0,34	20	2
EUROPEAN JOURNAL OF INNOVATION MANAGEMENT	Q2	0,78	63	2
INTERNATIONAL ENTREPRENEURSHIP AND MANAGEMENT JOURNAL	Q1	1,34	55	2
JOURNAL OF BUSINESS ECONOMICS AND MANAGEMENT	Q2	0,49	37	2
SOCIAL INDICATORS RESEARCH	Q1	0,82	107	1
MANAGEMENT DECISION	Q1	0,92	98	1
JOURNAL OF ORGANIZATIONAL AND END USER COMPUTING	Q2	0,46	32	1
HELIYON	Q1	0,46	28	1
EUROPEAN JOURNAL OF SCIENCE AND THEOLOGY	Q1	0,49	18	1
INTERNATIONAL BUSINESS REVIEW	Q1	1,77	95	1
JOURNAL OF INTERNATIONAL BUSINESS STUDIES	Q1	4,82	195	1
CREATIVITY AND INNOVATION MANAGEMENT	Q1	1,15	60	1
JOURNAL OF SUSTAINABLE TOURISM	Q1	1,73	103	1
INTERNATIONAL FOOD AND AGRIBUSINESS MANAGEMENT REVIEW	Q2	0,47	35	1
MATHEMATICS	Q2	0,50	32	1
INTERNATIONAL JOURNAL OF ENTREPRENEURSHIP AND INNOVATION	Q2	0,60	16	1
SERVICE INDUSTRIES JOURNAL	Q1	1,18	66	1
INTERNATIONAL JOURNAL OF MANPOWER	Q2	0,44	58	1
EXPERT SYSTEMS WITH APPLICATIONS	Q1	1,37	207	1
INTERNATIONAL JOURNAL OF ORGANIZATIONAL ANALYSIS	Q2	0,42	25	1
CORPORATE SOCIAL RESPONSIBILITY AND ENVIRONMENTAL MANAGEMENT	Q1	1,52	73	1
INTERNATIONAL JOURNAL OF PRODUCTION RESEARCH	Q1	1,91	142	1
JOURNAL OF SCIENCE AND TECHNOLOGY POLICY MANAGEMENT	Q2	0,47	16	1
BUSINESS STRATEGY AND THE ENVIRONMENT	Q1	2,12	105	1
KYBERNETES	Q2	0,31	40	1
AGRIBUSINESS	Q2	0,57	43	1
MANAGEMENT RESEARCH REVIEW	Q2	0,56	53	1
JOURNAL OF BUSINESS RESEARCH	Q1	2,05	195	1
OECONOMIA COPERNICANA	Q1	0,59	13	1
JOURNAL OF BUSINESS VENTURING	Q1	7,11	182	1
REVIEW OF INTERNATIONAL BUSINESS AND STRATEGY	Q2	0,56	29	1
JOURNAL OF CLEANER PRODUCTION	Q1	1,94	200	1
EUROPEAN MANAGEMENT JOURNAL	Q1	1,37	102	_
JOURNAL OF ENTREPRENEURSHIP IN EMERGING ECONOMIES	Q1	0,65	15	1
EVALUATION AND PROGRAM PLANNING	Q2	0,56	62	1
JOURNAL OF INFORMATION SCIENCE	Q1 Q2	0,50	64 113	1
ENVIRONMENTAL SCIENCE AND POLLUTION RESEARCH	Ų2	0,85	113	68
Grand Total				80

Source: Personal approach of the authors

The next step was analyzing the sample reduced to 68 articles from 45 journals, to discover which of them are in the scope of our research. After a preliminary screening of the abstract of the emergent articles, we eliminated those that do not fall under the research question, the final pool consisting of 22 papers (Table 2).

Table no. 2 Articles selected in phase 2

Author Full Names	Article Title	Source Title
Agostini, Lara; Caviggioli, Federico; Filippini, Roberto; Nosella, Anna	Does patenting influence SME sales performance? A quantity and quality analysis of patents in Northern Italy	European Journal of Innovation Management
Agostini, Lara; Nosella, Anna	Enhancing radical innovation performance through intellectual capital components	Journal of Intellectual Capital
Amadieu, Paul; Viviani, Jean- Laurent	Intangible Effort and Performance: The Case of the French Wine Industry	Agribusiness
Anderson, Brian S.; Eshima, Yoshihiro	The influence of firm age and intangible resources on the relationship between entrepreneurial orientation and firm growth among Japanese SMEs	Journal of Business Venturing
Brown, Dalila; Foroudi, Pantea; Hafeez, Khalid	Marketing management capability: the construct and its dimensions An examination of managers' and entrepreneurs' perceptions in a retail setting	Qualitative Market Research
Carmona, Pedro; Momparler, Alexandre; Gieure, Clara	The performance of entrepreneurial small- and medium-sized enterprises	Service Industries Journal
Crema, Maria; Verbano, Chiara	Managing Intellectual Capital in Italian Manufacturing SMEs	Creativity and Innovation Management
Cucculelli, Marco; Bettinelli, Cristina	Business models, intangibles and firm performance: evidence on corporate entrepreneurship from Italian manufacturing SMEs	Small Business Economics
Dai, Ou; Liu, Xiaohui	Returnee entrepreneurs and firm performance in Chinese high-technology industries	International Business Review
Foroudi, Pantea; Gupta, Suraksha; Nazarian, Alireza; Duda, Marta	Digital technology and marketing management capability: achieving growth in SMEs	Qualitative Market Research
He, Xiaoyun; Lu, Haibing	Catch a Fad or Capture a Value? Social Media Leverage in SMEs	Journal of Organizational and End User Computing
Khalique, Muhammad; Hina, Khushbakht; Ramayah, T.; bin Shaari, Jamal Abdul Nassir	Intellectual capital in tourism SMEs in Azad Jammu and Kashmir, Pakistan	Journal of Intellectual Capital
Khan, Kashif Ullah; Atlas, Fouzia; Ghani, Usman; Akhtar, Sadia; Khan, Farhan	Impact of intangible resources (dominant logic) on SMEs innovation performance, the mediating role of dynamic managerial capabilities: evidence from China	European Journal of Innovation Management
Khan, Sher Zaman; Yang, Qing; Waheed, Abdul	Investment in intangible resources and capabilities spurs sustainable competitive advantage and firm performance	Corporate Social Responsibility and Environmental Management
Knight, Gary A.; Kim, Daekwan	International business competence and the contemporary firm	Journal of International Business Studies
Nunes, Paulo Macas; Almeida, Alcina	The Quadratic Relationship between Intangible Assets and Growth in Portuguese SMEs	Amfiteatru Economic

Ramos-Gonzalez, Maria del Mar; Rubio-Andres, Mercedes; Sastre-Castillo, Miguel Angel	Effects of socially responsible human resource management (SR-HRM) on innovation and reputation in entrepreneurial SMEs	International Entrepreneurship and Management Journal
Rua, Orlando Lima	From intangible resources to export performance: Exploring the mediating effect of absorptive capabilities and innovation	Review of International Business and Strategy
Rua, Orlando; Franca, Alexandra; Fernandez Ortiz, Ruben	Key drivers of SMEs export performance: the mediating effect of competitive advantage	Journal of Knowledge Management
Seo, Hyeon Sik; Kim, YoungJun	Intangible Assets Investment and Firms' Performance: Evidence from Small and Medium- Sized Enterprises in Korea	Journal of Business Economics and Management
Strielkowski, Wadim; Guliyeva, Aida; Rzayeva, Ulviyya; Korneeva, Elena; Sherstobitova, Anna	Mathematical Modeling of Intellectual Capital and Business Efficiency of Small and Medium Enterprises	Mathematics
Ying, Qianwei; Hassan, Hazrat; Ahmad, Habib	The Role of a Manager's Intangible Capabilities in Resource Acquisition and Sustainable Competitive Performance	Sustainability

Source: Personal approach of the authors

The content analysis can be divided into some broad categories: intellectual capital and SMEs performance (6 articles); intangible assets/resources and SMEs performance (4 articles); intangible assets effect on innovation and innovation impact on SMEs' performance (4 articles); marketing and social media and SMEs' performance (3 articles); intangible resources and SMEs' export performance (2 articles); entrepreneurial orientation and capabilities and SMEs' performance (2 articles); international business competence (IBC – intangible asset) and international performance of SMEs (1 article).

4.1 Intellectual capital and SMEs' performance

Crema and Verbano (2014) analyzed the relationship between intellectual capital (IC) and Italian manufacturing SMEs. According to existing literature, authors select human capital (HC), internal structural capital (ISC) and relational capital (RC). Conclusions show that Italian manufacturing SMEs have well-developed HC, moderately developed RC and heterogeneous results for ISC. The firm's performance is positively influenced by IC components.

Agostini and Nosella (2017) focused on the relationship between intellectual capital (IC) components (human capital, relational capital and organizational capital) and radical innovation performance. The sample contains 975 Italian SMEs and the applied methodology is hierarchical regression. The conclusion is that human capital positively influences the relational and organizational capital, which enhance radical innovation performance. This means that employees represent a critical part of the growing reputation and innovation of SMEs.

Khan et al. (2018) published a study on 329 Pakistani SMEs, respectively if sustainable competitive advantage (SCA) and firm performance (FP) are positively influenced by intellectual capital (IC), financial capability (FC), and corporate social responsibility (CSR). The methodology used is the structural equation model (SEM) and data was collected through surveys. The conclusions show that IC, FC and CSR have a strong, positive impact on SCA and FP. In addition, SCA has a mediating role in the relations between FC, respectively CSR and FP, and it emphasizes the importance of investments in IC and intangible resources in general.

Khalique et al. (2018) proposed a study regarding the influence of intellectual capital (IC) on the organizational performance of a sample of Pakistani SMEs from the tourism industry. According to scientific literature, IC incorporates six components: human capital, customer capital, structural capital, social capital, technological capital and structural capital (Khalique et al., 2011). The research concluded that IC, as an overall concept, has a positive impact on organizational performance. Separately, the most influential components were the customer and technological

capital. Human capital, social capital and spiritual capital are characterized with medium influence and structural capital appears as a negatively significant variable.

Ying et al. (2019) proposed a study regarding the impact of managers' intangible capabilities in sustainable competitive performance with a mediating role of resource acquisition. The sample consists of data from 384 owners/managers of Pakistani SMEs, collected through questionnaires. The results show that intellectual capital (IC) is relevant in both resource aquation and sustainable competitive performance. In addition, especially SMEs that have limited resources should enhance managers intangible capabilities in resource aquation.

Strielkowski et al. (2021) used mathematical models to test the influence of intellectual capital (IC) on 206 SMEs from CIS countries. IC components selected for this study are human capital, structural capital, and customer capital. The findings show that IC is not utilized by the management of SMEs in CIS countries, but it is demonstrated that it positively influences the performance, in combination with financial resources and with some important reservations.

The above articles show that intellectual capital brings valuable advantages to SMEs that invest in this type of intangible assets and both managers and employees are a key part of businesses development.

4.2 Intangible assets/resources and SMEs' performance

Nunes and Almeida (2009) published an article regarding the impact of intangible assets on the Portuguese SMEs' performance. The sample was selected from the SABI database and authors retrieved information from 1383 SMEs during 1999 and 2005. The results show that it exists a quadric relation between intangible assets and SMEs growth, the intangible resources being a catalyzing factor. In addition, the findings reflect a negative relationship between both the age and the size of the firms and the growth of SMEs; the performance is also accelerated by internal finance.

Amadieu and Viviani (2010) published a study that focuses on the influence of intangibles on the financial performance of wine industry French SMEs. The fundamental takeaway is that investing in intangibles does not ensure financial success for French wineries. Intangible expenses have a favourable impact on commercial performance for enterprises more involved in the marketing process, such as wholesalers, but there is no transition into financial performance, implying that cash flows created by these investments are insufficient.

Cucculelli and Bettinelli (2014) focused on 376 Italian SMEs over 10 years (2000-2010) to analyze the performance by business models and investments in intangible assets (R&D and advertising on sales). The used statistical method is regression and selected dependent variables for quantifying performance are return on sales (ROS) and total factor productivity (TFP). The results show that SMEs' performance is positively influenced by both business models changes and investments in intangible assets, separately and together. In addition, the empirical evidence shows that business model innovations support more effectively the ROS and intangibles influence more the TFP.

Seo and Kim (2019) analyzed in their paper the impact of investments in intangible assets on Korean SMEs' performance. The sample consists of 173 production firms that invest in intangible assets: human capital, marketing and R&D. Statistical method applied is regression, the dependent variable being firm performance and the independent variables being the above investments in intangible assets. The results show that SMEs' performance and market value is positively influenced by investments in intangible assets and that should motivate firms from both public and private sector from Korea to invest in this kind of assets.

Intangible assets are valuable investments that influence positively SMEs' performance. According to the journals above, the most widely used methodology is statistical analysis, respectively regression.

4.3 Intangible assets effect on innovation and innovation impact on SMEs' performance

Carmona et al. (2012) published a comparative study on SMEs' performance considering the innovative or non-innovative characteristics. The sample contains in 3.217 firms: 2.471 non-innovative and 746 innovative. Authors use intangible assets as a proxy for innovation (Lev, 2001). The results show that innovative firms perform better than non-innovative ones and they have numerous advantages, including lower tax rates.

Agostini et al. (2014) analyzed the impact of patents on the performance of 196 Italian SMEs. The methodology applied consists of cross-sectional time-series regression. Patents are one of the most important and highly used intangible assets. The results show that overall, patents influence positively SMEs' performance, but the increase in the number of patents doesn't imply an increase in achievements. One of the most relevant findings is that SMEs should prioritize the investments in patents and should select only the patents that relate to the core part of the business and that bring value to the firm.

Khan et al. (2020) published an analysis on the relation and influence of intangible resources (dominant logic) on Chinese SMEs innovation performance. In addition, the research questions focus on the mediating role of dynamic managerial capabilities. Dominant logic consists of two parts: information filter (pro-activeness and external orientation) and routines (learning and routines and dynamic managerial capabilities refer to managerial human capital, managerial social capital and managerial cognition. The results show that innovation performance is positively impacted by the use of intangible resources, respectively dominant logic. Another conclusion of this study, that confirms the previous findings in the literature review, highlights the importance of managerial capabilities as they are valuable intangible resources, and they bring valuable competitive advantages.

Ramos-González et al. (2020) analyzed the influence of socially responsible human resource management (SR-HRM) on two of the most important intangible assets, innovation and reputation. The sample consists of 261 SMEs and the methodology was partial least squares (PLS). Results show intangible assets have a strong relation, while innovation has a significant and positive influence on reputation in SMEs. In addition. SR-HRM impacts positively both SMEs innovation and reputation level, essential aspects for firms' performance.

The results show that investments in intangible assets impact positively innovation and the performance of SMEs. In addition, they bring competitive advantages and help businesses in differentiation.

4.4 Marketing and social media and SMEs' performance

He and Lu (2016) focused on the impact of using social media on SMEs' performance. The sample consists of 146 U.S. SMEs. The results confirm the previous findings from the specialized existing literature (Fournier and Avery, 2011; Kaplan and Haenlein, 2010; Laroche et al., 2013), respectively that investments in social media can create valuable intangible assets. In addition, SMEs' managers should focus on the online community that is built due to social media activity and that these efforts bring value and differentiation in long term.

Brown et al. (2019) focused in their paper on the relationship between intangible assets and marketing capabilities. Data was gathered through 19 interviews with managers and entrepreneurs from 12 UK SMEs from the retail industry. The findings of this study show that a company's communication with internal and external stakeholders about critical aspects of management, marketing, customer relationships, communication, innovation, and performance skills can become clearer and more valued through intangible assets.

Foroudi et al. (2019) proposed an article with the intent to assess the relation between digital technology, tangible/intangible assets and marketing management capabilities in the case of UK SMEs. The results show that marketing capabilities are strongly influenced by digital technology and they impact the growth of SMEs' performance.

Data were collected mainly through surveys and the findings recommend to managers invest in marketing activities and social media activity to create customers loyalty and to engage communities for the SMEs' performance.

4.5 Intangible resources and SMEs' export performance

Rua, Franca and Ortiz (2018) focused on what are the main determinants of 247 Portuguese SMEs' export performance (EP). The authors developed a model to test if entrepreneurial orientation, intangible resources, and absorptive capabilities have a positive relation with EP and if this relation is mediated by competitive strategies, cost leadership or differentiation. Intangible resources consist of reputational resources, access to financial resources, human resources, cultural resources, relational resources and informational (knowledge) resources (Morgan et al., 2006). The results show

that intangible resources positively influence the development of cost leadership and even more, differentiation. There is no direct connection between intangible resources and EP, but through strategy, they become key drivers to SMEs' export performance.

On a similar sample, Rua (2018) published another study that focused on the impact of intangible assets on export performance, taking into account the mediating role of absorptive capabilities and innovation. Intangible resources have a positive, significant, and direct impact on absorptive capabilities and export performance but no significant and direct impact on innovation. Absorptive capabilities have no influence on the export performance, but innovation has a positive, significant, and direct impact on export performance and it also implies a mediating effect on the relationship between intangible resources and export performance.

Both articles show that SMEs' export performance is positively influenced by investments in intangible resources, either by being key drivers or by direct impact.

4.6 Entrepreneurial orientation and capabilities and SMEs' performance

Anderson and Eshima (2013) published a study on the relationship between entrepreneurial orientation (EO) and firm growth, under the influence of firm age and intangible resource advantage on a sample of 207 Japanese SMEs. Intangible resource advantage consists in measuring employee know-how, managerial systems, company reputation, intellectual property, and informal social networks. The authors applied hierarchical linear regression analysis, and the conclusions show that even though EO increases, without intangible resource advantage, the firms don't significantly grow; also, younger SMEs can experience higher growth levels in combination with higher EO than the older firms.

Dai and Liu (2009) proposed a comparative analysis between returning and local entrepreneurs and their impact on Chinese SMEs' performance from high-tech industries. The results show that returning entrepreneurs (who studied or worked in OECD countries) use their intangible resources in terms of commercial and technological know-how and overperform the local entrepreneurs and positively influence companies' growth.

The conclusions of the above studies show that entrepreneurial orientation combined with intangible capabilities influence positively the growth of Chinese and Japanese SMEs.

4.7 International business competence (IBC – intangible asset) and international performance of SMEs

Knight and Kim (2008) analyzed what is the connection between international business competence (IBC) and the international performance of SMEs. According to the specialized literature, IBC is itself an intangible, a concept that includes intangible assets and competencies (Lambe, Spekman and Hunt, 2002; Ritter and Gemunden, 2004; Johnson and Sohi, 2003; Johnson et al., 2006). Considering that the scope of the research was analyzing SMEs that developed abroad, the authors included: in IBC international orientation, international marketing skills, international innovativeness, and international market orientation. The data was gathered through case study interviews (16 SMEs – first phase) and surveys (354 SMEs – second phase). The results emphasize that IBC is important in the internationalization of companies, especially for SMEs, that don't rely on the same amount of financial and tangible assets as large companies do.

5. Conclusions

This paper provides a systematic review of the scientific literature about the impact of investments in intangible assets on SMEs' performance. In the last decades, the importance of intangible resources has increased dramatically, and the growth of businesses has been directly connected to this type of asset.

We conducted a systematic literature review that was based on a sample of 22 high-quality peerreviewed articles obtained through a rigorous data collection process and selection from Web of Science. After proceeding with the pre-selected criteria and understanding which papers apply to our research questions, the 22 articles were classified into five macro themes: intellectual capital and SMEs' performance (6 articles); intangible assets/resources and SMEs' performance (4 articles); intangible assets effect on innovation and innovation impact on SMEs' performance (4 articles); marketing and social media and SMEs' performance (3 articles); intangible resources and SMEs' export performance (2 articles); entrepreneurial orientation and capabilities and SMEs' performance (2 articles); international business competence (IBC – intangible asset) and international performance of SMEs (1 article).

To the best of our knowledge, these are the most important articles regarding the impact of investments in intangible assets on SMEs' performance. The results of the analysis show that intangible assets are positive influencers, either as a whole concept or as a separate intangible resource like innovation, marketing, or entrepreneurial orientation on businesses development.

Several academic and practical implications are presented in our study. Firstly, through this paper, we bring valuable information regarding the status of the research – the impact of the investments in intangible assets on SMEs' performance. The conclusions show that there is a research gap in the existing literature and there are numerous future directions to test and validate the findings of the analysis. Secondly, managers and entrepreneurs should analyze the above relationship and consider that the resources of SMEs are limited, and any investment must have profitable returns.

Limitations of our analysis are mainly related to our paper selection process and choice of data. Our source was the Web of Science database and other researchers might conduct this literature review by using other sources, for example, Scopus. In addition, the criteria can be changed and include other words or expressions to find relevant articles to observe the constant effect of investments in intangible assets.

6. References

- Agostini, L. & Nosella, A., 2017. Enhancing radical innovation performance through intellectual capital components. *Journal of Intellectual Capital*, 18(4), pp. 789-806.
- Agostini, L.; Caviggioli, F.; Filippini, R. & Nosella, A., 2015. Does patenting influence SME sales performance? A quantity and quality analysis of patents in Northern Italy. European Journal of Innovation Management, 18(2), pp. 238–257.
- Amadieu, P. & Viviani, J.L., 2010. Intangible Effort and Performance: The Case of the French Wine Industry. *Agribusiness*, 26(2), pp. 280-306.
- Anderson, B.S. & Eshima, Y., 2013. The influence of firm age and intangible resources on the relationship between entrepreneurial orientation and firm growth among Japanese SMEs. *Journal of Business Venturing*, 28(30), pp. 413-429.
- Aon & Ponemon Institute LLC, 2019. EMEA Intangible Assets Financial Statement Impact Comparison Report.
- Barnes, P. & McClure, A., 2009. Investments in Intangible Assets and Australia's Productivity Growth. *Productivity Commission*.
- Brown, D.; Foroudi, P. & Hafeez, K., 2019. Marketing management capability: the construct and its dimension. An examination of managers' and entrepreneurs' perceptions in a retail setting. *Qualitative Market Research*, 22(5), pp. 609-637
- Carmona, P.; Momparler, A. & Gieure, C., 2012. The performance of entrepreneurial small- and medium-sized enterprises. *Service Industries Journal*, 32(15), pp. 2463-2487.
- Crema, M. & Verbano, C., 2016. Managing Intellectual Capital in Italian Manufacturing SMEs. *Creativity and Innovation Management*, 25(3), pp. 408-421.
- Cucculelli, M. & Bettinelli, C., 2015. Business models, intangibles and firm performance: evidence on corporate entrepreneurship from Italian manufacturing SMEs. Small Business Economics, 45(2), pp. 329-350
- Dai, O. & Liu, X.H., 2009. Returnee entrepreneurs and firm performance in Chinese high-technology industries. *International Business Review*, 18(4), pp. 373-378
- Dewey, A. & Drahota, A., 2016. Introduction to systematic reviews: online learning module Cochrane Training
- Foroudi, P.; Gupta, S.; Nazarian, A. & Duda, M., 2017. Digital technology and marketing management capability: achieving growth in SMEs. *Qualitative Market Research*, 20(2), pp. 230-246
- He, X.Y. & Lu, H.B., 2016. Catch a Fad or Capture a Value? Social Media Leverage in SMEs. *Journal of Organizational and End User Computing*, 28(3), pp. 67-81
- Ivanov, G., & Mayorova, E., 2015. Intangible Assets and Competitive Advantage in Retail: Case Study from Russia. *Asian Social Science*, 11(12), pp. 38-45

- Khalique, M.; Hina, K.; Ramayah, T. & Shaari, J.A.N.b.., 2020. Intellectual capital in tourism SMEs in Azad Jammu and Kashmir, Pakistan. *Journal of Intellectual Capital*, 21(3), pp. 333-355.
- Khan S.Z., Yang Q. & Waheed A., 2019. Investment in intangible resources and capabilities spurs sustainable competitive advantage and firm performance. *Corporate Social Responsibility and Environmental Management*, 26(2), pp. 285-295
- Khan, K.U.; Atlas, F.; Ghani, U.; Akhtar, S. & Khan, F., 2020. Impact of intangible resources (dominant logic) on SMEs innovation performance, the mediating role of dynamic managerial capabilities: evidence from China. *European Journal of Innovation Management*, doi:10.1108/ejim-07-2020-0276.
- Khan, S.Z., Yang, Q. & Waheed, A., 2019. Investment in intangible resources and capabilities spurs sustainable competitive advantage and firm performance. *Corporate Social Responsibility and Environmental Management*, 26(2), pp. 285-295.
- Knight, G.A. & Kim, D., 2009. International business competence and the contemporary firm. *Journal of International Business Studies*, 40(2), pp. 255-273
- Mehta, A.D. & Madhani, P.M., 2008. Intangible assets An introduction, The Accounting World 8(9), pp. 11-19.
- Nunes, P.M. & Almeida, A., 2009. The Quadratic Relationship between Intangible Assets and Growth in Portuguese SMEs. *Economic Interference*, 11(25), pp. 151-158
- Ocak, M. & Findik, D., 2019. The Impact of Intangible Assets and Sub-Components of Intangible
 Assets on Sustainable Growth and Firm Value: Evidence from Turkish Listed Firms. Sustainability,
 11(19), pp. 1-23
- Ocean, T., 2020. Ocean Tomo's Intangible Asset Market Value Study.
- Piekkola, H., 2020. Intangibles and innovation-labor-biased technical change. *Journal of Intellectual Capital*, 21(5), pp. 649-669.
- Ramos-Gonzalez, M.D.; Rubio-Andres, M. & Sastre-Castillo, M.A., 2021. Effects of socially responsible human resource management (SR-HRM) on innovation and reputation in entrepreneurial SMEs. *International Entrepreneurship and Management Journal*, https://doi.org/10.1007/s11365-020-00720-8
- Rua, O.; Franca, A. & Ortiz, R.F., 2018. Key drivers of SMEs export performance: the mediating effect of competitive advantage. *Journal of Knowledge Management*, 22(2), pp. 257-279
- Rua, O.L., 2018. From intangible resources to export performance: Exploring the mediating effect of
 absorptive capabilities and innovation. Review of International Business and Strategy, 28(3-4), pp. 373394.
- Salamudin N., Bakar R., Kamil Ibrahim M., & Haji Hassan F., 2010. Intangible assets valuation in the Malaysian capital market. *Journal of Intellectual Capital*, 11(3), pp. 391-405
- Seo, H.S. & Kim, Y., 2020. Intangible Assets Investment and Firm's Performance: Evidence from Small and Medium-Sized Enterprises in Korea. *Journal of Business Economics and Management*, 21(2), pp. 421-445
- Stolowy, H., & Jeny-Cazavan, A., 2001. International accounting disharmony: the case of intangibles. *Accounting, Auditing & Accountability Journal*, 14(4), pp. 477–497.
- Strielkowski, W.; Guliyeva, A.; Rzayeva, U.; Korneeva, E. & Sherstobitova, A., 2021. Mathematical Modeling of Intellectual Capital and Business Efficiency of Small and Medium Enterprises. *Mathematics*, 9(18), 2305, https://doi.org/10.3390/math9182305
- Ying, Q.W.; Hassan, H. & Ahmad, H., 2019. The Role of a Manager's Intangible Capabilities in Resource Acquisition and Sustainable Competitive Performance. *Sustanability*, 11(2), doi:10.3390/su11020527.

Financial Intermediation in Romania

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Abstract

The study of financial intermediation is a current issue constantly analyzed at the level of national economies or geographical areas. The specialized literature is rich in materials and support models. Therefore, we set out to analyze the degree of financial intermediation in Romania in the current period. By studying the causal relationship between the loans to the private sector and banking sector assets as a share of GDP, we will highlight current trends, capturing the subsequent causes and effects.

In the future, this paper may be part of a larger study that aims to investigate the causes for the low level of financial intermediation in Romania, to identify the main obstacles in sustainably increasing the value of the indicator, and to sketch out possible solutions for overcoming them.

Key words: financial intermediation, financial system, non-government credit

J.E.L. classification: G01, G20, G21, G24, G30, E50

1. Introduction

The financial intermediation process refers to the set of activities through which the funds attracted from the savers are made available to those who need funds. In this sector, the main actors are the credit institutions that perform the financial intermediation in the savings-investment process. The degree of financial intermediation is defined at the level of an economy as non-government credit expressed as a share of GDP.

The analysis of this indicator occupies an important place on the agenda of central banks, national and international financial institutions, financial analysts and professional associations (e.g., Romanian Association of Banks). To a large extent, financial intermediation development correlates with the degree of development of a country, as well as with its potential to attract financial funds and investments.

The importance of the indicator at a macroeconomic level justifies its analysis carried out for the current period. Moreover, it would be interesting to identify the causes and challenges of the present period with regard to financial intermediation.

In Romania, financial intermediation, calculated as non-government credit to GDP ratio, decreased in 2013 compared to 2012. The intermediation rate of only 26.4% was in the year 2013 at the same level as in the year 2006. At that moment, our country ranked last in the European Union in terms of its financial intermediation level and also in terms of economic wellbeing and wages. As our country has not had a notable experience over the last 15 years regarding the evolution of the degree of financial intermediation, we are interested in the annual changes from the 2018 - September 2021 period and its position compared to other EU countries.

2. Theoretical background

Financial intermediation plays a key role in the savings-investment process. It essentially facilitates the transfer of capital and risk between borrowers and savers.

The reasoning behind financial intermediation has 2 directions:

- ✓ Economic agents that need capital have more information about their financial situation and development prospects than the potential capital providers
- ✓ The costs of searching and filtering the offers from possible counterparties without resorting to a qualified intermediary are prohibitive (Isarescu, 2007).

Financial intermediary is a special financial entity which performs the role of efficient allocation of funds, when there are conditions that make it difficult for lenders or investors of funds to deal directly with borrowers of funds in financial markets. Financial intermediaries include depository institutions, insurance companies, regulated investment companies, investment banks, pension funds. They are financial institutions specialized in the activity of buying and selling (at the same time) assets and financial contracts (Mayowa, 2020).

The connection between financial development and economic growth has been studied and demonstrated by many economists. In general, a well-developed and sound financial system has a positive effect on economic growth. However, the inclination towards lending and consumption can negatively influence the share of savings and, consequently, economic growth (Pagano, 1993).

There are differing views on how financial structure and implicitly financial intermediation directly affect economic growth (Levine, 1997).

Furthermore, the quality of financial products is determined by the legal framework but also by the financial education of the financial market participants. Thus, within a clear and stable legislative framework, financial institutions can develop a wide range of products and services tailored to the needs of the different categories of customers. La Porta even states that the justice system shapes the quality of financial services (La Porta et al., 1998). The stability and coherence of the legislative framework is a key component of financial development, significantly influencing long-term economic growth.

In the process of explaining the relationship between financial development, degree of financial intermediation and economic growth, political aspects have been introduced as an influencing factor (Fohlin, 2000; Rajan and Zingales, 1999).

This is a particularly interesting result in light of the more recent literature on the causal relationship between financial and real growth. The inverted U-shaped relationship between financial institution assets and GDP per capita lends support to the idea that the moderately industrial countries of the time depended more on financial institutions to mobilize capital than did the most and least advanced economies (Fohlin, 2000).

Starting from these aspects highlighted by the specialized literature, we will study financial intermediation in Romania in the current period.

3. Research methodology

In the specialized literature, including on the basis of specific datasets, the range of approaches regarding the causal relationship between financial development and economic growth of a country is diverse.

Bangake and Eggoh (2011) highlighted a biunivocal causal model between economic growth and the degree of financial intermediation.

The financial development - economic growth influence model, according to which a high degree of financial intermediation will determine in the short and medium term an increase in GDP as a result of increasing the allocation of resources for the most productive activity sectors, is the one used by Banerjee (2012), Mishra *et al.* (2009), Habibullah and Eng (2006).

Herwadkar and Ghosh (2013) approached this relationship in the opposite direction: economic growth determines the degree of financial intermediation.

According to a study published by Lazea *et al.* (2017) there are several causal relationships (Table no.1).

The causal relationships were obtained by modeling the interconnections between the degree of financial development and economic growth.

Table no. 1. The causal relationship (Granger type) between financial development and economic growth

Financial development	Causal relationship	Economic growth
Loans to the private sector		
(% of GDP)		
Loans to households (% of GDP)		
Loans to the private sector		
(% in total credit)		Economic growth
Intermediate money (% of GDP)		
Private sector deposits (% of		
GDP)		

Source: Lazea V. (coord.)., Financial intermediation - problems and solutions, BNR/ National Bank of Romania Notebook no. 48 p. 16

In our study, starting from the specific elements of the Romanian financial system, we will tackle the issue of the degree of financial intermediation highlighting the structure of the credit, its characteristics and dynamics, the loan-to-deposit ratio, but also the evolution of non-performing loans.

Findings. The structure of the Romanian financial system. Financial intermediation

A characteristic of the Romanian financial system from 1990 to the present is the dominant share of banking system assets in the total financial system assets. In percentages, these ratios were within the 70.4% - 95% range.

In the middle of 2021, the banking sector represented 70.4% of the total, being followed, at great distance, by the private pensions category (10.8%) and investment funds 5.8%.

Figure no. 1 Financial sector, Romania (2021) ■ Credit institutions Private pension funds ■ Investment funds ■ IFN/Non-bank financial institutions Insurance companies

Source: BNR, Financial Stability Report, 2021, p. 50

Regarding the dynamics and structure of the assets in the banking system in the 2018-2021 period, the following comments can be made:

- The number of credit institutions did not vary significantly: by June 2020 it was 33, and after that moment, by opening a new branch of a foreign bank, the total number reached 34.
- Regarding the volume of total assets, it was established that in the period 2018-September 2021, their volume increased significantly from 451.1 billion lei to 602.7 billion lei, i.e., by 33.6% (Table No. 2).

This increase also determines a favorable evolution of the degree of financial intermediation.

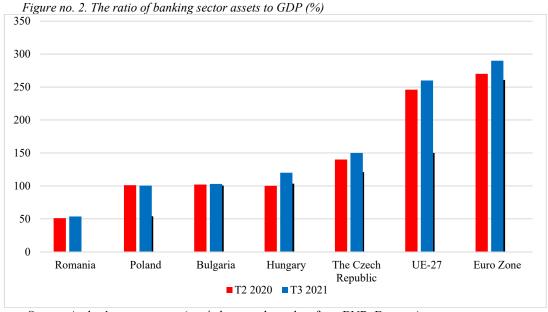
Table no. 2 Romanian banking system indicators

	Dec. 2018	Dec. 2019	Dec. 2020	Jun. 2021	Sep. 2021
Number of credit institutions	33	33	34	34	34
of which foreign banks' branches	7	7	8	8	8
Total net assets (billion lei)	451,1	495,2	560,9	585,9	602,7
Assets of private-owned institutions (% in total assets)	91,9	91,8	89,4	88,7	88,9
Assets of foreign-owned institutions (% in total assets)	75,0	73,7	70,5	69,4	69,7

Source: BNR https://www.bnr.ro/Indicatori-agregati-privind-institutiile-de-credit-3368.aspx (accessed, November 11, 2021)

- Since the beginning of the COVID-19 pandemic (April 2020) until the second quarter (T/Trimester) of 2021, the net assets of the banking system increased in each quarter, totaling a variation of + 16% (Jun. 2020-Sept. 2021). Thus, it can be seen that the pandemic did not negatively influence the activity of the sector and financial intermediation.
- A characteristic of the field is the large ratio of assets covered by private-owned credit institutions (approximately 90%, on average). In fact, the non-private capital comes from 2 credit institutions: CEC Bank and Exim Bank).

In order to compare the degree of financial intermediation in Romania with that of other EU member states, a starting point is the ratio of banking sector assets to GDP (Graph no.2).



Source: Author's own concept (carried out on data taken from BNR, Eurostat)

Against the background of credit growth, in the first half of 2021, the degree of financial intermediation registered a positive evolution compared to the same period of the previous year, amid continuing the sustained progress of the assets of financial institutions. Thus, in the second quarter of 2021, the ratio of financial system assets to GDP was 76.2 percent (an increase of 5.5 percentage points, year on year). However, Romania registered a degree of financial intermediation of only 26.6%, about 3 times lower than the EU average of 85%.

5. Conclusions

The financial system of a country should be a network that facilitates the relations between the financial institutions and the other financial market actors by providing the specific legislative framework and tools. Financial intermediaries are those which provide the liquid assets needed by economic agents, households, and the government.

It was found that in the developed economies the ratio of banking sector assets to GDP is high, as well as the degree of financial intermediation. Moreover, the level of financial culture is a determining factor in the adoption under financial security conditions of the loaning decision. In Romania there is an inequality of income, but even in households with above average income there is a reduced inclination towards savings. Regarding lending, there are usually 2 opposing attitudes in the case of Romanians. One category avoids resorting to lending in any form, regardless of the cost/situation, and almost excludes banking from everyday life and another category, inclined to consumption, uses loans in order to meet continuing general needs. The middle class is rather poorly represented. They are saving money, they resort to lending, but they may be reluctant to provide collateral.

