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

Oil and Gas Production, Exports and Imports as Critical Business Internationalization Operations for companies in Globalization: An Analytical Approach

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Abstract

This paper analyzes and presents oil and gas production, exports and imports as critical business operations in globalization and internationalization in a shape of an analytical approach. The research methodology began with a literature review to the research topic then there was a focus on data analysis and description by creating a business model and framework that illustrates the connection and the trajectory between the oil and gas industry and business internationalization. The main research question is "Are oil and gas production, exports and imports critical business internationalization operations?" Some of the results showed that the business internationalization strategy needs to meet the criteria and regulations of the oil and gas business from the country of origin to the country of destination. In conclusion, oil and gas remain powerful energy sources compared to renewables due to the beneficial use. There is always a huge connection between the oil and gas industry and the oil and gas business internationalization operation since production, exports and imports are important driving factors in international trade, business internationalization and globalization.

Key words: globalization, business internationalization, oil and gas, operation, exports, imports, company, values

J.E.L. classification: A13, F20, F23, F60, M20, M21

1. Introduction

Investors that try to enter the oil and gas industry face from time to time a complex or unique metrics used throughout the sector. Oil is considered today the main source of energy that moves the world and pushes it to development. The oil and gas industry goes from time to time through an unprecedented situations marked by a shock in supply and a great impact on demand. The pandemic provoked by Covid-19 generated an unusual destruction of demand but geopolitical conflicts increase hydrocarbon prices when they break out. The world sometimes confronts a recession in times of globalization owing to the factor of inflation and other factors that are related to energy prices, the level of production and purchasing power. The periods of the pandemic caused by sudden spread of Covid-19 and the Russian-Ukrainian geopolitical conflict provoked many challenges to economies at the global level since they both appeared in an unanticipated way. Both risks could engender changes and challenges in the economic area of both advanced and developing economies. (Benabed and Grünbichler, 2023). Since the business cycle has got four principal successive phases and the economic fluctuation globally may be sent out between economies, globalization could push economies to go through different risks such as the risk of the pandemic and Russian-Ukrainian conflict that could have an impact on the global economic stability (Benabed and Grünbichler, 2023).

Basically, the increase of commodity prices may manipulate and impact the economic balance of importers and lead to inflation in good and services since commodities are the main engines of the global economy. (Benabed and Grünbichler, 2023). Oil has undergone various changes in prices since the outbreak of the pandemic in 2020 and the outbreak of the Russian-Ukrainian geopolitical

conflict 2022 that affected the economic and geopolitical infrastructure and stability. Oil witnessed high prices in the recent decade in 2022 when the world annual oil average closing prices in US dollar reached 94.53\$ per barrel to decline in 2023 to 76.93 \$ per barrel. (Benabed and Grünbichler, 2023). Commodities are very important for the economy, such fluctuation of their prices may be challenging from time to time to industrial economies since they are considered sources to many businesses and economies. (Benabed and Grünbichler, 2023). Back to some previous research, the global economy is fueled with fossil fuels, so, the widespread of the Covid 19 pandemic and the escalation of geopolitical tensions may be a significant factor towards an economic recession. (Benabed and Bulgaru, 2023).

2. Literature review

2.1. Globalization, industrialization, energy sources and the economy

Globalization has gradually turned the world into one market and for ages it has undoubtedly followed various waves of industrialization. It moved the world and human society from simple energy resources such coal and wood to fossil fuels for industry as sources of energy and to sustainable energy and business, step by step it globalized the energy market. In fact, every step is accompanied by energy consumption, so the intensive use of energy has become fundamental in economy. (Benabed and Boeru, 2023). Globalization has relieved the spread and propagation of technology and information, thereby engendering new opportunities for innovation and development, emphasizing that the 4th and 5th industrial revolutions are evidence of it. In addition, it has led to concerns regarding privacy and security, as well as the possibility of job displacement and inequality. (Benabed and Boeru, 2023).

The growing demand for downstream products, like hydrocarbon, petrochemicals and intermediates, offers extra business opportunities for oil and gas exporting economies. However, there is still a gash refining capacity globally (see: BP, 2020). Hence, according to Ruble (2019) the export markets for refined products are contested and refiners in industrialized countries, especially in the United States (US) are efficient. (Ruble, 2019).

2.2. Energy sources and transition, IRs and Globalization for the global economy

Energy requires economic stability since it is something very significant for economic growth and the opposite is right. Furthermore, energy is one the principal bases of economy. Globalization has led the world to consume and produce much energy to satisfy the needs of industries and populations. (Benabed and Boeru, 2023). Historically, energy has gone through different periods and centuries of industrial revolutions (IRs), from the first industrial revolution (mechanization and steam engines) to the beginning of Globalization in the fourth industrial revolution and by continuing to move toward the fifth industrial revolution where there should be a direct interaction between humans and machines together and for sure that will require huge amounts of energy to produce goods and services. (Benabed and Boeru, 2023). In the era of Globalization the more the economy produces the more energy is required. Consequently, the waste of energy has impacted many economies that is why energy transition and sustainability came up to sustain the amounts of used energy and store them for a sustainable use and profit and moving to renewable energies that require more attention since they are expensive to buy or set up. (Benabed and Boeru, 2023). Globalization has the world to a global economy that relies on energy markets, international trade, competitiveness, commodity markets and innovations. (Benabed and Boeru, 2023).

2.3. The Oil and Gas industry, commodity prices, production and economic growth

The oil and gas industry is one of the largest sectors in the world in terms of dollar value, generating an estimated \$5 trillion in global revenue back to 2022. Oil is critical and important to the global economic framework, affecting everything from transportation to electricity to heating to industrial production and manufacturing. (Mcclay, 2022).

Oil and gas production is a multi-stage entire process of discovering a resource, transporting it to a refinery, and turning it into a finished product ready for sale. Or, in industry terminology, upstream, midstream, and downstream segments. (Mcclay, 2022). As of 2022, the United States is the world's largest net producer of crude oil, followed by Saudi Arabia, Russia, Canada, and China. When it comes to natural gas production, the top five countries or producers include Russia, the United States, Canada, and Iran. (Mcclay, 2022).

Oil and natural gas are major industries in the energy market and both play an influential role in the global economy as the world's primary fuel sources. The processes and systems involved in producing and distributing oil and gas are highly complex, capital-intensive, and require state-of-the-art technology. (Mcclay, 2022).

The real exchange rate is a key economic variable that affords and allows to assess the price competitiveness of a country, and constitutes a critical stake in economies wherein turnovers are derived from exports' activity. While the real exchange rate is difficult to forecast because of its high volatility (Meese and Rogoff, 1983), it does not fluctuate erratically. Indeed, variables such as trade openness, productivity differentials, the net foreign asset position, public expenditure, etc. have been found to be key indicators of its dynamics (Lane and Milesi-Ferretti, 2002). The literature also identified the terms-of-trade, defined as the rate of the prices of a country's exports to the prices of its imports, as being a major indicator of real exchange rate movements (De Gregorio and Wolf, 1994).

In the early 2000s, fuel and non-fuel commodity prices experienced a surge which has sparked and gleamed interest on the link between terms-of trade of countries whose exports are mainly composed of commodities and the real exchange rate. (Chen and Rogoff, 2003). Moreover, "oil currencies" were observed (Habib and Kalamova, 2007), defined as currencies that appreciate when the price of oil increases. (Habib and Kalamova, 2007). The rapid information integration among different economic markets facilitates and eases international commodity transportation trade, oiling the wheels of globalization. Market frictions, amongst other factors, are responsible for the discrepancy in the reaction time to new market information, with markets subject to higher frictions reacting slower to new information, relative to lower-friction markets, generating information price between the markets (Mensi *et al.*, 2016).

Unlike financial assets like stocks and bonds, commodities require to be physically delivered, and hence, the transportation cost (freight rates) forms an integral or complete part of commodity prices (Zlatoper and Austrian, 1989).

3. Research methodology

The research methodology began with a relevant literature review to the research topic then there was a focus on data analysis and description by creating a business model and framework (See figure no.2) that illustrates the connection and the trajectory between the oil and gas industry and business internationalization.

The set research questions are

RQ1: Are oil and gas still considered important energy sources for business?

RQ2: Are oil and gas production, exports and imports critical business internationalization operations? RQ3: How may multinational or transnational companies connect both oil and gas industry and the commodities' business internationalization operations?

4. Analysis and results

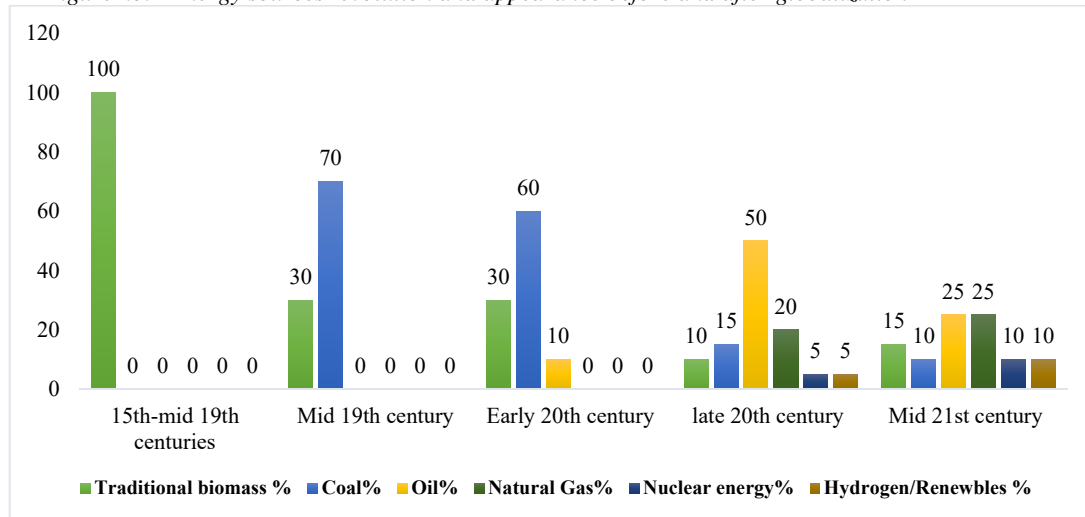
4.1. Energy sources' evolution and appearance before and after globalization

Historically, the energy sources have passed by different ages and centuries, starting from the mid-15th to the 19th centuries the main source of energy used to be the traditional biomass energy, in the mid-19 century coal appeared with 70% of importance and use to dominate biomass energy that decreased to 30%. Later, in the early 20th century oil appeared as a another new source of energy but with only 10% of use and availability compared to coal that remained in the lead with 60% of use and followed by traditional biomass energy 30% approximately. In the late 20th century other three

energy sources started to appear with various percentages taking natural gas as a second source of energy with 20% after oil that raised to 50% of importance and use, coal remained a source of energy with approximately 15% in the third position and then 5% for nuclear energy and 5% to hydrogen and renewable energies. (See figure no.1).

Whereas, starting from the mid-21st century until the present time both oil and natural gas equalized in importance, availability with 25% each from the total energy sources, followed by biomass energy, coal, nuclear energy and renewables. Hence, Oil and natural gas are still main energy sources and they are more important and cheaper compared to nuclear energy and renewable energies that required more expensive investments and installations. Furthermore, the large amount of refined products that comes out from crude oil and natural gas is very important in different energy and industrial sectors. (See figures no 1 and 2).

Figure no.1 Energy sources' evolution and appearance before and after globalization



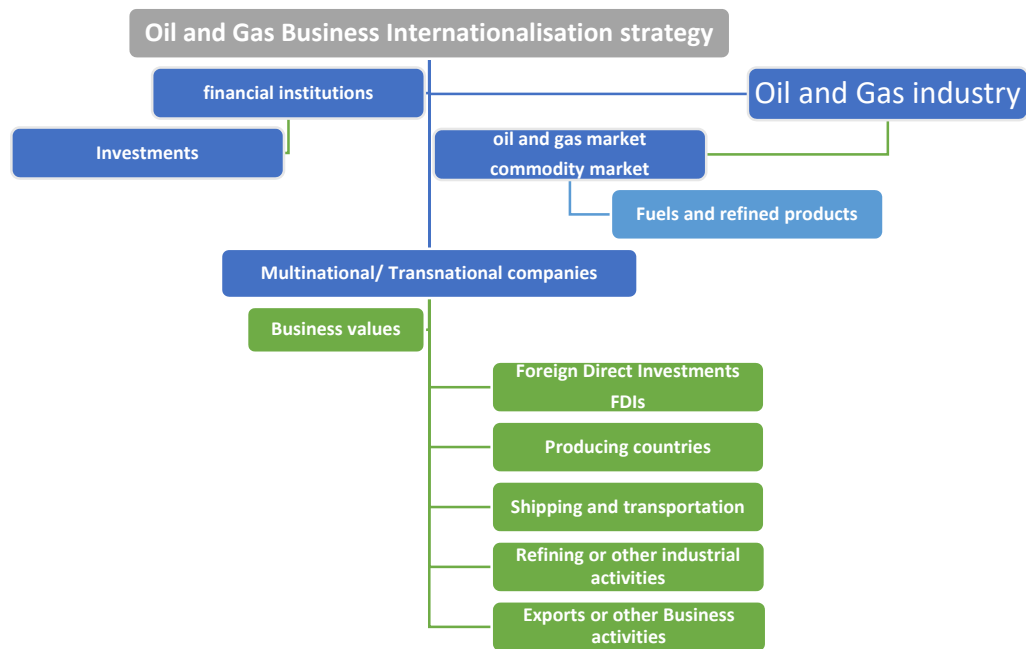
Source: Author's creation and research, 2023

4.2. Oil and Gas Business Internationalization Strategy and framework

A framework and model for business values has created and illustrated in figure no. 2 in this research and full paper to connect both business internationalization strategy and the oil and gas industry. In figure no 2 we observe that there are two main types of oil and gas business internationalization strategies one could be through multinational companies and another with transnational companies but both strategies are approximately very similar. (See figure no.2).

Both strategies may help generate more benefits and business values since multinational companies for example can take over foreign direct investments, exports of crude oil, natural gas or any of the refined products from crude oil, oil and gas operation and industry in the producing countries and shipping or transportation activities. (See figure no.2). The oil and gas business internationalization strategy required as well financial institutions and investments between the industry and market of both oil and gas or commodities. The strategy need to meet the criteria and regulations of the oil and gas business from the country of origin to the country of destination. (See Figure no. 2).

Figure no. 2 Business Internationalization Strategy and framework: The trajectory for Business values



Source: Author's design and research, 2023

4.3. The exports and imports of Oil and Gas as business internationalization operations

Importing fuels is the action of buying or acquiring them from another country or another market other than local own. Imports are important for the economy because they allow a country to make up due to the inexistence of certain products, high costs, scarcity or the low quality of some products or services since with them it is possible to supply and diversify the markets as products from other countries.

While, exporting is the commercial activity that consists of selling products such as crude oil and natural gas or other services to another country or other countries. In other words, it is the action and effect of sending products, goods or services from one market to another or from a country to other countries following some negotiation and agreements in shape of contracts. Exports provide great economic benefits to the country of origin since they attract foreign currency or money from abroad contributing to the country's economy by expanding the market beyond the borders and developing the national industry and generating more employments among others.

Most of a country's oil has something to do with whether it was exported or imported and sent to other markets. Indeed, international trade is all transactions involving international imports and exports that are made between countries and between different industries, in other words, it is a global view of how clients or companies buy and sell them in the world with a way of seeing the market at a global level. International trade is a very important percentage of the economy. International trade allows countries to complement each other, so, if the country or company is not competitive and cannot produce, it can order these products by negotiating with other companies or other countries. In fact, thanks to imports or exports there are economic and business opportunities especially in the world of globalization. All countries can have the products they need through exports and imports, so international trade triggers other industries and thus the world develops, motivating production and sales between different units. In addition to this, as there are many products in many countries, international trade helps the consumer to choose thanks to the possibility of opening different markets to process the offers and demands of all the products that exist or may exist with reference to the prices and brands.

Companies can be more competitive with international trade and the possibility of open markets because closed markets lack competitiveness because they do not have competitors and when companies come from abroad they can create new franchises and without a doubt there are different franchises that can help the markets and business.

Franchises are as well a product of globalization, many companies have emerged that they are very competitive thanks to globalization. International trade can also allow for better production by producing and developing better products or products that do not exist in other parts of the world for export. Moreover, the industry can become of higher quality. Companies in the country are given the opportunity in other countries or markets thanks to internationalization with the possibility of selling and producing in other countries or exporting to other countries such as oil companies or other competitive companies. Reaching other markets around the world may be possible through international trade but taking into account that some risks may occur.

4.4. Exports and their benefits to the exporting economy

Exports are those that benefit the company or country no matter the products or services since by making a sale abroad it is attracting money from another economy to another by bringing in money from abroad through sales of what it has been offered. By exporting, the country is generating money from abroad for the country's economy. There are many economies that have got their economic growth based on exports including oil and gas exporting countries that are considered somehow some of the richest ones. Furthermore, the generation of employment can benefit by activating the economies since with money from abroad the country or companies are financing different services to achieve the shipment.

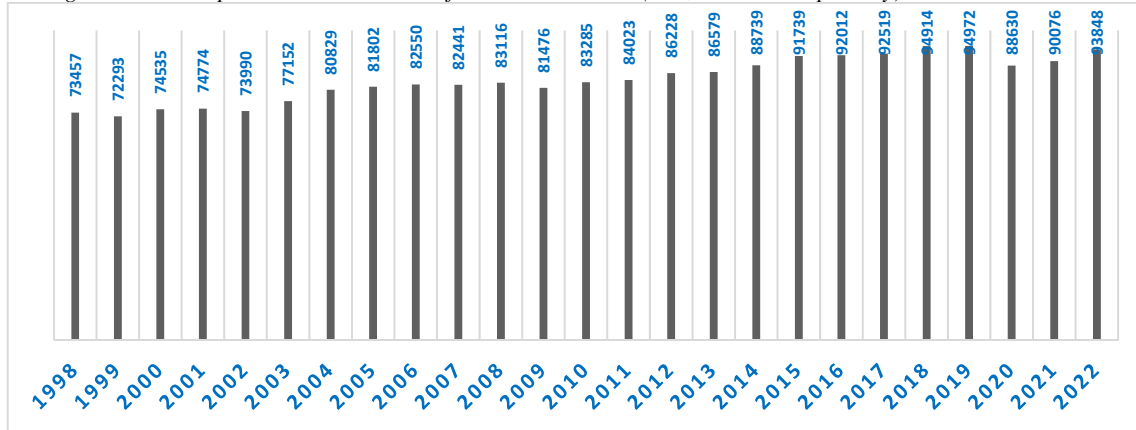
The money from products or services may greatly help the country's internal production so that it continues producing for a long time including the strategies that some economies follow for investments as a process of business internationalization as well.

Some restriction may occur during the processes of exports and one of the most important points that can interestingly be met are customs declarations or certifications so that the export is legal, otherwise the authorities can detain the product. As another type of restrictions, it can be caused by complications with the departure of goods from the country of origin.

4.5. Global oil production and the impact of the pandemic

Figure no 3 illustrates the how global oil production amounted to 93.9 million barrels per day in 2022. The highest level of oil production reached since 1998 was in 2019 at nearly 95 million barrels per day. However, the breakout and sudden widespread of coronavirus pandemic and its impact on transportation and shipping fuel demand led to a notable decline in the following year 2021. Moreover the production remains high all over the years, the thing that makes sure that crude oil is an important source of energy but in times of crisis such as the pandemic provoked by Coronavirus the decrease in oil demand could be a threat to countries that have got their economies based on oil exports and to companies that exercise various operations of oil and gas business internationalization or production. (Figure no. 3).

Figure no. 3. Oil production worldwide from 1998 to 2022 (in 1,000 barrels per day)



Source: Author's contribution, Statista data 2023

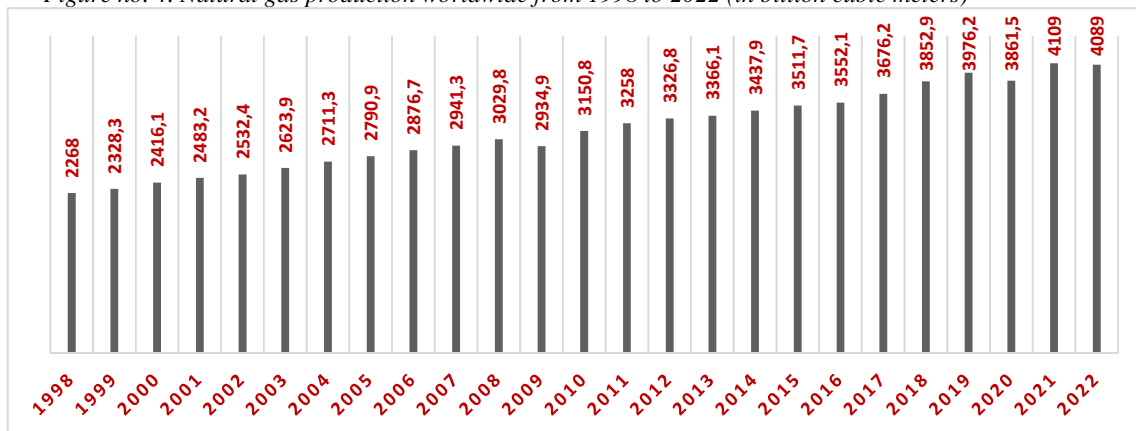
4.6. The oil market and the Organization Petroleum exporting countries (OPEC)

Oil has proved to be a very powerful commodity, oil producers are either part of the cartel OPEC or are outside as non OPEC producers. OPEC the organization of Petroleum Exporting Countries, was founded back in the 1960 to stabilize the supply of oil and to this day members broadly agree to supply oil to the international market at a specified rate of production. Saudi Arabia one of the founding OPEC members continue to dominate oil supply with OPEC. Most OPEC members produce 1 than million barrels of oil a day. OPEC used supply 80% of world oil but its influence over global oil supply has diminished to 40% with non-OPEC members dominating.

4.7. Global natural gas production from 1998 to 2022

In figure no. 1 that illustrates natural gas production in billion cubic meters we observe according provided available analyzed data by the of this research and paper publication that the Global natural gas production amounted to approximately 4089 billion cubic meters in 2022, with a slight decrease compared to 2021. The figure and data show that there has been a gradual growth and raise in production since 1998 where the total global amount of produced natural gas annually was approximately 2268 billion cubic meters. The thing that makes sure that natural gas is still considered an important energy source if the production increases from a year to another. (Figure no.4).