As a result, the banks' offer is also quite low in terms of retail credit.

Regarding the lending for the economy, the predominant use of lines of credit and less of investment loans can be observed. These directions can also be explained by the inconsistency of the legislative framework and the multiple changes in the fiscal field.

Consequently, although the degree of financial intermediation in our country is low compared to other EU countries and the EU average, this situation is somewhat explainable. The positive thing is that every year the degree of financial intermediation increases.

As a recommendation for future research, one can analyze the influence of financial education on the lending / savings decision, as well as the effects of atypical laws on the degree of financial intermediation (e.g., the Law on giving in payment).

6. References

- Banerjee, 2012. Credit and Growth Cycles in India: An Empirical Assessment of the Lead and Lag Behavior, RBI Working Paper Series No. 22, 2012 Available at: https://www.researchgate.net/publication/232649376 RBI WORKING PAPER SERIES Credit a nd Growth Cycles in India An Empirical Assessment of the Lead and Lag Behaviour > [Accessed: sept, 2021]
- Bangake C., Eggoh J. C., 2011. Further Evidence on Finance-growth Causality: A Panel Data Analysis. *Economic Systems*, 35(2), pp. 176-188, Available at:
 https://econpapers.repec.org/article/eeeecosys/v_3a35_3ay_3a2011_3ai_3a2_3ap_3a176-188.htm
 [Accessed: sept, 2021]
- Fohlin C., 2000. Economic, Political, and Legal Factors In Financial System Development: International Patterns in Historical Perspective, Social Science Working Paper 1089 [online] Available at: < https://papers.ssrn.com/sol3/papers.cfm?abstract_id=267674> or https://dx.doi.org/10.2139/ssrn.267674 [Accessed: Jun, 2021]
- Habibullah, M. Z., Eng, Y. K., 2006. Does Financial Development Cause Economic Growth? A Panel Data Dynamic Analysis for Asian Developing Countries. *Journal of Asian Pacific Economy*, 11(4), pp. 377-393 Available at: <
 - https://www.researchgate.net/publication/247515437 Does Financial Development Cause Economic Growth A Panel Data Dynamic Analysis for the Asian Developing Countries > [Accessed: Oct, 2021]
- Herwadkar, S.,Ghosh, S., 2013. What Explains Credit Inequality Across Indian States: An Empirical Analysis, Reserve Bank India Occasional Papers No. 34, Available at:
 https://rbidocs.rbi.org.in/rdocs/Content/PDFs/05AR01D3B4FC002048D78A8FA1FC7BCF393D.PD
 [Accessed: Oct, 2021]
- Isarescu M., 20017. Financial intermediation in Romania during 1990-2007 [Intermedierea financiara in Romania in perioada 1990-2007], Bacau poster presentation. www.bnr.ro
- La Porta, R. Lopez de Silanes F. Shleifer A., 1998. *Low and Finance* [online] Available at: https://www.jstor.org/stable/10.1086/250042 [Accessed: Oct, 2021]

- Levine, R., 1997. Financial development and economic growth. *Journal of Economic Literature*, 35, 2 pp. 688-726 [online] Available at: https://www.jstor.org/stable/2729790> [Accessed: Oct, 2021]
- Mayowa A., *Theory of Financial Intermediation* [online] Available at https://www.researchgate.net/publication/345762472_THEORY_OF_FINANCIAL_INTERMEDIATION [Accessed: Jan.2020]
- Mishra P. K., Das, K. B., Pradhan B. B, 2009. Empirical Evidence on Indian Stock Market Efficiency in Context of the Global Financial Crisis. *Global Journal of Finance and Management*, Vol.1, No.2, pp.149-157
- Pagano M., 1995. Financial Market and Growth: An overview, European Economic Review 37, pp. 613-622
- Rajan and Zingales, 1999. *The Politics of Financial Development*. Working paper, University of Chicago and NBER Available at: < http://web.pdx.edu/~ito/Rajan_Zingales.pdf > [Accessed: Oct, 2021]

The Use of ROA and ROE in Study of a Bank's Profitability

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Abstract

Bank profitability has been and will continue to be a topic of interest for all the actors in corporate banking governance. During this period, the banking sector is facing the double challenge of sustaining credit flow in the new macroeconomic conditions characterized by a high degree of uncertainty and managing rising financial risks. Shareholders are preoccupied with the return on investment, the management with result commitments, the monetary authority with ensuring stability in the banking sector.

This paper presents an analysis of bank profitability applied to a commercial bank in Romania. We will carry out the calculation and interpretation of the indicators and the positioning of the bank in relation to the system. The analyzed bank is situated above the sector's average. According to the obtained results, the Romanian banking sector has been standing at the highest level in terms of profitability according to the EBA (European Banking Authority) classification, in terms of ROE.

Being a classic model of analysis, the study can be developed, applied to and adapted for other banking institutions. We believe that this paper is useful for young researchers and analysts.

Key words: ROA, ROE, bank profitability

J.E.L. classification: G01, G20, G21, G24, G30, E50

1. Introduction

Commercial banks are a key component, they support the development of the business environment through the services and products they offer, being the main creditor of the modern economy. The main purpose of a commercial bank is profitability or profit maximization so as to minimize risk exposure. According to Bătrâncea I. (2010), profitability conveys the position of the banks within the banking system, highlighting the quality of bank management. The financial performance of the banks is disclosed through the profit and loss account. In order to carry out a practical analysis of the banking activity, the specialized literature refers to a series of statistical indicators, generically encountered under the name of banking performance indicators, which make up a reflection of the extent to which, starting from the activity carried out by taking risks, the banking company has performed its activity successfully.

Given that the banking sector represents over 70 percent of Romania's financial system – in terms of the share of banking assets in total assets, the interest in the profitability and efficiency of the banking system is considerable.

Bank profitability is an objective of the banking activity, which is why we will continue by focusing on specific indicators.

2. Theoretical background

In order to assess the economic and financial state of the banks, the specialized literature recommends the use of the following system of banking performance indicators, on whose calculation, analysis and interpretation we have focused: economic profitability - Return on Assets (ROA); financial profitability - Return on Equity (ROE); Equity Multiplier (EM).

In general, in order to perform the analysis of banking units' profitability, the "DuPont" system is used as an analysis model based on the comparison between the profit of the banking company and the risk. The system quantifies both the bank's performance and its exposure using a set of specific indicators: Return on Assets, Return on Equity and Equity Multiplier.

According to Borlea S. (2006), bankers pay special attention to the message sent to the stakeholders via an indicator-based analysis. In general, banks manage profitability by trying to exceed the market average and making sustained efforts to maintain a stable and predictable profit, a decision that has an impact on attracting new investors in the banking field. Thus, the profitability indicators prove to be an extremely useful tool kit. However, the analysis of the information provided by them will be carried out only in close correlation with the other indicators assessing balance, management and risk, given that profitability indicators alone do not create a complete picture of the banking activity. That being said, there is a need to base the analysis of the banking performance "on a correlated system of indicators", of which Popa A. (2009) lists: net margin of bank's assets, net margin of interest-earning assets, Return on Assets, Return on Equity, overall profitability rate. A universally accepted model in bank profitability management and risk management is Asset and Debt Management, having as fundamental objective the "sustained increase in profitability" in order to maximize the capital reserves of the banking institution. Thus, for any bank its strength lies in the interest margin, which highlights, with the help of the results of the banking activity, the efficiency in obtaining them and implicitly the efficiency of its intermediation. In the category of banking performance indicators, we also include the profitability rate, which is the expression of the profit obtained by the bank in its activity, and here we are talking about financial profitability (Return on Equity) or economic profitability (Return on Assets). According to Anghelache C. et al. (2018), economic profitability is a reflection of the effect of managerial capacity in terms of the use of the financial resources in order to obtain profit by the bank, under the conditions of the evolution plan and program of measures. Another important indicator in the assessment of the banking performance is the Equity Multiplier, whose action takes place in the context in which the use of new resources brings superior advantages or at least equal to the Return on Assets.

There are also stochastic analyses based on ROA and ROE. Peterson and Schoemann (2008) created a model of bank profitability via Return on Assets (ROA) and Return on Equity (ROE) in a stochastic setting.

3. Research methodology

Bank profitability analysis: the ROE model

The Return on Equity (ROE) model is a well-known approach used in analyzing a bank's results using financial statements. This model uses elements both from the balance sheet and from the profit and loss account (Geruning., Brajovic, 2004). The comparison is made for the same banking institution at different time frames or is used to compare the bank to its rivals or to the average of the banking system. Thus, the banks from the same banking system / geographical area are compared with each other, being contenders. The system's average is a useful benchmark for the comparisons, and also for risk assessment.

Obviously, the reference periods are identical for the balance sheet data and for those extracted from the profit and loss account. For an accurate image, it is preferable to use average balance data so as to eliminate distortions that may occur at the beginning or end of a period.

Profitability rates accepted in the bank profitability analysis

The banks' managers and system analysts generally evaluate bank profitability in terms of return on equity (ROE) and return on assets (ROA). If a bank constantly presents over a longer period of time indicators above the banking system's average, it can be considered a high-performance institution. In order to obtain higher yields, a bank must assume an above average risk and have a competitive advantage in terms of the products and services it offers.

The formula used is:

$$ROE = \frac{Net income}{Shareholder Equity} x100 (1)$$

ROE measures the return (per percentage) of shareholders' investment. The higher the return, the higher the dividends the management can pay. In addition, a rising return on equity provides the support for future return increases.

The rate of Return on Assets is calculated according to the formula:

$$ROA = \frac{Net \ income}{Total \ assets} x100 \ (2)$$

The Return on Assets is obtained by dividing net income by total assets (usually at average value). The indicator measures the percentage of return on a monetary unit of asset. As an analysis model, the following aspect can be mentioned: the higher the ROA, the better the bank's profitability. The ROA indicator's values vary among banks, largely due to differences in the level of the commissions.

ROE is linked to ROA through a bank's Equity Multiplier (EM), which is equal to the total assets divided by shareholders' equity. EM measures the bank's financial leverage ratio or the amount of its debt compared to equity. The higher the aggregate liabilities, the greater the financial leverage ratio and EM.

EM = Total Assets / Shareholder's Equity (3)

The profitability indicators are correlated, the relationship being as follows:

$$ROE = ROA \times EM$$
 (4)

4. Results. Profitability analysis within T Bank

The theoretical model presented will be used in the analysis of a top credit institution in Romania. The analysis conducted will demonstrate the usefulness of the presented indicators. The data used is extracted from the financial statements of the bank, which will hereinafter be referred to as T Bank.

This analysis is part of a larger study carried out by the authors. It started with the study of the income structure, the income classes analyzed being: interest income, income from commissions based on transactions, income obtained from securities trading and other income. The analysis of the structure of the income aims to highlight the manner in which, within the total income, the shares have varied. The classes of expenses affecting the actual result of the bank have also been analyzed.

The analysis of the data shows that T Bank has been profitable during the period, and the income before tax has experienced an upward trend, due to the increase in the value of operating income at a higher rate than the growth rate of related expenses in the year 2019. In the year 2020 there was a decrease in operating income which, coupled with a slower decline in expenses related to the operating activity led to a decrease in income before tax. The Net income followed the same trend as the one before tax, but its value was influenced by the value of the income tax (Fig No.1).

Figure no. 1 The calculation of income before tax and net income for the 2018-2020 period

Indicators – Thousand RON	2018	2019	2020
Total operating income (a)	3,593,980	4,031,270	3,937'204
Total operating expenses (b)	2,023,364	2,144,124	1,782,284
Income before $tax = a-b$	1,642,446	1,887,146	1,371,036
Taxes	423,055	266,634	173,731
Net income	1,219,391	1,620,512	1,197,305

Source: Authors' own calculations based on the data from the 2019 and the 2020 Annual Report.

ROA, a ratio calculated by dividing net income by total assets, is an expression of the bank's management's ability to use resources in order to make a profit.

The values obtained show that the Return on Assets at the level of T Bank decreased in the 2018-2020 period, both as a result of the fluctuation in the net income value, affected by the income tax in the years 2019 and 2020, and as a result of the increase in total banking assets / average value of assets at net value, in the 2018 - 2020 period.

The Return on Assets values obtained show that for every 1 leu invested, in the year 2018, the bank obtained a profit of 1,92 lei, and in the year 2020 it obtained only 1,26 lei. It follows therefore that the bank is facing a downward trend in the ROA indicator, which can be interpreted in terms of the bank encountering difficulties in terms of income generation, especially as a result of taking low risks in terms of the lending activity.

Figure no. 2 The calculation of the Return on Assets (ROA) for the 2018-2020 period

Indicator – thousand RON	2018	2019	2020
P _n (Net income)	1,219,391	1,620,512	1,197,305
TA (Total assets)	74,118,914	87,438,075	103,354,985
ROA calculated P _n / TA	1.65%	1.85%	1.16%
ROA from the Bank's statements = net income/ average total assets at net value	1.92%	2.03%	1.26%

Source: Authors' own calculations based on data from the Board of Directors' Reports in 2019 and 2020

ROE is an important indicator for the bank's shareholders, in terms of reflecting the management's ability to get involved in the banking institution's activity, the fundamental objective of the managerial staff being to maximize the value of the investment made by the shareholders through high-performance investments, efficiently using the bank's resources. Applying the calculation formula described in the theoretical model, the results from Table no. 2 were obtained.

ROE is an indicator mainly used by listed companies, such as T Bank, having a consistent influence on the bank's shares stock exchange rate, in terms of influencing the supply and demand of the issued shares.

Figure no. 3 The calculation of the value of Return on Equity (ROE) for the 2018-2020 period

Indicator - thousand RON	2018	2019	2020
P _n (Net income)	1,219,391	1,620,512	1,197,305
Shareholders' equity	7,411,216	8,496,443	9,522,869
Calculated ROE	16.45%	19.07%	12.57%
ROE calculated by the bank			
Net income / average total equity at net value	17.17%	20.26%	13.67%

Source: Authors' own calculations based on data from the Board of Directors' Reports in 2019 and 2020

Considering the values obtained, we find that after a tendency of increase in the ROE value in the year 2019, in 2020 the indicator had a downward trend. This situation was favored by the fact that net income experienced a fluctuating evolution with increases in 2019 and decreases in value in the year 2020. However, in this situation the main influencing factor was the value of shareholder's equity, with an upward trend, in 2018 as a result of the decrease in the carried forward result, and in 2020, as a result of the increase in the bank's share capital.

Figure no. 4 The calculation of the Equity Multiplier at T-Bank in the years 2018-2020

Indicators -RON	2018	2019	2020	
Total assets	74,118,914	87,438,075	103,354,985	
Shareholders' equity	7,411,216	8,496,443	9,522,869	
Equity Multiplier (leverage ratio)	10	10.29	10.85	

Source: Authors' own calculations based on data from the Board of Directors' Reports in 2019 and 2020

The Equity Multiplier (EM), calculated as the ratio between total assets and shareholder's equity, shows the number of times the shareholder's equity multiplied as a result of the active operations performed by the bank.

The indicator is a reflection of the degree in which the bank's business has developed having a certain volume of shareholder's equity as a starting point, its value varying in a contrary manner to the share of shareholder's equity in the bank's overall equity and debt, as follows: the higher the share, the lower the Equity Multiplier, and vice versa.

The profitability indicators in Table 8 are correlated, the established relationships being included in:

$$ROE = ROA \times Equity Multiplier$$
 (1)

Figure no. 5 ROE at T Bank compared to the banking system's average

Indicators – Thousand RON	2018	2019	2020
ROE T Bank	16.45%	19.07%	12.57%
ROE Romanian banking system	13.77%	11.06%	8.26%
Deviation	2.68 pp	8.01 pp	4.31pp

Source: Authors' own calculations based on data from the Board of Directors' Reports in 2019 and 2020.

Fig No. 5 shows that T Bank has a high degree of performance. The ROE indicator is above the average of the banking system for the entire analyzed period. While at the beginning of the period, the deviation compared to the average was 2.68 percentage points, in the year 2019 it increased to 8.01 percentage points, which shows a substantial increase. The values of the deviation can also be correlated with the increase in the investors' appetite for the shares of the respective bank. The year 2020, in the context of the pandemic, brought a deterioration in the results obtained by most banks. For the first time in the last 7 years, ROE calculated as an average for the entire banking system is under 10%, which shows, according to the European Banking Authority, an average result - atypical for Romanian banking.

Figure no. 6 ROE - Romanian banking system 16 13,77 11,8 11.61 11,06 10,1 10 8.26 7,6 2016 2017 2017 2019 2020 2021 ■ ROE Romania ■ ROE UE

Source: BNR/National Bank of Romania - Financial Stability Report, 2021

Profitability indicators and especially ROE are also important for the systemic risk assessment. That is why the European Banking Authority has set intervals to characterize banking systems. Thus, if ROE is below 6%, the system is considered *worst* from the perspective of profitability; if ROE is in the 6% -10% range, the level of profitability is *intermediate*, and if the level is over 10% the system is rated in the *best* class.

It is noteworthy that in the 2016-March 2021 period the banking system in Romania entered the "best" class, with the exception of the year 2020. The first quarter of 2021 brings optimistic results: the Romanian banking system has a ROE of 11.61% compared to the average EU ROE of just 7.6%.

5. Conclusions and future directions

As in any economic entity, obtaining and maximizing profit is a fundamental objective of financial management and, implicitly, of banks' management. Profit is the basis for calculating banking performance indicators. Through the analyses performed in the study, the classic indicators - ROE and ROA, as well as EM - were brought to the fore.

The calculation of the indicators at the level of the prestigious financial institution of the Romanian banking system has shown that the bank has the ROE indicator in the 16.45% -19.06% range, showing a solid position throughout the analyzed period, and also a potential for attracting investors.

Although the pandemic affected the domestic banking system, T Bank was not significantly affected. If we compare the year 2020 with 2019, there is a deterioration in the indicators. However, T Bank is situated above the banking sector average by more than 4 pp if we refer to the ROE indicator.

2020 was a year of resistance and solidarity for T Bank. The Bank's results exceeded the conservative forecasts in the initial budget. The Bank's customer support strategy was reflected in expanding the volume of operations and the business, constituting an accelerated learning lesson.

If we follow the evolution of ROE, the Romanian banking sector obtained weaker results in 2021 compared to 2019 and 2018, but if we compare it with the EU average, we find that the first quarter of 2021 was a very good one.

Discussions based on ROA and ROE indicators will continue, given that asset management decisions cannot be separated from shareholders' return on investment.

In the future, we intend to also take into account other indicators, such as AU (asset utilization), NIM (net interest margin) and to tackle the issue of bank's solvency.

6. References

- Anghelache, C., Lilea, F.-P., Sfetcu, M., Chiliment, M., 2018. Analiza eficienței activității bancare în condițiile riscului asumat [Analysis of the efficiency of the banking activity in the conditions of the assumed risk], Romanian Statistical Review Supplement nr. 2 / 2018, [online]. Available at: https://www.revistadestatistica.ro/supliment/wp-content/uploads/2018/02/RRSS-02-2018-A3-RO.pdf [Accessed: 05.04.2021]
- Bătrâncea, I., 2010. Analiză financiară în bănci [Financial analysis in banks], Cluj Napoca: Risoprint Publishing House
- Borlea, S., 2006. Sistem de indicatori de analiză financiara în bănci [System of financial analysis indicators in banks], in *Annales Universitatis Apulensis Series Oeconomica*, "1 Decembrie 1918" University, Alba Iulia, Faculty of Sciences, no. 8/2006, vol. 1, [online]. Available at: http://www.oeconomica.uab.ro/upload/lucrari/820062/9.pdf [Accessed: April, 2021]
- Geruning H. V., Brajovic, B.-S., 2004. Analiza şi managementul riscului bancar evaluarea guvernației corporatiste și a riscului financiar [Banking risk analysis and management corporate governance and financial risk assessment], Bucharest: Irecson Publishing House, p. 64.
- Petersen, M.-A., Schoeman, I., 2008. Modeling of Banking Profit via Return-on-Assets and Return-on-Equity Proceedings of the World Congress on Engineering 2008 Vol II WCE 2008, July 2 4, London, U.K. [Accessed: May 25, 2021]
- Popa, A., 2009. Analiza și perfecționarea managementului în instituțiile de credit [Management analysis and improvement in credit institutions], Abstract, PhD thesis, Cluj-Napoca, p. 7.
- Stănel, Gh., 2008. Sistemul plăților interbancare: concepte, instrumente, procedee, transferuri și plăți, riscuri, securitatea operațiunilor [Interbank payment system: concepts, instruments, procedures, transfers and payments, risks, security of operations], Bucharest: Economică Publishing House, p. 9.

The Impact of the Increase in Market Interest Rates on The Credit Risk of Guarantees Issued Under the SME Invest Program

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Abstract

The present study aims to present the impact of market interest rates on the credit risk of the guarantee issued under the SME Invest program, in the context of the Covid-19 pandemic.

The SME Invest program is the largest project initiated by the Romanian Government in recent years. It was launched in 2020, as a result of the pandemic that had repercussions on all economies around the world, namely the Covid -19 pandemic. The role of the SME Invest Romania program is to support and develop the Romanian economy during the crisis period.

This study is based on the use and calculation of the EBITDA indicator. The main source of information is the National Credit Guarantee Fund for SMEs, the institution that manages and implements the SME Invest program.

Key words: SMEs, interest rates, bank credits, entrepreneurship, Covid-19 pandemic

J.E.L. classification: A11, D00, G20, G21, E00

1. Introduction

The study is structured in three parts. Part I - presents theoretical information on the EBITDA indicator. Part II presents the methodology used in conducting the study, and Part III presents the conclusions of the study.

The study is based on calculations made using the EBITDA indicator from the database of FNGCIMM.

Among the main idea of the study, another idea that wants to stand out, is that of the importance of SMEs, these being the only source of support and development of an economy.

2. Theoretical background

The National Credit Guarantee Fund for Small and Medium Enterprises (FNGCIMM SA-IFN) is a non-bank financial institution, with venture capital, established in order to facilitate the access of SMEs to financing, by providing guarantees for financing instruments contracted from commercial banks or other sources. FNGCIMM implements government programs aimed at economic recovery, business development, as well as job creation and support, operating as a joint stock company, with sole shareholder the Romanian state, under the prudential supervision of the National Bank of Romania.

The SME INVEST ROMANIA program is the government's response to the health and economic crisis, in the context of the COVID-19 pandemic.

SME INVEST ROMANIA is intended to support the entrepreneurial environment, facilitating the access of SMEs to financing, to ensure the necessary liquidity to continue economic activity, by accessing one or more loans for investments and / or one or more loans / lines working capital loan, guaranteed by FNGCIMM in the name and account of the Romanian state, through the Ministry of Finance. The program was launched in 2020, and continues today, in 2022, proving to be a real success and the main source of survival for SMEs, in the context of the Covid-19 pandemic.

3. Research methodology

The present study is an analysis and synthesis based on the EBITDA indicator. The data used are according to the database of the National Credit Guarantee Fund for SMEs.

The entire case study is reflected in the "Table 1 - Distribution of the guaranteed portfolio according to the share of additional expenses with interest in 2023 compared to EBITDA 2020, lei" and "Table 2 - Distribution of the guaranteed portfolio according to gross growth of interest expenses estimated for 2022, lei".

The attached Table 1 shows the distribution of guarantor beneficiaries according to the share in EBITDA (Dec 2020) of the estimated increase in interest expenditures from 2023. This table identified the main category of beneficiaries at risk. Beneficiaries were divided into categories according to the share in the EITDA of the increase in interest expense in 2023 (maximum 5% for Category 1, at least 5% but not more than 10% in Category 2, etc. - thresholds being available in the last column).

Table no. 1 Distribution of the guaranteed portfolio according to the share of additional interest expenses

in 2023 compared to EBITDA 2020 (lei)

C- Category	Number of beneficiaries	Balance of guarantees Nov 2021	Average turnover 2020	Median turnover 2020	Median - Increase of interest expenses from 2023 in EBITDA 2020	Median - Increase of interest expenses 2023	Median - EBITDA 2020	Maximu m increase of interest expenses in EBITDA
C1	16,455	8,513,574,903	7,926,868	2,442,292	2%	10,840	494,228	5%
C2	6,401	5,301,852,907	7,372,012	2,699,871	7%	18,800	256,236	10%
С3	4,181	3,794,215,339	6,414,951	2,200,110	15%	20,000	116,108	50%
C4	324	243,531,795	4,177,673	1,183,809	92%	16,000	14,201	13455%
C5 Operatin g losses	1,510	495,619,182	2,384,588	667,304	-7%	6,871	-84,866	-
C6-No financials	2,094	1,081,651,359	-	-	-	9,960	-	-
Total	30,965	19,430,445,484	7,252,955	2,305,599	2%	7,233	335,933	-

Source: National Loan Guarantee Fund for SMEs

The distribution in table 1 is different from the distribution in table 2 (ex: a beneficiary with EBITDA of 500 thousand lei in 2020 and an increase in 2022 of the expenses with interest related to SME Invest financing in progress of 15 thousand lei representing 3% of EBITDA is in Category 1 in Table 1 and in Category 2 in Table 2).

Table 2 attached to this material shows the distribution of beneficiaries of guarantees according to the estimated gross increase in interest expenses, in order to form an overview of the gross amounts that will affect the profit and loss account of companies in 2022 in hypothesis of a 6M ROBOR of 6%. Beneficiaries were divided into categories according to the estimated gross value of the increase in interest expense in 2022 (maximum 13,500 lei for Category 1, at least 13,500 lei but not more than 24,000 lei in Category 2, etc. - thresholds being available in the last column).

Table no. 2 Distribution of the guarantee portfolio according to the gross increase of interest expenses

estimated for 2022 (lei)

C- Category	Numerical share	Average share of investment financing	Average turnover 2020	Median turnover 2020	Median EBITDA	Median increase in inter- est ex- pendi- ture 2022	Medium increase in interest expendi- ture 2023	Medium increase in inter- est ex- pendi- ture 2024	Maximum increase in interest expenditure in 2022
C1	70%	6%	2,262,482	1,406,177	193,925	4,800	8,000	9,448	13,500

C2	14%	10%	8,496,314	5,761,179	700,270	20,118	32,000	38,400	24,000
C3	7%	18%	13,326,546	9,256,129	983,580	36,000	60,000	69,600	48,000
C4	4%	20%	23,371,340	15,179,758	1,603,871	67,158	105,156	120,000	90,425
C5	4%	6%	52,119,343	36,584,943	3,130,364	120,000	200,000	240,000	120,000
C6	1%	51%	43,793,364	29,498,834	3,874,096	175,852	264,776	281,100	347,969
Total	100%	9%	7,252,955	2,305,599	335,933	7,233	12,000	14,400	-
Source: National Loan Guarantee Fund for SMEs									

It is also worth mentioning that the average tested ROBOR 3M rate applicable in 2022 will be 6%, 8% in 2023 and 9% in 2024, compared to the base value of 3% applicable in each of the 3 years. The study is based on the use of the EBITDA indicator (Earnings Before Interest, Taxes, Depreciation and Amortization). The earnings before interest, taxes, depreciation, and amortization (EBITDA) formula is one of the key indicators of a company's financial performance and is used to determine the earning potential of a company.

The impact of the interest rate increase was calculated only on the SME Invest guarantee portfolio in balance as of November 30, 2021 (31 thousand beneficiaries with guarantees in balance of 19.4 billion lei and loans in balance of 23.4 billion lei)

The estimation of the payment interests of the SMEs in the period 2022-2024 was made according to the value of the current SME Invest financing on November 30, 2021, the type of accessed credit (line of credit or investments) and the following average repayments of the accessed loans:

For investment loans will be repaid 10% in 2022, another 20% in 2023 and another 20% in 2024. For line loans there will be no repayments in 2022, 2023 and 2024. The use of this assumption is based on the reasoning that the beneficiaries will try as much as possible to extend the maximum term of the SME Invest credit lines, given the very good margins received and a possible decrease in the availability of credit from banks in the event that aggregate demand will be affected by the strong growth of banks. There will certainly be beneficiaries who will no longer extend their credit lines, but obviously they will not affect their exposure to the risk of a sharp rise in market interest rates.

The analysis was based only on the estimation of interest expenses and repayment rates related to SME Invest financing (according to NBR Regulation no. 2/2012, FNGCIMM does not have access to the information from the Credit Risk Center -CRC- for the guarantees issued in the name and account of the Romanian state, but only to those issued on behalf of its own funds), without taking into account other ongoing financing of the beneficiaries, in order to have a clearer picture on the impact of the installments to be paid in the future.

The financial indicators of the beneficiary SMEs were calculated only where they were available (for 2100 beneficiaries there were no financial statements as of Dec 2020, these being represented mostly by PFAs and startups). The financial statements of SMEs on 31.12.2020 were made available in gross form by the Ministry of Public Finance based on protocol number 825341/2018 and processed at the level of FNGCIMM.

For the beneficiaries with operational losses (category 5 in table 1) no credit risk was determined due to the increase of bank interest, given that it cannot be estimated based on the financial statements, the decision of the bank granting financing based on most likely on a subjective basis (these beneficiaries had a higher credit risk anyway and no future impact of ROBOR 3M growth).

4. Findings and conclusions

Overall, we estimate that an increase in the size of the banks tested will lead to a medium increase in the probability of default over a 3-year horizon from 1.7% to 1.9%, which means the increase estimated payments for guarantees, in the period 2022-2024, from 365 million lei to 412 million lei.

The credit risk induced by the interest rate increase (only 7 beneficiaries with balances in balance of 3.2 million lei have been identified who are no longer entitled to receive an interest grant in 2022 and for whom the increase in interest expenditure exceeds 50% of the EBITDA of 2020) in 2022 is insignificant, from the point of view of the interest grant granted under the SME Invest program and which will be settled in 2022. Thus, the increase of ROBOR 3M in 2022 from 3% to 6 % will lead to an increase in the grant in the form of interest granted by the state for the portfolio in force of guarantees by about 50 million lei (from 224 million lei calculated at a 3M ROBOR of 3% to about 274 million lei calculated at a 3M ROBOR of 6%).

The largest category of beneficiaries exposed to credit risk (category 4 in the attached table 1) is represented by 324 beneficiaries with a volume of guarantees in balance of 244 million lei, for which the estimated increase in interest in 2023 (calculated as interest expense for a 3M ROBOR of 8% (plus fixed margins for the SME Invest program of 2.5% for credit lines and 2% for investment loans) minus interest expense for a 3M ROBOR of 3 % plus related margins) represents at least 50% of EBITDA for the year 2020. EBITDA was calculated on the basis of the financial statements of SMEs on 31.12.2020 as the sum of the operating result, the depreciation expenses from which the profit tax was deducted.

In addition to the above beneficiaries, we estimate that in 2024, a further 89 beneficiaries with a volume of guarantees in the balance of 52 million lei will fall into a very high risk category given that the increase in interest rates from 2024 (calculated as interest expense related to a 3M ROBOR of 9% minus the interest expense related to a 3M ROBOR of 3%, taking into account the maximum margins of the program) represents at least 50% of the EBITDA for the year 2020.

We make the following clarifications regarding the conclusions formulated in this material:

The present analysis only tested the increase in the interest expenses of the beneficiaries - sensitivity analysis. It is expected that an increase in interest rates of the magnitude of those tested in this material will significantly influence the aggregate demand in the economy and the turnover (and thus the operating profits of certain companies) will contract significantly, with an impact on credit risk. future. To capture this impact, a scenario analysis is needed to assess several macroeconomic variables.

The estimation of the probability of default was based on an internal rating model of FNGCIMM which takes into account only the financial statements of SMEs and historical default data of FNGCIMM resulting from guarantees issued on the basis of its own capital. The distribution of SME Invest beneficiaries is different from the SME base of FNGCIMM's own guarantees (overall the quality of SME Invest beneficiaries is much better) so that the estimates of default probabilities may suffer in accuracy.

5. References

- FNGCIMM database
- https://www.fngcimm.ro/
- https://mfinante.gov.ro/ro/web/site
- https://insse.ro/cms/
- https://ec.europa.eu/eurostat/web/sector-accounts/data/key-indicators
- https://www.fngcimm.ro/attament/eiH2e OUG%201102017.pdf

Considerations Regarding the Use of Information Technology in the Creation of Current Models of Entities' Accounting

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Abstract

In this paper, in a simplified manner, we are approaching the digitalization of accounting - a booming process, similar to other industries, some of which have been massively disrupted by technological advances. The digitalization of a company's accounting comes with a multitude of benefits, and more and more entrepreneurs are adopting this model to streamline processes. Through digitization we have managed to bring accounting to the business requirements of the 21st century, which means that entrepreneurs now have control of their business even from the mobile phone. Digitization does not mean that people, the accounting experts, disappear from the conversation and everything is just technology. On the contrary, online accounting brings benefits because behind the technology is always a professional accountant who checks and advises entrepreneurs - this expert is relieved by technology of repetitive tasks, time consuming.

Key words: blockchain technology, accounting, trends.

J.E.L. classification: M41, F60.

1. Introduction

Blockchain or Distributed Registry Technology (DLT) is fundamentally a technology related to the discipline of accounting. The old way of doing accounting is changing day by day and the role of the accountant is also changing. The penetration of technology in the field of accounting also brings opportunities such as streamlining the business, but also the ability to serve a larger number of customers. Thus, any repetitive activity specific to the work of an accountant can now be taken over and executed by software. But, like any other newly implemented strategy, the digitalization of accounting also comes with challenges of all kinds. (www.hyperledger.org)

The field of accounting takes place in an area where 97% of activities are suitable for digitization, and in an economy based on digitization, information means power, and more and more companies are interested in streamlining this segment in the hope that they will reach higher competitive market. Thus, the digitalization of accounting brings benefits to both smaller firms and large corporations. (www.hyperledger.org)

But how do traditional accounting services combine with technologies such as Spring Boot, Node.js, GraphQL, Angular, OpenCV, MongoDB, PostgreSQL or Redis? The combination is successful. This is demonstrated by the growing number of clients of the entities that have submitted everything on time, have reports and documents on the phone or online, on the platform. The internal challenge is a cultural one, first and foremost. We meet mixed teams of professional accountants and computer programmers. In the meetings of the mixed teams, at the same table are understood some who talk about the accounts 5121, 411, 401, 2131, 704, 691, about databases, about Node.js and Angular. (www.hyperledger.org)

2. Theoretical background for the use of the IT tools in entities's accounting

Accounting digitization is also based on state-of-the-art technologies such as Robotic Process Automation (RPA), Machine Learning or Artificial Intelligence (AI), which can provide companies with new opportunities to improve preforming business processes. It takes a lot of technology to effectively turn a picture taken with your mobile phone into a correct accounting note in just a few seconds. Software robots have been built that manage to automatically count all the documents for which he was trained using automatic pattern recognition. Robot training involves history and a lot of algorithm work. Fuel receipts from large operators were only automatically recorded after tens of thousands of images were processed. The same is true for other documents that fall within a template. In the end, one of the professional accountants visually validates the accuracy of the data. (www.hyperledger.org)

The changes that are taking place as a result of the phenomenon of digitization are also a major risk to which companies are exposed, given the scale of cyberattacks in the current context of business internationalization, globalization and the development of information technology. However, at the level of modern companies, data protection measures have been taken. Data is in the cloud, in Microsoft Azure, or similar systems. This ensures system availability, back-up, recovery, security, data compliance. (www.hyperledger.org)

Digitization, represented by new technologies, robotics, cloud services, intelligent systems and Big Data, has quickly entered the area of accounting, being the main factor that can contribute to increasing the efficiency of the activity carried out. The accounting profession takes place in an area where 99.99% of the activities are suitable for digitalization, being necessary to adapt to the new reality and to reconfigure the activity of the professional accountant. (www.hyperledger.org)

IT has penetrated virtually all the activities we know today and, moreover, has managed to capture the basic tasks in all areas. In the current context, the accounting profession is under the impact of the digital revolution, in the sense that many of the activities carried out by professional accountants are and will be taken over by modern information systems that are constantly evolving.

At the moment, it is no longer enough for a professional accountant to know in detail only the accounting techniques, the legislative and calculation aspects of taxes and fees or to have the necessary knowledge to perform economic-financial analysis and those related to performing internal control or audit, but must have in-depth knowledge of the use of new advanced information technologies and digital connectivity, the strategic benefits that the company can gain through their implementation, and how they can be turned into a profit for the entity. (www.hyperledger.org)

3. Research methodology - evolution of IT tools in entities's accounting systems - empirical aspects of research

The research methodology used in this article consists of the empirical research of a data set available on the Internet and the construction of models of accounting records.

Blockchain is also known as Distributed Registry Technology (DLT) - which is probably a simple definition of blockchain technology. (<u>www.hyperledger.org</u>)

Encryption, in its most rudimentary form, has been around for over 2,000 years, at least if we look at more or less accurate historical details. The best example is Caesar's cipher. It's also quite simple: reverse the position of some letters in the alphabet and write the message with the new alphabet created this way.

But this cipher is an excellent example of what cryptography means: you have the encrypted message that others can see, but if you don't have the key to decrypt it, you don't understand what's there. However, Caesar's figure is extremely simple and, in the modern world, does not offer any protection. A slightly more modern application of it is ROT13. Take the first 13 characters of the alphabet and put them after the other 13 characters. The report is in 26 characters, because that is the Latin alphabet. The Romanian one uses the same 26 characters, but it has 31 letters - the diacritics are added.

The somewhat modern encryption started in 1917 and 1918 with Edward Hebern, an American, and Arthur Scherbius, a German. (www.hyperledger.org) The first one created an electro-mechanical machine whose purpose was to encrypt a message by changing the characters. Conversations are thus

hidden from the public, just as encryption works now: you can see that messages are being sent, but you can't read them. Or at least that's how it should work, because every company that implements encryption, in one form or another, does it the way it wants.

In the world of those who are somewhat interested in technology or specialize in its development, from programmers to engineers, encryption was not a new topic, because they already knew its potential, usefulness and types of implementation.

What happened in 2021, stronger than ever, is that WhatsApp has changed the terms of use of the platform. In short, users who would interact with businesses through the app agree that those conversations can be shared with Facebook (the company that controls WhatsApp). From here, things get trickier, and this is where the true meaning of life begins. The Telegram application, which already has hundreds of millions of users, and the Signal application stood out. (https://www.pcworld.com)

However, WhatsApp also offers end-to-end encryption. The change now is that encryption is not available for all messages. Those with friends, those in groups, will be encrypted, those with business are not. WhatsApp has been encrypted for more than four years. And from the very beginning, a researcher specializing in cryptography and security has shown that the protocol has serious breaches. (https://www.pcworld.com)

WhatsApp encryption is end-to-end, only it uses a public and a private key. The first key is used to encrypt the message, the second key to decrypt it. Public keys are stored on the company's servers and the first breach can be fixed there on the server. Then it's about how the app uses the public key. If you change your phone or reinstall the app, a new key is generated. To make the conversation more secure, you should validate that the other person is one and the same with your person through a unique code. It's just that WhatsApp automatically validates the key and the messages could be redirected to another user. (https://www.pcworld.com)

Another key moment in increasing the attention for encryption and the general public, not only in specific scenarios or in the military field, was the recommendation of the European Commission to those of its staff to use the Signal application. Part of the motivation for the recommendation was that it was open source. The stronger motivation, however, was that members of EU structures are careless when it comes to the security of conversations.

The ransomware threat has become the negative character of encryption. In the case of ransomware, the encryption technique is the same. Use a combination of public-private key and symmetric encryption. If he didn't rely on it, he wouldn't be able to encrypt the huge amount of data in a short period of time. What is interesting, however, is that one of the ransomware booms was this: the exchange of public-private key pairs via the Internet, from a central server, so that the ransomware is no longer vulnerable to brute force. guess the key. Growth began in 2014 and now exceeds \$ 4 billion annually in business. (https://www.pcworld.com)

Regardless of the most problematic cyber threat, the growing interest in cryptography is justified by several factors that lead to attracting talent in this area.

The first and most obvious is the cryptocurrency area. Bitcoin has grown so much that in Romania there are many people involved in launching cryptocurrencies or working in blockchain startups, where the interest is even higher than for currencies.

On the other side of the barricade, the growing interest in cryptography has either been the result of ransomware threats, ie they have been successful as a threat in the financial area, and is developing a lot in cybercrime, or is the increased interest of governments in cracking cryptographic algorithms to expose information to which they no longer have access.

And when it comes to governments, the resources are even greater. In their case, for most states, switching to end-to-end encryption meant that classic interceptions could no longer be performed. Currently, over 80% of global internet traffic is encrypted. This means that governments no longer have visibility. And then a lot goes into cryptographic analysis (analyzing encryption protocols to find a vulnerability), through brute force, using supercomputers to guess which key is the pair of a private key, or developing exploits. There are companies that have decided to take another path: break into the phone, where the messages are unencrypted. It's a huge market for exploits, with prices of almost 1 million euros per iPhone vulnerability, for example. (https://www.pcworld.com)

One last idea about security looks at a future defined by quantum computers. For now, we are talking about them only at the level of experiments and a huge potential to be discovered and explored. One of the important worries in their case is that they will break the encryption very easily. (www.hyperledger.org)

An ordinary computer today would take billions of years to break the RSA-2048 standard. A quantum computer could do it in less than a day. Not now, but when it would reach both stability and higher capacity. For example, a quantum computer with 4,099 qubits would be able to crack the RSA-2048 in 10 seconds (https://en.wikipedia.org/wiki/RSA_Security). However, most of the quantum computers developed today have a few tens of qubits, and they are not in a perfectly stable state. Their stability determines both the speed and the quality of operations. There are exceptions, of course, such as the D-Wave system announced in 2020 with 5,000 qubits (https://www.dwavesys.com). However, it can only solve optimization problems, which reduces its usefulness, but shows that there is room for development. (www.hyperledger.org)

4. Findings. Survey of the specific evolutions regarding the application of IT in the accounting of transactions in Romania

Each user participating in a Distributed Registry Technology software system will archive their own copy of the database, an instance of the transaction values recorded in the history, which have been stored in the registry. By comparing the instances of other users, it is memorized synchronized to the transactions carried out through a process of agreement of the users. Unlike the traditional system of accounting records, there is no entity, an owner of the accounting data having special rights to edit or delete economic and financial transactions. In fact, there is no central register at all, which is an element of major difference from the classical system of double-entry classical accounting. (www.hyperledger.org)

Blockchain has the potential to enhance the capabilities of the accounting profession by reducing the cost of accounting and reconciling accounting records. This ensures absolute security over the ownership of the patrimony and the historical records of the entity's assets. (www.hyperledger.org)

Blockchain is able to support professional accountants in getting a fair picture of their own funding resources and lending opportunities that can be accessed by their entities. Thus, it is possible that the working time of professional accountants may be relieved of accounting, being available for advisory activities, accounting consulting, interpretation of accounting data describing the financial position and financial performance of the entities. (www.hyperledger.org)

Along with other tools for introducing information technology tools into the accounting profession, such as machine learning, blockchain will lead to accounting through a set of automated procedures. Instead, professional accountants will work on issuing audit reports on the reality of accounting records, combining accounting records with financial accounting evaluation. Blockchain accounting can provide data on the existence of a secure customer, but it is necessary to verify the recoverable amount of the claim. It is possible to verify ownership of assets through blockchain records, and it is necessary for professional accountants to verify, in the field, the physical condition, location and actual value of assets. (www.hyperledger.org)

By eliminating reconciliations and ensuring certainty in the transaction history, the blockchain could also expand the scope of accounting, taking into account several areas that are currently considered too difficult to measure, such as the amount of accounting information that an entity holds. (www.hyperledger.org)

The application of blockchain technology in accounting is a replacement for traditional accounting and reconciliation accounting work. This phenomenon changes the activity of accountants in the accounting records of transactions, leading at the same time to the amplification of the activities of professional accountants who provide added value to accounting information. We consider here: the activities of professional accountants in mergers and acquisitions, the activities of professional accountants for analysis and the issuance of professional judgments for key figures describing the financial performance of entities. www.hyperledger.org)

Blockchains also allow for a greater degree of transparency than traditional accounting works. This is attractive in cases where corruption or misappropriation of property is in jeopardy. For example, spending could be provided in a blockchain-based asset; from there the final beneficiary of

the funding could be easily identified. (www.hyperledger.org)

At present, business-to-business transactions lead to accounting with four sets of data, in which each company makes its own double-entry accounting and, in theory, the two sets of accounting records have a set of data of equal value. This model could be substantially modified by a computerized blockchain-based accounting system. By simplifying the barriers around the internal accounting of each company and making entries directly in blockchain IT systems, the accounting records allow the transaction to be recorded faithfully, verifiable and identical by each party. This system can be applied, for a start, to accounting for the transactions of groups of companies. Over time, the system may be applicable to more and more entities, creating a universal record system. (www.hyperledger.org)

Basically, any kind of asset register will have to be designed around the limits of privacy that a blockchain creates. While the data in each transaction can be encrypted, if the source or ownership of the assets is at stake, then previous transactions must be public to verify this. Finding a way to balance the competing priorities of decentralization, confidentiality, and security is a current area of research among blockchain specialists.

There are several areas that can affect the blockchain. When paired with a robust digital identification system, an identity block could store credentials for individuals, simplifying customer knowledge and other identification processes, allowing organizations to share identification activities. Similarly, a database of intellectual property rights could be distributed to simplify the process of identifying owners' Internet Protocol addresses, claiming and paying royalties. (www.hyperledger.org)

Blockchain information systems have applications in financial audit - statutory, external. Confirmation of a company's financial condition would be less necessary if some or all of the transactions underlying that status were visible on the computer network. This approach would mean a profound change in the way professional financial audit services are performed. (www.hyperledger.org)

A blockchain IT solution, when combined with proper data analysis, could help with transactional assertions involved in a financial audit, and the auditor's skills would be better used, given the ability to address professional, higher-level judgments. (www.hyperledger.org)

5. A case study of the accounting of set of transactions

Table no. 1 Table of transactions related to the case study

Transactions	Textual description of the transactions
Initially	On January 1, 2021, a real estate business entity purchased a housing complex, for which the fair value of 4,800,000 m.u. (monetary units). The housing complex has an estimated useful life of 30 years and will be used for rent to third parties, thus being accounted for in the category of real estate investments. (Nicolae, 2010).
December 31, 2021	In accordance with its accounting policies, at the end of each reporting period, the entity shall perform tests to determine whether there are any indications of impairment of the housing complex. The company's accounting specialists exercise their professional judgment; they estimate that there has been a depreciation of the present value of the asset group, and the value of the adjustment for impairment to be recorded on expenses is $400,000 \text{ m.u.}$
December 31, 2022	The company's accounting specialists note the increase in the current value of the asset and, implicitly, the reduction of the adjustment for depreciation by 200,000 m.u.
December 31, 2023	The entity decides to sell the housing complex at the price of 5,600,000 m.u.

Source: Case study data proposed by the author

Accounting data

(Making entries by the author)

Table no. 2 Recording of the purchase of the housing complex

Account - Debit	Account - Credit	Amount
Tangible fixed assets - Real estate investments	Providers of tangible fixed assets in the	4,800,000
recorded at fair value	category of real estate investments	

Source: Calculations and records made by the author

Table no. 3 Calculations for amortization for year 2021

Calculations and records		
As of December 31, 2021, the entity calculates and records the amortization for the period January 1 -		
December 31, $2021 = 4,800,000 \text{ m.u.} / 30 \text{ years} = 160,000 \text{ m.u.}$		

Source: Calculations and records made by the author

Table no. 4 Record for amortization for 2021 year

Account - Debit	Account - Credit	Amount
Operating expenses related to the amortization	Depreciation of real estate investments	160,000
of real estate investments valued at fair value	valued at fair value	

Source: Calculations and records made by the author

Table no. 5 Recognition of expenses of the depreciation of the current value of the building as of December 31, 2021

Account- Debit	Account - Credit	Amount
Operating expenses related to adjustments for impairment of	Adjustments for property	400,000
real estate investments valued at fair value	impairment	

Source: Calculations and records made by the author

Table no 6 Calculations for amoutization for year 2022

Table no. 6 Calculations for amortization for year 2022		
Calculations and records		
Annual depreciation = $4,400,000 - 160,000 - 400,000 = 3,840,000$ m.u. $/ 29$ years = $132,414$ m.u.		

Source: Calculations and records made by the author

Table no. 7 Record for amortization for 2022 year

Account - Debit	Account - Credit	Amount
Operating expenses related to the amortization	Depreciation of real estate investments	132,414
of real estate investments valued at fair value	valued at fair value	

Source: Calculations and records made by the author

Table no. 8 Recognition of transfers to income of reduction of depreciation at December 31, 2022

Account- Debit		it	Account - Credit	Amount
Adjustments	for	property	Revenue from adjustments for impairment of real	200,000
impairment			estate investments valued at fair value	

Source: Calculations and records made by the author

Table no. 9 Calculations for amortization for year 2023

Calculations and records		
Annual depreciation = 3,840,000 - 132,414 + 200,000 = 3,907,586 m.u. / 28 years = 139,557 m.u.		
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Source: Calculations and records made by the author

Table no. 10 Record for amortization for 2023 year

Account - Debit	Account - Credit	Amount
Operating expenses related to the amortization	Depreciation of real estate investments	139,557
of real estate investments valued at fair value	valued at fair value	

Source: Calculations and records made by the author

Table no. 11 Registration of the sale of the housing complex valued at fair value

Account - Debit	Account - Credit	Amount
Operating expenses related to the amortization	Depreciation of real estate investments	5,600,000
of real estate investments valued at fair value	valued at fair value	

Source: Calculations and records made by the author

Table no. 12 Recognition of the transfer - removal from recordings of the housing complex

Account - Debit	Account - Credit	Amount
Depreciation of real estate investments valued	Tangible fixed assets - Real estate	431,971
at fair value	investments recorded at fair value	
Adjustments for real estate investment	Tangible fixed assets - Real estate	200,000
depreciation	investments recorded at fair value	
Expenses from the sale of tangible assets - real	Tangible fixed assets - Real estate	4,168,209
estate investments	investments recorded at fair value	

Source: Calculations and records made by the author

Table no. 13 The financial result generated by the sale of the real estate investment - housing complex

Revenues	Costs	Financial Result - Profit
5,600,000	4,168,209	5,600,000 - 4,168,209 = 1,431,791 m.u.

Source: Calculations and records made by the author

In order to implement the proposed accounting model in practice, companies may consider implementing alternatives to the accounting model. This will ensure a fair presentation of the financial impact of transactions in: *Statement of profit and loss and other comprehensive income, Statement of financial position*, in financial reporting - summary accounting documents prepared by entities.

6. Conclusions

In my opinion, the application of new, innovative tools and techniques that have emerged as a result of the development of information technology (IT) information capabilities provides the necessary foundation for multi-item, multi-dimensional processing of accounting information.

The practical application of new technologies and up-to-date IT tools ensures a constant flow of accounting data to the various entities, to the users of the summary accounting statements or documents. This creates the instrumentalization of a real-time interaction between the need for accounting data in the decision-making process of entities and spatially and temporally delocalized data sources.

One of the most important issues is to provide a wide range of tools for the increased security of financial and accounting data. This requirement is imposed by the current conditions in which we encounter an external environment with multiple challenges and threats from business entities, competitors or parastatals.

7. References

- International Accounting Standards Board, 2011. International Financial Reporting Standard 13 Fair Value Measurement, available on-line at: http://eifrs.ifrs.org
- International Accounting Standards Board, 2018, *International Financial Reporting Standards (IFRSs)*, available on- line at: http://eifrs.ifrs.org.
- Nicolae, T., 2010. Standarde contabile [Accounting standards]. Constanta: Ex Ponto Publishing House
- Nicolae, T.C., 2015. Contabilitate financiară aprofundată: caiet de studiu individidual: învățământ la distanță(ID) [Advanced financial accounting: individual study book for distance learning (DL)]. Constanta: Ovidius University Press Publishing House
- www.arbc.ro, www.ziare.ro
- www.bnr.ro.
- www.hyperledger.org.
- www.insse.ro.

The Impact of Taxation and Crisis on Savings – An Interdisciplinary Approach

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Abstract

The design, organization and functioning of the fiscal system produces a series of changes in the economic, social and political life of any country. The purpose of this paper is to highlight the fact that the tax system can thus be used as an instrument of political decisions, being at the same time the initiator and result of fiscal policy that allows the use of various techniques and mechanisms for tax collection, often for political, social and not least economic purposes.

The changes that have taken place in the international security environment over the last decade, especially in its last period, have shifted all the attention of the international community to clarifying a vision that will contribute to strengthening world peace and security, thus reducing conflict any nature, implicitly, to the reduction, until the elimination of the causes that generate them.

Key words: fiscal system, fiscal policy, tax, fiscal burden, economic-financial crises

J.E.L. classification: E62, G01, G51

1. Introduction

The changes that have taken place in the international security environment over the last decade, especially in its last period, have shifted all the attention of the international community to clarifying a vision that will contribute to strengthening world peace and security, thus reducing conflict conditions, any nature, implicitly, to reduce, to eliminate, where possible, the causes that generate them. This vision essentially involves the identification on a global scale of vulnerabilities, possible risks and threats that could lead to the emergence of sources of instability or aggravation of existing ones. An important element is to accompany the process of their identification by analyzes that allow the creation of tools necessary for the practical realization of this vision, so as to obtain a solid state of stability, at different levels (global, regional or national) and to it also prevents the emergence of new sources. It is assumed that this process will gain momentum, both in its spatial and temporal dimensions, involving resources, multiple strategies and diversified actions, in accordance with the nature of the major sources of instability.

The economic and financial crises of the last 15 years have extended to Romania, affecting the saving mechanism of the population, the impact of the fiscal pressure being the main cause that led to the decrease of the saving population. Taxation is a system of contributions imposed by the state on individuals and legal entities in order to ensure the financial resources necessary to meet the needs of society by incurring expenses. The rationality of the fiscal policy decisions implies the observance of the basic principles of taxation and these must be in accordance with the meaning and evolution of the economic variables but also of the behavior of the citizens (Dăianu, D., 2008).

The main objective pursued in carrying out this work is to identify on a global scale the vulnerabilities, the possible risks and threats that could lead to the appearance of some sources of instability or the aggravation of some already existing ones.

Also, the specific objectives of this research are:

- 1. highlighting the fact that taxation plays a key role in creating a fair society and building a strong economy. Through it, progress can be made towards eliminating inequalities, not only by supporting social mobility, but also by reducing inequalities in market income.
- 2. fiscal policy can have a major impact on employment decisions, investment levels and the willingness of entrepreneurs to expand their business, all of which lead to stronger economic growth.

Thus, fiscal policies are assessed in relation to four priorities:

- stimulating investments;
- employment support;
- reducing inequalities;
- ensuring fiscal compliance.

Covid-19 has had and still has strong effects on the Romanian economy, especially in terms of the necessary response from the authorities, the change in the behavior of some citizens but also the global impact with strong implications both on the consumer side (consumer confidence).) as well as on the supply side.

One of the characteristics of the global economy is the consumption of the population. It is the factor that pushes many economies forward (USA, Romania), and secondarily others, which provide goods for consumption (Germany, China).

2. Literature review

Regarding the application of the fiscal policy, A. Marshall states that almost all types of fiscal policy include both a good and a bad part. Whether evil or good dominates depends on how the policy adapts to the conditions of the economic and financial environment, the foresight, the horizon of ideas and the competence that influences its own development.

The fiscal policy thus represents one of the multiple instruments, through which the structural modeling of the fiscal system is realized and its functionality is ensured, in accordance with the objectives established by the public decision maker (Andrew W. Lo, 2008).

Friedrich A. Mayek in the Constitution of Freedom considered that budget revenues from high levels of taxation of high revenues, especially very high revenues, represent such a small share of total revenues that they hardly affect the burden borne by other taxpayers, but for years, the beneficiaries of progressivity were not the poor, but exclusively the wealthy categories of workers and the less affluent part of the middle class, who gave the largest number of voters.

Fiscal policy has a significant impact on saving and raising capital. An increase in taxation has the effect of reducing savings and capital for investments that will affect future consumption.

As Milton Friedman has argued in both fiscal and monetary policy, leaving aside all political considerations, we simply do not know enough to be able to use deliberate changes in taxation and spending as a sensitive mechanism for stabilization (Desmet C., 2009). Trying to do so would certainly make matters worse or improve things by introducing a random disruptive factor, which simply adds to the other imbalances.

In order to overcome the contradictions that manifest themselves at micro and macrosocial level, the state adopts a series of measures, elaborates policies and strategies, through which it tries to adapt to the new conditions (Blundell-Wignall, A., Atkinson, P. și Se Hoon Lee, 2008). Measures that have proven viable in the past cannot always be successfully applied to current situations. The economic mechanism is thus called upon to adapt to the conditions of evolution of the national economy, but it cannot change from one day to the next, nevertheless implying a certain stability.

The French economist Gabriel Ardant considers that taxes play a very important role both in influencing economic processes and activities, but especially in terms of the behavior of individuals (Furceri D. and Mourougane A., 2009). He argued that the role of the tax was no longer to provide money to the government, but to limit consumption in times of scarcity, to allow it to grow when production capacity could be directed towards meeting the needs of peace, to curb it again. when the economy is experiencing inflationary spikes (Watt A., 2008). This function of "balancing" the

tax does not fulfill itself. In both old and new forms, it is no less one of the most useful tools of full labor policy.

3. Research methodology

The working method is that of documentary research in archives, of qualitative and quantitative type. I used the documents archived within the European Commission, the International Monetary Fund and the World Bank. The archive information was supplemented by reading several books and specialized articles, which deal with the topic of research. We also used scientific research papers and interviews with dignitaries involved in Romania's relations with the IMF and the WB in the current period. The statistical information identified in the archive documents was synthesized, analyzed and processed and will be found during the research.

4. Findings. The impact of taxation and financial crises on saving and relocating economic activity

This paper proposes an analysis of the causes and consequences of the current financial crisis, with particularization on the case of the Romanian financial system, which has not been unaffected by the negative effects manifested globally. The current crisis is a recognition of the need to reconfigure the global financial system in the light of the following:

- a) Financial crises are an inevitable part of modern capitalism, a consequence of the interactions between human behavior and the ability to innovate, compete and evolve. But even if crises cannot be avoided, their negative effects can be significantly reduced by ensuring adequate risks for the right parties, and this goal can be achieved by increasing transparency, especially in the so-called "shadow banking system". banking system "). The government can play a central role in providing this transparency.
- b) Before hoping for an effective management of the risks of the financial crisis, we must master the significance of these risks but also the means of their effective measurement. Therefore, in order to issue new regulations, it is necessary to develop a formal definition of systemic risk and to create specific measures that are sufficiently practical and comprehensive to be used by both policy makers and the general public. These measures will require hedge funds and other parts of the shadow banking system to ensure greater transparency to regulators on a confidential basis (eg information on assets under management, indebtedness, liquidity, partners and property rights).
- c) The most pressing change in the regulations of the financial system is to provide the public with information on those institutions that have failed in one way or another. This can be achieved by setting up an independent investigative agency to report regularly on the details of registered bankruptcies and to propose measures to avoid the problems presented in the future.
- d) For the average citizen, the current financial crisis is a mystery and concepts such as subprime mortgages, CDOs, CDSs and the collapse of the credit market only create more confusion and fear. Therefore, a critical point of any crisis management protocol is the establishment of regular lines of communication with the public, through which to clarify the determinants and consequences of the crisis.
- e) It is necessary to develop and implement a new branch of accounting "risk accounting" to measure and manage systemic risk on a global scale.
- f) All technology-based industries are burdened with the risk of technological innovations that may temporarily outweigh people's ability to use them effectively. Under these conditions, government intervention is needed to support the development of as many educational programs in financial technology as possible in universities.
- g) The complexity of financial markets restricts the ability of regulators to keep up with innovations. The new regulations need to be adaptive and focus on financial functions and less on institutions, ensuring greater flexibility and dynamism. An example of adaptive regulation is the requirement to standardize an OTC contract and to establish an organized exchange for the moment when its size exceeds a certain limit.

The democratic state ensures by its simple existence the necessary and general means and mechanisms for the functioning of the economy, guaranteeing through its coercive force with which it is invested by the society. In this sense, "there is a continuous gradation, both in the actions of the business world, between normal and abnormal, between current and market values. There are no differences between short or long periods. More generally, there is no significant difference between the goods.

Economic levers are used by the state to stimulate domestic production of goods and services, or to promote exports through export premiums or, as the case may be, to shape certain actions, whether investment or savings manifested among economic agencies or individuals. physical.

Regarding the impact of taxation on industrial changes, there are two complementary components: labor taxation and invested capital taxation, which directly affect the behavior of economic agents. According to EU statistics, tax revenues account for about 39% of European GDP.

At European level, indirect taxes consist mainly of general consumption taxes (VAT), but also of certain mandatory taxes applied on certain categories of goods and services (excise duties). Indirect taxes generally affect all categories of people, whether natural or legal. If we consider the structure of taxes, the tax levied on the income of employees and the totality of social security contributions constitute approximately half of the total fiscal and parafiscal taxes. The fact that these taxes directly affect and affect the labor force contributes to the increase in labor costs. Knowing that working with capital and nature is an indispensable factor of production for any economic activity, the increase in the costs of its use is directly reflected on the volume of profit but also on the total cost of production and ultimately in price.

The cost of labor is an essential and most important component in industry, and the taxation applied to this factor of production, sometimes too excessive, contributes to diminishing the competitiveness of companies operating in the European economic space. Labor taxation affects both the employer and the employee. Rising labor costs are prompting companies to increase labor productivity by increasing the intensity of capital investment. This trend is particularly evident in the Member States with the highest labor costs. Conversely, the relative cost of labor is one of the variables that encourages companies to locate their labor-intensive investments preferably in the territory of the Member States with the lowest cost. Given that tax and social security contributions tend to be higher in Member States with employee pay levels (including employer social security contributions and taxes) that exceed the European average, the share of taxation on labor increases the cost gap, and thus directs job creation to Member States with a more competitive cost structure.

At the same time, given that the products are valued throughout the community, the cost of labor therefore becomes an important and determining factor in setting the price. Different taxation of labor factors even within the EU causes some companies to relocate their production capacity to countries where the tax burden is lower. States having some freedom in setting tax rates, especially since certain categories of taxes are not harmonized throughout the Community, or in the case of other taxes or duties such as VAT, the law provides only minimum tax rates, leaving the state to set the tax level yourself.

The second important aspect in the investor's decision to relocate his activity is the taxation of the invested capital, which implies both the analysis at the level of the enterprise and at the level of the investor. In this case, it is the corporate income tax that is established using different nominal rates from one Member State to another.

In the specialized literature and fiscal practice, therefore, a series of quotas are distinguished, as follows: The legal tax quota is the legally imposed quota. The actual tax rate is the amount of tax paid by a person or enterprise after including all other reliefs or amounts intended for the State, divided by the total or taxable income of that person or enterprise. The default tax rates are defined for each economic function. These are calculated by relating the overall tax revenue corresponding to the respective category (consumption, labor and capital) to the estimated value of the potential tax base defined on the basis of the production accounts and the income accounts within the national accounts. The overall default capital tax rate is calculated by relating the income from all capital taxes to (in principle) the total capital and income of enterprises.

5. The impact of taxation on the relocation of industrial economic activity

Tax competition is currently an important issue for EU Member States. The tax therefore becomes a real competitive instrument, no longer seen only as a lever for intervention in the economy or the classic source of revenue for the public budget. The tax being the one that counterbalances the investment decision in one state or another. Therefore, as a result of some fiscal decisions, tax regimes were created that were far too permissive and permissive for the economic activity in order to divert and relocate some investments in the economy. These are now known as harmful tax regimes which are defined in the Code of Conduct for Business Taxation as "those regimes which affect, or could significantly affect, the location of business activities within the Community". The Code defines as "potentially harmful" those measures which make possible a much lower effective level of taxation, including zero, than the levels generally levied in those Member States.

Taxation can be seen as a factor that does not always determine investment decisions in SMEs, which are often constrained by the environment in which they operate. Taxation plays a much more important role in the case of multinational enterprises that also have a higher mobility and that are not culturally related to the area in which they operate. At the same time, fiscal competition does not only affect enterprises because once the mobility of financial assets, it also targets the capital income of individuals.

The fact that the states do not cooperate in the field of taxation as well as the legislative provisions, most of the time gaps that leave loopholes, water the so-called non-taxation situations. Relevant to this end is the double non-taxation. Such disparities may arise, for example, in the definition by Member States of the concepts of borrowed capital and equity. One Member State may consider a transaction as a contribution to equity rather than a loan, and may therefore consider capital income as non-taxable, while another Member State may consider the loan as borrowed capital, and Accordingly, it may allow the interest-bearing undertaking to deduct the interest paid. This could result in a deduction in one Member State without proper taxation in another Member State. Another sector is that of hybrid entities, ie entities that are considered capital companies (opaque) by some Member States and as partnerships (transparent) by other Member States; this difference in classification within the Member States may lead to double exemptions or double deductions.

Unrestricted intra-Community tax competition risks, on the one hand, increasing the basic tax factors for the least mobile taxable parties - such as small businesses or services that cannot be relocated - and, on the other hand, changing the distribution of the tax burden. between taxpayers and consumers to cover public spending and social transfers. This last aspect would have negative effects on social cohesion.

If there is a transfer of the tax burden on the less mobile production factors such as labor and raw material taxes, there may be a decrease in the competitiveness of enterprises as well as an alarming decrease in their jobs, compared to foreign competitors. , non-EU. All this will affect the percentage of national GDP growth that will suffer as a result of this transfer of tasks, which will translate into a decrease in public investment capacity but also the lack of budgetary resources available to the state to intervene.

A very important aspect is the reduced capitalization, ie the financing of foreign subsidiaries, instead of a capital contribution. From this point of view, there is a high degree of subjectivity on the part of different administrations, and judgments are, therefore, very difficult when it comes to financial institutions.

Fiscal competition and the mobility of economic factors are increasing within the EU for the following reasons:

- large companies consider the European internal market as a single market, their "national" market;
- e-commerce does not take into account national borders;
- the value chains of production and distribution are becoming more and more segmented, and their various components are increasingly mobile;
- Improving transport infrastructure and reducing costs following the restructuring of freight transport encourages the geographical spread of businesses and their subsidiaries;
- the number of multinational acquisitions and mergers of enterprises is increasing;
- EU enlargement contributes, inter alia, to the mobility of economic investment, people and capital;
- Increasing the level of knowledge and language training contributes to increasing the mobility of people.

6. Conclusions

Therefore, fiscal competition is directly affected by each country, causing states to implement specific public policies in order to reduce the level and structure of public spending, knowing that taxes and duties are the main sources of revenue to the budget. In an effort to attract as many investors as possible, states apply fiscal policies, which often do not have the effects expected by their application and which turn companies into advantages of fiscal facilities.

If, although this interstate fiscal competition is found, the ideal would be that this process does not occur to the detriment of the supply and quality of public services. These are of paramount importance for maintaining and attracting productive activities that create wealth, jobs and - ultimately - basic taxation, and tax competition must not affect the financing and coverage of the collective social protection system.

7. References

- Andrew W. Lo, 2008, *Hedge Funds, Systemic Risk, and the Financial Crisis of 2007–2008*, Prepared for the U.S. House of Representatives Committee on Oversight and Government Reform November 13, Hearing on Hedge Funds.
- Blundell-Wignall, A., Atkinson, P. şi Se Hoon Lee, 2008. The Current Financial Crisis: Causes and Policy Issues. *Financial Market Trends*, OECD.
- Dăianu, D., 2008. What This Financial Crisis Tells Us. Review of Economic and Business Studies -Journal of the Faculty of Economics and Business Administration, "Alexandru Ioan Cuza" University of Iasi, Romania, No. 2/2008
- Desmet Cherles, 2009. Reforming financial szstems: building anew, or tinkering?, Hayek Institute site.
- Furceri, D and Mourougane A., 2009. *Financial Crises: Past Lessons And Policy Implications*. OECD Economics Department Working Papers No. 668, februarie 2009.
- Watt Andrew, 2008. The Economic and Financial Crisis in Europe: Addressing the Causes and the Repercussions. European Trade Union Institute, European Economic and Employment Policy Brief, No. 3.

Assessing Portfolio Risks Involving Bitcoin and Ethereum Using Vector Autoregressive Model

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Abstract

Investors now have a multitude of non-traditional assets to choose from, especially from the spectrum of alternative assets, such as financial digital assets.

We start from the premise that there is a high risk associated with investing in financial digital assets, along with the opportunities presented from these emerging digital markets that evolve in a decentralized environment. We will be looking at the two major digital assets, specifically Bitcoin (BTC) and Ethereum (ETH), as per their dominance within the markets of crypto assets.

This paper will focus on the evolution of financial digital assets and the impact on portfolio assessment that have allocations for BTC and ETH. In order to identify the value and potential of these financial digital assets, we will be addressing volatility and portfolio risks by means of a Vector Autoregression model on the returns of both, BTC and ETH.

Key words: financial digital assets, volatility, portfolio risk

J.E.L. classification: F33, F42, F01, E02

1. Introduction

Technological development has produced enormous opportunities for investors to invest in non-traditional assets such as alternative assets from the crypto space. The major drawback of traditional assets is the extent of responsiveness to changing macroeconomic and global financial conditions. However, Bitcoin, one of the many cryptocurrencies from the financial digital assets space, appeared to be a haven against changing macroeconomic and global financial conditions (Bouri et al., 2018). In the same way, Bitcoin is out of the purview of a centralized institutions such as governments, banks, or other financial intermediaries. The decentralized nature of Bitcoin incentivizes the environment for investors, and there is a spectacular rise in interest towards these type of financial digital assets. For instance, the mean annual return of Bitcoin from 2013 to up to date stood at 408.8% (UpMyInterest, 2021), which is much higher than the annual return of many other assets in the crypto space and outside of this ecosystem.

The concept behind the successful growth and adoption of Bitcoin, as it roughly captures almost 41.5% of total market capitalization in the crypto market (Coinmarketcap, 2021). Bitcoin appeared to be the first decentralized and unregulated financial digital asset, which attracted massive attention from media, academics and the financial industry along with its investors. In November 2021, Ethereum price reached the \$4800 level, and it is second most traded financial digital asset in the market with a market share dominance of 23% (Coinmarketcap, 2021).

This research study focuses on assessing the degree of price volatility and portfolio risk associated with Bitcoin and Ethereum. We will be conducting an empirical study to measure the price volatility of these two different assets in the crypto assets' environment.

2. Literature review

There exist different strands of literature related to financial digital assets. The first strand of literature deals with the contribution of crypto assets to portfolio diversification. For instance, Ozturk (2020) suggested that Bitcoin might not provide sufficient contributions to portfolio diversification

in the short and medium-term, mainly due to the volatile nature of Bitcoin. However, due to limited connectedness between Bitcoin and other assets, like gold and crude oil, it might offer potential gains from diversification in the long run. The study implies that crypto assets are significant for portfolio diversification, especially on a longer timeframe. Similarly, Conlon et al. (2020) modeled and examined most international equity markets, and concluded that crypto assets do not appear to be a safe haven except for the Chinese CSI 300 index. For Zhang & Ding (2021), frequent and high fluctuations in cryptocurrency prices, induce investors to thoroughly account for risk portfolio assessments. However, the volatility impact on the market varies from short, medium to long runs with different performance scenarios. The negative impact on the market is more severe in both, the short and medium timeframe, but the risk of spillover gets down in the long run.

The second strand of literature deals with crypto as an alternative to FIAT currencies. After being accepted as a medium of exchange, Bitcoin failed to gain momentum in retail transactions for significant reasons. First, Bouri et al. (2019) argued that Bitcoin is not regulated. Second, since no central authority is navigating the price movement, high volatility is expected in the price and returns of Bitcoin. Alternatively, decentralization and lack of regulation allow investors to face frequent steep ups and downs in this type of asset's price shocks and returns. Due to this reason, it is less plausible that crypto assets would be used as a currency substitute since they lack exposure to currency and commodity returns. For instance, Liu & Tsyvinski (2021) findings posed severe challenges to the popular explanations that crypto in its existing shape cannot serve as a unit of account or store of value due to its lack of exposure to the returns of earnings on foreign exchange and commodity investments. For Brenyah (2018), the lack of acceptance by institutional investors to engage in the ecosystem makes the crypto market more volatile and serves as an alternative to currencies.

The third strand of literature is related to the price and return volatility of crypto assets. This segment of literature explains and focuses on the risk associated with cryptocurrencies in different scenarios and studies. For instance, annualized return volatility of Bitcoin has stood at 81% since 2013, and this is likely to be due to the lack of interest from the institutional investors who still consider Bitcoin a speculative asset. In the absence of normal assets return distribution, variance is no longer a good measure of portfolio risk. The daily cryptocurrency returns do not exhibit a normally distributed function but follow the Cauchy distribution function (Hrytsiuk et al., 2019).