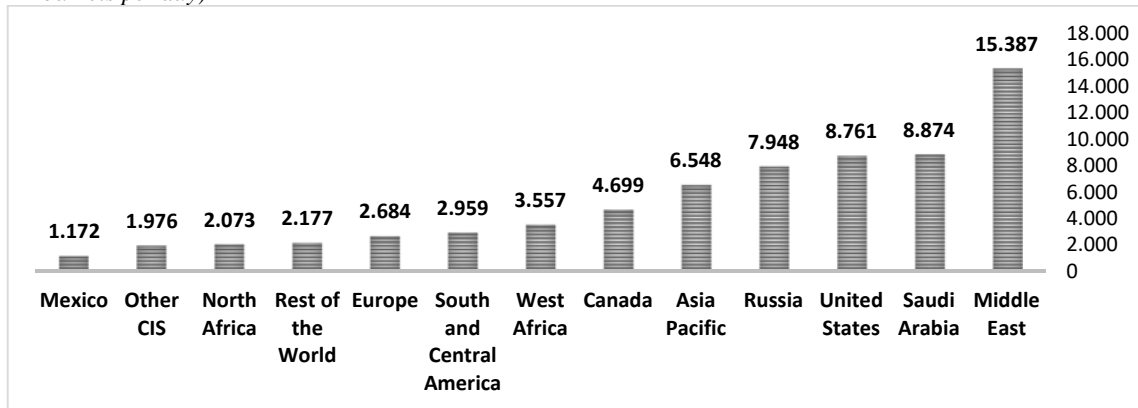
Figure no. 4. Natural gas production worldwide from 1998 to 2022 (in billion cubic meters)



Source: Author's contribution, Statista data 2023

Figure no.5 shows and illustrates the leading crude oil and oil products exporters globally in 2022 in 1000 barrels per day. According to the data provided by Statista at the time of finishing this research and paper the middle-east was in the lead with 1537 barrels per day. In fact Saudi Arabia was the leader oil and crude oil exporter globally with 8874 followed by the US with 8761 barrels a day then Russia with 7948 barrels a day. So, Saudi Arabia and the US and Russia have been for years the top three crude oil and oil products exporter globally. However, in the top 5 we observe the Asia pacific with 6548 billion barrels per day and Canada with 4699 barrels per day. Besides, from 3557 billion barrels per day to 1172 billion barrels a day we observe that West Africa followed but South and Central America then Europe, after than the rest of the world, North Africa with 2073 barrels per day then Mexico with 1172. (See figure no.5).

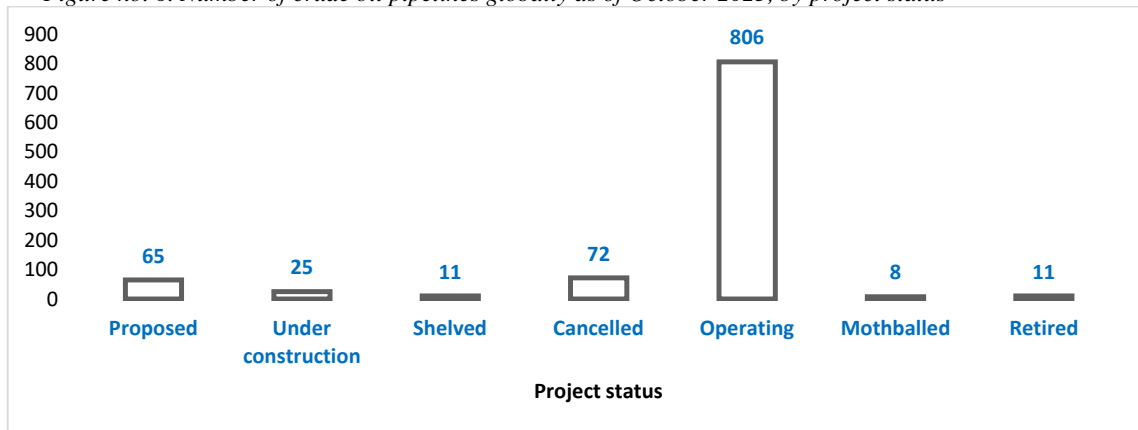
Figure no. 5. Leading crude oil and oil products exporters globally in 2022, by region or country (in 1,000 barrels per day)



Source: Author's contribution, Statista data 2023

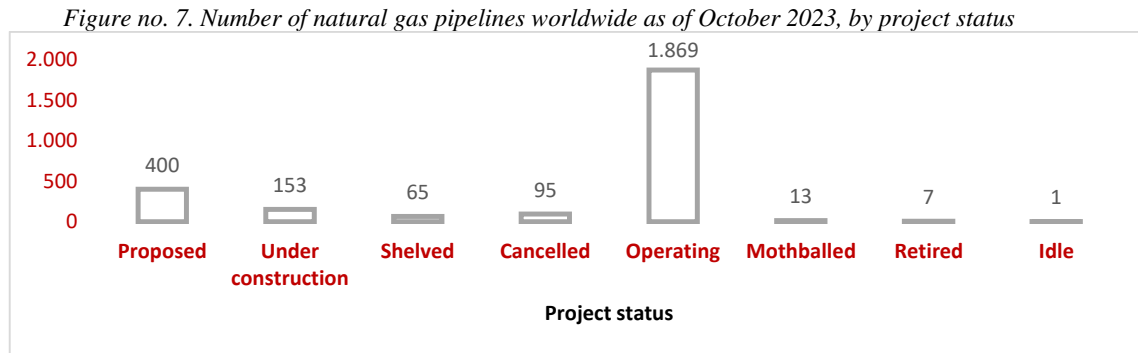
Figure no.6 illustrates and shows the number of crude oil pipelines divided in various project status globally. In 2023 there has been a total of 806 operational oil pipelines in the world as of October 2023. The number of oil pipelines under construction at so far and by the time of publishing this research has been 25. This is notably lower compared to the number of gas pipelines globally, on figure no.06 as well we observe that the number of cancelled pipelines is 72 according this data provided by Statista in the last quarter of 2023, while the proposed globally are 65 but the retired are 11. (Figure no. 6).

Figure no. 6. Number of crude oil pipelines globally as of October 2023, by project status



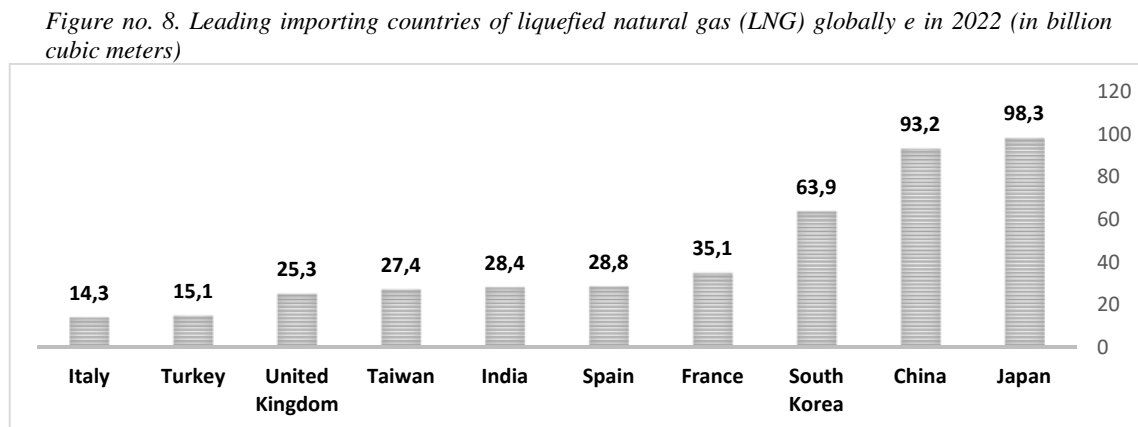
Source: Author's contribution, Statista data 2023

Figure no.7 illustrates and shows that as of October 2023, there were 1,869 operating gas pipelines globally in the world. 153 are still under construction while 400 are proposed but 95 have been cancelled. (See figure no.7).



Source: Author's contribution, Statista data 2023

Figure no.8 shows the leading importing countries of LNG in 2022 and at the top we see Japan with 98.3 billion cubic meters followed by China with 93.8 billion cubic meters and then South Korea with 63.9 Cubic meters. The other amount in billion cubic meters from 35.1 to 14.3 is for countries such as France and Italy that rely more on natural gas exports but during the pandemic and after the Russian Ukrainian conflict they started to think about LNG import as reserve to their industries and production operations. (See figure no.8).



Source: Author's contribution, Statista data 2023

5. Conclusions

To sum up, the oil and gas business internationalization strategy required as well financial institutions and investments between the industry and market of both oil and gas or commodities. The strategy need to meet the criteria and regulations of the oil and gas business from the country of origin to the country of destination. The business revenue from products or services may greatly help the country's internal production so that it continues producing for a long time including the strategies that some economies follow for investments as a process of business internationalization as well.

Some restriction may occur during the processes of exports and one of the most important points that can interestingly be met are customs declarations or certifications so that the export is legal, otherwise the authorities can detain the product. As another type of restrictions, it can be caused by complications with the departure of goods from the country of origin. International trade allows countries to complement each other, so, if the country or company is not competitive and cannot produce, it can order these products by negotiating with other companies or other countries. In fact, thanks to imports or exports there are economic and business opportunities especially in the world

of globalization. Both oil and gas remain power energy sources but sources of geopolitical conflicts and conflicts of interest.

Therefore, companies that could multinational or transnational need to adapt their business internationalization strategies with the producing area and the areas of exports and imports, a resilience plan, sustainability measure are considered important steps in this kind of business for values and competitive advantage since energy and its sources are important business activities for the growth and stability of both global and local economies. Oil and gas production, exports and imports are important and at the same time critical business internationalization operations. Oil and gas are still sources of geopolitical conflicts and other types of geopolitical conflicts, a resilience plan and a focus on sustainability are important for companies that exercise the oil and gas business.

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Multinational Companies as a Business Internationalization Driving Strategy: Implications for Competitive Advantage and Business Values

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Abstract

This paper analyzes and presents Multinational Companies as a business Internationalization driving strategy with a focus on their implications for business values. The research methodology began with a literature review then there was a focus on data analysis and description. The research questions are "what are the characteristics of multinational companies for business internationalization?" And "what implications, reasons and goals are there?" Some of the results illustrated that multinational companies are very important for business internationalization since they are one of the main internationalization strategy but they may face some restrictions, losses or possible difficulties in negotiations abroad. Taxes and the unpredictable risks may make them an object to sudden losses. In conclusion, Internationalization has been so far a relevant step for companies and businesses to leave the difficulties of domestic narrow markets and similarities. Some business operations of multinational companies such as outsourcing, licensing, exports or FDIs should focus more on the contracting process and locations.

Key words: business internationalization, multinational companies, implications, strategy, values

J.E.L. classification: A13, F20, F23, F60, M20, M21

1. Introduction

Normally, when companies decide to start expanding at a global or international level, they logically have to expand in other countries to take advantage of the advantages of low cost or the differentiation that allows them to expand their profitability, but in order for them to carry this out, it is very important that have an internationalization strategy. Internationalization allows companies to achieve at least a competitive advantage to increase their presence in the international market, therefore it is important that they are well designed and since based on this the company will be able to enter new markets to increase value or profit, the number of your customers and your sales.

Through internationalization, the company can introduce products or services to other countries that do not yet have them or do not have them. Globalization has gradually turned the world into one market and for ages it has undoubtedly followed various waves of industrialization. It moved the world and human society from simple energy resources such coal and wood to fossil fuels for industry as sources of energy and to sustainable energy and business, step by step it globalized the energy market. In fact, every step is accompanied by energy consumption, so the intensive use of energy has become fundamental in economy. (Benabed and Boeru, 2023). Globalization has relieved the spread and propagation of technology and information, thereby engendering new opportunities for innovation and development, emphasizing that the 4th and 5th industrial revolutions are evidence of it. In addition, it has led to concerns regarding privacy and security, as well as the possibility of job displacement and inequality. (Benabed and Boeru, 2023).

2. Literature review

2.1. Background of Multinational companies (MNCs)

Multinational corporations (MNCs) are a distinctive attribute and characteristic in the modern economy, occupying about one quarter of global output and one third of international trade (Jensen, 2006). Even if the global economy becomes increasingly integrated, their growing significant importance to the economic activity and role are likely to continue to expand despite the obstacle and interruption provoked by a recent financial recession and crisis. (World Bank, 2010) since they remain a significant motion from perfectly integrated global markets (Ghemawat, 2011).

Indeed, there has been much research on the role and progress as an institution of multinational companies (Bartlett and Ghoshal, 1989). Multinational companies or corporations' executives have struggled to define and determine a suitable role for headquarters to effectively reach values from international business operations or activities. There are frequent large scale reorganizations and reformations of Multinational companies' o corporations' headquarters that illustrate and show how uncertain many are as to the better influence and optimal structure of that entity (Bartlett, 1983). There are various international business scholars and strategists that have conceived to evolve and promote prescriptions for the optimal allocation of business activities between headquarters and the country's subsidiaries (Bartlett and Ghoshal, 1989). For them, the main challenge is the balance of the inherent tensions while the company operating internationally to achieve an overall effectiveness and dynamic arbitration by even maintaining the suppleness to match local markets' requirements and needs (Ghemawat *et al.* , 2007). This has led to specific recommendations concerning headquarters design that try to balance the requirements of centralization with decentralization (Bartlett and Ghoshal, 1989).

The international business literature began examining the significant and important role of headquarters in the multinational corporation by taking into consideration centralization–decentralization continuum as a way to sort out the classic inherent compromise and tradeoff in any multinational strategy between local responsiveness and global efficiency (Prahalad, 1975). Therefore, with a limited attention to the specific roles played by headquarters, the focus used to be on the level of delegation and mission of authority to the country subsidiary organizations as it is possibly best captured in Porter's notion of global and multinational strategy (Porter, 1986).

2.2. Multinational companies between internalization and internationalization

In fact, according to Fisch (2008) with regard to the option of international entry, the investment can be analyzed from the perspectives of internalization and internationalization. Internalization decisions address the share in capital that is chosen for entry such as entry by a minority or majority joint venture or a completely-owned subsidiary but Internationalization decisions relate to investing a certain amount of capital at the entry such as entering by a smaller or larger subsidiary but (Fisch, 2008).

Once companies want to go multinational by investing abroad, they need to decide about the time and type of market entry. It is highly important to choose the right moment and volume of international entry as its success might be affected by uncertainty. According to Buckley and Casson (1976) in the “Long-run Theory of the “Multinational Enterprise” , firms embrace the imperfections of international markets by internalizing business processes and concerning implicit knowledge, raw materials perishable goods or intermediate products. (Buckley and Casson, 1976) However, internalizing markets may lead to reduced economies of scale, problems of cross-border communication and discrimination by host governments. (Buckley and Casson, 1976). According to Williamson (1975) some researchers consider the theory of internalization together with the transaction cost view of markets and hierarchies (Williamson, 1975).

According to Cambridge dictionary (2023) Internationalization in literature is the act of including something when calculating the cost of a product or activity. (Cambridge dictionary, 2023) The Cambridge dictionary (2023) states as well that the evidence against particular representations does not put a dent in the concept of internalization, and the proof against the general concept is impossible. (Cambridge dictionary, 2023). Internalization occurs when a transaction is handled by

an entity itself rather than routing it out to someone else. This process may apply to business and investment transactions, or to the corporate world. (Chen, 2021). In business, internalization is a transaction conducted within a corporation rather than in the open market. Internalization also occurs in the investment world, when a brokerage firm fills a buy order for shares from its own inventory of shares instead of executing the trade using outside inventory. (Chen, 2021).

Mainly, according to Chen (2020) Internalization can also apply to a multinational corporation. This happens when the company decides to shift or switch assets between its own subsidiaries in different countries. (Chen, 2021). Furthermore, internalization can occur when an individual, business, or firm decides to handle an issue in-house instead of outsourcing it to a third-party. (Chen, 2021). Besides, companies may decide to internalize the production of a particular material on its own rather than having another manufacturer do so. This process is called internal sourcing, or sending products to customers through the business's own channels instead of using an outside shipping company. (Chen, 2021). Internalization is beneficial to a company as it cuts down the costs of outsourcing certain process such as selling products and services or manufacturing. It seems that the traditional approaches to international entry need to be enriched for a dynamic analysis. Buckley and Casson (1998) state that early models of the multinational enterprise did not foresee the rising importance of uncertainty in today's foreign direct investment decisions. Therefore, Buckley and Casson propose a new approach, the theory of real options. Rivoli and Salorio (1996) argue that the theory of real options involves the question of when exactly a foreign direct investment takes place after a location has been chosen for entry. (Buckley and Casson, 1998). Regarding business models for the international development context, we can identify two lines of significant studies, one more focused on e-business and the other aimed at defining models of wider application. (Benabed *et al.*, 2022).

3. Research methodology

The research methodology focused on a relevant literature review to this research and data analysis and description by creating two frameworks that illustrate Main reasons and goals for multinational companies' business (See figure no.1) and the main reasons and goals for multinational companies' business and the link with international business. (See figure no. 2).

The set research questions are:

RQ1: what are the characteristics of multinational companies for business internationalization?

RQ2: what implications, reasons and goals are there?

4. Findings

4.1. Business Internationalization and some companies' driving strategies

4.1.1.The multinational strategy is applied in multinational companies or those that want to be multinational that have been created or legally registered in their country of origin but also have others in different countries of the world and in the same way with this strategy the companies have production facilities but all its strategies, planning and, above all, the decisions that are considered the most important come from the matrix that is normally located in the country where it is founded. The multinational strategy favors the development of the countries where it is located since they generate greater production of goods and services, but what is most favorable is that companies can generate job opportunities.

4.1.2. The transnational strategy is somewhat similar to the multinational but with a difference in the purpose of producing or marketing its products in other markets. The transnational strategy is applied in companies that have a parent company and then expand to other countries in the world with the purpose of marketing their services or products in new markets and competing in the international market. On the other hand, to achieve a greater competitive advantage, companies use different activities such as research, development, marketing, production and commercialization to add values to their businesses.

4.1.3. The global strategy is a strategy that considers each country in which the company operates as a segment of the global market and has competitive advantages because they can produce products that have more models to achieve global efficiency but adapted to the needs of each market. . Global strategy is important and is used in global companies, which require a high level of coordination and centralization of the decisions made at the headquarters in order to fully exploit their competitive and strategic advantages.

In conclusion , the application of Internationalization strategies allow companies to increase their level of competitiveness, expand their growth, have lower costs and consolidate their products and brands, although companies must know that their application is not an easy process due to both legal and economic cultural differences of each country but above all because each consumer is totally different.

4.2. Positioning the company in the international market by implementing the necessary actions

A multinational company is a company that operates in several countries where it may have factories, offices or points of sale and normally there is a country where it begins operations and we can call that company a parent company and the rest of the countries where the multinational has been established and extended over time will be called subsidiaries.

Internationalization strategies are a system that is used to plan and implement actions that are aimed at fulfilling and positioning a company in the international market. To develop and apply any of the internationalization strategies well, it is necessary to go through the following stages: (See figure no 1):

Figure no. 1. Main reasons and goals for multinational companies' business



Source: Author's design and research, 2023

4.2.1. Analysis. Basically it should be important for the company to figure out about its current situation by going through an analysis so that it can make better decisions with the aim of boosting, optimizing or streamlining business processes, discovering new growth potentials or finding markets. For instance international companies according to their profile develop a long-term strategy that is sustainable and can optimize the customer satisfaction at an international level, the same thing could be possible for multinational companies.

4.2.2. Evaluation plan. The multinational company or any of subsidiaries or areas need from time to time to go through an evaluation plan to find out to rate it direction according to its activities.

4.2.3. International implementation. When the previous points are analyzed to make some changes in the company, this way since the company is prepared it can operate internationally, however it is important that the company takes into account that an implementation must be well carried out since it is constantly analyzed.

4.2.4. Intermediary service and commercial relations. At this point the company can establish relationships with suppliers, customers and management. All these aspects are very important for a company that is just entering the international market. So you can expand a company more quickly. For this reason, it is useful that in global trade there is the presence of local management who will

be in charge of providing all the local knowledge so that the main company can enter the market, avoiding making mistakes that could be costly. On the one hand, increasing sales and minimizing failures in local management is also very important in the process of business internationalization. On the other hand, it is also important to have the human resources prices of the country to which the company is directing its products or services. In addition to this, it is necessary to take into account the regulations to which the company will have to adapt.

4.2.5. Technological innovations and application. Having the intermediaries of innovation and technology is a key factor in the success of many companies during and for the internationalization process. This key is a necessity for rapid growth and for companies to reinvent their products they also have to have oriented innovation by adding new features and new ideas.

4.2.6. Strategies. For the company in order to be able to transform a business, it is very necessary to focus on key competencies, therefore a well-chosen and effective strategy would be a way out that can perhaps minimize tangible and intangible losses.

4.2.7. Measuring results. When the company has implemented strategies in the international market, a period must be established in which the results can be measured because this way it can be known if the objectives are being met correctly and actions are necessary to modify or eliminate what was achieved. It can cause harm or be a risk to the growth of companies, their profits and their business.

4.3. The management and trajectory of the multinational company

4.3.1. The trajectory of the company multinational presents some particularities compared to when it only acts at the national level, aspects related to the organizational level are very important such as human resources policy, especially the management of expatriates, the management of cultural differences between different countries and the most appropriate structural models for your organizational design. Regarding human resources policy, three main challenges appear such as: the management of expatriates, the rotation of managers and the incentive system.

4.3.2. The rotation of managers through the different subsidiaries seeks a better global integration of the company through a better understanding of the problems and opportunities that arise in foreign countries, creating a network of managers with contacts all over the world that allows learning and mutual help on multiple occasions, experience abroad is an essential requirement for internal promotion.

4.3.3. Expatriates are those managers or employees who carry out their work in the country of destination, coming from another country, often the origin of the company. The main problems linked to expatriates come from the financing of prolonged stays, the difficulties of adapting to the destination country, the demotivation caused in local managers by their higher salary costs or the difficulties that often arise when it comes to return to the country of origin. However, expatriates tend to be used to a greater extent when politicized personnel are not available in the destination country and when there are high cultural differences or when the transfer of knowledge between the parent company and the subsidiary or control of the subsidiary is necessary to achieve greater global coordination

4.3.4. The incentive and performance evaluation systems also seek the global integration of the company and to do so they must achieve a difficult balance in two aspects between the countries where they operate, considering the difficulty of competitive performance in all markets and between positions of similar status and the responsibility within the company regardless of the country where they are.

4.3.5. The management of cultural difference refers to the understanding of the cultural traits of the destination countries as a key to the success of companies' actions in these countries. This requires the development of an international corporate culture that integrates such traits and helps overcome

cultural differences. Culture or cultural intelligence is especially relevant when global or transnational strategies are implemented since it allows greater integration for the transfer of resources and knowledge in global learning between countries.

There are some aspects that can help companies to integrate culturally, such as maintaining a certain balance between the economic and financial interests of the parent company and subsidiaries and assuming some degree of commitment to local employment.

4.4. The characteristics of multinational companies

➤ **A control exercised by the parent company over the subsidiaries:** By following this way the company may decide how to operate in them and who the managers are and in addition to this it returns the profit obtained from the subsidiaries.

➤ **Investments in research, development and innovation:** Multinational companies are targets for investment in research, development and innovation in various fields, industries or markets because they contribute to the increase in production in several countries.

➤ **They grow by absorbing competition:** Given that multinational companies have many financial resources, they can grow by absorbing competition, as has been the case for some.