Different econometric models and techniques have been used to forecast crypto volatility to help crypto investors' decision-making and risk management. For Instance, Brenyah (2018) used Value at Risk (VaR), expected shortfall, and filtered historical simulation with the help of GARCH modeling. According to Kyriazis (2021), sophisticated GARCH models are much more efficient in explaining the fluctuations in the volatility of digital financial assets. However, the author has shown that the inclusion of Bitcoin with conventional assets significantly changes the risk-return trade-off involved in the decisions of different investors. Similarly, Wang (2021) findings revealed the haven property of Bitcoin and argued that Bitcoin could provide a strong hedge against recessionary periods. Specifically, during economic recessions, portfolio risk will decrease if Bitcoin, as an asset, is part of the investor's portfolio. Shen et al. (2021) applied both conventional modeling and machine learning to forecast volatility in the returns of bitcoin, and Recurrent Neural Network (RNN) outperforms Generalized AutoRegressive Conditional Heteroskedasticity (GARCH) and Exponentially Weighted Moving Average (EWMA).

Apart from GARCH and its variant models, Value-at-Risk (VaR) measure has been frequently used to assess the volatility of Bitcoin's return and its contribution to the portfolio risk. For instance, Stavroyiannis (2018) concluded that because of high volatility in Bitcoin's returns, the distribution is not normal, and for that reason, the VaR approach is not suitable. However, Conditionally Adjusted VaR (CAVaR) models effectively explain the risk connected to different crypto assets. In this regard, Li & Huang (2020) examined risk connectedness among seven major cryptocurrencies using the CAVaR model and shown that risk spillover levels are stronger under downward risk than upward risk tendency.

3. Research methodology

Our approach for this empirical study will involve a quantitative research methodology based on the Vector Autoregression (VAR) model to achieve our objectives and to assess the level of portfolio risk associated with digital financial assets.

Our study will identify the optimal lag for our two sets of time series, daily Log returns of Bitcoin and Ethereum. The VAR model enables the study to obtain coefficient matrices, the covariance matrix of residuals, and impulse response function. First, we will calculate the Log daily return of Bitcoin and Ethereum by using daily closing and opening prices. And then, in the second stage, we will estimate the VAR model and detail the obtained results through diagnostic tests and impulse response graphs.

The research strategy is structured for the study to provide coefficient matrices and explain each coefficient's statistical significance. Results and comments on the covariance matrix of residuals will be provided, and finally, we will be presenting a conclusion after explaining the impulse response function. Vector autoregressive model extends univariate regression and involves more than one-time series, whereas univariate autoregression is suited for single time series. In the VAR model, a vector of variables is included in the model, and each variable depends on its lags and the lags of another variable in the vector.

4. Data Description

The timestamps for the data involved in this study have been collected from January 2016 to October 2021 and its based on the daily closing and opening prices of Bitcoin and Ethereum assets. For replication purposes, the data is public and can be extracted from many digital assets providers. Regarding the validity of data, we have engaged the data sets from Yahoo Finance, as the values are different for each provider due to the phenomena that most of the biggest crypto exchanges have and run their order books. Because of this, differences in price ranges are expected, and results may vary.

5. Econometric Model

Based on the knowledge we obtained reviewing the existing literature in this field, the available econometric models used in this type of analysis are the Value-at-Risk (VaR) approach, GARCH, and Vector Autoregressive model (VAR). However, we are using the VAR model assuming that both sets of time series, i.e., daily annualized Log returns of Bitcoin and Ethereum, are stationary at level, which entails properties of both time-series do not dependent on time and mean, and variance are consistent over time. Vector autoregressive model extends univariate regression, known as the single equation model where current values are determined by previous year value called lagged value. A vector of variables is included, and each variable depends on its lags and the lags of another variable in the vector. Equations 1 and 2 present the VAR model used for Bitcoin and Ethereum in this study:

$$Bt = \alpha 0 + \alpha 1 Bt - 1 + \alpha 2Et - 1 + \mu 1t$$
 (1)

$$Et = \beta 0 + \beta 1 Bt - 1 + \beta 2Et - 1 + \mu 1t$$
 (2)

The two equations show a two-variable VAR with a single lag for both, Bitcoin and Ethereum. In the first equation, Bitcoin as a dependent variable depends on intercept, equal to the average daily log-returns of Bitcoin when there is no independent variable included in the model.

It is possible to expand the model to include more than one lag, which implies that latest price of bitcoin will be affected by the price of bitcoin from the previous day, and the same holds for Ethereum and the residuals, which should not be connected with the delays included in this particular model. The second equation depicts Ethereum as a dependent variable based on intercept (constant), lag (prior days prices), and residuals.

6. Results and Discussion

In VAR model analysis, checking the stationarity of the series is essential. According to Elder and Kennedy (2001), incorrect conclusions might be obtained if data stationarity is not validated. In the Dickey-Fuller test, autocorrelation in the error term prevents a first-order autoregressive process from being represented. The "Augmented Dickey-Fuller" test is used to check unit root in the model and its stationarity. (Göktaş, 2005). The series stationarity is assessed using ADF test statistics and within the stationary test for Bitcoin and Ethereum, the ADF Z- test value is less than the McKinnon critical values for 1%, 5%, and 10% significance levels.

To eliminate the unit root, the first-degree difference in the series was collected and the stationary test was performed many times. If the H0 hypothesis is rejected, the series is seen as being stationary in nature.

Within table 1, the values of ADF test of stationarity are presented.

Table no. 1 Augmented Dickey Fuller test for Bitcoin and Ethereum

ADF FOR		Test statistics	1% critical value	5% critical value	10% critical value	MacKinnon approximate p-value for	Stationarity level
ЕТН	Z(T)	-32.696	-3.43	-2.86	-2.57	0	Stationary (1)
BTC	Z(T)	-33.008	-3.43	-2.86	-2.57	0	Stationary (1)

Source: Author's creation

These results confirming that after taking 1st difference of Bitcoin and Ethereum are stationary at 1st difference as their p-value is less than 0.05.

To use the VAR model on the data, we need to determine the ideal lags, which indicates that today's price will be influenced by the price of the previous day. Tables 2 and 3 present obtained results of selection order criterion to select optimal lags for both BTC and ETH annualized return of log prices. Different types of tests have been applied to choose an optimal lag selection, for instance, log-likelihood (LL), likelihood Ratio Test (LR), Final Prediction Error (FPE), Akaike's Information Criterion (AKI), Hannan and Quinn Information Criterion (HQIC), and Schwarz's Bayesian Criterion (SBIC). Both FPE and AIC are used to estimate prediction error for various models and see the relative quality of each model.

If the lag duration is too short, the model's specification will be incorrect, and if it is too long, the degree of freedom will be of no benefit. The criteria we are going to use for lag length is HQ, Schwarts and Akaike.

All the mentioned tests are used to identify and choose optimal lag, and the basic rule of thumb to select optimal lag is to see the highest value for each mentioned type of test. For instance, as per the log-likelihood ratio test, the highest value is recorded at lag 4, which is accurate for all other types of tests.

One can see that the AIC criterion also shows lag 4 is optimal because, the value -9.82788 is the largest among the rest of the lags. Thus, the optimal lag for log opening and closing price would be lag 4.

Table no. 2 Optimal lag selection for Ethereum and bitcoin Selection-order criteria

Sample:	1 Jan, 2016-	11 Nov, 2021 , bu	ıt with g	gaps	Number o	f observation	ns = 2	137
lags	LL	LR	df	p	FPE	AIC	HQIC	SBIC
0	9417.66				5.10E-07	-8.81203	-8.81009	-8.80673
1	9417.66	1242.1	4	0	2.90E-07	-9.3895	-9.38368	-9.37359
2	10038.7	524.21	4	0	2.30E-07	-9.63106	-9.62136	-9.60454
3	10300.8	265.31	4	0	2.00E-07	-9.75147	-9.73788	-9.71434
4	10433.4	171.3*	4	0	1.8e-07*	9.82788*	9.81041*	-9.78015*

Endogenous:

dlreturnbtc

dlreturneth

Exogenous: constant

Source: Author's creation

In table 2, the optimal lag selection for difference of Ethereum' and Bitcoin annualized log of return prices is presented.

Using the logic mentioned earlier, it can be said that the optimal lag for Ethereum' and Bitcoin is set to be lag 4 represented by the asterisk sign. The term constant in the table represents our single exogenous variable in the model. Its value is determined outside of the model and shows the average value of the dependent variable when the model contains no independent variable. At the same time, the endogenous variable is determined within the model and, in this case, difference of annualized return of log prices for Bitcoin and Ethereum. Finally, the values holding stars also show that lag 4 is the optimal lag for this model using HQIC, AIC and SBIC criteria.

Table no. 3 Coefficient matrices

Equation		Parms	RMS	Е	R-sq	chi2	P>chi2
dlreturneth		9	.027	796	0.3870	1349.18	0.0000
dlreturnbtc		9	.019	9016	0.4134	1506.167	0.0000
	Coef.	Std.Err.	Z	P>z	[95%Conf	. Interval]	
dlreturneth dlreturneth							
L1.	-0.769	0.026	-29.140	0.000	-0.820	-0.717	
L2.	-0.578	0.032	-17.970	0.000	-0.642	-0.515	
L3.	-0.354	0.032	-11.020	0.000	-0.417	-0.291	
L4.	-0.175	0.026	-6.620	0.000	-0.226	-0.123	
dlreturnbtc							
L1.	-0.018	0.039	-0.470	0.636	-0.094	0.058	
L2.	-0.022	0.048	-0.460	0.644	-0.117	0.072	
L3.	-0.079	0.048	-1.630	0.103	-0.173	0.016	
L4.	-0.061	0.039	-1.560	0.118	-0.137	0.015	
constant	0.000	0.001	0.040	0.968	-0.001	0.001	
dlreturnbtc dlreturneth							
L1.	0.020	0.018	1.140	0.254	-0.015	0.056	
L2.	0.008	0.022	0.350	0.723	-0.035	0.051	
L3.	0.031	0.022	1.430	0.154	-0.012	0.074	
L4.	0.014	0.018	0.810	0.419	-0.021	0.050	

dlreturnbtc							
L1.	-0.836	0.026	-31.740	0.000	-0.888	-0.785	
L2.	-0.624	0.033	-19.040	0.000	-0.688	-0.560	
L3.	-0.432	0.033	-13.180	0.000	-0.496	-0.368	
L4.	-0.219	0.026	-8.310	0.000	-0.271	-0.167	
constant	0.000	0.000	0.000	0.999	-0.001	0.001	

Source: Author's creation

After choosing optimal lag for equations 1 and 2, in table 3, we present coefficient matrices obtained using the VAR model. Based on equation 1, assuming ETH Log of return on price as the dependent variable, it can be said that lag 4 of log return on price is significantly related to ETH log return on price. For instance, one can see that the coefficient is negative -0.769, and its associated probability value is less than the standard 5%.

It might be taken as: the past four-day return on ETH prices can predict latest price calculated in our study. A rise of 1% in the four-days lagged return on log of price reduces current prices by 0.769%, although these are negligible changes. For this reason, there is no statistical relevance to the remainder of the ETH price log, which is why it has no predictive value. In other words, the past four days BTC price movements may be used to anticipate latest price from our study. Our latest prices will drop 0.018% if a 1% rise in four-days lagged return on log of price occurs. Using the previous four days of price returns, these figures may be used to anticipate our latest price return, from our research.

There are two constant terms in the table, one in the log of return price of ETH equation and the second in the log return on price of BTC equation.

In both cases, they represent the average value of the dependent variable without considering for independent variable. For instance, in the both equations, the constant is equal to 0.000, which shows the average log of return on price of BTC and ETH when there is no independent variable.

Table no. 4 VAR Stable: Eigenvalue stability condition

There is the transfer Eigenvalue state tilly contained					
Eigenvalue	Modulus				
.1144018 + .6917044i	.701101				
.11440186917044i	.701101				
.1559007+ .6568266i	.675075				
.15590076568266i	.675075				
.5421565+ .382316i	.6634				
.5421565382316i	.6634				
.5306347+ .3387802i	.62956				
.53063473387802i	.62956				

All the eigenvalues lie inside the unit circle. VAR satisfies stability condition.

Source: Author's creation

For the VAR model, table 4 shows that the outcomes are stable, which demonstrates that the model is stable. It is impossible to conduct an accurate test or estimate the standard error of the impulse response function if the VAR is not steady. This test shows that all of the values are inside the unit circle and that VAR stabilizes the model, which is important for our study.

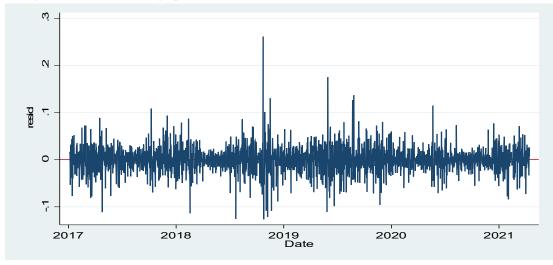


Figure no. 1 Residual line graph around the mean

Source: Author's creation

This graph from figure 1 confirms that the residual is showing appropriate estimated VAR model and confirms the stationarity and stability of the model. The graph depends on residual and years of the data from 2017-2021 all daily observations are around the mean value except some of them which are outliers.

Table no. 5 Granger Causality Wald tests

Equation	Excluded	chi2	df	Prob > chi2	Results
dlreturneth	dlreturnbtc	3.9837	4	0.408	Btc does not affect price of eth
dlreturneth	ALL	3.9837	4	0.408	There is no causal relation
dlreturnbtc	dlreturneth	3.9965	4	0.406	Eth does not affect price of btc
dlreturnbtc	ALL	3.9965	4	0.406	There is no causal relation

Source: Author's creation

A causality test must be done to assess the direction of the association between two variables. Causality is the statistical notion that future predicted values of a time series variable are influenced by previous period values.

This element of causality explores if the delayed values from a variable may be utilized as an explanation for a different variable. Granger test is thought to be induced by variables (x) if the delayed values of (x) have a significant impact on variables (x, y).

In this model, since all the probability values are more than 0.05, no other variable impact, such as BTC or ETH, was able to forecast the return of ETH prices or the return of BTC prices. Neither of the variables are connected in any way.

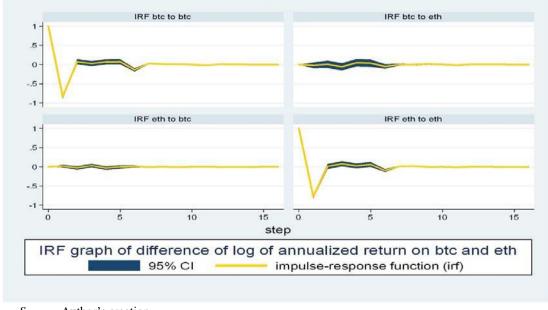


Figure no. 2 Impulse Response Function return on prices of BTC to ETH

Source: Author's creation

The impulse response function is used to show the impact of the exogenous shock on the system equation. There are two different variables used in impulse response function: impulse and response variable. For instance, in figure 2, the return on price for BTC is treated as an impulse variable and the return of price for ETH as response variable. The figure shows the effect of a one-standard-deviation impulse on the return of log price of the BTC equation. After the initial impulse, the log of return on price shows extreme fluctuations and IRF from BTC to ETH is wider than all other impulses.

The second row in figure 2 shows the effect impulse from ETH to BTC is minimum because the line is straight almost with no variations and reaches to zero and it does not have any wider effect. In the last graph impulse response of ETH to ETH start from one which means start from previous lag value and then it declines to minimum value after that it becomes a straight line on zero.

7. Conclusions

For this research we have selected the two major dominating financial digital assets of the crypto market. Based on our study we can conclude that the price movements, for both Bitcoin and Ethereum, within the spectrum of alternative financial assets, are momentum driven and involve a high volatility. As we are approaching a portfolio risk assessment, in our opinion the risk is high and is directly correlated with the returns of these assets. Thus, the allocations for this kind of assets in such a scenario should be carefully calculated, as every portfolio manager will be looking the best returns on their investments.

Clearly, the two assets studied above, make a great contribution to a portfolio and the returns are substantial and present a great investment opportunity.

Our results confirm that the prices for both Ethereum and Bitcoin are independent, but we can ascertain correlations. In our opinion the implications of price fluctuations and the elasticity for shock absorption, for each of our assets, influence one another. We believe this is a direct implication on how the crypto market evolved, in terms of accumulating liquidity along with the way the trading pairs have developed over time. Based on our research on price fluctuations and volumes, presented on different crypto exchanges, we can clearly notice that most the leading pairs for trading, start with ETH/BTC as leading pair and the rest of the crypto assets just follow the trend, trading against BTC and ETH. As the market started to mature and more players and projects have been developed, the liquidity and volumes started helping the independency of these two assets. A major pivot for the

volatility and liquidity, for both BTC and ETH, was the introduction and adoption of the stablecoins, which allowed these assets to define their trading value in USD directly.

There is an important aspect that we need to mention with regards to the data drawn for our study and that is the timeframe of the data used. We have conducted our research based on data from 2016 to 2021, for the reason that the influx of liquidity for these assets has started at higher rates from late 2020. It's an important aspect as the prices, liquidity and volatility related to these assets from 2016 till 2020 was quite constant with no major spikes or abrupt price fluctuations.

The reason for this set of data is to assess the volatility over these two major liquidity periods, that directly influence the volatility assessment. Our returns analysis and results present an independency between these assets, but with a liquidity evolution and correlation.

Investors risk assessment on portfolio allocations that involve financial digital assets from the crypto sphere should be carefully vetted as they are to be treated as high-risk investments with great returns.

8. References

- Boiko, V., Tymoshenko, Y., Kononenko A, R. Y., & Goncharov, D., 2021. The optimization of the cryptocurrency portfolio in view of the risks. *Journal of Management Information and Decision Sciences*, № 4, vol. 24. P. 1-9.
- Bouri, E., Vo, X. V., & Saeed, T., 2021. Return equicorrelation in the cryptocurrency market: Analysis
 and determinants. Finance Research Letters, 38, 101497.
- Brenyah, B., 2018. VaR vs. ES: The Battle of Major Cryptocurrencies.
- Coinmarketcap, 2021. Bitcoin market dominance, Data from 24th November 2021. Retrieved from https://coinmarketcap.com/
- Conlon, T., Corbet, S., & McGee, R. J., 2020. Are cryptocurrencies a safe haven for equity markets?
 An international perspective from the COVID-19 pandemic. Research in International Business and Finance, 54, 101248.
- Elder, J. and Kennedy, P.E., 2001. Testing for unit roots: what should students be taught?. *The Journal of Economic Education*, 32(2), pp.137-146.
- Göktaş, Ö., 2005. Theoretical and Applied Time Series Analysis. Istanbul: Beşir Publications.
- Hrytsiuk, P., Babych, T., & Bachyshyna, L., 2019. Cryptocurrency portfolio optimization using Valueat-Risk measure. Strategies, Models and Technologies of Economic Systems Management (SMTESM 2019), Atlantis Press.
- Kyriazis, N. A., 2021. A Survey on Volatility Fluctuations in the Decentralized Cryptocurrency Financial Assets. *Journal of Risk and Financial Management*, 14(7), 293.
- Li, Z., Wang, Y., & Huang, Z., 2020. Risk connectedness heterogeneity in the cryptocurrency markets. *Frontiers in Physics*, 8, 243.
- Liu, Y., & Tsyvinski, A., 2021. Risks and returns of cryptocurrency. *The Review of Financial Studies*, 34(6), 2689-2727.
- Ozturk, S. S., 2020. Dynamic Connectedness between Bitcoin, Gold, and Crude Oil Volatilities and Returns. *Journal of Risk and Financial Management*, 13(11), 275.
- Shen, Z., Wan, Q., & Leatham, D. J., 2021. Bitcoin Return Volatility Forecasting: A Comparative Study between GARCH and RNN. *Journal of Risk and Financial Management*, 14(7), 337.
- Spulbar, C., Birau, R., 2019. Emerging Research on Monetary Policy, Banking, and Financial Markets, IGI Global USA (formerly Idea Group Inc.), 322 pp., ISBN13: 9781522592693, ISBN10: 1522592695, EISBN13: 9781522592716, DOI: 10.4018/978-1-5225-9269-3, https://www.igi-global.com/book/emerging-research-monetary-policy-banking/220042.
- Stavroyiannis, S., 2018. Value-at-risk and related measures for the Bitcoin. The Journal of Risk Finance.
- Trivedi, J., Spulbar, C., Birau, R., & Mehdiabadi, A. (2021). Modelling volatility spillovers, cross-market correlation and co-movements between stock markets in European Union: an empirical case study. Business, Management and Economics Engineering, 19(1), 70-90. https://doi.org/10.3846/bmee.2021.13588
- UpMyInterest, 2021. Bitcoin Mean Annual Return. Retrieved from https://www.upmyinterest.com/fund?tick=Bitcoin
- Wang, C., 2021. Different GARCH models analysis of returns and volatility in Bitcoin. *Data Science in Finance and Economics*, 1(1), 37-59.
- Zhang, X., & Ding, Z., 2021. Multiscale Systemic Risk and Its Spillover Effects in the Cryptocurrency Market. Complexity.

Cost Management Regarding S.C. Adarco Invest S.R.L. Petroşani

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Abstract

Globalization and development of socio-economic systems raise new challenges for managers, from fierce competition, to increased productivity and implicitly managerial performance. Thus, the managers of economic entities are determined to develop a good long-term vision regarding the global positioning on the market and to fully value the skills of human resources, in conditions of cultural diversity and to manage production costs as efficiently as possible.

The basic tool that serves the management activity and implicitly to obtain a maximum economic efficiency is the knowledge of production costs. Applying rigor to costs and the entire activity, managers can analyse the possibilities of reducing costs and increasing performance, by applying a relevant method of calculating costs, respectively budgeting costs through the ABC/ABB method. For example, the company S.C. Adarco Invest S.R.L. from Petroşani. The study concludes with the author's conclusion on the benefits of applying this method by economic entities with an industrial profile.

Key words: managerial decisions, economic entities, cost management, ABC/ABB method, decision making process

J.E.L. classification: M21

1. Introduction

Throughout its evolution, cost management has known different meanings and approaches, being considered to be a very complex activity, with profound implications in the economic, social and political life of an economic entity, or a country, as well as globally. In the conditions of the market economy, obtaining the economic efficiency, for the managers of the economic entities is a real challenge. In order to face all these challenges, managers must have special skills, develop their long-term vision of the future and the global positioning of the economic entities they lead, take into account the values and principles of ethics in business and to fully value the skills of human resources, given the growing cultural diversity. Therefore, cost management has become increasingly important due to its role in shaping economic processes within modern economic entities. The quality of the management act is a vital condition for the economic entities to obtain competitive advantages and to resist in the competitive mechanisms. Therefore, the effort and responsibility to lead the entity to achieve the proposed objectives, requires managers to combine several roles, such as: informational, interpersonal and decision-maker.

Opting for the most efficient method of calculating production costs has become a strategic goal of management. Knowledge of production costs in all their complexity, theoretical and practical, is the basic tool that serves the management activity and increase the efficiency of economic activity. The cost can be defined, from a theoretical point of view, as representing the value expression of all factors of production consumed for the production and distribution of material goods, execution of works or provision of services and also from an accounting perspective the cost can be seen as a sum of expenses incurred, obtaining and/or selling a utility (products, services) and the cost of a utility is equal to the value of resource consumption.

The role of cost in the decision-making process is marked by the functions they perform, namely: (1) determining and eliminating non-economic costs; (2) identification of inefficient activities; (3) analysis of the performance achieved by certain particularities; (4) stock evaluation; (5) setting the

lower limit of the acceptable price reduction; (6) determining the profitability of products; (7) support in setting the selling price.

Through a rigor of costs and the choice of the appropriate method of calculating them, economic entities can track and analyse, through an appropriate information system, ways to reduce costs and increase performance, as well as the entire organizational activity carried out by them.

2. Theoretical background

Analysing various points of view of specialists in the field, cost management can be defined as the activity or art/science of planning, organizing, controlling and managing the costs of an economic entity in making the best decisions by its leader. Regarding the limitations of the traditional approach to cost management, foreign specialists such as Hanid M., Siriwardena M. and Kosela L. (2011) have identified their causes and the needs for cost information management. Over time, specialists such as Ballard (2008), Rosenfeld (2009), Jaya (2010) have made important contributions, through their attempts to improve cost estimation, highlighting the fact that the use of erroneous information from previous designs leads to increased inaccuracy in cost estimation. In 1987 Johnson and Kaplan had their first attempt to transpose and apply the methodology of direct reference quantities, with a dual function in the calculation of plan costs, for the production sectors and on auxiliary and auxiliary sites. Activity costing is one of the latest discoveries in the field of costing, based on its design The Hidden Factory published in America by Jeffrey G. Miller and Thomas E. Volmann. In 1989, a study on the calculation of process costs was published by R. Horvath and R. Mayer, specialists in the field. At the level of our country, professors Cornel V. Olariu (1977), Oprea Călin and Gh. Carstea (2002) played an important role in the calculation and calculation of costs through the paper Management Accounting and Cost Calculation. A special approach to cost was taken by Professor Ionascu (2003) who considered cost as a tool of management control, which combined with other types of tools such as standards, budgets, etc. contributes to the good information of managers, and relevant studies on the implementation of methods for calculating process costs have been published by Professor S.Căpușneanu.

3. Research methodology

The research methodology involved the observance of some principles and rules regarding the revision of the specialized literature, the collection and processing of data, the synthesis of the theoretical aspects and the obtained results. Theoretical research analysed the current state of knowledge, both in an international and national context, and the empirical study complements the theoretical one by putting into practice the information on cost, management control and cost calculation in order to get the best decisions by the management of the economic entity, respectively by the manager. The empirical study was conducted at S.C. Adarco Invest S.R.L. Petroşani starting from the question: How can it become a more profitable entity? Does the change in the method of calculating costs lead to a rigorous operational control in the managerial process? Is the calculation of costs able to reflect the efficiency of the effort made to achieve the objectives of the economic entity?

4. Methods used in cost management

In the literature, the methods used in cost management are grouped into three categories, namely: classical methods of costing, advanced methods of calculating costs and methods of complex accounting and operational control. The category of basic methods for calculating costs includes: the global method, the order method and the phase method, the category of advanced cost calculation derivative methods includes: THM tariff-hour-machine method, Pert-cost method, Georges Perrin method GP, and the category of complex accounting methods and operational control includes: normal/rational cost method, standard cost method, standard cost method, JIT Just In Time method, target cost method (Target Costing), ABC method (Activity-Base- Costing). All these methods of calculating costs can be represented graphically as in figure no. 1, depending on the object pursued

can be methods that have as sole objective the determination of the cost of products (works, services), absorbent methods necessary to manage productive activity, and partial or limiting methods.

Methods of costs calculating Complete Partial Complex Advanced Direct Costing Basic Methods Accounting Derivative Method Methods and Methods of Full (variable costs) Global Method Operational Cost Calculating or Simple Control Calculating Method **Normal Costs** Machinery-Direct Costing Method hourly fare Method (rational) Method THM Methods on Phases Standard Cost Method Developed Pert – Cost Direct Costing Method Method Metoda on Normalized Orders Costs Method Georges Perrin Method (GP) JIT Method (Just in time) Target Cost Method ABC Method-Activity Based Costing

Figure no. 1. Methods of costs calculating

Source: processed after (Mihalciuc, 2015).

In terms of cost management, the methods of calculating the full cost serve a fairly simple pricing policy in that the selling price must exceed the direct costs and the indirect costs must be reasonably allocated to the cost of production, and through partial costs the criterion of cost variability is taken into account, which allows a more operational and appropriate analysis for control and planning. The study further focuses on the critical analysis of the costing method currently applied to S.C. Adarco Invest S.R.L. and replacing it with one of the modern methods of calculating costs.

5. Critical analysis of the costing system applied to S.C. Adarco Invest S.R.L. Petrosani

Within the company SC Adarco Invest Petroşani, the managerial accounting is organized both on the basis of the general norms of accounting, and of the internal norms for forbidding the communication of hidden information, to external factors. The entity constantly analyses its costs, as it is known that a cost is a consumption of resources in optimizing the result. Managerial accounting uses specific and analytical accounts based on supporting documents, establishing specific procedures and techniques for calculating costs, depending on the particularities of the

entity's activity. Starting from the analysis of the organization of managerial accounting, from the Management Accounts Plan, it can be said that it is adapted to the aims pursued, to highlight the flow of costs, to make forecasts and to determine the deviations. The company subject to the study uses all the accounts from class 9, respectively, synthetic grade first accounts, structured on three groups of accounts, and the calculation accounts are developed on analytical, on production sections, workshops, etc., and within them on categories of costs. In this way, the accounting and calculation of costs can be deepened to the level of jobs and services, offices in order to interest the employees, in the results of their work. For the auxiliary activity, the analytical accounting is organized on types of workshops (mechanic, carpentry, pumps, carpentry), and within them on types of expenses (material expenses, salary expenses, social security contribution and social protection, depreciation, expenses with repairs etc.).

Indirect production costs are tracked by production sections, by items of expenditure (expenses for maintenance and operation of equipment, depreciation of means of transport, depreciation of buildings, TESA staff salaries, etc.). The accounting of general administrative expenses is organized by types of expenses (magazine subscriptions, travel, TESA staff salaries, etc.). The recording of direct expenses is made with the help of account 921 "Expenses of the basic activity for the production activity", developed on analytics, which collects the costs generated by the activities carried out.

The production structure and the analytical accounting are organized in two sections, respectively a locksmith section and an electrical and hydraulic section. The entity produces three categories of finished products, namely sorting and TMB stations, transfer stations and equipment based on raw materials resulting from the first manufacturing phase. The products made are sorting stations, transfer stations and various equipment.

The method of calculating costs currently used by S.C. Adarco Invest S.R.L. Petroşani is the global one, this being applied both in the entities that manufacture a single product, work or service, but also in case from the production process several coupled products are obtained from the same raw material or using the same technology. The study took into account a month of production in which it was estimated a consumption of 9,000 kg of metal for the sorting plant.

According to the global method of cost calculation, the budget of total costs for the scheduled production of 9,000 kg of metal confectionery-sorting plant is 1,541,802 lei. According to the production report, the unit achieves a quantity of 9,891 kg metal fabrication, at the standard price of 171.31 lei / kg, resulting in 1,694,427 lei production costs. To determine the unit cost of one kg of metal fabrication for the sorting plant, the following operations take place:

- the production obtained during the month is recorded at a pre-calculated cost

931 Obtained production cost = 902 Internal discounting on obtained 1.541.802 lei production

- is recorded at the end of the month, production at actual cost 902 Internal production = 921 Basic activity expenses 1.694.427 lei discounting

- the price difference between the standard and the actual cost is recorded

903 internal discounting = 902 internal discounting regarding price differences regarding the obtained production -152.625 lei

 the closing of the accounts in the management accounting is registered at the end of the month

901 internal expense = % 1.389.177 lei discounting 931 Cost of obtained production -152.625 lei 903 Internal discounting

regarding the price difference

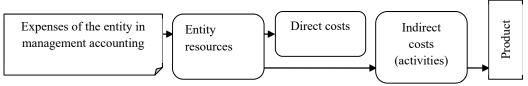
Unit cost =
$$\frac{1.389.177}{9.891}$$
 = 140.88 lei / kg metal fabrication-sorting installation

As a result of the analysis of the actual production cost, for the composting installation, compared to the budgeted cost, a saving in the amount of 152,625 lei resulted.

6. The use of Activity-Based-Costing (ABC) in S.C. Adarco Invest S.R.L. Petrosani

The ABC (Activity-Based-Costing) method was designed in the late 1980s, as a result of the work of the International Consortium for Advanced Processing (C.A.M.I.) group, which defined the way to identify the causes of the connections between cost drivers and the cost of activities. The basic concept of the ABC method is that of activity, defined as a set of people, technologies, raw materials, methods that contribute to the realization of a product or service. The scheme for determining the production cost according to the ABC method is shown in figure no. 2.

Figure no. 2 Scheme for determining the production cost according to the ABC method



Source: processed after (Cokins, Căpușneanu, 2000)

The general calculation rapport is:

Production cost = Direct costs + Quota of activity costs (1)

According to the ABC method, the treatment of indirect costs involves the steps of: (1) identifying the centers of analysis and the activities associated with each; the number of activities involved depends on the finesse and quality pursued in the distribution of costs; before identifying the costs of the two types of activities we need to identify which are the main activities and which are the secondary activities (support); (2) identification of cost determinants (cost-drivers - explanatory factors of cost variation) for each type of activity; the choice of cost drivers should be made with caution, as the wrong choice of some of them can lead to misallocation errors on the cost bearers, and ultimately to inaccurate costs that do not reflect the reality as it is. The allocation of costs is done under two aspects: quantitative, resources are allocated by processes, by activities, by categories of employees, to which the hourly volume is allocated in hours or equivalent hours (hours of machine operation, hours of testing); value, allocation of costs at process level and hence at the level of activities and operations (employees, works, orders, services); (3) cost drivers are the units of measurement that are used to allocate indirect costs (production, administration, sales); (4) regrouping activities that have the same cost determinant in a "regrouping center"; the total costs related to a regrouping center divided by the quantity of the determinant associated with this center represent the unit cost/determinant; in order to determine the production cost we need both financial information and information on products and customers; (5) obtaining the cost of a product by summing the direct costs with those of the cost determinants coming from the regrouping centers necessary to obtain each assortment; on this occasion, the preparation of the situations required by the management of the entity is considered; the management accountant transposes the results obtained from the determination of costs (by products, works performed, services provided, customer segments, geographical areas, etc.) and performs their analysis and interpretation. The prepared reports are sent to the management which proceeds to analyze them and make the appropriate decisions regarding the business policy established by the pursued objectives.

In order to highlight the particularities of the method for calculating the costs based on the activities (ABC method), in comparison with the traditional method, the financial and management data were collected from the records of the economic entity focusing on sorting and composting facilities. The production sections are structured to obtain several types of products. During the analysed period, the unit manufactured a C1 sorting plant and a C2 composting plant, weighing: C1

= 5000 kg, and C2 = 9000 kg. The unit costs pre-calculated by the ABB method are: C1 = 856,555 lei; and C2 = 1,541,799 lei. The expenses registered during the management period are presented in table no.1.

Table no.1. Expenditures recorded during the management period

Expenditure item	Section 1 - 5000 kg	Section 2 - 9000 kg		
	lei	lei		
Raw materials	100.431	180.773		
Black board	45.194	81.348		
Round steel	10.043	18.077		
Corner steel	35.251	63.452		
Bolts and nuts	5.022	9.039		
Paint	2.912	5.242		
Thinner	2.009	3.615		
Wages	49.745	89.538		
Other direct expenses	312.450	562.409		
Maintenance materials, technical overhauls of	45.522	81.940		
equipment				
Spare parts	124.152	223.474		
Electricity	41.384	74.491		
Current repairs performed by third parties	8.277	14.898		
Depreciation of property, plant and equipment	10.346	18.623		
Expenses on materials of the nature of inventory items	82.768	148.983		
Indirect expenses	20	3.361		
Water, sanitation	3.476			
Transport of materials by third parties	1	.738		
Expenditure on fuel and lubricant consumption	23	3.175		
Expenses with printed matter	1	.159		
Salaries of engineers and technicians – section service	17	3.813		
Expenses with the administrative department	44	8.843		
Supplies, printed		753		
Materials of the nature of inventory-administrative-household objects	6	.953		
Lighting energy - administrative - household	1().429		
Water, sanitation, needs - administrative - household	811			
Property, plant and equipment insurance premiums		23.175		
Post office, telecommunications		5.794		
Commissions, banking services	The state of the s	5.064		
Maintenance, repairs of office equipment		.270		
Management staff salaries	359.213			
Depreciation of property, plant and equipment	17.381			
Sales department expenses		5.979		
Protocol, advertising, publicity		.708		
Transport of materials by third parties		7.938		
	17.381			
Expenditure on fuel and lubricant consumption	6.953			
Expenditure on fuel and lubricant consumption Travel in the interest of work				

Source: Authors own contribution

According to the ABC method, the data are reprocessed in order to be registered in the managerial accounting, as follows:

- 1. identification of the processes within the economic entity: the supply process, the quality assurance process, the production process, the marketing process, the shipping process;
 - 2. identification of the main activities within the processes

Processes		Activity
1. Production	CC1 Section 1	Raw materials
		Wages
		Other direct expenses
		Maintenance expenses
	CC2 Section 2	Raw materials
		Wages
		Other direct expenses
		Maintenance expenses
2.Administration	Cooperation /	
	collaboration	
3. Sales	Packing	Distribution

3. Choice of specific cost drivers for each type of indirect expenditure in part as follows:

The situation of cost drivers

Activity	Cost inductor	C1	C2
01. Production	quantity manufactured (kg)	5000	9000
02. Administration	quantity manufactured (kg)	5000	9000
03. Sales	quantity manufactured (kg)	5000	9000

In management accounting, the journal register presents the following records, according to the methodological steps specific to the activity cost calculation method (ABC):

Stage I. Collection of production costs by destinations

No.	Explanations	Debit	Credit	Debit	Credit
INO.	4	account	account	amount	amount
1.	Recording of expenditure on consumption	921.01 C1	901	100.431	281.204
	of raw materials	921.02 C2		180.773	
2.	Recording expenses with direct salaries	921.01 C1	901	49.745	139.283
	related to orders	921.02 C2		89.538	
3	Other direct expenses	921.01 C1	901	312.450	874.859
		921.02 C2		562.409	
4	Water, sanitation	923.11	901	3.476	203.361
5	Transport of materials by third parties	923.12	1	1.738	
6	Expenses on fuel and lubricant	923.13	1	23.175	
	consumption				
7	Expenses with printed materials	923.14		1.159	
8	Salaries of engineers and technicians -	923.15		173.813	
	service department				
9	Supplies, printed	924.41	901	753	448.843
10	Materials of administrative inventory items	924.42		6.953	
	 household objects nature 				
11	Lighting energy - administrative -	924.43		10.429	
	household				
12	Water, sanitation, needs - administrative -	924.44		811	
	household				
13	Property, plant and equipment insurance	924.45		23.175	
	premiums				
14	Post office, telecommunications	924.46		5.794	
15	Commissions, banking services	924.47		15.064	
16	Maintenance, repairs of office equipment	924.48		9.270	
17	Management staff salaries	924.49	_	359.213	
18	Depreciation of property, plant and	924.50		17.381	
	equipment				
19	Protocol, advertising, publicity	925.51	901	3.708	85.979
20	Transport of materials by third parties	925.52	_	57.938	
21	Expenditure on fuel and lubricant	925.53		17.381	
	consumption		_		
22	Travel in the interest of work	925.54		6.953	

Stage II. Allocation of indirect costs by activities

The allocation base corresponding to each type of indirect expenditure is taken from the table of specific cost drivers, ie the weight of the two orders.