➤ **The possibility of a large size of multinational companies:** The large size of multinationals that have many workers, many equipment, buildings and many financial resources.

➤ **Best located in their sectors:** Multinational companies are usually the best located in their sectors because they are strong companies that, thanks to economies of scale, are able to reduce costs and therefore sell at lower prices. A typical example would be IKEA.

➤ **Strong negotiating ability:** There are companies that have this ability to sell their products at low prices in a large quantity but there are also companies that negotiate with the products or third parties to reach a good opportunity by selling their quality products to slightly high prices but in a quantity very appropriate to the markets using the intermediaries of digitalization and marketing to reach customers.

➤ **Easy access to financial resources:** Multinational companies can issue private debt bonds and sell them to investment funds, private clients or banks, in addition to this they can request money from many banks. Multinational companies can make capital increases and issue new shares that they can sell to the public in various countries.

➤ **More labor conflict and less flexibility:** Multinational companies need many investments and in addition to this they incur large costs because they have large structures such as offices, factories, subsidiaries with many employees, which makes it difficult for them to negotiate layoffs, for example in times of crisis or risks. Therefore they can incur losses very quickly if workers leave jobs or in cases of conflicts of interest or geopolitics. So, your sales or production may go down but your things remain the same.

➤ **The ability to diversify in products and sectors:** When the companies go multinational they may help diversify in products and sectors abroad through licensing, exports, foreign direct investments or outsourcing.

➤ **The skills and qualification levels of the workers:** The high level of qualification that the workers may have is very important for this type of company. Multinationals need very diverse profiles, which is why they want to reach different markets internationally to diversify their productions and services using the diversified capabilities and qualifications of foreign workers.

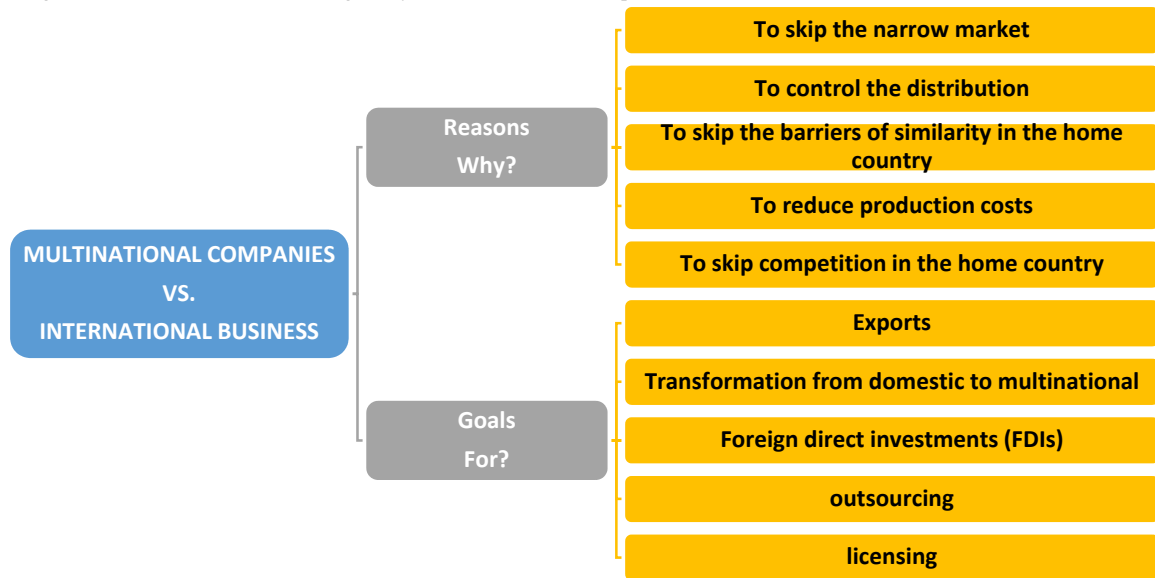
➤ **The importance of transportation and raw materials:** Multinational companies always have to negotiate transportation in cases of export or import of raw materials, for example, which is why it is very necessary to open subsidiaries where it is very easy to find raw materials, negotiated export contracts with neighboring regions or countries where multinational companies are located.

4.5. Main reasons and goals for multinational companies' business

According to this research there are various reasons for business internationalization through multinational companies since it is an important strategy for international business opportunities and values. Companies choose to multinationals to skip the narrow market in the domestic or home country and by extending their business abroad they may be able to control the distribution between

the areas of their subsidiaries and even between them and the neighboring areas. When companies go multinationals they skip somehow the barriers of similarity in the home country and through this strategy they may reduce the production costs. Furthermore, one of the main reasons for the multinational strategy is skipping competition in the home country and financial difficulties. (See figure no. 2).

Figure no. 2. Main reasons and goals for multinational companies' business



Source: Author's design and research, 2023

However, going multinational needs to be based on some goals and some of them could be Exports between its subsidiaries and even for other countries, the transformation from domestic to multinational and this way the company may reposition itself and extend its reputation abroad. Moreover, multinational companies are famous as well with the possibility foreign direct investments (FDIs) and other business internationalization processes such as outsourcing with its three types and licensing for business values. (See figure no.2).

5. Conclusions

To sum up, Internationalization has been so far a relevant step for companies and businesses to leave the difficulties of domestic narrow markets and similarities, the example and business models such as outsourcing, licensing, exports or FDIs are operations of multinational companies and they can be a successful business operations in case of successful contracts and plan between the multinational companies and the countries of destination.

Internationalization allows companies to achieve at least a competitive advantage to increase their presence in the international market, therefore it is important that they are well designed and since based on this the company will be able to enter new markets to increase value. or profit, the number of your customers and your sales. Through internationalization, the company can introduce products or services to other countries that do not yet have them or do not have them. A multinational company is a company that operates in several countries where it may have factories, offices or points of sale and normally there is a country where it begins operations and we can call that company a parent company and the rest of the countries where the multinational has been established and extended over time will be called subsidiaries. Multinational companies have got various characteristics and implications for business values and no matter their size small, medium or large they need to focus on the aspects of sustainability and digital opportunities to reach the clients' satisfaction and be close to them.

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Advancing Sustainable Development: The Role of European Environmental Law in Regional Integration and Globalization

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Abstract

This paper examines the central role of European environmental law in promoting sustainable development, regional integration, and globalisation. It examines the evolution of European environmental law, highlighting its historical development and its importance in the European sustainable development agenda. The relationship between European environmental law and regional integration is analysed, with an emphasis on cooperation between Member States and harmonisation of national legislation. It also discusses the contribution of European environmental law to global efforts to address environmental challenges, including the convergence of international standards and the role of the EU in international negotiations and agreements.

Key words: European environmental law, sustainable development, regional integration, globalization, environmental policies

J.E.L. classification: K32, K33, K38

1. Introduction

This paper aims to provide a comprehensive examination of the role of European environmental law in promoting sustainable development, regional integration, and globalization. By addressing the complex interplay between environmental regulation and regional/global dynamics, this study aims to provide valuable insights into the evolving landscape of environmental governance within the European Union (EU) and beyond. It begins with an introduction to the research context and sets out the aims of the paper. The theoretical background or literature review section then provides a comprehensive synthesis of the relevant academic literature, outlining key concepts, principles and previous research findings related to the topic.

The research methodology section details the methods used to obtain the results, including the research design, data collection techniques and data analysis approaches. The findings section presents the findings in a structured manner, with supporting visual aids, and discusses their implications in relation to the research objectives (Braşoveanu, 2013, p.88).

2. Theoretical Background

European environmental law is a body of legal principles and regulations developed to address environmental issues. Key references in this area include the work of scholars such as Stan (2013a, p.111), who has examined European and international legal provisions relating to environmental impact assessment in coastal areas.

Sustainable development is a central concept that emphasises the integration of economic, social, and environmental goals to ensure long-term well-being. The Brundtland Report (1987) of the World Commission on Environment and Development is a seminal reference in defining sustainable development (Braşoveanu, 2013, p.88).

Regional integration refers to the process by which neighbouring countries come together to cooperate and integrate various aspects of their economies and policies (Aivaz and Tofan, 2022, p. 5). The European Union is a prime example of regional integration, and Aivaz and Tofan's (2022,

p.5) work on digitalization and research and business development allocations in the EU context could provide insights into this aspect.

Globalisation involves the increasing interconnectedness and interdependence of countries and economies around the world. It has important implications for environmental law and sustainable development. The works of Aivaz (2021, p.8), in particular those that discuss the impact of ICT on education and living standards in the context of globalisation.

Digital transformations, as discussed in the work of Munteanu *et al* (2023, p.204) have a significant impact on various aspects of sustainable development, and their findings relate to financial challenges and resilience in emerging innovative enterprises.

In the context of sustainable development, understanding the financial aspects of environmental protection and resource management is crucial. Rus's work (2019, p.144) sheds light on fiscal issues that can be linked to the financial underpinnings of sustainable development efforts. This work can be used to discuss the importance of legal and fiscal mechanisms in achieving environmental sustainability.

Sustainable development often starts at the local level, where the impact of policies and practices is felt most acutely. Rus's research (2020, p.181) can be integrated to highlight the role of local government and finance in supporting sustainable initiatives. It highlights the importance of adequate funding for local sustainability projects (Braşoveanu, 2013, p.88).

The paper by Munteanu *et al* (2023, p.205) is highly relevant in the context of sustainable development. It highlights how digital transformations pose financial challenges and discusses strategies for building resilience in innovative enterprises (Aivaz, 2021, p.9). This work can be linked to the financial implications of sustainability practices, and how digitalisation can both facilitate and challenge sustainable initiatives.

The paper by Aivaz, Munteanu and Jakubowicz (2023, p.1) examines the impact of blockchain technology on conventional markets. This research can be linked to sustainable development by discussing how blockchain's transparency and reliability can enhance sustainable supply chains and financial transactions, contributing to environmental and social sustainability.

3. Research methodology

The research utilizes a mixed-method approach, incorporating a review of existing legislation and legal institutions, complemented by analysis of quantitative data on environmental indicators. Case studies on specific regions will be used to illustrate the practical implications of the legislation.

4. Findings

An analysis of the European environmental legal framework in the context of promoting sustainable development and regional integration reveals several key findings:

- The European Union attaches great importance to public participation in environmental decision-making. Statistical data show a remarkable level of public participation in consultations and policy discussions on environmental issues.
- Transparency in environmental governance is evident through the availability of environmental information to the public. However, efforts are needed to improve the comprehensiveness and accessibility of such information.
- Citizens have actively used access to justice mechanisms, including administrative and judicial review, to address environmental grievances. However, there is room for improvement in the efficiency of judicial processes.
- Initiatives have been taken to raise public awareness and build capacity for environmental advocacy. However, further investment in environmental education programmes and legal aid services is recommended.

The European environmental legal framework is consistent with the overarching objective of promoting sustainable development. The integration of sustainability principles into environmental law is evident in various directives and regulations (Braşoveanu, 2015, p.18).

Significant progress has been made. However, there is still a need for continuous improvement in terms of public participation, access to information, regulatory efficiency and capacity building.

These findings underline the EU's commitment to democratic environmental governance and to addressing environmental challenges in the context of regional integration and globalisation. Continued efforts to improve transparency, streamline legal processes and empower citizens are essential for the continued effectiveness of European environmental law in promoting sustainable development.

4.1. Analysis of the Current Legal Framework

The legal framework for environment and sustainable development in the European Union (EU) is primarily based on the Treaty on the Functioning of the European Union (TFEU), in particular Articles 191-193. These articles form the cornerstone on which EU environmental policy and sustainable development initiatives are structured and implemented (Dură, 2013, p.7). The TFEU underlines the EU's commitment to addressing environmental challenges and promoting sustainable practices as an integral part of its overarching policy objectives.

Within this framework, the EU adopts successive Environmental Action Programmes (EAPs), which set out its environmental priorities over multiannual periods. Currently, the 8th EAP, covering the period 2021-2030, serves as the guiding instrument for the EU's environmental agenda, articulating objectives and strategies to promote sustainable development in the region.

A key piece of legislation within the EU's environmental legislative architecture is the Water Framework Directive (WFD) (Directive 2000/60/EC). The WFD is a seminal instrument for the protection and sustainable management of water resources, establishing a comprehensive framework for the wise use of water and aiming to achieve good ecological status for all aquatic bodies in the EU (Braşoveanu, 2015, p.18).

Complementing the environmental legislative framework are the Habitats Directive (Directive 92/43/EEC) and the Birds Directive (Directive 2009/147/EC), which are the cornerstones of EU nature conservation policy. These Directives establish the Natura 2000 network, a pan-European network of protected areas, and aim to protect habitats and species of key importance for European biodiversity.

In the area of sustainable energy, the Renewable Energy Directive (RED) (Directive (EU) 2018/2001) plays a key role by setting binding targets for the increased use of renewable energy sources across the EU. This Directive has profound implications for the promotion of sustainable energy practices and the simultaneous reduction of greenhouse gas emissions.

In addition, the EU has adopted a climate change and energy package of regulations and directives aimed at curbing greenhouse gas emissions and promoting clean energy sources. Notable components of this package include the Effort Sharing Regulation (ESR) and the Energy Union Governance Regulation.

In the context of resource efficiency and waste management, the Circular Economy Package includes directives and regulations aimed at promoting a more circular economic paradigm, prioritising waste reduction, increased recycling efforts and improved resource efficiency (Dură, 2018, p.54).

By ratifying the Aarhus Convention, the EU has committed itself and its Member States to facilitating public access to environmental information, promoting public participation in environmental decision-making and ensuring the availability of legal remedies for citizens in environmental matters.

This comprehensive legal framework has been enriched by significant case law from the Court of Justice of the European Union (CJEU), most notably the landmark "Urgenda" case and cases on air quality standards. CJEU rulings have been instrumental in the interpretation and development of EU environmental law.

In addition, the European Green Deal, an ambitious policy framework, underlines the EU's commitment to sustainability, articulating aspirations such as achieving carbon neutrality by 2050 and supporting a 'zero pollution' ambition. This initiative serves as an overarching strategy that integrates environmental considerations into various policy areas, including those related to regional integration and globalization (Aivaz, Munteanu and Jakubowicz, 2023, p.2).

Overall, the diverse and complex legal framework governing environmental and sustainable development issues in the European Union underscores the region's commitment to addressing contemporary environmental challenges, promoting sustainable practices and integrating environmental imperatives into its broader policy agenda, thereby positioning itself as a global leader in sustainability and environmental governance (Braşoveanu, 2015, p.18).

4.2. EU Environmental Action Programmes

Assessing the effectiveness of the current legal framework within the European Union (EU) in promoting sustainable development and environmental protection requires a nuanced analysis, characterised by a thorough examination of legislative achievements, practical enforcement mechanisms and quantifiable results. This assessment involves examining the capacity of the legal apparatus to promote the twin goals of sustainable development and environmental protection.

At the heart of EU environmental governance is a complex web of legal instruments, including directives, regulations, and international treaties. These legal edifices manifest the EU's unwavering commitment to sustainable development and environmental protection, and thus represent a significant legislative achievement (Dură and Mititelu, 2014, p.28). Nevertheless, the effectiveness of these legal constructs depends on their operationalisation within the domestic legal systems of the member states.

The effectiveness of the existing legal framework depends on its practical implementation in the different legal landscapes of the EU member states. A careful examination of the extent to which these countries have transposed EU directives and regulations into their national legal frameworks is of paramount importance. Moreover, the rigorous enforcement of these legal provisions plays a key role in determining their practical utility.

Explaining the impact of the legal framework requires recourse to case studies, which provide empirical insights into the tangible effects of environmental legislation. These studies provide illuminating examples of where EU environmental legislation has produced commendable results, such as improving air and water quality, conserving critical habitats or reducing pollutant emissions. At the same time, case studies can highlight persistent challenges that require further legislative refinement (Braşoveanu, 2015, p.18).

An example of the effectiveness of legislation can be seen in the area of air quality standards. An examination of statistical data on the attainment and maintenance of legally mandated air quality thresholds, including particulate matter (PM10) and nitrogen dioxide (NO2) levels, is crucial. In addition, case studies provide context by highlighting regions where legislative action has led to tangible improvements in air quality.

The evaluation of EU nature conservation directives, including the Habitats and Birds Directives, requires an examination of their impact on biodiversity conservation. Statistical metrics provide a quantitative assessment of the effectiveness of Natura 2000 sites in protecting threatened species and habitats. At the same time, case studies illuminate instances of triumphant habitat restoration or species recovery that can be directly attributed to the protective scope of these pieces of legislation (Căzănel, 2019, p.7).

The evaluation of the Renewable Energy Directive (RED) requires a statistical study of the diffusion of renewable energy sources in the EU. These data illustrate the effectiveness of the statutory targets and incentives. Complementary case studies highlight countries that have made notable progress in the uptake of renewable energy technologies as a result of the impetus provided by legislation.

The impact of the Circular Economy Package is measured through quantitative indicators, including waste reduction metrics, recycling rates and resource efficiency benchmarks. In parallel, case studies present examples of Member States that have successfully translated circular economy principles into actionable policies, delivering tangible results in terms of waste minimisation and resource optimization (Stan, 2013a, p.111).

The effectiveness of EU climate policies, including legally binding emission reduction targets, is assessed through an empirical analysis of greenhouse gas emission trends. This statistical analysis provides critical insights into the impact of climate legislation on emissions reductions across different sectors and geographical regions.

A comprehensive assessment of an effective regulatory framework includes an evaluation of public participation in environmental decision-making. Statistical data that elucidate the extent of public participation and the accessibility of legal redress mechanisms for environmental matters provide key insights into the responsiveness of the legal architecture to citizen engagement.

In summary, a careful assessment of the effectiveness of the prevailing legal framework for sustainable development and environmental protection in the European Union requires a comprehensive combination of legislative scrutiny, practical assessment of enforcement and empirical validation through case studies and statistical analysis. This multifaceted approach allows for a comprehensive assessment of the impact of existing legislation on the promotion of sustainability and environmental integrity across the EU's diverse legal landscape (Trandafirescu, 2012, p.1).

The Water Framework Directive (WFD) - Directive 2000/60/EC is a landmark piece of legislation within the European Union's legal framework designed to underpin the protection and sustainable management of water resources. Designed as a holistic approach to water management, the WFD establishes a comprehensive regulatory framework covering both surface and groundwater bodies. Its overall objective is to achieve 'good ecological status' for all aquatic ecosystems in the EU.

To achieve this goal, the Directive uses a multi-faceted strategy, including the establishment of River Basin Management Plans, the identification of significant pressures on water bodies, and the development of remedial measures to correct water quality and ecological imbalances (Braşoveanu, 2015, p.18).

The Habitats Directive (Directive 92/43/EEC) and the Birds Directive (Directive 2009/147/EC) are the cornerstones of EU nature conservation policy and embody a strong commitment to conserving biodiversity and protecting habitats and species of European importance. These Directives harmonise the conservation efforts of EU Member States through the designation and protection of Natura 2000 sites - key areas for the conservation of Europe's natural heritage. While the Habitats Directive focuses on the conservation of natural habitats and species, the Birds Directive focuses on the protection of birds. Together, these directives orchestrate a pan-European network of protected sites that form a cornerstone of EU nature conservation.

The Renewable Energy Directive (RED) - Directive (EU) 2018/2001 embodies a central component of the EU's energy policy landscape, driven by the need to diversify energy sources, reduce greenhouse gas emissions and strengthen energy security. The Directive has a dual role: to promote the growth of renewable energy sources and to improve energy efficiency (Stan, 2013b, p.101). Of paramount importance is the setting of binding renewable energy targets, which oblige Member States to increase the share of renewable energy in their energy portfolios. Such measures are an integral part of promoting sustainability, mitigating climate change and advancing the transition to clean energy.

The Climate Action and Energy Package is a multifaceted set of legislative and regulatory initiatives aimed at galvanising efforts to combat climate change and promote the use of clean energy. At its core, the package comprises regulatory instruments, including the Effort Sharing Regulation (ESR), which sets binding emission reduction targets for Member States for sectors not covered by the EU Emissions Trading Scheme (ETS). In addition, the Regulation on the Governance of the Energy Union sets out a robust framework for the coordination of national energy and climate policies, thereby facilitating the achievement of collective climate objectives (Braşoveanu, 2015, p.18).

The Circular Economy Package provides a holistic response to the need to transform the prevailing linear economic model into a more circular and sustainable paradigm. The package includes directives and regulations that focus on the key principles of waste reduction, improved recycling practices and increased resource efficiency. By promoting a circular approach to resource use, the Circular Economy Package seeks to curb waste generation, limit resource depletion, and recalibrate consumption patterns towards a more sustainable trajectory (Braşoveanu, 2013, p.89).

These legal instruments within the EU legal framework exemplify the region's unwavering commitment to sustainability, environmental protection and energy transition (Dură, 2013, p.7).

They reflect a convergence of legislative and regulatory efforts aimed at addressing contemporary global challenges, including environmental degradation, climate change and the need to secure clean and sustainable energy sources for future generations.

4.3. Public Participation and Access to Justice in European Environmental Law

In its efforts to promote sustainable development and environmental protection, the European Union (EU) has recognised the central role of public participation and access to justice in its legal framework. This paradigm recognises that effective environmental governance requires the active engagement of citizens and mechanisms for seeking redress when environmental interests are at stake. In this context, statistical data emerges as a critical tool for assessing the responsiveness of the legal framework to the imperative of public participation.

Quantitative assessment of public participation efforts encompasses a range of data points that illuminate the degree of public involvement in environmental decision-making. Statistical indicators may include the number and variety of public consultations conducted by governmental or environmental agencies. In addition, the analysis may include the proportion of citizens and stakeholders who participate in these consultations. Assessing the extent to which public input influences environmental policies and projects through statistical analysis provides a tangible measure of the responsiveness of the regulatory framework to citizen engagement (Braşoveanu, 2015, p.18).

Transparency in environmental governance is underlined by the availability and accessibility of environmental information to the public. Statistical data on the dissemination of environmental data, reports and assessments can serve as a quantifiable metric. These data shed light on the extent to which citizens have access to timely and relevant environmental information (Rus, 2019, p.144). The widespread availability of such information is emblematic of the legal framework's commitment to transparency and informed decision-making.

Access to justice mechanisms within the EU environmental legal framework emerge as a critical avenue for citizens to seek redress when environmental laws are perceived to have been violated (Căzănel, 2017, p.578). Statistical data on the frequency of environmental cases brought before administrative or judicial tribunals, as well as the outcomes of such cases, reveal the accessibility and effectiveness of legal mechanisms (Rus, 2020, p.181). This empirical analysis conveys the commitment of the legal framework to facilitate the ability of citizens to challenge decisions that may affect environmental integrity or public health.

Assessing the efficiency and timeliness of environmental legal remedies is crucial. Statistical measures of the duration of legal proceedings related to environmental disputes and the disposition of such cases provide insights into the accessibility and speed of the legal system in addressing environmental grievances. The data describe the effectiveness of legal mechanisms in providing timely redress (Munteanu *et al*, 2023, p.217).