1. Allocation of maintenance costs.

$$K_{A} = \frac{203.361}{5000 + 9000} = 14,526$$

Name of order	Allocation base	K_A	Amount (lei)
C1	5000	14,526	72.629
C2	9000	14,526	130.732

2. Allocation of administrative expenditure:

$$K_{A} = \frac{448.843}{5000 + 9000} = 32,060$$

Name of order	Allocation base	K_A	Amount (lei)
C1	5000	32,060	160.301
C2	9000	32,060	288.542

3. Allocation of expenses related to the sales activity

$$K_{A} = \frac{85.979}{5000 + 9000} = 6,141$$

Name of order	Allocation base	K_A	Amount (lei)
C1	5000	6,141	30.707
C2	9000	6,141	55.272

The management accounting records as follows:

No.	Evalanations	Explanations Debit account		Debit	Credit
NO.	Explanations	Deon account	account	amount	amount
23	Allocation of maintenance costs on	921.01 C1	923	72.629	203.361
	the two orders	921.02 C2		130.732	
24	Allocation of expenses related to the	921.01 C100	924	160.301	448.843
	administration activity on the two	921.02 C200		288.542	
	orders				
25	Allocation of expenses related to the	921.01 C100	925	30.707	85.979
	sales activity on the two orders	921.02 C200		55.272	

Stage III. Calculation and recording of obtained production at pre-calculated cost

Order	Quantity (pieces)	Pre-calculated cost
C1	5000	856.555
C2	9000	1.541.799

No.	Explanations	Debit Credi	Credit	Debit	Credit
110.	Explanations	account	account amount 902.01 C1 856.555	amount	
26.	Recording the pre-calculated cost of	931.01 C1	902.01 C1	856.555	856.555
	the two orders	931.02 C2	902.02 C2	1.541.799	1.541.799

Stage IV. Recording the finished production at actual cost

No.	Explanations	Debit	Credit	Debit	Credit
INO.	Explanations	account	account	amount	amount
27.	Recording the actual cost of the two	902.01 C1	921.01 C1	726.263	726.263
	orders	902.02 C2	921.02 C2	1.307.266	1.307.266

Stage V. Recording cost differences

3	_	8				
	No.	Explanations	Debit	Credit	Debit	Credit
	INO.	Explanations	account	account	amount	amount
	28	Recording the differences between the	903.01 C1	902.01 C1	130.292	130.292
		actual and the pre-calculated cost	903.02 C2	902.02 C2	234.533	234.533

Stage VI. Allocation of cost differences on the obtained production

	No.	Explanations	Debit	Credit	Debit	Credit
INO.		Explanations	account account		amount	amount
1	29.	Recording the differences between the	931.01 C1	903.01 C1	130.292	130.292
		actual and the pre-calculated cost per order	931.02 C2	903.02 C2	234.533	234.533
					<u> </u>	

Stage VII. Cost effective discounting of results

No.	Explanations	Debit	Credit	Debit	Credit
NO.	Ivo. Explanations		account	amount	amount
30.	Discounting the actual cost on the	951.01 C1	904.01 C1	726.263	726.263
	results related to the two orders	951.02 C2	904.02 C2	1.307.266	1.307.266

Stage VIII. Closing expense accounts

No.	Explanations	Debit	Credit	Debit	Credit
INO.	Explanations	account	account	amount	amount
31.	Cost-production interface	901	935.01	2.033.529	726.263
			C100		1.307.266
			935.02		
			C200		

Direct costs were included directly in the cost of production, as they presented the possibility of direct identification on the object of calculation, for example: the quantity of raw materials taken over at the end of the month from the data sheet, the salaries in the payroll of people actually working in the two sections, electricity determined by the number of kwh (meters are installed to measure electricity in each section), maintenance materials, equipment, spare parts, inventory items by number of vouchers.

Indirect costs are the category of costs that are not directly included in the cost of the two installations, but are used in an appropriate allocation to the cost carriers, using specific cost drivers. In other words, they cannot be directly identified by the cost bearers, but are collected by activities and then allocated to the calculation objects, taking into account the carefully selected cost drivers.

Following the analysis of the actual production cost compared to the budgeted cost, it results that a saving was made both at the sorting plant C, in the amount of 130,292 lei, and at the composting plant C2, in the amount of 234,533 at, as a result of applying the method ABC / ABB.

7. Findings

Regarding the implementation, compared to the global method currently applied, the ABC method has several advantages: the correct determination of the costs associated with the products; performs a thorough analysis of indirect costs; helps to determine relevant costs; helps to highlight deviations identified as the difference between planned and actual costs; uses an appropriate technique for allocating the costs of activities to carriers, which allows highlighting the causal relationship between the costs to be allocated and the allocation basis.

Several limitations have also been identified, such as: it requires a long period of knowledge and assimilation before widespread use within an economic entity; the input data sources must be collected, verified and then entered into the system; the habit of managers to use less expensive traditional systems; activity-based cost information can be misinterpreted and should be used with caution in decision-making; the reports generated by this system are usually not in accordance with accepted accounting principles; sometimes entities are required to use the cost allocation bases for which the data is more accessible, to the detriment of the allocation bases they would have liked to use; data irrelevant to short-term decisions; the generation of delays due to the prioritization of activities in which the entity's staff is involved.

8. Conclusions

Changes in the external environment, the need for relevant information in the decision-making process, the achievement of performance objectives have led to a rethinking of costing. The traditional method of calculating costs fails to reflect the realities of the manufacturing process and ignores external factors, which inhibits the economic entity's orientation towards changing the market, processes and technologies, on the way to improving the response to customer needs.

The use of the ABC method leads to the easier determination of the cost of the sub-activity and allows the retention of the different types of variables that explain the formation of costs. Therefore, it appears necessary to correlate the capacity-volume ratio, by groups of significant activities. The ABC allows the highlighting of activities that do not bring additional benefit to the product and are not strictly necessary.

By implementing the ABC method, objectives are met such as: the cost of manufactured products becomes more accurate; cost management is significantly improved; there is a cost control; a pertinent allocation of expenditure is made; more accurate cost information is obtained.

By designing products or processes that require a smaller number of resources or processes, managers benefit from an important tool to reduce costs, thus ensuring increased efficiency. The determination of costs on the basis of activities confers a greater accuracy of the costs of the products obtained, by allocating indirect (general) costs to the activities carried out for the production of those outputs and not by allocating these costs.

9. References

- Ballard, G., 2010. Target Value Design and Integrated Project Delivery. Leicestershire: University of Loughborough.
- Căpușneanu, S., 2006. Bazele organizării contabilității de gestiune și calculației costurilor prin metoda ABC (Activity-Based Costing) în industria textilă din România [The Basics of Organizing Management Accounting and Costing by ABC (Activity-Based Costing) in the Romanian Textile Industry]. Theoretical and Applied Economics, 9 (504), Bucharest, pp.89-96.
- Căpușneanu, S., 2008. Elemente de management al costurilor [Cost Management Elements], Bucharest: Economica Publishing House.
- Căpușneanu, S., & Briciu, S., 2011. Analysis of the Possibility to Organize the Management Accounting through the Target Costing (TC) Method in the Romanian Entities. *Theoretical and Applied Economics*, XVIII (562), pp. 71-88.
- Căpușneanu S., Cristina O.C., Oncioiu I., Topor D.I., Rakos I.S., Ionescu C.A., 2021. *Managementul costurilor [Cost Management]*. Bucharest: Universitara Publishing House.
- Călin, O., Cârstea, Gh. 2002. Contabilitatea de gestiune şi calculația costurilor [Accounting and Costing Management]. Bucharest: GEnICOD.
- CIMA, 1991. Management Accounting: Official Terminology of the CIMA, London: CIMA/Unwin
- Cokins, G., & Căpușneanu, S., 2010. Cost drivers. Evolution and benefits. Theoretical and Applied Economics, 8, pp. 7-16.
- Hanid, M., Siriwardena, M., & Koskela, L., 2011. What are the big issues in cost management? In 19th Annual Conference of the International Group for Lean Construction, IGLC 2011, 424-433.
- Ionașcu, I., Filip, & A.T., Stere, M., 2003. *Control de gestiune [Management Control]*. Bucharest: Economica Publishing House.
- Jaya, N. M., Pathirage, C. P., & Sutrisna, M., 2010. The development of a conceptual framework on activity-based cost controlling for better management of project overheads during the construction stage. TIIMI 2010 International Scientific Conference. London, United Kingdom.
- Johnson, H., & Kaplan, K., 1987. Relevance Lost, the Rise and Fall of Management Accounting, Boston: Harvard Business School Press.
- Ebbeken, K., Posller, L., Ristea, M., 2000. Calculația și managementul costurilor [Cost Calculation and Management]. Bucharest: Teora Publishing House.
- Mihalciuc, C., 2015. Organizarea contabilității de gestiune în entitățile economice. Îndrumar teoreticoaplicativ [Organization of management accounting in economic entities. Theoretical-applied guide].
 Bucharest: Didactic and Pedagogical Publishing House.
- Rosenfeld, Y., 2009. Cost of quality versus cost of non-quality in construction: the crucial balance. *Construction Management & Economics*, 27, 107-117.

Supreme Audit Institutions and the Strive Towards an Open Data Culture

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Abstract

Open data is the pinnacle of democratic access to public information, enticing public authorities to strive for better governance since operational transparency invites public scrutiny. Our investigative demarche focuses on establishing whether EU's supreme audit institutions provide their stakeholders useful and comparable information within the national Open data portals and whether their communication with stakeholders using their official websites abides by the Open data principles and legal requirements. Information pertaining to the 28 European Open data portals was analyzed by multiple research criteria to establish each SAI's involvement in providing meaningful datasets. Furthermore, each European SAI's Open data conduct using their official website was measured by employing a disclosure index composed of specific criteria. Our research illustrates the current level of SAI Open data literacy and aims to highlight good practices in order to contribute to the dissemination of an Open data culture among European supreme audit institutions.

Key words: open data, external audit, public sector, supreme audit institutions, European Union **J.E.L. classification:** H83

1. Introduction

INTOSAI principles on the value and benefits of supreme audit institutions (abbreviated SAIs) state that access to audit reports should be facilitated for all stakeholders, using appropriate communication tools. Furthermore, SAI transparency, effective communication, good governance and service excellence and quality are all principles that form the bedrock of a modern supreme audit institution.

Our research captures the external public audit sector in full reform process, under the impact of digitalization, as a present and future challenge and an imperative trend for the information and knowledge-based society, that affects SAI activities in an increasingly significant manner.

Our investigative demarche focuses on the perspective of external public audit concerning Open data practices and has a bidimensional aim. Firstly, we analyze the generalization degree of Open data practices in EU member states and the SAIs' footprint within the national Open data portals and secondly, we measure the dissemination degree of documents created and managed by the EU SAIs using their official websites (the 27 SAIs of the EU member states and the European Court of Auditors).

Aiming to achieve their main objective, to ensure transparency and accountability for the efficient, efficacious and economic use of public resources, the European Union's supreme audit institutions process vast amounts of data stemming from a variety of domains pertaining to the public and private sectors. Concomitantly, the external audit process creates added value in the form of highly re-usable data, documents and information relevant to its stakeholders.

2. Literature review

There is a general consensus among researchers that Open data will contribute extensively to the creation of value in business, science and government (Inkpen *et al*, 2021), citing policymakers that consider data as "the raw material of the 21st Century" (Calzada, 2018, p.2).

Special consideration was given to researching whether current Open data policies and practices are able to harness its full potential (Concilio *et al*, 2021, p.1), urging the public authorities to further improve and target Open data creation to ensure it reaches the quality threshold needed for added value creation.

Open data's growth gave rise to open science advocates (Ramachandran *et al*, 2021, p.14, Inkpen *et al*, 2021), advancing the agenda for collaborative frameworks and efficient research, promoting cultural change amid the neo-liberalization of universities and academics.

Conversely, the research on public external audit by reference to the valences of digital technology both at the international and the national echelon is limited, generally converging on the conclusion that it will increase efficiency and effectiveness of audit work. (Pedrosa, 2020, p.565).

Sanchez Fernandez de Valderrama *et al* (2014, p.474) have approached computer-assisted audit techniques, concluding that audit activity can be implemented with a higher degree of precision and swiftness when employing audit software. In their view, computer-assisted audit techniques do not pertain only to financial audit, but also to performance audit and conformity audit.

Antipova (2019, p.441) shows that the digital audit extends the possibility of visualizing broader trends, problems and relationships, offering more relevant observations to decision-makers and interested parties in public sector improvements. In her vision, the pillars of public sector audit digitalization are standardization, human resources management and data management. Likewise, SAIs' future perspectives should include, alongside shoring up their investigative abilities, augmenting international transparency, also the increase in digital technology usage.

Conversely, considering that public external audit proves valuable to a variety of users (Hay et al, 2020), Torres et al (2020) have approached the use of social media by SAIs, as an instrument to communicate with and involve stakeholders. Essentially, the authors researched the presence of supreme and regional audit institutions from the European Union and the United States of America within Web 2.0 and the social media instruments. Their research results indicate that the adoption of these instruments by public external audit bodies is rather incipient, since half of the researched institutions do not employ such instruments and that there are significant approach differences between institutions (social media is best used in the United States of America compared to the European Union; the usage degree is higher among supreme audit institutions compared to their regional counterparts), considering the public administration's typology, the country's population, general social media use and past national transparency scores. Likewise, their results illustrate that the number of social media followers and public awareness regarding SAI's digital presence is generally limited, and the published content rarely engages stakeholders in interaction.

Dascălu (2016, p.123) considers that supreme audit institutions can play a dual role in the context of an open government paradigm. First, by conducting audits on the government's Open data programs to ensure their adequate implementation and proper public accountability and second, by harnessing the power of Open data in their audit activities. To reach this goal, the author envisages substantive modifications to the public external audit activity, starting with SAIs' strategic approach and continuing with constructing the adequate framework needed for the online audit.

The European Union's Charter of Fundamental Rights (2012) establishes the people's right to expression and information, and also to hold opinions and to receive and impart information and ideas free of interference from public authorities and regardless of frontiers. Similarly, the right to access documents of institutional bodies, offices and agencies of the European Union, whatever their medium, is guaranteed to each EU citizen or legal entity having a registered office in a member state, under the reserve of protecting personal data.

Furthermore, the EU recognizes the strong evolution towards the information society and the role of digital content in rapidly creating job opportunities, while the public sector collects, produces and reproduces a multitude of information in diverse activity domains.

In this context, the first European "Open data" regulatory initiative was the landmark EU Directive 2003/98/CE (2003) on the reuse of public sector information, its fundamental principle stating that the reutilization of documents belonging to public sector entities is allowed, for commercial and non-commercial purposes, according to a minimal set of regulations and, if possible, the documents shall be provided in an electronic form. After the Directive entered into effect, the volume of data produced and available globally (including public data) has grown exponentially. Furthermore, new types of data were generated and collected seamlessly, concomitant with the development of new data analysis, processing and marketization technologies, allowing for new economic and social opportunities for the reuse of public sector information.

Building on these premises, the European Directive 2013/37/EU (2013) was implemented, amending the previously introduced legislation 2003/98/CE. It premiered the concept of Open data, as well as definitions for machine-readable formats – "documents structured in such a way that software applications can easily identify, recognize and extract specific data from it" and open format – "a file format that is platform-independent and made available to the public without any restriction that impedes the reuse of documents". Concomitantly, the scope of the initial legislation was broadened, by including documents pertaining to university libraries, as well as those belonging to cultural institutions such as museums, libraries and archives, that were previously expressly exempted from the scope of public sector information reuse norms.

The accelerated progress that marked the recent years in terms of digital technologies, particularly regarding machine learning, artificial intelligence, and the internet of things have determined the European legislator to amend and improve the specific regulations by introducing EU Directive 2019/1024 (2019) on Open data and the reuse of public sector information. It underscores the importance and contribution of public sector information to improving the internal market and developing new applications for consumers, considering that the intelligent use of data, including the use of artificial intelligence applications can have a transformative effect on all economic sectors.

EU Directive 2019/1024 further nuances the reuse of public sector documents, by recognizing that Open data initiatives not only bring added value to its final beneficiaries, to its re-users and the society as a whole but also aides the public entities producing and publishing it, through promoting transparency and accountability and through further improving the quality of information managed and published, using the feedback received from stakeholders.

Recognizing the importance of harnessing the entire potential of public sector data, EU member states are encouraged to promote the creation of databases using the basic principle "open by design and by default" in all areas subject to Open data policies. Furthermore, the Directive compels member states to make all existing documents reusable unless national rules restrict access. Moreover, data stemming from research activities, that was previously exempted from publication becomes subject to Open data regulations for commercial or non-commercial purposes, provided that the research benefited from public funding, under the reserve of protecting intellectual property, confidentiality and personal data. In addition, member states are encouraged to ensure long-term data access by introducing adequate information preservation policies.

Beyond acting as a platform for member states to harmonize their national legislation, the 2019 EU Open data Directive aims to facilitate the creation of informational products based on public sector documents, ensuring their effective and borderless use by private entities, in particular SMEs, in informational products and services, and on the other hand, by EU citizens, promoting communication and free information dissemination. To reach this goal, the Commission must facilitate cooperation between member states and further support the design, testing and implementation of interoperable electronic interfaces to ensure the delivery of efficient and secure public services.

3. Research methodology

The first research dimension, the generalization degree of Open data practices in EU member states and the SAIs' footprint within the national Open data portals, firstly entailed a round-up of EU member states' Open data portals. Subsequently, by recourse to the investigation of these portals, we collected and centralized data referring to the number of public organizations registered as Open data suppliers, the total number of databases published and also the number of economic, financial or

accounting—related databases. Likewise, we conducted searches among the enrolled organizations and, where the supreme audit institution was identified among them, we collected information regarding its Open data practices, respectively SAI's activity intensity (assessed by the number of databases published and the last publication's date), the specific content of published data and the data formats used for this purpose. To mitigate the error risk in identifying SAIs among the enrolled entities in the national Open data portals, we employed corroborative search techniques, respectively searching for SAI's full name in its official language, its roots, the keyword "audit" and where the portal allowed, we conducted exhaustive searches among the enrolled entities.

The second research dimension, respectively analyzing the dissemination degree for documents created and managed by the EU SAIs through their official websites also constitutes a quantitative research. The documents targeted by our investigative approach refer to operational planning, audit reporting, aggregated reporting and follow-up on recommendations. In this regard, we firstly identified 6 specific Open data criteria ("open data" keywords, annual activity program, audit reports, periodic activity reports, follow-up on recommendations, long-term data availability). By analyzing the official websites of the 28 European Union SAIs, for each information category identified, we scored 1. The basis for our research were the English-version websites and, where these did not offer relevant information, we used the native language website versions, by recourse to automatic content translation.

In order to assess the SAIs' dissemination degree for Open data, we employed the disclosure index (information publication index), by comparing information published to the total potential disclosure

Mathematically, the disclosure index (Matiş et al, 2014, p.20) is calculated with the following formula:

$$DI = \frac{\sum_{i=1}^{m} di}{n}$$

where:

DI = disclosure index;

di = 1 if the information exists and is relevant, 0 otherwise;

m = number of disclosed elements;

n = number of potential elements to be disclosed.

As a result, the disclosure index scores between 0 and 1. Practically, as the disclosure index is closer to 1, the respective SAI discloses more relevant information on its official website.

Our investigative approach is focused on two research questions: to what degree do EU SAIs provide useful and comparable information to stakeholders, as a part of the Open data informational network? Are EU SAIs active actors in promoting an "open by design and by default" culture?

4. Findings

Research results indicate a general preoccupation from the part of the EU member states to create the national Open data infrastructure, showing that all 27 member states have developed governmental Open data portals. Out of the 27 national Open data portals, 5 are exclusively available in their national language (Austria, Denmark, Germany, Italy and Hungary), while the rest also employ an English version, although generally limited to the main website sections.

The EU27 national Open data portals host an average of 507 public institutions, most in France (2,860), Estonia (2,200) and Austria (1,290), while the national Open data portals with the least institutional adherence belong to Malta (3), Greece (24), Denmark (35), the Czech Republic (45), Latvia (86) and Slovakia (91). Romania ranks 15th among EU member states, hosting 108 public entities enrolled in its Open data portal. The enrollment degree for EU national Open data portals is mapped in Figure 1.

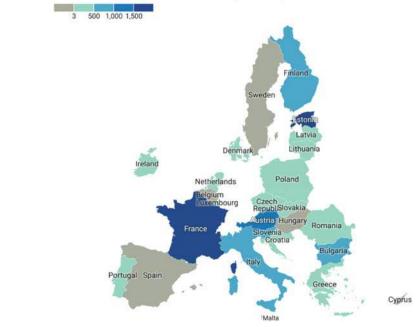


Figure no. 1. Enrollment degree for EU national Open data portals

Source: own projection based on data collected from EU national Open data portals

From the perspective of Open data publishing intensity across the national frameworks, the 27 portals researched host an average of 17,617 datasets, the most active countries being the Czech Republic (136,115), Germany (48,353), Spain (47,743), Italy (45,980), France (37,253) and Austria (34,739). From an opposite perspective, the national Open data portals managed by Greece (47), Malta (205), Latvia (487), Estonia (789) and Denmark (846) have the least intense publication intensity. As before, the Romanian Open data portal ranks at the middle of the pack, with a total of 2,346 datasets published. The publishing intensity of public bodies enrolled in the national Open data portals is mapped in Figure 2.

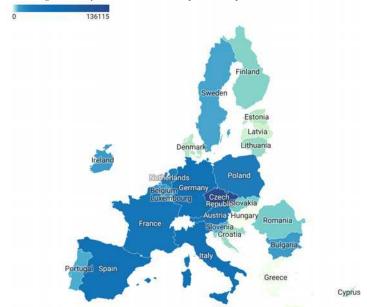


Figure no. 2. Publishing intensity on EU national Open data portals

Source: own projection based on data collected from EU national Open data portals

From the perspective of the enrollment of SAIs in the national Open data portals, our research results indicate that only 10 national supreme audit institutions hailing from EU members states (Austria, Bulgaria, Cyprus, Estonia, Finland, France, Czech Republic, Slovakia, Slovenia and the Netherlands) currently enjoy membership. Out of the 10, the SAIs belonging to Finland and the Netherlands are inactive members of their national Open data portal, without any datasets published.

The main coordinates of SAI activity within the national Open data portals are presented in Table 1.

The results obtained illustrate a reduced SAI interest to provide data in an open manner within the dedicated national infrastructure. Except for the French SAI, which boasts 188 published datasets, the other 9 supreme audit institutions enrolled in the national Open data portals have only published between 0 and 12 datasets since their enrollment.

Furthermore, by analyzing the adoption of the "open by design and by default" philosophy, our research illustrates a reduced SAI preoccupation to provide the public with updated information. Thus, only 2 supreme audit institutions (Austria and France) have published data within the current year, while SAI Estonia published its latest dataset in 2020 and the SAIs belonging to Bulgaria, Cyprus, Slovakia and Slovenia are inactive for the last 2 or 3 years. Conversely, only the Czech supreme audit institution dynamically publishes data, allowing stakeholders to access permanently updated information.

Table no. 1. The main coordinates of SAI activity within the national Open data portals

No.	The supreme audit institution	SAI published datasets	Latest SAI publication	Nature of data published	Data formats
1	SAI Austria	8	11.03.2021	audited partiespolitical parties' transactions	csv, pdf, xlsx
2	SAI Bulgaria	5	24.09.2019	register of public dignitarieselectoral financial data	csv
3	SAI Cyprus	3	21.02.2018	- audit reports/special reports	csv, pdf, html
4	SAI Czech Republic	12	dynamic	 audited parties petition statistics public property and public procurement data collected during audits 	csv, xlsx
5	SAI Estonia	1	10.12.2020	audit reports starting with 1990 to date	html
6	SAI Finland	0	N/A	N/A	N/A
7	SAI France	188	06.04.2021	audit reportsaudit-related statistical data	csv, xlsx, xml, txt
8	SAI the Netherlands	0	N/A	N/A	N/A
9	SAI Slovakia	10	31.10.2019	 audited parties audit program list of identified deficiencies SAI specific information – contracts, invoices etc. 	xlsx, html
10	SAI Slovenia	9	13.12.2018	audit reportspublic auditor listslists of identified deficiencies	pdf, html
11	European Court of Auditors	9	01.11.2019	annual reports	xml

Source: own projection based on data collected from EU national Open data portals

The mapping of EU SAIs' enrollment in the national Open data portals, as well as their publishing intensity is presented in Figure 3.

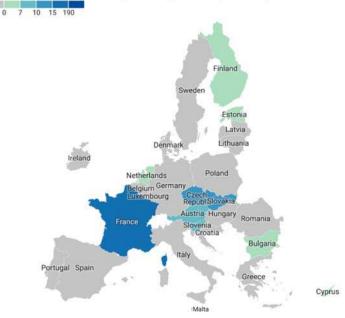


Figure no. 3. SAI portal enrollment and Open data publishing intensity

Source: own projection based on data collected from EU national Open data portals

By reference to the types of data published by EU member state's supreme audit institutions, our research emphasizes the fact that the majority of enrolled SAIs publish periodic activity reports. Additionally, SAI Bulgaria publishes information regarding public dignitaries and financial data on the electoral process. The Czech SAI publishes data on the audited entities, internal statistics on petitions and, additionally, is the only SAI to offer data collected from public entities during audits, respectively data on public property and public procurements. SAI Slovakia in turn publishes the list of audited entities, its annual audit program, the list of identified deficiencies, as well as a series of internal administrative information – commercial contracts, invoices etc. Concomitantly, SAI Slovenia publishes the list of public external auditors and the registry of identified deficiencies.

Regarding the data formats used to publish Open data, our research highlights that, in most cases, supreme audit institutions employ several formats for their published data, respectively: csv (commaseparated values) in the case of SAI Austria, Bulgaria, Cyprus, France and the Czech Republic, pdf (portable document format) in the case of SAI Austria, Cyprus and Slovenia, xlsx (Microsoft Excel Open XML), as is the case with SAI Austria, France, the Czech Republic and Slovakia or html (hypertext markup language), employed by SAI Cyprus, Estonia, Slovakia and Slovenia. Correlatively, our research highlights some of the less utilized formats used by SAI to publish Open data, as is the case with xml (extensible markup language) and txt (text file), both used by the French SAI. On average, supreme audit institutions employ 2 data formats when publishing Open data, while SAI Bulgaria only uses csv format and, oppositely, SAI France employs 4 data formats – csv, xlsx, xml and txt.

For our second research dimension, the values for the Open data disclosure index obtained by investigating the content of EU's supreme audit institutions' official websites, are presented in Figure 4.

Research results illustrate significant disparities between the European supreme audit institutions regarding their Open data disclosure practices when using their official websites.

The Open data disclosure index for the researched supreme audit institutions varies between 0.5 and 1. By reference to the results obtained using the selected criteria, SAI Belgium, Bulgaria, Cyprus, France, Germany, Greece, Ireland and Luxembourg disclose the least Open data, while, conversely, the Estonian and Lithuanian supreme audit institutions disclose all the Open data categories envisaged by our research.

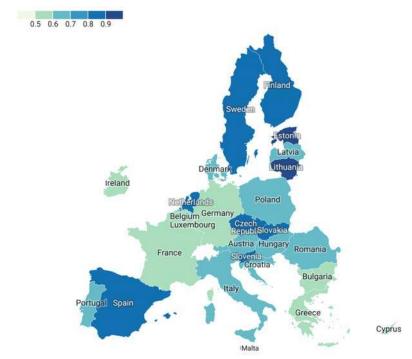


Figure no. 4. EU SAIs' Open data disclosure index

Source: own projection

The average SAI Open data disclosure index for the selected sample is 0.6845, which suggests a relatively high Open data disclosure index for the data managed by EU's supreme audit institutions and published on their official web pages.

However, research results indicate that only 36% of the analyzed supreme audit institutions adequately present relevant information regarding the "Open data" syntagma (SAI Denmark, Estonia, Finland, Italy, Latvia, Lithuania, the Czech Republic, Slovakia, Spain and the Netherlands). For the rest of the analyzed websites, the search results do not offer relevant content or such content is not found at all. By exception, the websites of SAI Belgium, Cyprus, Greece and Romania do not currently employ internal search engines.

From the operational planning standpoint, our research indicates that only 16 EU supreme audit institutions present, through their official websites, the annual audit program/plan or relevant information in this regard (the European Court of Auditors, and SAI Croatia, Estonia, Finland, Greece, Latvia, Lithuania, Poland, Portugal, the Czech Republic, Romania, Slovakia, Slovenia, Spain, Sweden and Hungary).

Furthermore, our research results highlight that the majority of EU supreme audit institutions' websites provide the interested parties information regarding audit reports and periodic activity reports and also offer the possibility of long-term access, some using wider timespans (for example SAI Belgium, Cyprus, Czech Republic and Slovenia) or narrower ones (for example SAI Croatia). Oftentimes, these documents are published on the official SAIs' websites using the pdf format and rarely in Microsoft word or html format.

It is worth mentioning the diversity of SAI practices regarding the disclosure of information regarding SAI audit reports. Most frequently, these reports are available in a chronological order. Additionally, some SAI websites offer their visitors the possibility of conducting more advanced searches based on metadata pertaining to each document, such as the auditee's activity domain or category, the audit type conducted or the SAI branch in charge of the audit process. Furthermore, SAI practices oscillate from the publication of the complete audit report (either individual reports or aggregated based on their audit theme) or of synthetic information or summarized reports, usually presenting the main conclusions and recommendations, written in the official state language and sometimes in other international language.

5. Conclusions

The research conducted highlights different maturity degrees of SAI Open data policies employed through the dedicated national Open data portals, while also illustrating the diversity in the Open data typology, format and content that supreme audit institutions offer to the public using their official websites.

The research results allow us to conclude on the incipient stage of EU's supreme audit institutions' in adopting an "open by design and by default" approach to publishing Open data, since only 10 SAIs are enrolled in the national Open data portals and 2 of them have never published a single dataset.

Concerning the SAIs' footprint within the national Open data portals, we can conclude on their marginal contribution, varying from 0.009% (SAI Czech Republic) to 0.505% (SAI France), with an average of 0.159% of the total Open datasets published. Quantitatively, only SAI France has a significant footprint within the national Open data portal, with 188 published datasets, while the other 9 enrolled SAIs have only published between 0 and 12 datasets across their entire Open data presence. Our conclusion is further supported by the lack of Open data publishing consistency, since only 3 European supreme audit institutions (Austria, France and Estonia) have published data in the last 2 years, which denote a lack of preoccupation for adopting an open conduct towards stakeholders. Our research results underpin previous research (Concilio *et al*, 2021, p.1) concluding that in general, the quality on published datasets sits below the benchmark needed for added value creation, and that further public incentivization and targeted dataset creation will be needed for Open data to reach its enormous potential.

Correlatively, the informational palette that SAIs offer their interested parties is heterogeneous, consisting of synthetic or otherwise already publicly available information, such as annual activity reports, to data regarding the SAIs' administrative activity (contracts, invoices) or, in some cases, data collected in their audit activities.

When referring to the EU's supreme audit institutions' Open data conduct using their official websites, the research allowed us to conclude on a wide range of maturity levels regarding the typology, format and content of published Open data, as well as the ease of access.

Our research highlights a reduced EU SAI interest to disclose Open data regarding the follow-up on the implementation status of their recommendations, with only 7 European supreme audit institutions offering their stakeholders through the official websites, data or documents relevant in this regard (SAI Austria, Estonia, Lithuania, Malta, Slovenia, Sweden and the Netherlands).

Furthermore, our research allowed us to conclude that, in most cases, the English version of the SAIs' websites differs significantly from the national language version. From this perspective, our research results converge with those previously conducted (Trincu-Drăguşin *et al*, 2021, p.14), illustrating that EU supreme audit institutions generally offer synthetic and often outdated information on their English version websites compared to the national language ones, since most SAI stakeholders are residents and the national language website is more relevant to them.

We consider that our investigative demarche on European supreme audit institutions contributes with nuances not found in previous research regarding the public external audit field, while its results are useful and of interest to the professional and the general socio-economic environment, preoccupied with this activity (stakeholders, decision-makers, regulatory bodies).

The main research limitations refer to certain constraints regarding the approach of public external audit and supreme audit institutions in the relevant literature, to the heterogeneity of SAI reports and official websites (presenting different information, on different timespans and in diverse formats), to a series of linguistic constraints given the fact that some SAIs present more detailed and exhaustive information only in their official national language.

6. References

- Antipova, T., 2019. Digital Public Sector Auditing: a look into the future. *Quality-Access to Success*, vol. 20(S1), pp. 441-446.
- Calzada, I., 2018. (Smart) Citizens from Data Providers to Decision-Makers? The Case Study of Barcelona. Sustainability 10, no. 9, pp:3252.

- Concilio, G., Francesco, M., 2021. The Unexploitable Smartness of Open Data. *Sustainability 13*, no. 15, pp:8239.
- Dascălu, E., 2016. External Audit A New Open Data Approach. Audit Financiar, 14, pp:115-124.
- Directive 2003/98/CE on the reuse of public sector information, [online]. Available at https://eurlex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32003L0098&from=en [Accessed 06 May 2021].
- Directive 2013/37/EU of the European Parliament and of the Council of 26 June 2013 amending
 Directive 2003/98/EC on the reuse of public sector information, [online]. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32013L0037&from=EN [Accessed 07 May 2021].
- Directive (EU) 2019/1024 of the European Parliament and of the Council of 20 June 2019 on Open data and the reuse of public sector information, [online]. Available at https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019L1024&from=EN, [Accessed 07 May 2021].
- European Union's Charter of Fundamental Rights, [online]. Available at https://eur-lex.europa.eu/legal-content/RO/TXT/PDF/?uri=CELEX:12012P/TXT&from=EN [Accessed 05 May 2021].
- Hay, D., Cordery, C.J., 2020. Evidence about the value of financial statement audit in the public sector. *Public Money & Management*, 41:4, pp. 304-314.
- Inkpen, R., Gauci, R., Gibson, A., 2020. The Values of Open Data. *Area*, https://doi.org/10.1111/area.12682.
- Matiş, D., Gherai, D.S., Vladu, A.B., 2014. A European Analysis Concerning the Compliance of Information Disclosed by supreme audit institutions. *Audit Financiar*, vol. XII, no. 109, pp. 18-24.
- Pedrosa, I., Costa, C., Aparicio, M., 2020. Determinants adoption of computer-assisted auditing tools (CAATs). Cognition, Technology & Work, vol. 22, iss. 3, pp:565-583.
- Ramachandran, R., Bugbee, K., Murphy, K., 2021. From open data to open science. Earth and Space Science, vol. 8.
- Sanchez Fernandez de Valderrama, J.L., Alvarado Riquelme, M., 2014. Teoria y practica de la auditoria I. Concepto y metodologia. Ed. Piramide, Madrid.
- Torres, L., Royo, S., Garcia-Rayando, J., 2020. Social media adoption by Audit Institutions. A
 comparative analysis of Europe and the United States. *Government Information Quarterly*, vol. 37, issue
 1, 101433.
- Trincu-Drăgușin, C.P., Pitulice, I.C., Ștefănescu, A., 2021. Harmonisation and Emergence Concerning the Performance Audit of the EU Member States' Public Sector. Romania's Case. Sustainability, Special Issue Sustainability Accounting in the Public Sector 13, 3673.
- SAI Austria website, [online]. Available at www.rechnungshof.gv.at [Accessed 07 May 2021].
- SAI Belgium website, [online]. Available at www.ccrek.be [Accessed 08 May 2021].
- SAI Bulgaria website, [online]. Available at: www.bulnao.government.bg [Accessed 09 May 2021].
- SAI Croatia website, [online]. Available at: www.revizija.hr [Accessed 10 May 2021].
- SAI Cyprus website, [online]. Available at: www.audit.gov.cy [Accessed 11 May 2021].
- SAI Czech Republic website, [online]. Available at: www.nku.cz [Accessed 12.01.2021].
- SAI Denmark website, [online]. Available at: www.rigsrevisionen.dk [Accessed 13 May 2021].
- SAI Estonia website, [online]. Available at: www.riigikontroll.ee [Accessed 14 May 2021].
- SAI Finland website, [online]. Available at: www.vtv.fi [Accessed 15 May 2021].
- SAI France website, [online]. Available at: www.ccomptes.fr [Accessed 16 May 2021].
- SAI Germany website, [online]. Available at: www.bundesrechnungshof.de [Accessed 17 May 2021].
- SAI Greece website, [online]. Available at: www.elsyn.gr [Accessed 18.01.2021].
- SAI Hungary website, [online]. Available at: https://www.asz.hu/hu [Accessed 18 May 2021].
- SAI Ireland website, [online]. Available at: www.audgen.gov.ie [Accessed 20 May 2021].
- SAI Italy website, [online]. Available at: www.corteconti.it [Accessed 21.01.2021].
- SAI Latvia website, [online]. Available at: https://lrvk.gov.lv/lv [Accessed 22 May 2021].
- SAI Lithuania website, [online]. Available at: www.vkontrole.lt [Accessed 23 May 2021].
- SAI Luxembourg website, [online]. Available at: www.cour-des-comptes.public.lu [Accessed 24 May 2021].
- SAI Malta website, [online]. Available at: www.nao.gov.mt [Accessed 23 May 2021].
- SAI the Netherlands website, [online]. Available at: https://english.rekenkamer.nl/ [Accessed 23 May 2021].
- SAI Poland website, [online]. Available at: www.nik.gov.pl [Accessed 25 May 2021].
- SAI Portugal website, [online]. Available at: www.tcontas.pt [Accessed 26 May 2021].

- SAI Romania website, [online]. Available at: www.curteadeconturi.ro [Accessed 19 May 2021].
- SAI Slovakia website, [online]. Available at: www.nku.gov.sk [Accessed 28 May 2021].
- SAI Slovenia website, [online]. Available at: www.rs-rs.si [Accessed 29 May 2021].
- SAI Spain website, [online]. Available at: www.tcu.es [Accessed 30 May 2021].
- SAI Sweden website, [online]. Available at: www.riksrevisionen.se [Accessed 31 May 2021].

The Role of Accounting in Conducting Judicial Accounting Expertises and their Evolution in the Digital Era

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Abstract

Accounting is a mysterious game of great people, done well for you and me, according to the rules and theories of the subject, to know where you came from and where you want to go.

The role of accounting is to know and reflect the reality, from an economic point of view, through an abstract representation of the data content, in a concrete way.

The objective of the article is to try to highlight the role of accounting in conducting forensic accounting expertise. Related to this, we will see how it can be a definite proof, or it can be creative, leaving the impression of a perfect appearance, but which through working tools able to validate the economic reality is unmasked, with not very encouraging results for the future.

The proposed working hypotheses are whether through accounting we can reflect the economic reality, with its help we can support the compliance with tax obligations and whether the accounting expertise is a reliable source.

Key words: accounting, tax evasion, forensic accounting expertise, digital technology, evolution **J.E.L. classification:** M40, M41, M49

1. Introduction

The information that is verified within the accounting expertise is found in the accounting in the form of financial-accounting documents. The reflection of economic processes, phenomena and events depends on how the accounting documents comply with the minimum content criteria and on how they were processed. The accounting expertise through its way of conducting does nothing but express its opinion on how the accounting information contained in the documents already prepared reflects the reality, is correct and provides a true picture of the activity carried out. The accounting expertise can sometimes have as object the performance of calculations based on the existing information in accounting, as well as the verification of the way in which certain salary rights, obligations towards the state, suppliers, clients, associates, private property, etc. were determined.

The accounting expertise deepens the accounting information and materializes its content in the form of the expertise work, based on which users can make decisions or decisions that establish the social, economic or financial order. While accounting researches events or processes of an economic-financial nature, processes and interprets data to provide an image of the results obtained, going through a long process of activities, accounting expertise answers only questions, but can sometimes overlap the whole process. of registration, processing, reporting and analysis of economic phenomena and processes, alterations covering only isolated aspects of accounting, taxation, etc.

The answers must be based only on the information provided by the accounting records and on the explanations given by those entitled. Expertise appears as a superanalysis that takes place on a subject to be controlled and that restores normalcy. There is an inseparable link between accounting and accounting expertise.

The common goal of the two disciplines is to mirror reality and provide conclusions to users for making the best decisions.

By approaching this article, I want to emphasize the role of accounting in conducting accounting expertise, arranged or commissioned, to find out the truth.

As accounting documents or financial information are mostly presented in digital format today, this also has an impact on accounting expertise. Digitization aims to eliminate human errors in document processing, reduce processing efforts, automatically correcting some mistakes, omissions and making certain information in a timely manner. Obtaining correct and timely data is also the objective of accounting expertise, which through the answers formulated must contribute to solving the cases brought to trial, knowing the culprits, the value of their guilt, entering the rights of the injured, removing fraud, increasing trust in the institution called justice, making the best decisions about the business of the future, etc.

If modern technology can also benefit accounting expertise, it is my challenge and one of the aspects of the topic. The work of accounting experts is done by processing the text to obtain a printable document and spreadsheets, without connections to cloud accounting software, integrated POS, ANAF platforms, online markets, etc.

The joint efforts of the authorities in the field of digitization lead step by step towards the realtime knowledge of the deviations from the normal path and can prevent their realization or elimination.

Starting from this challenge and continuing the steps taken by Romanian courts through applications, by integrating modules from taxpayers' accounting platforms, through digital platforms of state institutions (taxation of electronic cash registers, introduction of electronic invoice, collection of information from taxpayers through the SAF-T form), connecting with the platforms of professional organizations with activities related to accounting (insolvency, audit, evaluation, tax consulting) consulting social media platforms, I consider it important to get some results in this field.

Through this online platform we propose to integrate only a few platforms in Romania to exemplify that digital markets can be created that offer digital services to users, better than offline and more reliable. Through this, we want to make expertise a valuable work, intelligible, useful and ready at the right time, increasingly interested in the users for whom it is intended. Then, through survey research to determine the impact at the level of certain categories (citizens, public institutions, administrative authorities, economic agents, insurance companies, brokers, NGOs) who are interested in the smooth running of the society in which they live, by pronouncing correct decisions and making decisions by business people. The application will give the possibility to connect entrepreneurs or citizens interested in the smooth running of society, professionals, digital services being the tool to connect them.

The result of our research is based on a series of significant bibliographical references for the approached topic and on the personal findings made in the field of scientific research.

The question that arises at this time, regarding the research started is whether the accounting expertise works developed on the platform will have an impact on the decision-making process by law enforcement and whether they will contribute to streamlining the work of those who perform them and those who uses.

2. Literature review

The browsing of the specific literature was done by selecting the most current and relevant sources for elaboration, from books, reliable scientific articles, as well as from other sources. Tangentially with the approached topic was studied the national and European legislation and cases from the judicial practice of the Romanian courts (jurisprudence).

The purpose of this scientific knowledge is to define concepts, analyze situations, critique problems, summarize knowledge and obtain results and to create a bridge between them, without being an exhaustive presentation.

In writing this article, we chose to deal with a serious problem in the world, but also in Romania, which affects the return of the economy to normal. For 30 years, there have been "loopholes" that allow the system of payment of tax obligations to the state budget to be unfair (in the case of salaries paid in IT, construction, agriculture but also for undeclared work, underground economy, non-compliance legislation, the reduced degree of collection, the lack of digitalization of state institutions, etc. Romania has the lowest degree of collection of taxes and fees in the EU (up to 30% of GDP) and hence the achievement of budget deficits, which is why rarely to interest-bearing loans, which affect

the future of the young generation. Although known to politicians, the situation persists, many being interested in a solution, but it is not known when and how.

Therefore, we also start our research with the general purpose of how to improve the information provided by accounting to help prevent and combat tax evasion.

The justification of the wording is motivated by the fact that the expertise is based on the accounting information that provides the basis for formulating the answers and implicitly in making appropriate decisions by users.

The objectives of the research were established according to the "SMART" method, according to which, they must be, specifically, measurable, accessible, realistic and within the deadline.

The accounting records the economic operations in an orderly and chronological manner, establishing the financial results over a certain period of time. Based on the processing of financial-accounting documents, certain information is obtained regarding the activity carried out and the contribution of each one to the fiscal revenues of the state budget is determined.

Therefore, the role of accounting is to reflect reality and requires specialized theoretical and practical knowledge. If this is the declared role of the object of accounting, how do skidding happen and resort to specialized works that validate / invalidate the results? The answer can sometimes be at the limit of legality, sometimes being intentional and punished according to the law, but always revealed in order to discourage inappropriate practices in the future.

The wide range of accounting expertise includes the establishment of taxes and fees due to the consolidated state and local budgets, debts and receivables of suppliers and customers, loans and interest due by bank customers at a specified time, recognition of salary, pension and other rights, the establishment of damages, damages and examples can continue.

As the object of expertise is to determine how economic phenomena and processes have been reflected in accounting, it is mandatory that the work be impartial, taking into account their importance for substantiating decisions, they have no purpose in themselves but a general purpose.

The literature in the field of accounting is always in the attention of specialists in legislation and must always be studied and interpreted by accountants in relation to all changes that occur and applied to correspond to the periods to which they refer. Their role is growing in relation to the partners in the service of those for whom they carry out activity, these being considered today reliable participants in a common activity.

We are confident that the purpose of our research can be achieved, helped by the digital age in explosive evolution, the accounting specialist no longer being in the back of a pile of papers (supporting documents) with which he struggles 24/24 hours, but in front of documents easy to process and with minimal effort, from anywhere, but which is otherwise prepared and cannot be left behind by technological evolution, as shown in figure no.1.

Figure no. 1 The accounting specialist behind a pile of papers



Although it is not recognized by the great masterpieces made in sculpture, painting. literary works, film, theater or music, accounting requires skill and refinement, it means continuity, attitude, optimism, theory and practice. If for speaking a foreign language you need a correct pronunciation and knowledge of vocabulary. for practicing accounting you need knowledge in all areas of activity and a lot of dedication. He who does not penetrate his secrets cannot hold "reckonings", although we all do this! But how do we do it?...and how much trouble do we give others to manage?!

Source: https://www.keez.ro/blog/contabilitate-digitala/ai.html

Source: Own source

Today we form a common body with IT professionals, the liberal professions, the state and we want to be able to answer the problems of our partners, our motto being "RESULTS".

3. Research methodology

From the point of view of positivist epistemiology, the article is based on concepts specific to accounting doctrine and practices, in our country, in the community and international space, influenced by professional estimates and assessments.

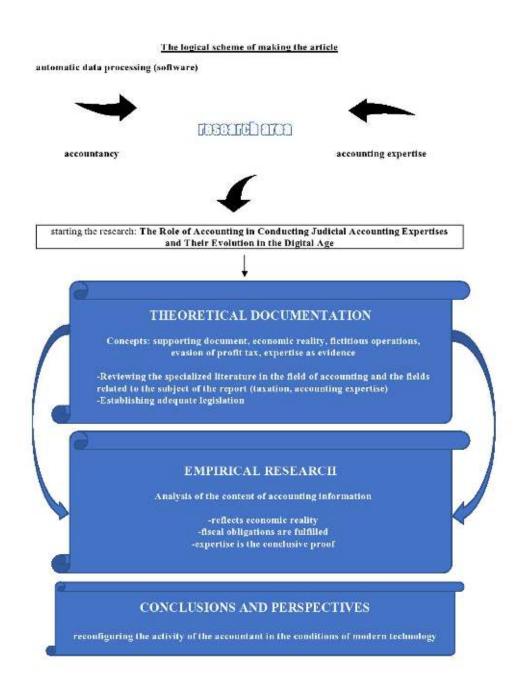
The methods used for the analysis of accounting information were logic and personal, deductive and inductive premises, both complementing each other.

Based on the scientific research carried out, conclusions were drawn and proposals were made for future directions, the diversity of aspects to be deepened being very large and in an evolutionary development.

The limitations are inherent for our research, there are restrictions both in the study of the literature and in the exemplary part and the results of the research action, the field being large. Despite all the existing limitations, however, our research is important for combating tax evasion, given the importance of accounting information.

Regarding the main purpose of the research, we assumed the idea that the article reflects a subjective reality, being the result of our work, based on current knowledge and judgments issued, as shown in figure no. 2.

Figure no. 2 The logical scheme of making the article



Source: Own source

4. Findings

Regarding the main purpose of the research, we assumed the idea that the research reflects a subjective reality, being the result of our work, based on current knowledge and judgments issued.

The logic developed in our research is given by the general rule of accounting, ie that of mirroring exactly the economic reality, thereby bringing benefits both in the interest of the state and the citizen.

Within its scope of action, inter alia, accounting contributes to the establishment and collection of taxes and duties, which is essential for the smooth running of the company. In this sense, accounting is a guarantor in preventing and combating tax evasion, an aspect that we investigate through this paper.

Specific to the researched topic, the accounting aims at the correct establishment of taxes and fees and the payment of term tax obligations to their beneficiary. Related to this, we will see how it can be a definite proof, or it can be creative, leaving the impression of a perfect appearance, but which through working tools able to validate the economic reality is unmasked, with not very encouraging results for the perpetrator.

In case of legal non-compliance, the accounting provides information for the certain determination of the damage caused, an amount that includes in addition to the main debt due and ancillary tax obligations. The state institutions trust the taxpayers who, through the declaratory system, assume their deeds, and in case of forgery in public documents, with the bearing of the damages caused.

In order to achieve the general objective subscribed to the research, we made a theoretical documentation, by reviewing the specialized literature, of the criminal schemes found in judicial practice and we practically exemplified how accounting uses specific mechanisms to combat tax evasion. The acts of tax evasion constitute economic-financial crimes, committed intentionally or through fault, incriminated by the New Criminal Code, facts that affect the patrimonial and non-patrimonial relations between persons, as subjects of criminal law.

The ways to evade the payment of profit tax are achieved through various criminal schemes, such as: companies such as "tax havens" (offshore), "ghost" (missing trader fraud), intra-Community VAT fraud ("carousel").

The research is empirical, which means that it uses empirical evidence. Knowledge was acquired through observation and indirect experience. We aim for the purpose of our research to lead to the progressive growth of economic construction, in order to reach a continuous development.

If you can handle a pile of paper, you're an artist, and accounting is just an art.

5. Conclusions

Conclusions and proposals, come to conclude the article, with personal opinions, criticisms, limitations and proposals for future study to continue the thorough study of some issues in the field. Practice has shown that any field researched, develops and gives the opportunity for a new study, because the problems change, do not remain the same.

Another limitation is the ignorance of the areas in which unrealistic reporting can usually occur. For a future study, we recommend deepening the topic in terms of issues such as: methods to prevent tax evasion in various areas, the profile of the suspect, deviations, corruption, risk reassessment, methods of efficiency of bodies last but not least, the completion of the legislation in the financial-accounting field regarding the declared incomes and deductible expenses, the supporting documents, the security of the software, the harmonization of the accounting.

At the end of this research, we conclude that through the efficient use of accounting mechanisms to combat tax evasion, permanent review of legislation in the financial-accounting field, eliminating legislative gaps and compliance with legislation by individuals, training and involvement of competent bodies in combating evasion, it can considerably reduce tax evasion, which would lead to an increase in the revenue allocated to the state budget and a better life for everyone.

From the perspective of the elaborated scientific approach, we consider that the research objectives have been met.

We propose a reconfiguration of the accountant's activity in the conditions of modern technology, so that operations that do not exist in reality can no longer be registered, bank transactions are recognized and recorded immediately and accurately in accounting, and anomalies detected, corrected in time, information documents from accounting integrated in the platforms of the fiscal body, for an efficient and timely control and others.

Thus, the accounting platforms will be easier to access, the audited economic information at the most significant levels, the economic-financial information will be able to be obtained and processed in time for making the most important decisions and for the correct reporting, from the level microeconomic and up to the macro-economic level. But all this will be the subject of future research. The steps are many and small, but it guarantees success!

6. References

- Boulescu M., Ghiță M., 1999. Accounting expertise and financial-accounting audit. Bucharest: Didactic and Pedagogical Publishing House;
- Botez D., 2005. Current trends and perspectives of the accounting profession in Romania. Iaşi: Sedcom Libris Publishing House;
- Crişan E., Nemeş R., Nolden N., 2015. Guide of good practices in the field of combating tax evasion crimes. Bucharest;
- Dobroteanu L., 2005. Genesis and future in accounting. Bucharest: Economic Publishing House;
- Horomnea E., 2003. Basis of Accounting. Concepts, applications, lexicon. Iaşi: Sedcom Libris Publishing House;
- Matiş D., 2010. Basis of Accounting. Foundations and premises for an authentic professional reasoning. Cluj Napoca: The House of Science Book Publishing House;
- Oncioiu I., Oncioiu F., Chiriță S., 2000. Accounting expertise as a means of proof in criminal proceedings. Bucharest;
- Ristea M., Dumitru C.G., 2006. Basics of accounting. Bucharest: University Publishing House.
- www.academia.edu/29004422/Suport_curs_contabilitate
- www.cafr.ro/pregatire-profesionala
- www.ccfiscali.ro > pregatire-profesionala
- www.ceccarbusinessmagazine.ro > revista-contabilitatea, expertiza și auditul afacerilor

Financial Audit from Robotization to Digitization

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Abstract

Currently, the financial audit process is carried out in an anachronistic manner by professionals in the field. Digitization is in itself a way to start dealing with the problems we have created in the past.

The aim of the article is to try to highlight the benefits of a digitized process of automatic data processing in a financial audit.

Digitization uses a number of integrated and complementary tools. The need to adopt integrative applications that have a good functioning and flexibility of processes, appears in a globalized environment with more and more varied accounting programs.

For this, it must be taken into account that the accessibility of those interested is easy, simple, able to adapt to legislative changes and new technologies quickly, with transparent information, low implementation costs, protected from cyber attacks and last but not least to contributes to the elimination of fraud and better management.

Key words: robotization, digitization, financial audit, automation

J.E.L. classification: M40, M41, M42

1. Introduction

This paper considers the applicability of digitization in a financial audit process and the effects it has on companies and auditors.

The amount of work done in an audit process increases from year to year and productivity needs to be improved. There is also a problem in improving quality to meet the expectations of audit stakeholders. Moreover, due to the impact of the spread of the new coronavirus infection (COVID-19) in 2020, it is estimated that each company will promote the introduction of remote works, automate operations and digitize the system by removing paper documents.

As the digitization of audit processes can be an effective means for these problems, audit firms together with IT specialists conduct daily research and development in this field.

As we develop and exploit the processes underlying any digitization, we will also encounter challenges related to various aspects of use operations in financial auditing.

Time and energy wasted in systems with outdated operating procedures should be limited and eliminated as much as possible in order to improve customer relationships.

Transformation initiatives naturally create premises for digitization, especially where there are significant gaps between the operational needs of the audit process and the capabilities of existing IT systems. This need is what attracts interest for RPA (Robotic Process Automation).

As part of an RPA initiative, software "robots" that act as users of IT applications are configured and managed.

Robotization technology provides a non-invasive alternative to coding automatic task logic for simplicity processed in a new application or service, then creates and uses specialized integration APIs or integrates the new code with existing systems by other means.

2. Literature review

To solve the problems in the audit work, it is necessary to prepare a large amount of standardized data to teach artificial intelligence to use the information in audit procedures.

In the past, the audit activity did not standardize in a digital environment the data it analyzes, for the simple reason that the accounting system is different from one company to another and the activity of the audited companies differs from one case to another, and in At present, the implementation of the digitization process is enormous.

Due to these differences, it often takes time to process and enter financial data into the analysis tools for the audit process.

Recently, an increasing number of companies are changing their reporting processes according to the standard system.

Standardizing the audit report is of real benefit to the auditor. This will facilitate communication with the beneficiaries, providing a binding common language for both parties. The terms used in the report have the same meaning, the one defined by the specific audit standard, both for the auditor and for the beneficiaries. This requires the auditor to prepare the report in a certain form, to use certain terms and expressions, and to study the standard in order to understand the auditor's conclusions.

The effort on the part of the beneficiary is minimal, because during the audit there is a continuous communication between the two parties, the conclusions being known by him before the report is written.

Financial data is beginning to be standardized at European level, managed centrally on different platforms and it is expected that not only the real-time use of financial information that contributes to management decisions, but also how financial audit processes will be conducted it changes significantly.

The emphasis is on the use of the results of the financial audit in the databases and the financial analysis of the consolidated packages at the level of the financial statements. All accounts that make up the consolidated financial statements, after detecting anomalies in advance, may focus on verifying the transactions for which anomalies were detected in the financial audit.

To perform a financial audit report using digitization, you need to go through three steps:

- standardization of procedures and databases
- introduction of artificial intelligence
- digitization of audit procedures

In addition to creating an environment in which financial information data and advanced data analysis technology can be fully utilized, it is essential to improve the digital literacy of the human resources responsible for financial audit.

In order to implement digitization in the audit processes, it will be necessary to involve experts, specialists and scientists who analyze the obtained data and build algorithmic models.

IT specialists have created a logical scheme of the automation process as follows:

Audit test Establish the Data Consultation on the information collection https://cursbnr.ro extraction required for the of the audit test to be included for the RPA Analysis of information Obtaining information from from http>://cursbnr.ro Request http://cursbnr.ro regarding the with the data received information exchange rate (in Excel format) from the client from http://cursbnr.r 1 Reconciling the information Standardization of the test Writing the interface by resulting from Excel regarding the extraction of RPA for the auditor the exchange rate through processing with the information present on RPA http://cursbnr.ro Data extraction Д Specialist RPA Execution of the Test development in test by the auditor Excel 1 Writing the Understanding the test in final RPA Excel by RPA "Learning" Python interface in order to process for the information from auditor Excel through Describe Import the Python OpenPyxl package î application development mode Output 'Learning" Python in with the test Connecting to order to create the previously Python sheet according to the developed in Excel development of RPA

Figure no. 1. Logic diagram of the automation process

Source: (Cristea, 2020)

When defining the aspects of a financial audit report that is more effective due to artificial intelligence, several questions need to be asked: What is a good decision? What is the acceptable quality of such a decision and how should it be assessed? What is a reasonable time to prepare an opinion issued by financial auditors and how can it be quantified? What are the reasonable costs? Such questions can only be answered by applying a legal rule and resolving a value conflict.

The auditors will have a deep understanding of the activity of the audited company based on their specialized knowledge in the field of accounting and will consult with the audited company making the best use of their skills while collaborating with various specialists.

By introducing the coexistence of artificial intelligence and accountants in the audit work, we try to remove the false idea that AI robs accountants of their jobs.

The value of future audits beyond these challenges is digital technology, through continuous audits that detect anomalies in real-time financial information.

The continuous collaboration with professionals to discover the risks and the communication with the audited companies has as final goal, the construction of a financial audit ecosystem that eliminates the accounting fraud.

Although special attention is paid to the development of digital technologies that can be used to stabilize the financial audit ecosystem at company level, research and developments are being conducted on the possibility of its use in global audit practice.

By implementing the financial audit system, financial information will be monitored in real time and financial transactions will need to be verified quarterly before settlement. Because the audit method focuses on data analysis, audits are usually performed from home in a robust security environment and the audited companies are visited to communicate the results and verify the actual products.

As a result, not only auditors but also audited companies are expected to be less burdened by the audit process, which will contribute to reforming the working style of both parties.

It will be necessary to move to an audit compensation model that takes into account low technological costs and it is essential to provide a detailed explanation to the audited company regarding the change in the audit compensation model.

For implementation, some of the commitments may be: efforts to improve the reliability of financial reporting and auditing, active investments in information technology, investments in human resources, accounting and financial auditing in the new digital system.

The possibilities of new employees, including those of predecessors, will also be explored, and efforts will be made to improve the efficiency and effectiveness of audit processes.

Auditors need to make efforts to help reduce the administrative burden on audited companies, and we anticipate that not only corporations but also other entities will use the common platform in the future.

In order to carry out the audit activity, there are some challenges that need to be addressed by the whole ecosystem. Western companies often unify management information by first introducing their own system, then rearrange it at the time of reporting in accordance with current regulations and financial reporting systems, as needed.

Traditional IT-based integration projects involving older systems can be difficult to justify, for several reasons, including software and labor costs, skill availability, security, and operational risks.

Because the technology is not invasive to existing systems, stand-alone RPA projects can be delivered much faster and at a much lower cost than traditional IT-based integration projects - with less involvement from people with disabilities.

We see a significant interest in digitization for the finance-accounting and financial aufit system. These areas typically suffer from the aging of IT systems and, moreover, business processes typically contain highly structured task groups in which operators often have to:

- enters data into multiple systems
- retrieve data from one system and enter it into another
- reconcile data between two or more systems
- run system reports and act on results in a structured way

Much of the work involved in these tasks is automable in theory and can become automated in practice - especially in cases where there are large volumes of work. Compared to humans, automated software systems do not have to rest, can run for an unlimited number of hours and do not lose focus.

Of course, unexpected errors will occur when robots are used, but in well-designed RPA systems, error rates for automatic tasks can be very low.

3. Research methodology

Artificial intelligence is in a wide range of development and is the main concern of modern society, related to digital transformation. This is the result of fundamental changes in the way literal documentation processes work. Sometimes we have to move away from the long processes on which the old procedures were built in favor of relatively new practices, which are still undefined.

In order to issue an opinion, the financial auditor analyzes the documentary materials and carries out a laborious activity which he completes by concluding a financial audit report.

For the elaboration of the paper, the most important stage is the gathering of evidence, on the basis of which the opinions are based. The auditor's effort to gather evidence to characterize the financial statements is noted in the audit file. The study of documents is the premise and the necessary and mandatory condition for the preparation of the report, duly substantiated, based on supporting

documents and accounting records, and not on presumptions, statements of the parties or witnesses. The working documents are the property of the auditor and the information contained in the file is confidential.

Practice has shown that these conclusions must be presented in a standardized form, in order to be intelligible, clear, avoiding equivocal language and misunderstandings arising from different formulations of the same ideas.

A distinctive feature of the financial auditor profession is the assumption of responsibility to act in the public interest. The appreciation of responsibility, as in any other field of human activity, is relative.

The audit report represents the specific form of presentation of the conclusions, finally materialized in the opinion of the auditor, and represents a synthesis of the results obtained, of the works executed, of the procedures used and of the conditions in which this service was provided.

The trust in the opinion expressed in the report is based on the ethical and professional conduct of the auditor, on the research methods used and his experience. The history of financial auditing shows that the trust of auditors increases with the standardization and increase of the company's control over the audit activity.

The formation of the auditor's opinion represents the final result of the analysis and evaluation of the accumulated evidence, provided that sufficient and adequate evidence has been collected to reduce the audit risk, below the level established when accepting the commitment.

4. Results and discussions

We need a regulatory framework to implement and implement public strategies and policies in the field of digital transformation and the information society. In this sense, a new structure has been organized and operates, the Authority for the Digitization of Romania (ADR), with legal personality within the working apparatus of the Government and under the coordination of the Prime Minister, which includes all departments or strategy, coordination, supervision services. and implementation in the field of e-government (coming from 4 institutions).

The financial audit activity is carried out by examining documents, records and financial statements, also including inspections and obtaining information from internal and external sources, all usually by sampling and focusing on events that have changed the representation of the organizations' assets. -a given period, usually annually.

In the fiscal sphere, this approach has undergone important changes, in particular as regards the periodicity and scope of those analyzed. This new reality has emerged and been intensified since the implementation of the digitalized accounting system, at the most different levels and segments of companies, involving their departments.

The financial audit aims to identify any errors or defects in the company's controls, so that the taxpayer can make the appropriate adjustments and corrections. We know that compliance with tax obligations is a major challenge for companies in general.

To avoid problems, it is ideal to carry out a prior financial audit through a technological resource that facilitates "private inspection" through the use of digital files.

One of the hallmarks of digital auditing is that it can be done remotely. Imagine that a company hires a consultant to verify compliance with tax obligations. In this case, the service can be performed only in a virtual environment, eliminating the presence of auditors in the organization.

Agility and low cost are also issues to consider. Because it is an action taken in the virtual sphere, the audit has a shorter duration than in the conventional way, influencing the amount charged for the service. Thus, the technological process through which the financial audit can be performed will have excellent results, especially from a fiscal point of view.

The advantages of using the digital system are:

• Ease of correcting irregularities

Because we are talking about a digital system, this type of audit performs several complex analyzes in a short time. Thus, it reduces the expectation between document submission and data analysis. Thus, the company will be able to better correct any errors, considerably reducing the chances of being penalized by the tax authorities.

• Reliability of information

This type of audit generally allows the data to be more reliable because it is not exposed to human error. In other words, the chances of a tax file being opened or having problems with the inspection are virtually nil. This certainly increases the credibility of the organization - which is very important in the current scenario.

• Guarantee for compliance with the law

The legislation in force imposes a number of tax obligations on the part of taxpayers. Undoubtedly, it is necessary to use tools that provide the company with operating conditions in accordance with the law. Transparency, quality of management and respect for consumers and laws are factors that are increasingly appreciated in the market and strengthen sustainable economic growth.

Application domain

Thus, given the circumstances and facilities of the technology, both for the tax authorities and for the companies, it is always prudent for the taxpayer to take a more careful position, previously auditing the data and information that are sent to the tax authorities.

5. Conclusions

In recent decades, AI has been a topic of debate and growing developments. We live in an age where technologies are developing rapidly and can be universally applied to different business environments. In the audit, this is still a difficult topic addressed by the scientific community, which justifies the relevance of this study.

In this context, the main objective of the article was to understand the impact on the possible applications of AI, as well as the prospects for implementing digitization in the financial audit.

Although the impact of AI is still low today, there is a perception that implementation is inevitable. In fact, auditing involves routine tasks that can be simplified and automated using these techniques, increasing work efficiency and effectiveness. Today, AI is already used, for example, in automating the production of standard reports.

Despite the fears highlighted by the rumors about the disappearance of the accounting and auditing professions, they will not be replaced, but will have to develop new skills to adapt to technological developments and the emergence of new functions.

The change of the new generation, the necessary investment, the size of audit companies, the information systems used by auditors, the possibility to include new tests and methodologies in audit standards, are some of the factors that, for respondents, facilitate or condition the implementation of AI for audit.

In short, the evolutionary trend of the profession is obvious. Those procedures that have been used for many years are now obsolete, and the audit needs to move towards new technologies to keep up with its customers' developments and even go beyond that. It remains for auditors to broaden their horizons, acquire new skills and contribute to the critical sense and judgment that characterizes them so well.

6. References

- Appelbaum D., Kogan A., Vasarhelyi M., 2017. Big Data and Data Analytics in the Modern Audit Engagement: Research Needs. AUDITING: A Journal of Practice & Theory, Vol. 36, No. 4, p. 1-27;
- Bendovschi A.C., Ionescu BS., 2015. The Gap Between Cloud Computing Technology and the Audit and Information Security Supporting Standards and Regulations. *Financial Audit*, vol. XIII, no. 125
- Cristea, L. M., 2020. Emerging IT Tehnologies for Accounting and Auditing Practice. Financial Audit, vol. XVIII, no. 4, p. 731-751;
- Directive 2014/56 / EU amending Directive 2006/43 / EC on the statutory audit of annual financial statements and consolidated financial statements;
- Directive CE / 43/2006 on the statutory audit of the annual financial statements and of the consolidated annual financial statements;
- Directive EC / 30/2008 amending Directive 2006/43 / EC on the statutory audit of annual accounts and consolidated accounts, as regards the implementing powers conferred on the Commission;

- Gartner, 2019. Why Audit Leaders Need to Adopt RPA, available online: https://www.gartner.com/smarterwithgartner/whyaudit-leaders-need-to-adopt-rpa/.
- Homocianu D., Airinei D., 2015. On-Line Dynamic Dashboards in Audit Activities. Financial Audit, vol. XIII, no. 125 – 5;
- Ionescu B.S., Prichici C., Tudoran L., 2014. Cloud Accounting A Technology that May Change the Accounting Profession in Romania. *Financial Audit*, vol. XII, no. 110 2;
- Janvrin D., Wood D., 2016. The Journal of Information Systems 2015 Conference on Information Technology Audit. *Journal of Information Systems*. Vol. 30, No. 1, p. 3-5;
- Lacurezeanu R., Tiron T.A., Bresfelean, V.P., 2020. Robotic Process Automation in Audit and Accounting. *Audit Financiar*, vol. XVIII, no. 4, p.752-770;
- Regulation 537/2014 on specific requirements regarding the statutory audit of public interest entities and repealing Commission Decision 2005/909 / EC;
- Stanciu V., 2016. Considerations regarding the financial audit in the Big Data era. *Financial Audit*, Vol. 13, Issue 128;
- Tugui Al, Gheorghe A.M., 2016. Identifying the difficulties encountered by the accounting profession in accessing documents in the context of the digital economy in Romania. *Financial Audit*, Vol.14, Issue 3.
- Zhang CA., Dai J., Vasarhelyi M.A., 2018. The Impact of Disruptive Technologies on Accounting and Auditing Education How Should the Profession Adapt? CPA Journal, Vol. September.
- The Authority for the Digitization of Romania, available online at: https://www.adr.gov.ro/adr/;
- ISACA Journal (a) (2018). Data and Data Analytics Progress During the Last Four Years, Vol. 5, available online at: https://next.sit.isaca.org/resources/isacajournal/issues/2018/volume-5/data-and-analyticsprogress-during-the-last-four-years;

An ARCH/GARCH Approach on Euro/RON Exchange Rate Volatility

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Abstract

Our study investigates the influence of political events, such as elections, censure motions, and economic policies, on the financial markets. We analyzed using ARCH/GARCH models daily EURO-Ron exchange rates from January 2017 to December 2020 to highlight the interconnection between political and economic shocks and the volatility of the financial markets. The results indicate a strong correlation between turbulence caused by political events and decisions and the volatility of the exchange rates in the studied period. It is necessary to understand better this link between the political factor and the effects that economic measures have on financial markets, especially in the current economic context, health, and, financial crisis generated by the COVID-19 pandemic, which caused governments to respond in unprecedented ways and lead to exceptional measures.

Key words: politics, exchange rate, volatility, Garch

J.E.L. classification: C10, G14, G18

1. Introduction

Our study investigates the influence of political events, such as elections, censure motions, and economic policies, on the financial markets. We analyzed using ARCH/ GARCH models daily EURO-Ron exchange rates from January 2017 to December 2020 to highlight the interconnection between political and economic shocks and the volatility of the financial markets.

The model successfully indicates that the ARCH and GARCH coefficients are statistically significant and the graphic outputs capture the volatility periods of the exchange rate.

The results indicate a strong correlation between turbulence caused by political events and decisions and the volatility of the exchange rates in the studied period.

Political uncertainty, in general, has the gift of creating long-term effects, unfortunately, because investors pay special attention to policymakers who influence the economic environment. A significant aspect of the investment process is given by predictability and legislative stability.

It is necessary to understand better this link between the political factor and the effects that economic measures have on financial markets, especially in the current economic context, health, and, financial crisis generated by the COVID-19 pandemic, which caused governments to respond in unprecedented ways and lead to exceptional measures.

2. Literature review

The article analyzes the influence of political events and economic measures on the exchange rate evolution between January 2017 and December 2020. The exchange rate evolved from 4.51 lei to 4.8694 lei for one euro.