Assessments of public participation and access to justice may also include data on public awareness and capacity to participate effectively in environmental decision-making and legal processes. Metrics may include participation rates in environmental education programmes, use of legal aid services, and awareness of available environmental remedies. This dimension highlights the importance of promoting public understanding and empowerment in environmental matters.

In summary, the examination of public participation and access to justice, as illuminated by statistical analysis, is an important facet of your exploration of the role of European environmental law in promoting sustainable development, regional integration and globalization (Braşoveanu, 2015, p.18).

These dimensions underscore the EU's commitment to democratic environmental governance and the crucial role of citizen engagement in shaping the trajectory of environmental policy in the European context.

5. Conclusions

The European Union has demonstrated a commitment to public participation and access to justice in its environmental legal framework. Statistical analysis shows a significant level of public participation in environmental decision-making. However, further efforts are needed to ensure that public input has a significant impact on policy outcomes.

The availability of environmental information to the public has improved, as evidenced by statistical data. However, improving the comprehensiveness and accessibility of such information remains essential to promote informed decision-making and environmental awareness.

Access to justice, including administrative and judicial review, is a cornerstone of the EU environmental legal framework. Statistical indicators show that citizens have used these mechanisms to address environmental grievances. However, measures to streamline legal procedures and reduce time delays are advisable to increase the effectiveness of these remedies.

Analysis underlines the need to improve the efficiency of environmental litigation. Faster decisions and shorter court proceedings would contribute to more effective access to justice in environmental matters.

While public awareness and capacity building efforts have been initiated, further investment in environmental education programmes and promotion of legal aid services is recommended. Increasing public understanding and empowering citizens to participate effectively in environmental decision-making and legal processes remains of paramount importance.

Recommendations for improvement:

- EU institutions and Member States should explore mechanisms to improve public participation, including the use of advanced digital platforms to facilitate wider engagement. Establishing clear guidelines for the integration of public input into decision-making processes can further enhance the effectiveness of public participation.
- Develop centralised and user-friendly environmental information portals that provide citizens with easy access to a wide range of environmental data and reports. Strengthen efforts to make information available in multiple languages to serve diverse populations.
- Streamline administrative and judicial review procedures to speed up the resolution of environmental cases. Consider the establishment of specialized environmental courts or tribunals to deal with such matters efficiently.
- Invest in comprehensive environmental education programmes for citizens, educational institutions, and public officials. Promote awareness-raising campaigns on environmental rights and access to justice mechanisms. Encourage legal institutions to provide pro bono legal aid for environmental cases.
- Encourage cooperation between EU Member States to share best practice in building public capacity for environmental engagement. Support research and initiatives aimed at empowering citizens to participate actively in environmental governance.

In conclusion, the European environmental legal framework has made significant progress in promoting public participation and access to justice. However, there is room for improvement in terms of efficiency, transparency, and capacity building. By implementing the recommended improvements, the EU can further strengthen its commitment to promoting sustainable development and environmental protection in the context of regional integration and globalisation.

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Transparency and Public Participation in EU Environmental Decision-making: Strengthening Global Governance and Regional Cooperation

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Abstract

By examining the mechanisms and practices used by the EU to promote public participation in environmental policy formulation and implementation, the study aims to highlight their importance in advancing global governance and regional cooperation for environmental protection.

The paper begins with an overview of the current state of global environmental challenges and the importance of effective governance in addressing them. It highlights the growing recognition of the role of public participation in environmental policy-making and the need for inclusiveness and transparency in decision-making processes.

It then examines the theoretical background to the concepts of transparency and public participation in environmental governance, highlighting their integration in international environmental agreements and the EU legal framework. The study reviews relevant literature on best practices and successful models of public participation in environmental decision-making.

Key words: Transparency, public participation, EU environmental decision-making, regional cooperation, environmental policies

J.E.L. classification: K32, K33, K38

1. Introduction

Environmental challenges are increasingly recognised as global issues that require effective governance and cooperation between nations. As environmental problems transcend national boundaries, international cooperation is essential to tackle issues such as climate change, biodiversity loss and pollution. In this context, the European Union (EU) plays an important role in shaping environmental policies and practices, both within its Member States and at the global level (Brundtland, 1987, p.3).

The research context explores the urgency of addressing environmental challenges at the global level and the role of the EU as a key actor in environmental governance. It highlights the importance of transparency and public participation in shaping effective environmental policies and decisions.

The study seeks to examine the role of transparency and public participation in EU environmental decision-making processes and their impact on global governance and regional cooperation for environmental protection. The paper aims to explore how public participation can enhance the legitimacy, accountability, and effectiveness of environmental policies within the EU and contribute to broader efforts in global environmental governance.

By exploring these issues, the paper aims to shed light on the importance of public participation in environmental decision-making and provide insights into successful models and practices within the EU. The research aims to contribute to the existing body of knowledge on environmental governance and to provide recommendations for policy makers and stakeholders to enhance transparency and public participation in the design of sustainable environmental policies.

The research methodology will outline the approach and methods used to explore these issues. The findings will present the results of the study and the discussion will analyse their implications for global governance and regional cooperation. Finally, the conclusions will summarise the main findings and their significance for promoting transparency and public participation in EU

environmental decision-making and their potential contribution to strengthening global and regional environmental governance.

2. Theoretical background

The introduction to the literature review provides a thorough examination of the basic concepts of transparency and public participation in the context of environmental decision-making. Transparency, as illustrated by the work of Aivaz (2021, p.17), involves the dissemination of information and data relating to environmental policies and decisions. Such transparency is essential to fostering an informed citizenry and building trust in the mechanisms of governance. At the same time, public participation, informed by Munteanu *et al* (2023, p.203) exploration of digital transformations, involves the active engagement of citizens and stakeholders in shaping environmental policy, thereby promoting democratic legitimacy and accountability in environmental governance.

The theoretical framework of the literature review draws on democratic theory, as advocated by Rus, to emphasise that effective democracy depends on transparency and inclusive public participation in decision-making processes (Rus, 2019, p.144). Governance theory, as presented by Braşoveanu, highlights the evolving paradigms of environmental governance, and emphasises the importance of collaborative, multi-actor decision-making (Braşoveanu, 2015, p.17). In addition, the review integrates Braşoveanu's reflections on the legal protection and conservation of the marine environment, highlighting the legal dimensions of environmental governance.

An in-depth analysis of relevant empirical research and academic contributions reveals a multifaceted landscape. Aivaz's (2021, p.17) examination of the correlations between infrastructure, medical staff and financial indicators in the health and social care sector of Constanta County, Romania, underlines the importance of data-driven decision-making in shaping public policies, including those related to the environment.

In addition, Munteanu *et al* (2023, p.203) research on digital transformations, crypto assets and resilience in emerging innovative firms highlights the evolving financial considerations in contemporary environmental governance.

Finally, Rus's work on tax evasion versus tax fraud sheds light on the fiscal dimensions of environmental governance, highlighting the impact of financial irregularities on the effective implementation of environmental policies (Rus, 2020, p.184). Braşoveanu's contributions to the discourse on environmental protection and sustainable development strategies provide important insights into the legal and political dimensions of environmental governance (Braşoveanu, 2015, p.17).

Importantly, the review extends its scope to include landmark global frameworks such as the 2030 Agenda for Sustainable Development and the Aarhus Convention. These frameworks, as endorsed by the United Nations, set out the imperative of linking environmental rights and human rights, thereby strengthening the global commitment to sustainable development and environmental protection.

In addition, the EU Sustainable Development Strategy, highlighted by the European Commission, outlines a strategic approach to harmonising the myriad of laws and policies affecting sustainability within the European Union. This strategy encapsulates Europe's commitment to environmental sustainability within the broader context of regional governance.

The review also incorporates research by Grigorescu *et al* (2023, p.1) which explores the development of a Green Competency Matrix based on civil servants' perceptions of sustainable development expertise. This research highlights the importance of expertise in shaping sustainable policies and initiatives.

Furthermore, Stan and Taseţe's (2023, p.357) examination of online information, consultation and communication in Romanian local public administrations, with a case study of Constanta and Cluj-Napoca, provides valuable insights into the digital dimensions of public participation and communication strategies within the public sector.

Despite the wealth of research reviewed, there are noticeable gaps in the existing literature. These gaps are particularly noticeable in areas that have received limited scholarly attention, including the complex intersections of financial dynamics and environmental decision-making, the

full integration of digital transformations into environmental governance discourse, and the comparative analysis of online communication strategies within local public administrations. Thus, this literature review highlights the need for further research in these areas in order to add to the existing body of knowledge and facilitate a more nuanced understanding of transparency and public participation within contemporary environmental governance paradigms.

3. Research methodology

The research uses a mixed-methods approach, including a review of existing legislation and legal institutions, the role of transparency and public participation in EU environmental decision-making, and their implications for global governance and regional cooperation.

4. Findings

This perspective underscores that the efficacious practice of democracy hinges inexorably upon transparency and inclusive public participation, enshrining these elements as linchpins of informed decision-making and governance accountability. In tandem, governance theory elucidates the shifting paradigms underpinning contemporary environmental governance. This paradigm shift is predicated on collaborative, multi-actor decision-making, as supported by Braşoveanu's contributions (2013, p.87). By leveraging these theoretical foundations, the review engenders a nuanced understanding of the intricate dynamics of transparency and participation within the environmental context.

A meticulous analysis of pertinent research and scholarly contributions reveals a multifaceted tableau that sheds light on the multifarious dimensions of transparency and public participation in environmental governance. Aivaz's (2021, p.17) investigation into correlations between infrastructure, medical staff, and financial indicators in the health and social care sector of Constanta County, Romania, underscores the pivotal role of data-driven decision-making in shaping policies, including those in the environmental domain. Simultaneously, Munteanu *et al* (2023, p.203) examination of digital transformations, crypto assets, and resilience in emerging innovative businesses underscores the evolving financial considerations in contemporary environmental governance.

Further augmenting this panorama, Rus's (2019, p.104) exploration of tax evasion versus fiscal fraud elucidates the fiscal facets of environmental governance, spotlighting the ramifications of financial irregularities on the efficacious implementation of environmental policies. Braşoveanu's (2013, p.88) oeuvre, spanning environmental protection and sustainable development strategies, adds to the discourse by encapsulating the legal and policy dimensions of environmental governance.

Noteworthy is the review's inclusion of seminal global frameworks, including the 2030 Agenda for Sustainable Development and the Aarhus Convention, each espousing a unifying imperative that interlinks environmental rights with human rights, underscoring the global commitment to sustainable development and environmental stewardship.

Notwithstanding the breadth of extant scholarship, conspicuous lacunae remain within the literature. These lacunae are particularly discernible in areas where limited scholarly attention has been directed. These areas encompass the intricate interplay between financial dynamics and environmental decision-making, the comprehensive amalgamation of digital transformations into the fabric of environmental governance discourse, and the comparative evaluation of online communication strategies within local public administrations. Thus, this literature review accentuates the exigency for further empirical inquiry in these domains, with the overarching objective of enriching the existing knowledge corpus and engendering a more profound comprehension of transparency and public participation within the contemporary milieu of environmental governance paradigms.

4.1. Overview of Transparency and Public Participation in Environmental Decision-Making

Transparency and public participation are pivotal components in the realm of environmental decision-making, serving as fundamental pillars of democratic governance and sustainability.

The concept of transparency entails the proactive disclosure of pertinent information pertaining to projects, policies, or actions with environmental implications. This encompasses the dissemination of data regarding environmental impact assessments, cost-benefit analyses, decision-making processes, and associated documentation. Transparency enables stakeholders to acquire a comprehensive understanding of decisions and, crucially, facilitates informed engagement by enabling citizens to voice their concerns and insights.