The volatility of financial markets has been intensively studied and analyzed in numerous specialized studies. Financial markets are generally characterized by a high degree of uncertainty reflected in the volatility of stock prices, bonds, exchange rates, interest rates. Volatility is an essential variable in assessing the state of financial markets and for decision-making by investors, managers, regulators.

Schwert (1989) studies the volatility of stocks on the US market and concludes that inflation and other economic factors seem to explain only some fluctuations in volatility. It suggests that changes at the political level would explain differences in capital market volatility over time. Berkman and Jacobsen also confirm the results of their study. They are expanding data internationally and demonstrating that political uncertainty at the international level is correlated with the volatility of the international financial markets. Markets react more strongly (higher volatility) when crises are stronger or when strong states are involved, concludes Schwert.

Berkman and Jacobsen (2006) studied how financial markets were affected by crises and wars. The impact of political uncertainty on volatility is substantial. International crises have a strong effect on capital markets' profitability and volatility. The more severe a crisis, the greater the adverse effects. Their research confirms the importance of political uncertainty in the volatility puzzle (Schwert, 1989), namely that political uncertainty is correlated with market volatility.

Frot and Santiso (2010) studied the effect of parliamentary elections on bonds and capital flows in emerging countries; the study results indicated that parliamentary elections affect the evolution of the portfolio if a candidate is not re-elected. Hence, political uncertainty plays an important role in explaining the effect of the polls. Investors want continuity and especially stability in the political environment, not like the changes. Investors value transparency. Events in the political environment cause increased volatility.

Chau et al. (2013) study the volatility of stock markets in the Middle East and North African Region (MENA) determined by the political uncertainty caused by the civil uprisings in the Arab World i.e. "Arab Spring,".

Vancea et al. (2017) study the influence that political events have on the financial markets in Romania, in this case, the foreign exchange market and the capital market. In their study, Vancea and Aivaz (2017) show a correlation between the political turmoil in Romania in 2012 and the volatility of the exchange rate.

The relationship between election uncertainty, economic policy uncertainty, and financial market uncertainty in seven US presidential election campaigns (from 1992 to 2016) was also examined by Goodell et al. (2019).

3. Methodology and database

In our study, we analyzed using ARCH/ GARCH models (Gherghina et al., 2021; Predescu and Stancu, 2011; Banerjee, 2021; Bora and Basistha, 2021; Curto and Serrasqueiro, 2021; Alexandru et al., 2013; Duttilo et al., 2021; GHERGUŢ et al., 2013 Fakhfekh et al., 2021; Vancea and Aivaz, 2012; Ftiti et al., 2021; Vancea et al., 2017; Ghorbel and Jeribi, 2021) daily EURO-Ron exchange rates, starting from January 3rd2017 to December 31th2020 to highlight the interconnection between political events and economic measures and the financial markets volatility.

Firstly introduced in 1982 (Engle, 1982), to estimate the variance of UK inflation, the ARCH (AutoRegressive Conditional Heteroscedasticity) developed over time. Bollerslev (1986) firstly introduced GARCH (Generalized Autoregressive Conditional Heteroscedasticity). Conditional variation in a GARCH model dependent on its precursory lags. GARCH models modulate the autoregressive (AR) process from the ARCH model into an ARMA process by adding a moving average (MA) process. Below we have the equation for a GARCH model (Bollerslev, 1986).

$$y_t = yx_t + \varepsilon_t$$

Where: y_t -stands for the dependendent variable in t period; x_t - independent variable in the time t; γ - coefficient that shows the influence of x_t on y_t ; ε_t residual terms in current t period.

$$\sigma_t^2 = \omega + \alpha \epsilon_{t-1}^2 + \beta \sigma_{t-1}^2$$

Where: σ_t^2 - stands for the variance, .. ω – "white noise" - the constant in the dispersion equation, α - "ARCH" coefficient; ε_{t-1} residual terms in previous period t–1; β -"GARCH" coefficient.

ARCH (1) model takes into account the volatility to predict the next values of the time series. The basic idea in an Arch model is that if volatility is high in period t-1, the volatility will be high in time t and vice versa. With other words the value of a time series in t moment is affected by the random error (ε_t) and the volatility in time t (σ_t). Since the volatility in time t is a function of the time series in t-1, σ_t is affected by the value of time series in t-1.

GARCH (1, 1) model is equivalent with ARCH (2) model, while GARCH (p, q) is equivalent with ARCH (q + p) (Gujarati, 2003). In GARCH (1, 1) the value of a time series in t moment is affected by the white noise (ε_t), the values of time series in t-1, and the volatility yesterday (σ_{t-1}). For really long time series the GARCH (1,1) model can be generalized as GARCH(p, q) model and when q=0 GARCH reduces to ARCH.

In our study, the variable that we used is the Ron/Euro exchange rate from 03.01.2017 to 31.12.2020. The time series was logarithmically transformed in order to attenuate the monostatic nature. The formula for daily rate is in line with Vancea et al, (2017); Bora and Basistha (2021); Predescu and Stancu, (2011); Curto and Serrasqueiro (2021); Gherghina et al., (2021); Fakhfekh et al. (2021);

$$R_t = ln\left(\frac{P_t}{P_{t-1}}\right)$$

where R_t stands for the exchange rate in period t, P_t is the ron/euro exchange price at time t and subscriptions the price in ron for one euro t-1 period.

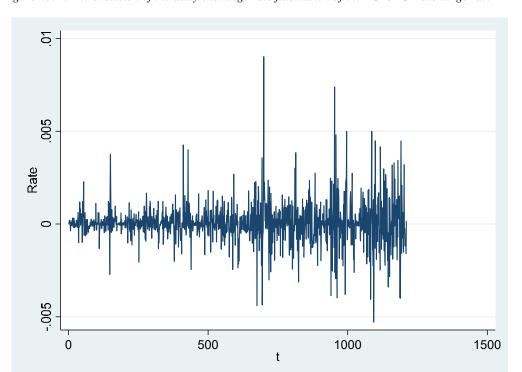


Figure no. 1. The evolution of the daily exchange rate fluctuation of the RON/EUR exchange rate

Source: Authors computation, Stata

In Fig. 1, we can observe the high volatility of the exchange rate. In the first period, we can identify volatility clusters (significant fluctuations are succeeded by the same volatile periods, but also they seem to be correlated with political turbulence) followed by high volatility at the beginning of the Covid-19 crisis (March 2020).

1210

-2.570

At this point in our study, we tested the exchange rate stationarity using the ADF (Augmented Dickey-Fuller) and Phillips-Perron (PP) tests. Were tested the following hypotheses:

H0: The exchange rate series has a root unit and is non-stationary.

H1: The exchange rate series is stationary.

Table no. 1. Results for Augmented Dickey-Fuller Test

Dickey-Fuller test for unit root Number of obs 1210 Interpolated Dickey-Fuller 1% Critical 5% Critical 10% Critical Test Statistic Value Value Value -33.579 -3.430 -2.860 -2.570 Z(t)

MacKinnon approximate p-value for Z(t) = 0.0000

Source: Authors computation, Stata

Number of obs

-2.860

Table no. 2. Results for Phillips-Perron test

Phillips-Perron test for unit root

Newey-West lags = 6 - Interpolated Dickey-Fuller 1% Critical 10% Critical Test 5% Critical Statistic Value Value Value Z(rho) -1092.736 -20.700 -14.100 -11.300

-3.430

MacKinnon approximate n-value for 7(t) = 0.0000

-33.575

Source: Authors computation, Stata

Z(t)

Table 1 and Table 2 from above indicate that we can reject the null hypotheses; the time series is stationary for a significance level of 5%. Results suggest that the test values are much higher than the theoretical critical values.

The presence of the ARCH effects can be observed in the correlograms graph. Therefore the next step in our study is to represent and interpret the correlogram of the exchange rate variance.

Figure no. 2. The correlogram of the exchange rate variance

LAG	AC	PAC	0	Prob>0		-1 0 1 [Partial Autocor]
LAG	AC	PAC	Q	PIODZQ	[Autoconveracion]	[Fairtial Autocoir]
1	-0.7300	-0.7300	534.51	0.0000		
2	0.5245	-0.0180	810.7	0.0000		
3	-0.3661	0.0225	945.41	0.0000		
4	0.2335	-0.0457	1000.3	0.0000	⊢	
5	-0.1802	-0.0752	1033	0.0000	-	
6	0.1403	0.0012	1052.8	0.0000	⊢	
7	-0.1241	-0.0314	1068.3	0.0000		
8	0.1173	0.0173	1082.2	0.0000	ı	ı
9	-0.1521	-0.1079	1105.6	0.0000	-	
10	0.1485	-0.0291	1128	0.0000	⊢	
11	-0.1245	0.0204	1143.7	0.0000		
12	0.1440	0.0907	1164.7	0.0000	⊢	
13	-0.1330	0.0063	1182.6	0.0000	-	
14	0.0926	-0.0636	1191.4	0.0000	ı	
15	-0.0510	0.0316	1194	0.0000	ı	
16	0.0210	0.0092	1194.5	0.0000	l	
17	-0.0115	-0.0158	1194.6	0.0000		
18	-0.0284	-0.0978	1195.4	0.0000	ı	
19	0.0281	-0.0352	1196.2	0.0000	I	
20	-0.0182	0.0305	1196.6	0.0000	ı	
21	0.0085	0.0083	1196.6	0.0000	I	
22	0.0462	0.0765	1198.8	0.0000		
23	-0.0566	0.0176	1202.1	0.0000	I	
24	0.0402	-0.0354	1203.8	0.0000		
25	-0.0593	-0.0691	1207.4	0.0000		

Source: Authors computation, Stata

In figure 2, we can observe the ARCH effect, and that is a strong suggestion that we need to estimate the heteroskedastic model.

Table no. 3. Estimating the GARCH model (1,1) for the exchange rate variance series

ARCH family regression

Sample: 03jan2017 - 31dec2020, but with gaps 1,000 Distribution: Gaussian Wald chi2(2) 21.62 Prob > chi2 Log likelihood = 790.0934 0.0000

Exchangerate	Coef.	OPG Std. Err.	z	P> z	[95% Conf.	Interval]
Exchangerate _cons	.0017823	.0031415	0.57	0.570	0043749	.0079394
ARCH						
arch						
L1.	.5017646	.0518346	9.68	0.000	.4001707	.6033585
garch						
L1.	.4822552	.0680673	7.08	0.000	. 3488457	.6156647
_cons	.001919	.0006267	3.06	0.002	.0006907	.0031473

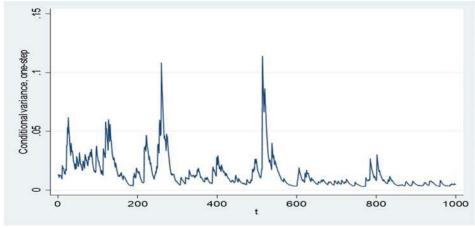
Source: Authors computation, Stata

The coefficients of the ARCH and GARCH terms are highly significant, meaning that there is significant predictability in the variance term. According to the information criteria from Table 3, the GARCH model (1,1) is robust and the variance equation is expressed below:

$$\sigma_{\rm t}^2 = 0.0017823 + 0.5017646 \, \varepsilon_{\rm t-1}^2 + 0.4822552 \, \sigma_{\rm t-1}^2$$

 $\sigma_t^2 = 0.0017823 + 0.5017646~\epsilon_{t-1}^2 + 0.4822552~\sigma_{t-1}^2$ The sum between the ARCH and the GARCH terms is <1 ensuring the stationarity and the nonnegativity of the variance process; the sum is very close to 1, indicating the persistence in volatility.

Figure no. 3 Volatility of the RON/EUR exchange rate based on GARCH (1,1) model



Source: Authors computation, Stata

Testing the validity of the model

We will run several validation tests for our estimated GARCH (1,1) model. We will test the homoscedasticity of the errors terms, the non-correlation of errors terms, and the normal distribution of the errors terms.

Figure no. 4. The distribution histogram of the daily variance series of the exchange rate

Source: Authors computation, Stata

The result of the Jarque-Bera test and histogram for the daily logarithmic exchange rate indicates that the residual terms of the time series do not have a normal distribution

Table no. 4. Testing ARCH effects

LM test for autoregressive conditional heteroskedasticity (ARCH)

lags(p) chi2			df	Р	Prob > chi2
1	0.000		1		0.9993
Н0:	no ARCH effects	vs.	H1: ARCH(p)	disturbance	

Source: Authors computation, Stata

Using the ARCH LM test (Lagrange multiplier), we can check for ARCH effects in the residuals. In our case, we accept the null hypothesis-no arch effects with a probability higher than 95%.

Analyzing the residual correlogram, we conclude that there is no autocorrelation in terms of error.

4. Research results and interpretation

In this study, we analyze the influence of political events and economic measures on the evolution of the exchange rate between January 2017 and December 2020. The exchange rate evolved from 4.51 lei to 4.8694 lei for one euro.

From the political context point of view, in the studied period, in addition to presidential, parliamentary, European, and local elections, seven censure motions took place, three of them being approved and leading to the fall of the government (Grindeanu, Dancila, Orban).

There were resignations of the Prime Minister (Tudose), large-scale protests in the country and abroad for the amendments to the justice laws, one of the most controversial legislative amendments, Emergency Ordinance 114/2018. In the last year of the analyzed period, a sizeable sanitary crisis was generated by the Covid pandemic.

The year 2017 began with the investment of the Grindeanu government, followed by a series of protests both in the country and abroad, due to the adoption by political decision-makers of Emergency Ordinance 13, which brought amendments to the justice law. Following the protests of GEO 13/2017, the Minister of Justice, Florin Iordache, resigned.

A premiere on the Romanian political scene was the fall of the Grindeanu government on June 21, 2017, by voting a censure motion filed by the PSD + ALDE parties against their government. In his place, Mihai Tudose was appointed prime minister, but only for a few months, and he resigned at the beginning of 2018. Viorica Dancila was appointed prime minister; the government resisted a censure motion (June 27, 2018).

The year 2018 was also marked by protests against changes in justice laws, one of the largest antigovernment rallies in Bucharest, on August 10. The end of the year blew up the financial markets by issuing the Emergency Ordinance 114.

Emergency Ordinance 114 of December 29, 2018, established new taxes on turnover for the energy and telecom sector and taxes on assets in the banking system.

2019 was an election year, with European elections on May 26. In October, the Dancila Government is dismissed by a censure motion, and in November, the Orban government is invested. Following the presidential elections of November 24, 2019, Klaus Iohanis is re-elected President of Romania.

Analyzing the above-mentioned political events, the national currency has not declined in a way that reflects panic.

An example of influence is the statement of the former Minister of Finance, Eugen Teodorovici, from December 18, 2018, announcing that the government will tax banks, energy companies, telecommunications, and bring amendments to Pillar II. Following the Minister's statement and the issuance of the Emergency Ordinance 114, in December 2018 and January 2019 sessions, the national currency registered significant depreciation to a maximum of 4,78 lei. The panic caused by the issuance of Emergency Ordinance 114 had a substantial impact on the exchange market, causing high volatility, Predictability and legislative stability are essential aspects for the financial markets and the investment process.

The National Bank interventions and the clarifications brought at the beginning of 2019 by politicians on the measures provided by the ordinance and the issuance of GEO 19 / March 2019, which improves GEO 114, also restored investor confidence and brought stability for the national currency.

The year 2020 is marked by the Covid pandemic. Although a censure motion fired the Orban government in February 2020, it was reinvested on March 14, forced by the pandemic outbreak. On February 26, the first coronavirus case was recorded in Romania, followed by establishing the state of emergency, our country following the example of other states.

In March 2020, following the declaration of the pandemic by the World Health Organization and the establishment of a state of emergency, we noticed a significant increase in exchange rate volatility. In the March 16 session, immediately after the declaration of the state of emergency, the exchange rate registered a strong fluctuation, oscillating in a single trading session between 4.7888 lei and a maximum of 4.8830 lei, ending the session at 4.8391 lei

The pandemic led to unprecedented measures by the authorities. In an attempt to support the economy during an emergency, the government has taken several measures, such as postponing certain taxes and utilities and technological unemployment. In the banking system, suspending the loan rates was taken for the debtors whose incomes were affected by the situation generated by the Covid-19 pandemic. Another critical measure is support for SMEs by guaranteeing loans through working capital and investment capital and subsidizing interest.

In the second part of the year, local elections (September 27, 2020) and parliamentary elections (December 6, 2020) occurred, these generated increases to up to a percentage for the national currency.

5. Conclusions

In our study, we used GARCH (1, 1) model to characterize the volatility of the Euro-Ron exchange rate from Jan 2017 to Dec 2020. The model successfully indicates that the ARCH and GARCH coefficients are statistically significant and the graphic outputs capture the volatility periods of the exchange rate.

Our results confirm the results of other studies, that is political events and economic policies influence the evolution of the Euro / Ron exchange rate. But not all the political events or financial measures have the same impact on the evolution of the Euro / Ron exchange rate. Scheduled political events, such as the Parliamentary and presidential elections, have led to increases, but volatility has not been very high, the currency fluctuated approximately 0,5% to 1%.

In the period studied, the highest level of volatility was determined by GEO 114 / 2018 and also by establishing a state of emergency, following the declaration of the pandemic (March 2020), volatility was very high. The investors panicked withdrew their money from the market and the exchange rate suffered a sharp depreciation.

Our study shows that the highest influence on the Euro/Ron evolution has the events that generate political instability like protests due to amendments to the justice laws and also unexpected events, like GEO 114.

That is evidence once more that all of these events and political uncertainty, in general, have the gift of creating long-term effects, unfortunately, because investors pay special attention to policymakers who influence the economic environment. A significant aspect of the investment process is given by predictability and legislative stability.

6. References

- Banerjee, A.K., 2021. Futures market and the contagion effect of COVID-19 syndrome. Finance Research Letters 102018
- Berkman, H., Jacobsen, B., 2006. War, Peace, and Stock Markets. Rochester, NY: Social Science Research Network
- Bollerslev, T., 1986. Generalized Autoregressive Conditional Heteroscedasticity. *Journal of Econometrics*, 31, pp. 307-327.
- Bora, D., Basistha, D., 2021. The outbreak of COVID-19 pandemic and its impact on stock market volatility: Evidence from a worst-affected economy. *Journal of Public Affairs e2623*
- Chau, F., Deesomsak, R., Wang, J., 2013. Political Uncertainty and Stock Market Volatility in the Middle East and North African (MENA). *Journal of International Financial Markets, Institutions & Money*, pp. 1-19
- Curto, Dias, J, Serrasqueiro, P., 2021. The impact of COVID-19 on S&P500 sector indices and FATANG stocks volatility: An expanded APARCH model. *Finance Research Letters*
- Pierdomenico, D., Gattone, S.A., Battista, T.D., 2021. Volatility Modeling: An Overview of Equity Markets in the Euro Area during COVID-19 Pandemic. *Mathematics 9: 1212*.
- Espinosa-Méndez, C., Arias, J., 2021. COVID-19 effect on herding behavior in European capital markets. *Finance Research Letters 38: 101787*
- Ftiti, Z., Ameur, H.B., Louhichi, W., 2021. Does non-fundamental news related to COVID-19 matter for stock returns? Evidence from Shanghai stock market. *Economic Modelling* 99: 105484
- Frot, E., Santiso, J., 2010. Portfolio Managers and Elections in Emerging Economies: How Investors Dislike Political Uncertainty. SSE, Working Paper no 9
- Achraf, G., Jeribi, A., 2021. Contagion of COVID-19 pandemic between oil and financial assets: The evidence of multivariate Markov switching GARCH models. *Journal of Investment Compliance*
- Goodell, J.W., McGee, R.J., McGroarty, F., 2019. Election Uncertainty, Economic Policy Uncertainty and Financial Market Uncertainty: A Prediction Market Analysis. *Journal of Banking and Finance 110* 105684
- Gherghina, S.C., Armeanu, D.S., Joldes, C.C., 2021. COVID-19 Pandemic and Romanian Stock Market Volatility: A GARCH Approach. Journal of Risk and Financial Management
- Vancea, D.P.C, Aivaz, K.A., 2017. Romania s Political Turbulence in 2012 and Exchange Rate Volatility. *The International E-Conference "Enterprises in the Global Economy"*, 2nd Edition, Filodiritto Editore, pp. 127-135
- Vancea, D.P.C, Aivaz, K.A., Duhnea, C., 2017. Political Uncertainty and Volatility on the Financial Markets – The Case of Romania. *Transformations in Business & Economics*, Vol 16, No 2A (41A), pp 457-477
- www.bnr.ro

Does the Disclosure of Performance Indicators Impact Bank Profitability? Empirical Study for the Romanian Banking System

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Abstract

New banking regulations and the increasing attention of banks in publicly disclosing information through their websites have led in recent years to an intensification of Corporate Social Responsibility CSR disclosures based on diverse and the same time in-depth categories of information regarding not only the classic financial and accounting information, but also corporate governance, environment and social involvement in community disclosures. Content analysis was used to study the annual reports published on Romanian banks' websites between 2013 and 2020, in order to find financial indicators disclosures, especially those related to banking performance. The relationship between bank profitability (measured by ROE and ROA), bank characteristics (set by size of the banks) and the disclosure degree was examined through OLS (Ordinary Least Square) regression panel model, using STATA. The results suggest that the evolution of performance banking indicators is influenced by the size of the banks and the disclosure degree.

Key words: disclosure, banks, profitability, Romania

J.E.L. classification: C23, G21, L25

1. Introduction

The inability of the literature to provide an unanimously acceptance of CSR (Corporate Social Responsibility) is obvious and fully justified, if taken into account the dynamics of CSR, given both the voluntary reporting, at the discretion of the banks, but also the reporting imposed by specific regulations. According to several authors (Jain et al., 2015, p.14), CSR reporting in banks and its assessment is by no means an exact science, if consider that CSR reporting is an organic process, one that is continually evolving. The construction of CSR studies is under the sign of the three fundamental theories – the legitimacy theory, agency theory and stakeholder theory. Many of the existing organizations began to change their way to doing business by adopting CSR practices (Modreanu et al., 2021, p.366). Precise boundaries between Corporate Social Responsibility, Corporate Governance or Accountability are difficult to outline, given the interactions between them, by also by the permanent evolution of concepts. Even if in recent years the focus of CSR is directed towards social and environmental responsibility aspects, still the subject of bank profitability remains a fundamental one of CSR policies. Various categories of bank stakeholders are interested in aspects of bank profitability, so in this field, we identify on the one hand, specific banking settlements in the area of financial reporting, in which various profitability indicators are disclosed, and on the other hand, each bank has the freedom to present details of profitability in various annual reports or similar documents.

We intend to find out how the performance banking indicators is influenced by the size of the banks and the disclosure degree. Study case was developed for the Romanian banking system. The paper is structured as such: the first section reviews the specialized literature, and the following sections present the research methodology and the study design, followed by results and conclusions.

2. Literature review

The investigation between CSR and bank profitability brought in the specialized studies various results, either the validation of some hypotheses of connection of the variables (positive or negative), or showed that there is no interdependence between CSR and bank profitability. A study conducted in 1985 (Aupperle et al., 1985, p.462) that have examined the empirical relationship between CSR and profitability, show us four components of assessing CSR economic, legal, ethical and discretionary. These four components are divided into two categories - "a concern for society", consistent of legal, ethical and discretionary and "concern for economic performance", that contains economic component. When correlating orientation toward social responsibility, "a concern for society" with profitability, the authors observed no statistically significant relationship. Attempts to configure CSR disclosure indices are not only recent, but the topic has concerned the research community in economics, especially in the 2000s, in the context of preparing specific measurement indicators. A CSR index was developed by Branco and Rodrigues (Branco and Rodrigues, 2008, p.694) - a SRD (Social Responsibility Disclosure) disclosure index which contains 30 indicators, grouped into 5 areas: environmental disclosure, human resource disclosure products and customers disclosure and community involvement disclosure. For the banking industry, the mentioned index was used in the analysis CSR disclosure on Tunisian listed banks - 11 banks during the period from 2007 to 2012 (Chakroun et al., 2017, pp.552). Content analysis represents a technique used by the mentioned authors to identify CSR items in the annual reports on websites, to which is added a multivariate analysis which proves that the level of CSR disclosure in Tunisian listed banks' annual report is explained by the leverage and financial performance variables (ROE). Recent study proves that bank profitability is not (only partially) significant in explaining CSR (Corporate Social Responsibility) website disclosures, based on a sample of 78 banks from the German banking industry (Schroeder, 2021, p.768). Particularities of banking activities, such as mobile banking, have been captured in specialized studies, based on CSR disclosure practices in line with Global Reporting Initiative (GRI). An index of 14 items used to measure the level of disclosure (about mobile banking) was developed by De Oliveira Malaquias and Hwang (De Oliveira Malaquias and Hwang, 2018, p.622) for Brazilian banks between 2006 and 2017. A negative interactive relationship between CSR (measured as "obra social" - "social work", a CSR practice that incurs a cost for Saving Banks in Spain) and financial performance (measured as ROA Return on Assets and ROE Return on Equity) have been proved for 47 entities between 1996 and 2006 (Martínez-Campillo et al., 2013, p. 54). An insignificant relationship between online financial disclosure with profitability (ROE and ROA), leverage and age by the Islamic banks in the Gulf Cooperation Council countries during 2015-2017 has been proved (Al-Sartawi and Reyad, 2018, p.237).

Recent approach was developed the CSR index of banks by using the method of principal component analysis, about which the authors consider could eliminate the subjectivism of other types of approaches (Zhou et al., 2021, p.10). The CSR index has been built from 10 different indicators based on the following areas: Growth ability (Growth rate of total assets, Growth rate of net assets, Growth rate of operating revenue, Operating profit growth rate), Profitability (Return on total assets, Return on equity), Quality of earnings (Earnings per share - diluted), and Risk management (Liquidity ratio, Nonperforming asset ratio, Core capital adequacy ratio).

Regarding the situation in Romania, the impact of corporate governance on the financial performances of the banks has been studied for 23 commercial banks in Romania during 2013-2015 (Manta et al., 2018, p.165). They proved that the size of the board (represented by the supervisory board and the executive board) determined a positive and significant impact on the

performance. Romanian listed banks on the Bucharest Stock Exchange have been studied in 2015 in terms of relationship between corporate governance disclosure issues and the financial performance (ROE Return on Equity, ROA Return on Assets and PER Price Earnings Ratio) (Perpelea and Mihalcea, 2019, p.536). The authors found that the positive relationship the studied variables. Another authors showed that the level of application of the CSR (7 areas and 18 criteria) is not significantly related to the financial performance of the banks (Paulik et al., 2015, p.65). Their results are based on four banks in the Czech Republic from 2010 to 2013. Another country studied from Eastern and Central Europe is Poland. Several authors have examined 18 commercial banks from Poland between 2008 and 2015, through the content analysis, and they found a positive relationship between banks' CSR disclosures and their profitability measured by ROA and ROE, while the relationship between banks' CSR disclosures and NIM Net Interest Margin is negative (Matuszak and Różańska, 2017, p.522).

3. Research methodology

Our study presents an empirical analysis of the correlation between bank profitability and the disclosure of performance in the annual reports published on the websites of Romanian banks. The empirical data required for this part of the study were collected using the content analysis method. In the necessary information collection phase, we applied mediated data collection methods, using information from the annual financial statements and annual reports published on the official websites of each entity in the sample analyzed for the period 2013-2020. Other data used were obtained by calculations working with statistical-mathematical methods, using Microsoft Excel software.

For the sampling, the entities were selected based on inclusion and exclusion criteria, namely:

- Inclusion criteria: Romanian banks were included, which in 2020 had published at least one
 of the financial indicators ROE Return on Equity, ROA Return on Assets and CIR Cost-toIncome Ratio;
- Exclusion criteria: those banks that had published scanned financial statements and do not allow advanced search were not selected; economic entities that did not comply throughout the analysis of the continuity principle.

In this way, we obtained a sample consisting of 10 banks, for a period of 8 years, a total of 80 observations (Banca Comercială Română SA, Banca de Export Import a României (EXIMBANK) SA, Banca Românească SA, Banca Transilvania SA, BRD - Groupe Societe Generale SA, Idea Bank SA, Libra Internet Bank SA, Patria Bank SA, Raiffeisen Bank SA, Unicredit Bank SA).

Following the collection of relevant data necessary for empirical research, we moved on to the next phase, that of data analysis. If the part of obtaining and calculating the data was done using the Microsoft Excel software, the part of analysis and further processing of the multiple linear regression model was done using the STATA software. Initially, in our model we tried to include several variables, both internal and macroeconomic, but some of them are not stationary, and could not be stationary, therefore they were excluded from our model.

The dependent variables in our models are variables that describe bank profitability, namely financial profitability – Return on Equity (ROE) and Return on Assets (ROA):

- ROE or financial profitability measures the profitability of the economic entity's activity in generating profits, per unit of equity. For Romanian banks in our sample for the period 2013-2020, ROE varies between -89.79% and 45.21% with a standard deviation of 20.995% and an average of 3.814%.
- ROA measures the return on an entity's assets in the generation of future economic gains or benefits. For Romanian banks in our sample for the period 2013-2020, ROA varies between -8.07% and 5.63% with a standard deviation of 1.979% and an average of 0.528%.

The regressors of the model, the explanatory variables used in our analysis are:

• The bank size expressed by natural logarithm of Total Assets for Romanian banks, in our sample for the period 2013-2020, varies between 0 and 18,454 with a standard deviation of 2,928 and an average of 15,987. We estimate that the size of the entity would have a positive impact on ROE and ROA.

• The disclosure degree expressed by the number of performance indicators identified in the annual reports, it is a variable calculated by us. The following indicators were sought in the banks' annual reports: ROA, ROE, Income Cost Ratio, Immediate Liquidity and Solvency Indicator. We attributed a number of identified indicators represents the disclosure degree (0 for no indicator, 1 for one indicator, 2 for two indicator and so on up to 5 for five indicators that have been identified as disclosed in the annual reports of banks). We have chosen the indicators listed above because they are the most common indicators in the banks' annual reports, as it resulted from the content analysis of the reports we did. For Romanian banks in our sample for the period 2013-2020, the disclosure degree varies between 0 and 5 with a standard deviation of 1,783 and an average of 2,688. For stationary, the disclosure degree was logarithmic and as a result the number of observations was reduced to 60. We estimate that the disclosure degree will have a positive impact on ROE and ROA.

Table no. 1 Descriptive statistics for ROE model

Variable	Obs	Mean	Std. Dev.	Min	Max
ROE	80	3.814	20.995	-89.79	45.21
Bank size	80	15.987	2.928	0	18.454
Disclosure degree	80	2.688	1.783	0	5
Ln_Disclosure degree	60	1.226	.347	0	1.609

Source: Authors' calculations

Table no. 2 Descriptive statistics for ROA model

Variable	Obs	Mean	Std. Dev.	Min	Max
ROA	80	.528	1.979	-8.07	5.63
Bank size	80	15.987	2.928	0	18.454
Disclosure degree	80	2.688	1.783	0	5
Ln_Disclosure degree	60	1.226	.347	0	1.609

Source: Authors' calculations

We studied the correlation between bank profitability expressed by the financial profitability, assets profitability, the disclosure degree of profitability indicators and the bank size using the multiple linear regression models presented below.

ROE model

$$ROE = \beta_0 + \beta_1 \times ln_Total_Assets_{i,t} + \beta_2 \times ln_disclosure_degree_{i,t} + \varepsilon_{i,t}$$

$$ROA \ model$$
(1)

$$ROA = \beta_0 + \beta_1 \times ln_Total_Assets_{i,t} + \beta_2 \times ln_disclosure_degree_{i,t} + \varepsilon_{i,t}$$
(2)

where, $ln_Total_Assets_{i,t}$ denotes natural logharitm of total assets and $ln_disclosure_degree_{i,t}$ represents the natural logarithm of disclosure degree, $\varepsilon_{ij,t}$ is an iid error term specific to country i in year t. We have performed the regression based on sample of 10 banks and 8 years included into the model and we have examined the results. In the ROE model, the sample is comprised of 60 observations and the expanatory index of the model, which consists in the R-squared, is at the medium level of 27,4%. The independent variables explains 27,4% of the variation of ROE on our sample.

Table no. 3 Empirical results for ROE model

Linear regression

ROE	Coef.	St.Err.	t-value	p-value	[95% C	onf	Interval]	Sig
Bank size	6.598	1.762	3.74	0		3.07	10.126	***
Ln_Disclosure degree	11.761	6.974	1.69	.097	-2.	204	25.726	*
Constant	-118.257	30.109	-3.93	0	-178.	.548	-57.965	***
Mean dependent var		7.415		SD dependent var			1	16.634
R-squared		0.2	.74 Nur	Number of obs			(50.000
F-test		9.773		Prob > F		0.000		
Akaike crit. (AIC)		493.393		esian crit. (E	BIC)		49	99.676
*** p<.01, ** p<.05, *	p<.1							

Source: Authors' calculations

Table no. 4 Empirical results for ROA model

Linear regression

ROA	Coef.	St.Err.	t-value	p-value	[95% C	onf	Interval]	Sig
Bank size	.758	.217	3.50	.001		324	1.191	***
Ln_Disclosure degree	1.285	.656	1.96	.055		028	2.599	*
Constant	-13.545	3.907	-3.47	.001	-2	1.37	-5.721	***
Mean dependent var	0.808 SD dependent var					1.948		
R-squared		0.2	259 Num	ber of obs			6	50.000
F-test		7.7	702 Prob	Prob > F			0.001	
Akaike crit. (AIC)	237.264		264 Baye	esian crit. (E	BIC)		24	13.547
*** p<.01, ** p<.05, * p	<.1							

Source: Authors' calculations

The OLS models obtained for ROE and ROA confirm that the entity size as well as the disclosure degree of information positively and significantly influence the return on equity and return on assets. The model obtained explains the return on equity in proportion of 27.4%, and the return on assets in proportion of 25.9%.

In the Tables no. 5 and 6 the correlation matrix for the variables is being presented. There are no correlations bigger than 0.5 between regressors and all used variables and this means that our independent variables are not correlated.

Table no. 5 Correlation matrix ROE model

·	no. 5 Correlation matrix ROE model									
	Variables	ROE	Bank size	Ln_Disclosure degree						
	ROE	1.000								
	Bank size	0.463	1.000							
	Ln Disclosure degree	0.222	-0.050	1.000						

Source: Authors' calculations

Table no. 6 Correlation matrix ROA model

Variables	ROA	Bank size	Ln_Disclosure degree
ROA	1.000		
Bank size	0.455	1.000	
Ln_Disclosure degree	0.206	-0.050	1.000

Source: Authors' calculations

One important step in the methodology of this study was to check the stationarity of the variables in the Panel Regression Model with Fisher Test. The estimates are run through OLS panel data method with robust standard errors, consistent with panel-specific autocorrelation and heteroskedasticity (Socol and Siniţîn, 2021, p.829). All variables used in our analysis are stationary.

Table no. 7 Fisher-ADF unit root tests

Fisher-ADF(1 lag)								
	Inv. chi-squared	Inv.N	Inv.L	M.Inv chi-squared				
ROE	74.3455	-5.7752	-6.3926	8.5928				
	[0.0000]	[0.0000]	[0.0000]	[0.0000]				
ROA	71.8886	-5.5848	-6.1539	8.2043				
	[0.0000]	[0.0000]	[0.0000]	[0.0000]				
Bank size	179.8087	-11.4807	-15.8233	25.2680				
	[0.0000]	[0.0000]	[0.0000]	[0.0000]				
Ln_Disclosure degree	50.7400	-5.1558	-5.7388	7.9078				
	[0.0000]	[0.0000]	[0.0000]	[0.0000]				

Source: Authors' calculations

4. Results

All dependent variables in our models have a significant impact on ROE and ROA: for bank size p value is below 1% and for natural logarithm of disclosure degree P value is below 10 %. Bank size has a positive impact on Return on Equity and also on Return on Assets, and this means that an increase of bank size with one unit leads to a increase by 6,598 of Return on Equity and by 0,758 on Return on Assets. The model also presents a direct proportionality between disclosure degree and bank profitability, expressed by ROE and ROA. Banks with higher performance disclosure degree have performed higher profitability indicators expressed by Return on Equity and Return on Assets.

Table no. 8 Determinants of ROE and ROA

	(1)	(2)
VARIABLES	ROE	ROA
Bank size	6.598***	0.758***
	(1.762)	(0.217)
Ln Disclosure degree	11.76*	1.285*
_	(6.974)	(0.656)
Constant	-118.3***	-13.55***
	(30.11)	(3.907)
Observations	60	60
R-squared	0.274	0.259

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1 Source: Authors' calculations

The estimation results suggest that ROE and ROA is influenced not only by factors which were analyzed in these models and there are other variables that explain the variation of the dependent variables.

5. Conclusions

The interest, both in the banking field and in the academic one, growing for the CSR Corporate Social Responsibility aspects and their relation with the profitability disclosed by the banks through their websites, made us develop the present study. It is built on an empirical study at the level of a sample of 10 banks from Romania, about which information could be collected from the annual reports (2013-2020), regarding the bank profitability and the disclosure of performance. Inclusion criteria were that Romanian banks to have published in 2020 at least one of the financial indicators ROE Return on Equity, ROA Return on Assets and CIR Cost-to-Income Ratio. Exclusion criteria

refer to those banks that had published scanned financial statements and do not allow advanced search were not selected and economic entities that did not comply throughout the analysis of the continuity principle.

We developed an OLS (Ordinary Least Square) regression panel model, using STATA in order to prove the relationship between bank profitability (measured by ROE and ROA), bank characteristics (set by size of the banks) and the disclosure degree (a variable that we computed based on the following indicators were sought in the banks' annual reports: ROA, ROE, Income Cost Ratio, Immediate Liquidity and Solvency Indicator). The results suggest that the evolution of performance banking indicators is influenced by the size of the banks and the disclosure degree.

The limitations of the study based on only national approach and a small number of banks in the sample make the results not generalized. Also, of the many forms of quantifying banking performance, only ROA and ROE were chosen and no more extensive approach was developed, taking into account for example, other banking performance indicators, such as business turnover, net profit rate etc. Also, the characteristics of the banks were approached only in terms of their size, without taking into account other aspects.

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7. References

- Al-Sartawi, A.M., Reyad, A., 2018. Signaling theory and the determinants of online financial disclosure. *Journal of Economic and Administrative Science*, 34(3), pp.237-247.
- Aupperle, K.E., Carroll, A.B., Hatfield, J.D., 1985. An Empirical Examination of the Relationship between Corporate Social Responsibility and Profitability, *Academy of Management Journal*, 28(2), pp.446–463.
- Branco, M.C., Rodrigues L.L., 2008. Factors Influencing Social Responsibility Disclosure by Portuguese Companies. *Journal of Business Ethics*, 83, pp.685-701.
- Chakroun, R., Matoussi, H., Mbirki, S., 2017. Determinants of CSR disclosure of Tunisian listed banks: a multi support analysis. *Social Responsibility Journal*, 13(3), pp.552-584.
- De Oliveira Malaquias, F.F., Hwang, Y., 2018. An empirical investigation on disclosure about mobile banking on bank websites. *Online Information Review*, 42(5), pp.615-629.
- Jain, A., Kaneley, M., Thomson, D., 2015. Voluntary CSR disclosure works! Evidence from Asia-Pacific banks. *Social Responsibility Journal*, 11(1), pp.2-18.
- Manta, A.G., Bădîrcea, R.M., Pîrvu, R., 2018. The Correlation between Corporate Governance and Financial Performances in the Romanian Banks. Current Issues in Corporate Social Responsibility, CSR, Sustainability, Ethics & Governance, pp.165-182.
- Martínez-Campillo, A., Cabeza-García, L., Marbella-Sánchez, F., 2013. Responsabilidad social corporativa y resultado financiero: evidencia sobre la doble dirección de la causalidad en el sector de las Cajas de Ahorros. Cuadernos de Economía y Dirección de la Empresa, 16, pp.54-68.
- Matuszak, L., Różańska, E., 2017. An examination of the relationship between CSR disclosure and financial performance: The case of Polish banks. *Accounting and Management Information Systems*, 16(4), pp.522-533.
- Modreanu, A., Andrisan, G.N., Sarbu, M.A., Corporate Social Responsibility: An Overview. *Ovidius University Annals, Economic Sciences Series*, XXI(1), pp.359-368.
- Paulik, J., Sobeková Majková, M., Tykva, T., Červinka, M. (2015), Application of the CSR Measuring Model in Commercial Bank in Relation to their Financial Performance, *Economics and Sociology*, 8(4), pp.65-81.
- Perpelea, M., Mihalcea, A., 2015. The importance of corporate governance in banking. Evidence from
 the banks listed at Bucharest Stock Exchange. *Strategica*, [online] Available at: http://strategicaconference.ro/wp-content/uploads/2016/01/Strategica-2015-Management-and-Leadership.pdf
 [Accessed 03 September 2021].
- Schroeder, P., 2021. Corporate social responsibility (CSR) website disclosures: empirical evidence from the German banking industry. *International Journal of Bank Marketing*, 39(5), pp.768-788.

- Socol A., Siniţîn, N., 2021. Do Non-Performing Loans Influence the Profitability of Banks? Evidence from a European Banking Group. *Ovidius University Annals, Economic Sciences Series*, XXI(1), pp.823-832.
- Zhou, G., Sun, Y., Luo, S., Liao, J., 2021. Corporate social responsibility and bank financial performance in China: The moderating role of green credit. *Energy Economics*, 97, 105190.

A Critical Survey on Efficient Market Hypothesis (EMH), Adaptive Market Hypothesis (AMH) and Fractal Markets Hypothesis (FMH) Considering Their Implication on Stock Markets Behavior

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Abstract

The fundamental objective of our research study is to provide a critical analysis on Efficient Market Hypothesis (EMH), Adaptive Market Hypothesis (AMH) and Fractal Markets Hypothesis (FMH) considering their impact on stock markets behavior. Efficient Market Hypothesis is one of the pillars of modern finance and it is built on the paradigm that any publicly information can be considered as available for all financial investors, stock market participants or other actors in financial markets, and consequently asset prices always integrate and reflect all relevant information. Adaptive Market Hypothesis is based is a more recent theory whose theoretical architecture includes evolutionary principles. On the other hand, the Fractal Market Hypothesis is focused on the concept of the stock market liquidity, considering the fact that Efficient Market Hypothesis completely ignores this major aspect. Moreover, a liquid stock market represents a stable market which has significant implications at the investment level. Past financial evidence has shown that short-term price changes exhibit the obvious tendency to be more volatile compared to long-term price trends.

Key words: Efficient Market Hypothesis (EMH), Adaptive Market Hypothesis (AMH), Fractal Markets Hypothesis (FMH), stock market, Random Walk Hypothesis (RWH), chaos theory **J.E.L. classification**: D53, E44, G1, G4

1. Introduction

This research paper aims to investigate most relevant aspects regarding Efficient Market Hypothesis (EMH), Adaptive Market Hypothesis (AMH) and Fractal Markets Hypothesis (FMH) considering their effects on stock markets behavior. Efficient Markets Hypothesis is not a falsifiable theory since frames the behavior of stock market asset prices under certain conditions, including the concept of informational efficiency. Stock market efficiency includes three main categories, such as: strong form efficiency, semi strong form efficiency and weak form efficiency. According to Malkiel (2003) an efficient market involves certain limitations that affect investment behavior given that it does "not allow investors to earn above-average returns without accepting above-average risks".

In literature, the paradigm of efficient market hypothesis is assimilated in close connection with the random walk theory. As a pioneering theoretical approach, Kendall (1953) argued that "stock price fluctuations are independent of each other and have the same probability distribution". Technically, every further asset price changes actually means just random departures from previous prices. In other words, Fama (1965) highlighted important aspects of random walk theory and argued that: "the future path of the price level of a security is no more predictable than the path of a series

of cumulated random numbers". Furthermore, Fama (1970) discussed the matter of efficient capital markets and suggested that the perfect scenario targets a capital market "in which prices provide accurate signals for resource allocation".

On the other hand, Adaptive Market Hypothesis (AMH) tends to perceive Efficient Market Hypothesis (EMH) as a theorized utopia that is impossible to apply in economic practice. In case of Adaptive Market Hypothesis (AMH), it is important to discuss about optimal dynamic allocation, but also relative efficiency. Moreover, Fractal Market Hypothesis represents another alternative to the concepts promoted by Efficient Market Hypothesis. Konstantinidis et al. (2012) have developed a critical empirical research (by comparison) between the main principles of Efficient Market Hypothesis and Behavioural Finance Theory, and argued that: "investing rationality and efficient market processes over time contradict investors' psychology, biased behavioral rules and market bubbles".

Extreme events such as the global financial crisis (GFC) significantly affects the development of the financial sector. For instance, the recent COVID-19 pandemic caused severe lockdown in most countries of the world, whether they were developed, emerging or underdeveloped, so affected the performance of all the sectors of the economy, including financial system (Batool et al., 2020). However, Spulbar et al. (2020) consider that global financial liberalization generates a lower impact on emerging economies compared to the case of developed economies. Consequently, it is very important to have a theoretical foundation that provides efficient solutions, especially in times of financial turmoil.

2. Literature review

Eugene Fama is a Nobel laureate in Economic Sciences, with significant contributions in the field of financial markets. In literature, Fama is also considered the father of Efficient Market Hypothesis which represents the quintessence of modern finance theory. According to Fama (1965): "The main conclusion will be that the data seem to present consistent and strong support for the random-walk model. This implies, of course, that chart reading, though perhaps an interesting pastime, is of no real value to the stock market investor." Fama (1970) also stated as "definitional statement" that: "A market in which prices always fully reflect available information is called efficient", but this condition "has no empirically testable implications".

In another train of thoughts, Fama (1976) suggested that: "An efficient capital market is a market that is efficient in processing information considering the fact that in the case of an efficient market, prices 'fully reflect' available information". In order to support the validity of market efficiency hypothesis, Fama (1998) argued that: "anomalies are chance results, while apparent overreaction to information is about as common as underreaction". In addition, Malkiel (2003) examined the linkage between the important conditions of predictability and efficiency in order to provide a viable explanation for possible investment opportunities and promoted the principles of Efficient Markets Hypothesis even in the light of the following issues: "if many market participants are quite irrational" and "if stock prices exhibit greater volatility than can apparently be explained by fundamentals".

Samuelson (1965) has made a significant contribution to disseminating the concept of market efficiency and argued that financial asset prices swing using a random pattern since future information is unpredictable and the changing price of financial assets also follows a random dynamics. Moreover, Sewell (2011) investigated relevant aspects regarding Efficient Market Hypothesis and concluded that "the definitional 'fully' is an exacting requirement, suggesting that no real market could ever be efficient, implying that the EMH is almost certainly false".

Fractal Market Hypothesis represents a very complex theoretical structure. Peters (1994) suggested that: "in fractal time, randomness and determinism, chaos and order coexist", but also revealed that "It has been difficult to reconcile randomness and order, chance and necessity, or free will and determinism".

3. Research methodology

The research methodology of this research paper includes a theoretical approach built on qualitative analysis. Brown (2020) analyzed in an exhaustive manner the implications of Efficient Market Hypothesis and concluded that it is very necessary as a price to be characterized by an adequate level of noise or inefficiency in order to enable the compensation of information production. For instance, Noda (2016) investigated the existence of Adaptive Market Hypothesis in case of Japanese stock market using a time-varying model, and identified that the degree of efficiency for selected stock markets changes over time, while empirical findings confirm Adaptive Market Hypothesis for the higher qualification stock markets. Fractal Market Hypothesis provides a different perspective compared to Efficient Market Hypothesis. It is based on chaos theory.

Lo (2005) provided a very interesting approach to Adaptive Market Hypothesis, considering the influence of evolutionary principles, such as it involves the fact that "the degree of market efficiency is related to environmental factors characterizing market ecologies such as the number of competitors in the market, the magnitude of profit opportunities available, and the adaptability of the market participants." As a representative approach applied for testing the Adaptive Market Hypothesis, Lim and Brooks (2011) suggested certain criteria regarding market efficiency, which should be varying through time, and on the other hand should be dependent on particular market conditions such as: financial crises, market crashes, stock bubbles and others.

4. Findings

Malkiel (2003) pointed out the fact that news is implicitly unpredictable by its very nature so as a consequence the price changes determined in this way have to be unpredictable, but also random, or in other words, "prices fully reflect all known information". According to Fama (1965) "in an efficient market, on the average, competition will cause the full effects of new information on intrinsic values to be reflected instantaneously in actual prices". In a previous research study, Malkiel (1973) argued that if "a blindfolded chimpanzee throwing darts at the Wall Street Journal could select a portfolio that would do as well as the experts" focusing on the idea that efficient markets do not allow financial investors to earn (gain) above-average risk-adjusted stock returns.

Spulbar and Birau (2018) investigated weak-form efficiency for a cluster of emerging capital markets, such as: Romania, India, Poland and Hungary considering the argument that stock market security prices always incorporate and reflect all relevant information. The empirical findings demonstrated that efficient market hypothesis has been rejected even in the case of weak-form efficiency for the sample period January 2000 to July 2018.

Trung and Quang (2019) examined the implications of Adaptive Market Hypothesis based on a case study for the Vietnamese Stock Market using certain autocorrelation tests such as: AVR test, AP test, GS test, but also a time-varying autoregressive framework. The empirical findings revealed that the behavior of Vietnamese stock market complies with Adaptive Market Hypothesis, while the market inefficiency has been considerable during previous financial crises, such as the period 2006–2007, but also 2011.

Lo and MacKinlay (1988) have conducted a solid empirical study in order to identify the reasons why stock market asset prices do not actually follow a random walk pattern and pointed out that: "... the common misconception that the Random Walk Hypothesis is equivalent to the Efficient Markets Hypothesis..." considering the economic implications of the empirical findings. However, Jegadeesh and Titman (1993) performed certain empirical studies applying momentum effect strategies which can determine the existence of abnormal stock returns. Spulbar et al. (2019) argued that considering the financial modeling effect of efficient markets hypothesis results that if we consider normal distribution, the skewness is naturally null.

5. Conclusions

This research paper provides a very well structured and documented comparative conceptual overview. It is concluded that Efficient Market Hypothesis (EMH), Adaptive Market Hypothesis (AMH) and Fractal Markets Hypothesis (FMH) represent essential paradigms in modern financial

theory, with significant implication on understanding stock markets behaviour. Kemp and Reid (1971) examined the empirical evidence on random walk hypothesis which claims that the changes in financial share prices are independent, so that it generates a random walk in price levels and argued that the dynamics of share price is "conspicuously non-random". Fractal Market Hypothesis considers that financial investors will not react immediately to the information they receive, while their reaction will also be distinct. Fractal Market Hypothesis is focused on the idea of stock market liquidity, despite the fact that Efficient Market Hypothesis does not even mention this extremely important concept, especially in the context of globalization and financial liberalization. Synthetizing, a liquid stock market is considered to be a stable market and this is very important in the financial investment environment.

Lo (2004) proposed an innovative perspective using the concept of Adaptive Markets Hypothesis (AMH) as an evolutionary framework, but also cognitive neurosciences insight in understanding economic linkages. Wilson (1975) defined the new concept of sociobiology a the "systematic study of the biological basis of all forms of social behavior", that is, including the behavior of financial markets. Thereby, Lo (2004) highlights a number of psychological traits of human behavior, such as: altruism, fairness, kin selection, language, mate selection, religion, morality, ethics, and abstract though and suggest that this complete reconciliation of Efficient Markets Hypothesis based on its behavioral selection choices implicitly generates an innovative synthesis called Adaptive Markets Hypothesis.

6. References

- Batool, M., Ghulam, H., Hayat, M.A., Naeem, M.Z., Ejaz, A., Imran, Z.A., Spulbar, C., Birau, R., Gorun, T.H., 2020. How COVID-19 has shaken the sharing economy? An analysis using Google trends data, Economic Research-Ekonomska Istraživanja, DOI: 10.1080/1331677X. 2020.1863830, https://www.tandfonline.com/doi/full/10.1080/1331677X.2020.1863830.
- Brown, S.J., 2020. The Efficient Market Hypothesis, the Financial Analysts Journal, and the Professional Status of Investment Management, *Financial Analysts Journal*, 76:2, 5-14, DOI: 10.1080/0015198X.2020.1734375.
- Fama, E., 1998. Market effciency, long-term returns, and behavioral finance, *Journal of Financial Economics*, Elsevier Science S.A., 49, 283-306, https://doi.org/10.1016/S0304-405X(98)00026-9.
- Fama, E.F., 1976. Foundations of Finance. Basic Books, New York.
- Fama, E. F., 1970. Efficient Capital Markets: A Review of Theory and Empirical Work, *Journal of Finance*, 25(2), 383–417.
- Fama, E.F., 1965. The Behavior of Stock-Market Prices, Journal of Business, 38(1), 34–105.
- Jegadeesh, N., Titman, S., 1993. Returns to buying winners and selling losers: Implications
- for stock market efficiency, *Journal of Finance*, 48, 65-91.
- Kemp, A.G., Reid, G.C., 1971. The random walk hypothesis and the recent behaviour of equity prices in Britain, *Economica*, 38(149), 28–51.
- Kendall, M., Branford H., 1953. The Analysis of Economic Time Series, Part 1: Prices. *Journal of the Royal Statistical Society*, 116(1), 11-34.
- Konstantinidis, A., Katarachia, A., Borovas, G., Voutsa, M.E., 2012. From Efficient Market Hypothesis To Behavioural Finance: Can Behavioural Finance Be The New Dominant Model For Investing?, *Scientific Bulletin Economic Sciences, University of Pitesti*, 11(2), 16-26.
- Lim, K.P., Brooks, R., 2011. The evolution of stock market efficiency over time: A survey of the empirical literature, *Journal of Economic Surveys*, 25, 69–108, https://doi.org/10.1111/j.1467-6419.2009.00611.x.
- Lo, A.W., 2005. Reconciling Efficient Markets with Behavioral Finance: The Adaptive Markets Hypothesis, *Journal of Investment Consulting*, 7(2), 21-44, Available online at SSRN: https://ssrn.com/abstract=1702447.
- Lo, A.W., 2004. The Adaptive Markets Hypothesis: Market Efficiency from an Evolutionary Perspective, *Journal of Portfolio Management*, 30, 15–29.
- Lo, A., MacKinlay, C., 1988. Stock Market Prices Do Not Follow Random Walks: Evidence from a Simple Specification Test", *Review of Financial Studies*, 1, 41–66.
- Malkiel, B.G., 2003. The Efficient Market Hypothesis and Its Critics, Princeton University, CEPS, Working Paper No. 91, Department of Economics, *Center for Economic Policy Studies*, available online at https://www.princeton.edu/~ceps/workingpapers/91malkiel.pdf.

- Malkiel, B.G., 1973. A Random Walk Down Wall Street, published by W. W. Norton & Company, Incorporated, New York, NY, U.S.A., 1985, ISBN 10: 0393954609ISBN 13: 9780393954609.
- Noda, A., 2016. A Test of the Adaptive Market Hypothesis Using a Time-Varying AR Model in Japan, Finance Research Letters, 17, 66–71.
- Peters, E., 1994. Fractal Market Analysis: Applying Chaos Theory to Investment and Economics, New York: John Wiley & Sons.
- Samuelson, P., 1965. Proof that Properly Anticipated Prices Fluctuate Randomly, Industrial Management Review, 6, 41-49.
- Sewell, M., 2011. History of the Efficient Market Hypothesis, Research Note RN/11/04, UCL Department of Computer Science, 14 pp., http://www.cs.ucl.ac.uk/fileadmin/UCL-CS/images/Research Student Information/RN 11 04.pdf.
- Spulbar, C., Trivedi, J., Birau, R., 2020. Investigating abnormal volatility transmission patterns between emerging and developed stock markets: A case study. *Journal of Business Economics and Management*, 21(6), 1561–1592.
- Spulbar, C., Birau, R., 2018. Testing weak-form efficiency and long-term causality of the R.I.P.H emerging capital markets, *International Journal of Business Quantitative Economics and Applied Management Research*, 5(2), 1-19.
- Spulbar, C., Trivedi, J., Birau, R., Tenea, C.A., Ejaz, A., 2019. Estimating volatility spillovers, dynamic causal linkages and international contagion patterns between developed stock markets: An empirical case study for USA, Canada, France and UK, *Annals of the "Constantin Brâncuşi" University of Târgu Jiu, Economy Series, "Academica Brâncuşi" Publisher*, 3/2019, 44-62.
- Trung, D.P.T., Quang, H.P., 2019. Adaptive Market Hypothesis: Evidence from the Vietnamese, Stock Market, *Journal of Risk Financial Management*, 12, 81, EISSN 1911-8074, Published by MDPI, doi:10.3390/jrfm12020081, https://doi.org/10.3390/jrfm12020081.
- Wilson, E., 1975. Sociobiology: The New Synthesis. Cambridge, MA: Belknap Press of *Harvard University Press*.

Investigating Short and Long Run Volatility Movements in the Context of COVID-19 Pandemic: A Case Study for Norwegian Stock Market

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Abstract

The main aim of this empirical study is to examine short and long run volatility movements based on a case study for Norwegian Stock Market, i.e. Oslo Stock Exchange. The econometric framework includes a series of statistical tests, ARIMA models and GARCH family models for the sample period from March 2013 to October 2021. The empirical results were influenced by the impact of COVID-19 pandemic. This research paper also contributes to the existing literature regarding the influence of extreme events, such as COVID-19 pandemic on the behavior of developed stock markets, like Norwegian Stock Market.

Key words: ARIMA models, leverage effect, GARCH models, volatility, COVID-19 pandemic,

stock market behavior

J.E.L. classification: D53, E44, G1, G4

1. Introduction

We focus on modeling changes in volatility pattern for OSEAX index from the OSLO BORS which is the Norwegian stock exchange considering data range from March 2013 to October 2021. ARIMA and GARCH class models have been used to lead volatility clusters from the series returns. The article focuses to model short and long volatility shocks, impact of COVID-19 pandemic and demonstrates fitness of GARCH and ARIMA class models to series returns.

The empirical findings revealed that ARIMA model with standard errors is not fitted, while GARCH (1, 1) model is fitted at significance level of 1%. The empirical results also confirmed the existence of short and long run volatility which were found and have been presented in graphical manner, while the stock return series have revealed the presence of leverage effect. Moreover, the EGARCH (1, 1) model conditional mean equation does not provide any significant to selected stock return series.

The World Health Organization known especially under the acronym WHO made an official statement defining the novel Coronavirus or COVID-19 as a "public health emergency of international concern" (WHO 2020). Moreover, starting with the official date of 11 March 2020, as a direct consequence of the extremely rapid spread everywhere in almost every country in the world, the World Health Organization stated that COVID-19 represents a global pandemic due to its extremely fast spreading capacity worldwide, but also considering its disastrous global consequences.

2. Literature review

Mou (2020) consider that the COVID-19 pandemic will remodel the macroenvironment of the world economy in terms of aggregate demand and total supply, labor income, and financial market trade. Hayat et al. (2021) highlighted the fact that COVID-19 pandemic has negatively influenced most economies in the world, even more so in the context severe measures implemented by governmental authorities based on enforced lockdowns and social distancing. Varona and Gonzales (2021) suggested that developing countries experience the impact of COVID-19 pandemic in a much amplifed way, even at doubled intensity, i.e.: an external shock and an internal shock which influence both aggregate supply and demand.

Ejaz et al. (2020) examined the behavior of Toronto stock exchange in the context of domestic portfolio diversification strategies, and pointed out that emerging stock markets ensure higher global investment opportunities compared to developed stock markets, such as Canada. Spulbar et al. (2019) have conducted an empirical study in order to examine the volatility effect, causality and financial contagion in case of a selected cluster including developed stock markets such as: USA, Canada, France and UK. The econometric framework was based on several statistic test such as: Unit Root Test, ADF test, Granger causality test and Vector Auto Regression (VAR), but also included GARCH (1, 1) model for the sample period from January 2000 until June 2018.

Davi et al. (2013) examined the ARIMA model and highlighted a number of advantages regarding the accuracy of the results provided in the forecasting process by using this algorithmic framework. On the other hand, it is important to mention that Wadia et al. (2011) provided a more critical approach regarding ARIMA model highlighting certain limitations such as its more precise applicability, especially in terms of time series/sequential data.

ARIMA stands for acronym of Auto-Regressive Integrated Moving Average model which in terms of the internationally academic and research community represents a generalization of another model, such as Autoregressive Moving Average (ARMA) model. Meher et al. (2021) highlighted the importance of including certain AR and MA terms in order to increase the significance of the model.

Fiskerstrand et al. (2020) examined the impact of ESG factors, such as environmental, social and corporate governance on the financial performance of the stock market in Norway for the sample period from 2009 to 2018. The empirical findings revealed there is no linkage between ESG factors and the dynamics of financial stock returns in the case of Norwegian stock market. Meher et al. (2020) revealed the fact that sustainable investment is interconnected with the ESG factors, which are environment, society and corporate governance considering that a sustainable stock market should focus on ensuring transparency and efficient responses in this regards.

3. Research methodology

The research methodology is based on financial econometric framework. In order to proceed with the econometric approach, we considered OSEAX index as the Oslo Bors All-Share Index for the sample period from March 2013 to October 2021, daily closing price databases. The sample period consists of 2155 daily observations.

We employ the following tests/models to investigate the normality of selected stock returns, clustering effect, presence of leverage effect and fitness of returns using the following econometric tools: ADF, ARIMA model, GARCH (1, 1) model and Exponential GARCH (1, 1) model.

The continuously-compounded daily returns is determined using the log-difference of selected stock market index, such as OSEAX index, as follows:

$$r_{t} = \ln\left(\frac{p_{t}}{p_{t-1}}\right) = \ln(p_{t}) - \ln(p_{t-1})$$

ADF regression process is managed as follows:

$$\Delta y_{t} = c + \beta \cdot t + \delta \cdot y_{t-1} + \sum_{i=1}^{p} \gamma_{i} \Delta y_{t-i} + \varepsilon_{t}$$

ADF process is managed as follows:

$$(1-L)yt = \beta 0 + (\alpha - 1)yt - 1 + \varepsilon i$$

Symmetric GARCH (1, 1) model is used as the following:

$$h_{t} = \omega + \alpha_{1} u_{t-1}^{2} + \beta_{1} h_{t-1}$$

Generalized Autoregressive Conditional Heteroscedastic or GARCH model is a generalized version of ARCH model designed by Engle. GARCH (1, 1) processes 1 ARCH effect and 1 GARCH effect. Processing Mean and Variance equations;

Mean equation is used as the following:

$$rt = \mu + \varepsilon t$$

Mean equation indicates sum of average return denoted by (μ) that is returns of asset in time (t), and residual return denoted by (εt) .

Variance equation is used as the following:

$$\sigma_t^2 = \omega + \alpha \varepsilon_{1t-t}^2 + \beta \sigma_{1t-1}^2$$

 $\sigma_t^2 = \omega + \alpha \varepsilon_{1t-t}^2 + \beta \sigma_{1t-1}^2$ The variance equation is based on the assumption that the value of constant is higher than 0, considering the value of $\alpha + \beta$.

The GARCH (1, 1) model represents a symmetric model that is extensively used to estimate volatility in time series returns.

The EGARCH model is also called Exponential GARCH model. EGARCH model has been developed by Nelson in 1991. It captures asymmetric responses of time-vary variances to volatilty shocks and also ensures that variance is always positive.

$$Log(\sigma_t^2) = \omega + \sum_{j=i}^{p} \beta i \ Log(\sigma_{t-i}^2) + \sum_{j=1}^{q} \alpha i \left| \frac{\varepsilon i - t}{\sigma}_{i-t} \right| - \frac{\sqrt{2}}{n} \left| -y i \frac{\varepsilon i - t}{\sigma i - t} \right|$$

ARIMA model is the following:

$$\hat{y}_{t} = \mu + \phi_{1} y_{t-1} + ... + \phi_{p} y_{t-p} - \theta_{1} e_{t-1} - ... - \theta_{q} e_{t-q}$$

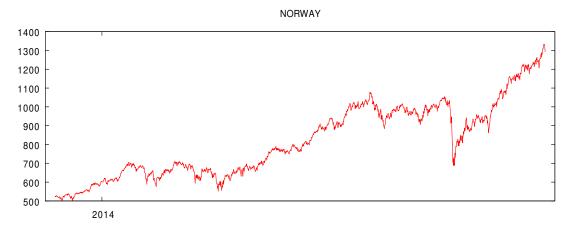
Moreover, the moving average parameters (θ 's) are defined so that their signs are negative in the equation, the parameters are denoted there by AR(1), AR(2), ..., and MA(1), MA(2).

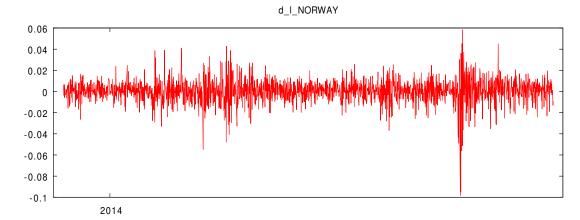
4. Findings

The Augmented Dickey-Fuller test was applied for OSEAX index of Norwegian stock market for the selected time period from March 2013 to October 2021. The empirical analysis was testing down from 25 lags, criterion AIC considering sample size 2146 - test with constant and using model: (1-L)y = b0 + (a-1)*y(-1) + ... + e, indicates estimated value of (a-1): -0.941118 where test statistic: tau c(1) = -15.6839, while with constant and trend estimated value of (a - 1): -0.941382and test statistic: tau ct(1) = -15.6816.

Figure no.1 indicates actual series movement from March 2013 to October 2021 consisting in 2155 daily closing index. Series movement captures the growth of OSEAX index from OSLO BORS from trading level of 500 to exceeding over 1000 before the impact of COVID - 19 pandemic, which resulted index to trend below more than 25% of pre-COVID-19 pandemic trading level. The recovery of index appears sharp and aggressive for the selected time period. The volatility magnitude appears in Fig. no.1 reaching to -0.10 magnitudes.

Figure no. 1 The trend of OSEAX index series returns (closing price actual movement and normalized log-returns)





Source: Authors' computation

Table no. 1 Summary Statistics

Mean	Median	Minimum	Maximum
0.00041818	0.00074757	-0.098320	0.058424
Std. Dev.	C.V.	Skewness	Ex. kurtosis
0.010789	25.801	-0.90427	8.5409
5% Perc.	95% Perc.	IQ range	Missing obs.
-0.016404	0.016063	0.010985	1

Source: Authors' computation

Property of summary of statistics indicates that index consists least but positive mean returns which negatively skewed and found with excess kurtosis, creating leptokurtic impact.

Table no. 2 ARMA model results

Coefficient std. error			p-value				
const	0.000418354	0.00022586	9	1.852	0.0640 *		
phi_1	-0.0275634	0.34	19367		-0.07890	0.9371	
theta_1	-0.000995630	0.34	18983		-0.002853	0.9977	
Mean dependent var 0.000418 S.D. dependent var 0.010789							
Mean of innovations –5.27e-08 S.D. of innovations 0.010782							
Log-likelihood 6700.881 Akaike criterion -13393.76							
Schwarz criterion -13371.06 Hannan-Quinn -13385.46							

Real Imaginary	y Modulus	Frequency	
ARRoot 1	-36.2800	0.0000	36.2800 0.5000
MARoot 1	1004.3887	0.0000	1004.3887 0.0000

Source: Authors' computation

Table no. 3 The empirical results for GARCH (1,1) and EGARCH (Normal) models

Conditional mean equation							
	coefficient	std. error	Z	p-value			
const	0.000564863	0.000177114	3.189	0.0014 ***			

Conditional variance equation

	coefficient	std. error	Z	p-value	
omega	3.40524e-06	1.29107e-06	2.638 0	.0084 ***	
alpha	0.106881	0.0245965	4.345	1.39e-05 ***	
beta	0.861962	0.0328564	26.23	1.08e-151 ***	
EGAR 0	CH(1, 1)				
Conditi	onal variance	equation			
omega	-0.336523	0.0741525	-4.538	5.67e-06 ***	
alpha	0.112883	0.0250949	4.498	6.85e-06 ***	
gamma	-0.131845	0.0164773	-8.002	1.23e-015 ***	
beta	0.973304	0.00649304	149.9	0.0000 ***	
	Llik: 7003.	10167 AIC	: -13998.	20334	
	BIC: -1397:	5.50301 HQ	C: -139 89	0.89951	

Source: Authors' computation

GARCH (1, 1) model fitted well to Norway series returns, the results from ARIMA is not satisfactory and significant along with conditional mean equation returns from EGARCH (1, 1) from the selected data range. We found that considering significant of Norway series returns by testing normality using ADF before applying ARIMA/GARCH modelling. The result property of ARIMA indicates significant at 10% returns only from the constant. Thus, ARMA model is not suitable for selected time returns. GARCH (1, 1) suitable for fitness of statistics, Exponential GARCH (1, 1) fitted only to conditional variance equations at significant level of (1%) but not to mean equations. It indicates presence of leverage effect, suggesting that negative volatility shocks creates more volatility than the positive shocks.

5. Conclusions

This research paper provides additional evidence on stock market behavior. We used ARMA and GARCH class models to capture the changes in volatility from Norway financial market series returns. Summary of descriptive statistics indicates that returns are negatively skewed with higher degree of kurtosis (leptokurtic) returns, ARMA model did not fitted to selected data and time range. GARCH class models (Bollerslev) GARCH (1, 1) fitted at significance level of 1%, Exponential GARCH fitted only to variance equations, and captures presence of leverage effect. The changes in market movement pattern and short and long run volatility including the impact of COVID-19 pandemic were captured.

6. References

- Devi, B.U., Sundar, D., Alli, P., 2013. An Effective Time Series Analysis for Stock Trend
- Prediction Using ARIMA Model for Nifty Midcap-50, International Journal of Data Mining & Knowledge Management Process, 3(1), 65-78. https://doi.org/10.5121/ijdkp.2013.3106.
- Ejaz, A., Birau, R., Spulbar, C., Buda, R., Tenea, A.C., 2020. The impact of domestic portfolio diversification strategies in Toronto stock exchange on Canadian textile manufacturing industry, *Industria Textila*, 71(3), 215–222, http://doi.org/10.35530/IT.071.03.1696.
- Fiskerstrand, S.R., Fjeldavli, S., Leirvik, T.L., Antoniuk, Y., Nenadić, O., 2020. Sustainable investments in the Norwegian stock market, *Journal of Sustainable Finance & Investment*, 10:3, 294-310, DOI: 10.1080/20430795.2019.1677441.
- Hayat, M.A., Ghulam, H., Batool, M., Naeem, M.Z., Ejaz, A., Spulbar, C., Birau, R., 2021. Investigating
 the Causal Linkages among Inflation, Interest Rate, and Economic Growth in Pakistan under the
 Influence of COVID-19 Pandemic: A Wavelet Transformation Approach, *Journal of Risk and Financial Management*, 14(6):277. https://doi.org/10.3390/jrfm14060277.
- Meher, B.K., Thonse, H.I., Spulbar, C.M., Birau, F.R., 2021. Forecasting Stock Market Prices Using Mixed ARIMA Model: A Case Study of Indian Pharmaceutical Companies, *Investment Management and Financial Innovations*, 18 (1), 42-54. Doi: http://dx.doi.org/10.21511/imfi.18(1).2021.04.
- Meher, B.K., Hawaldar, I.T., Mohapatra, L., Spulbar, C., Birau, R., 2020. The Effects of Environment, Society and Governance Scores on Investment Returns and Stock Market Volatility, *International Journal of Energy Economics and Policy*, 10(4), 1-6, DOI: https://doi.org/10.32479/ijeep.9311.
- Mou, J., 2020. Research on the Impact of COVID19 on Global Economy. *AEECE 2020 IOP Conf. Series: Earth and Environmental Science*, 546: 032043.
- Wadia, S.A., Ismail, M.T., Alkhahazaleh, M.H., Karim, S.A., 2011. Selecting Wavelet Transforms Model in Forecasting Financial Time Series Data Based on ARIMA Model. *Applied Mathematical Sciences*, 5(7), 315-326.
- Spulbar, C., Trivedi, J., Birau, R., Tenea, C.A., Ejaz, A., 2019. Estimating volatility spillovers, dynamic causal linkages and international contagion patterns between developed stock markets: An empirical case study for USA, Canada, France and UK, *Annals of the "Constantin Brâncuşi" University of Târgu Jiu, Economy Series, "Academica Brâncuşi" Publisher*, 3/2019, 44-62.
- Varona, L., Gonzales, J.R., 2021. Dynamics of the impact of COVID-19 on the economic activity of Peru. PLoS ONE, 16:e0244920.
- WHO, 2020. Statement on the Second Meeting of the International Health Regulations (2005) Emergency Committee Regarding the Outbreak of Novel Coronavirus (2019-nCoV). Geneva: World Health Organization, Available online: https://www.who.int/news-room/detail/30-01-2020-statement-on-the-second-meeting-of-the-international-health-regulations (2005) emerge ncycommittee-regardingthe-outbreak-of-novel-coronavirus-(2019-ncov) (accessed on 20 August 2021).