Conversely, public participation involves the active involvement of citizens, communities, and relevant stakeholders in the decision-making process. This can encompass mechanisms such as public consultations, deliberative processes, public hearings, or stakeholder engagement initiatives. Public participation fosters inclusive and democratic governance by affording individuals the opportunity to articulate their perspectives, provide recommendations, and contribute to policy formulation and decision-shaping.

In concert, transparency and public participation play an integral role in upholding democratic ideals and ensuring that environmental decisions are underpinned by a broad spectrum of inputs and considerations. These principles are instrumental in achieving sustainable environmental management and striking an equilibrium between developmental pursuits and environmental preservation (Trandafirescu, 2012, p.1020).

The EU provides the public with access to a wide range of environmental information through the "European Environment Agency" online platform and the "Transparency Register." These resources offer access to reports, data, analyses, and assessments regarding the state of the environment and the impact of policies.

The EU conducts public consultations at various stages of policy and regulatory development. Citizens, non-governmental organizations, and other stakeholders can express their opinions and suggestions on proposed legislative initiatives. For example, the European Commission conducts public consultations on its legislative proposals.

Non-governmental organizations (NGOs) play a significant role in the EU's environmental decision-making process. They can lobby, provide expertise, and participate in formal consultations. The EU pays attention to the activities of NGOs and facilitates their interaction with European institutions (Paraschiv and Stan, 2023, p.182).

EU decisions and decision-making processes are transparent, and relevant documents are available to the public. This includes information about the legislative process, official documents, impact assessments, and public hearings (Braşoveanu, 2015, p. 17).

The EU ensures that citizens and organizations have the opportunity to challenge decisions that affect the environment through the judicial system. This can serve as a means to check legality and compliance with environmental regulations.

In the European Union, transparency and public participation in environmental decision-making are established within a well-defined legal and institutional framework. These mechanisms allow citizens and stakeholders to actively engage in shaping environmental policies and monitor their implementation to ensure responsible and sustainable environmental management in Europe (Stan and Taseşte, 2023, p.357).

4.2. Analysis of the legislative framework regarding - Transparency and Public Participation in EU Environmental

The legal framework for transparency and public participation in environmental decision-making in the European Union is an important issue in the context of strengthening global governance and regional cooperation in the field of environmental protection (Braşoveanu, 2013, p.88). The European Union applies a number of directives and regulations that set requirements for transparency and public participation in environmental decision-making.

One of the main relevant directives is Directive 2003/35/EC on public participation in respect of the drawing up of certain plans and programmes relating to the environment and amending Council Directive 85/337/EEC. This Directive sets out requirements for public consultation and the provision of relevant information on plans and programmes likely to have significant effects on the environment. The Member States of the European Union must ensure that the public is informed and given the opportunity to participate in environmental decision-making on plans and programmes likely to have significant effects on the environment. Regulation (EC) No 1367/2006 on the application of the Aarhus Convention in relation to access to information, public participation in decision-making and access to justice in environmental matters is also an important tool for strengthening global governance and promoting regional cooperation in the field of environmental protection. This Regulation establishes the public's right of access to information relating to the environment, the right to participate in the preparation of decisions affecting the environment and the right of access to justice in environmental matters (Grigorescu *et al*, 2023, p.2). It ensures that the public has the opportunity to be informed and to express its opinion on environmental matters.

At EU level, there are also other directives and regulations dealing with transparency and public participation in environmental matters. For example, Directive 2011/92/EU on Environmental Impact Assessment and Directive 2001/42/EC on Strategic Environmental Assessment include requirements for public consultation and information in the process of environmental impact assessment and environmental strategies.

These directives and regulations help to ensure transparency in environmental decision-making and public participation in these processes. They also facilitate regional cooperation between EU Member States and promote global environmental governance.

The European Union's legal framework on environmental transparency and public participation plays an important role in strengthening global governance and promoting regional cooperation on the environment. It sets out clear requirements for public consultation and the provision of relevant information in environmental decision-making.

All these pieces of legislation have been adopted with the aim of ensuring that environmental decisions are taken in a transparent manner and that the public has the opportunity to participate in the process. They form the legal basis for the promotion of transparency and public participation in the European Union in relation to environmental protection.

The European Union enforces legislation on transparency and public participation in environmental decision-making through a number of mechanisms and procedures to ensure that Member States respect and properly implement these rules. EU legislation in this area is enforced in the following ways:

- EU Member States are required to transpose EU directives and regulations into national law. This process involves adopting and adapting national legislation to meet the requirements of EU legislation on environmental transparency and public participation.

- The European Commission is responsible for monitoring how Member States apply EU legislation. Monitoring mechanisms allow the Commission to request additional information from Member States, carry out inspections and require corrections if it finds irregularities in the application of legislation.

- EU law gives citizens and non-governmental organisations the right to challenge decisions and actions by national authorities affecting the environment before the courts. This ensures that the public has a legal means to take action if they believe that their rights to transparency and public participation are not being respected.

- The European Union encourages cooperation between Member States and the exchange of information to improve transparency and public participation in environmental matters. This is done through cooperation platforms and the exchange of best practices between Member States.

- The EU provides technical assistance and funding to help Member States implement environmental legislation. - This support can include training, guidance and resources to help Member States comply with transparency and public participation requirements.

- Overall, the EU uses a system of monitoring, reporting and corrective action to ensure that environmental transparency and public participation legislation is properly implemented and enforced in all Member States.

These efforts contribute to promoting more open governance and citizen participation in environmental decision-making in the European Union (Braşoveanu, 2013, p.88).

The situation in Romania, as a Member State of the European Union, regarding the application of legislation on environmental transparency and public participation may vary depending on specific developments and the way EU regulations and directives are implemented at national level. Romania is required to transpose the relevant EU Directives and Regulations into national law. This may involve adopting or amending existing legislation to meet European standards on transparency and public participation in environmental matters.

As required by EU law, Romania should carry out public consultations on decisions that may affect the environment. These consultations may include the provision of relevant public information and the opportunity for citizens and organisations to express their views in the decision-making process. Romania should ensure public access to relevant environmental information. This may include publishing environmental data and documents in a way that is accessible to citizens and organisations (Munteanu *et al*, 2023, p.203). Citizens and organisations in Romania have the right to challenge decisions of national authorities affecting the environment before the courts. This is crucial for the enforcement of environmental rights. The European Commission can monitor how Romania applies EU law and can request corrections or make recommendations in case of irregularities or non-compliance (Căzănel, 2015, p.22).

In practice, the application of environmental transparency and public participation legislation in Romania may be subject to debate and criticism, and developments may vary depending on the specific context and resources available. However, the European Union exerts pressure and provides assistance to ensure that Member States, including Romania, comply with environmental transparency and public participation requirements (Mititelu, 2016, p.158). An example could be a motorway construction project that passes through areas of ecological value or that may have an impact on the environment.

In this case, the Romanian authorities should organise public consultations to obtain the opinion of citizens and organisations on the environmental impact of the project. This should include the provision of relevant information and the opportunity to make comments and suggestions. When considering the exploitation of natural resources, such as mining or logging, the Romanian authorities should take into account EU requirements on public consultation and information (Mititelu, 2013, p.122). The public must be informed about potential environmental impacts and have the opportunity to participate in the decision-making process. Urban development projects that may affect green areas or natural habitats should also be subject to public consultation. This allows citizens and organisations to have a say in how the project is carried out and how the environment is protected. Romania needs to develop strategic environmental plans that set out objectives and measures to protect the environment (Mititelu, 2015, p.243).

This process must be transparent and include public consultation to ensure that the interests of citizens and the environment are taken into account (Stan and Taseşte, 2023, p.357). It is important to note that these cases may vary in complexity and scope, but compliance with the requirements of transparency and public consultation remains a fundamental aspect of the decision-making process regarding environmental protection in the EU and in the Member States, including Romania.

Law No. 52/2003 on the transparency of decision-making in public administration: This normative act regulates transparency in public administration in general and also applies to the environment.

Government Emergency Ordinance no. 57/2007 on the regime of natural protected areas, the conservation of natural habitats, flora and fauna, this normative act regulates the protection of natural areas and natural habitats and provides for public consultation in the case of the development and revision of the management plans of these protected areas (Căzănel and Calafus, 2018, p.299).

5. Conclusions

This study has shed light on the intricate dynamics of transparency and public participation in the context of EU environmental decision-making. The findings of this research have revealed the following key insights:

The study employed a rigorous methodological approach, including extensive data collection and analysis. As a result, the validity and credibility of the findings can be considered robust and reliable. However, it is essential to acknowledge that no study is without its limitations, which we will discuss further.

This study has contributed valuable insights to the discourse on transparency and public participation in environmental decision-making within the EU. While it is essential to acknowledge the study's limitations, its findings provide a solid foundation for future research and policy development in this critical area of global governance.

Improvement proposals:

To enhance public participation in environmental decision-making, consider using a broader spectrum of participation methods and tools, such as public debates, online consultation platforms, surveys, and regional consultations.

It is essential to invest in education and information for the public regarding environmental issues and decision-making processes. This can ensure greater awareness and involvement of citizens in these matters.

To strengthen transparency, develop and implement additional mechanisms for reporting and monitoring environmental decisions, ensuring that information is easily accessible and understandable to the public.

Collaborating with environmental non-governmental organizations and other stakeholders can contribute to the development of better-informed policies and decisions and increase the level of expertise available.

To measure the effectiveness of participation processes, develop methods to assess the impact of public involvement in environmental decisions so that continuous adjustments and improvements can be made.

These are some improvement proposals for transparency and public participation processes in environmental decisions within the European Union. Implementing these measures could contribute to more efficient governance and better overall environmental protection.

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Methods of Measuring and Analyzing Inflation and Its Effect on Economic Growth

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Abstract

This paper delves into the relationship between inflation and economic growth, two pivotal elements in contemporary economic discussions. It aims to demystify and elucidate these concepts, particularly examining how they are interlinked through the development of a comprehensive econometric model. The study pays special attention to key economic indicators such as the Consumer Price Index (CPI), Producer Price Index (PPI) and the growth rate of Gross Domestic Product (GDP). In addition, the paper considers the role of monetary and fiscal policies in managing inflation and fostering economic growth. This exploration not only contributes to a deeper understanding of economic dynamics but also offers valuable insights for policymakers and economists in formulating effective economic strategies.

Key words: Consumer Price index, economic growth, econometric model, inflation, monetary and fiscal policies

J.E.L. classification: E30, E31, E37

1. Introduction

The topicality and importance of this paper derives from the fact that the inflationary problem is still a relevant issue that is being addressed through monetary and fiscal policies. Alongside this, from the point of view of human progress, economic growth is also an important issue. This importance derives from the fact that the prosperity of nations is linked to the recorded performance of economic growth. The economic growth of any country reflects its ability to increase the production of goods and services.

The aim of this paper is to clarify the concepts of inflation and economic growth and to determine their dependence by constructing an econometric model that analyses the effect of inflation on economic growth.

Inflation is often determined by the Consumer Price Index (CPI), to which is added the Producer Price Index (PPI) or GDP deflator. Economic growth is most often stated as the growth of the Gross Domestic Product (GDP) of the country concerned. Hence the main objective of this paper is to identify a set of indicators that determine inflation and influence economic growth, with which to build a valid econometric model.

The secondary objectives of the research are to clearly define and understand the concepts of inflation and economic growth, to identify theories and explanatory models of inflation, to identify the positive and negative effects of inflation on economic growth, and to identify monetary and fiscal policies in the context of inflation and economic growth.

The objectives, both primary and secondary, are achieved in the three sections of the paper. Thus, the paper is structured into three chapters, the first two consisting of a theoretical part and the last one representing a practical part.

2. Literature review

The complex relationship between inflation and economic growth has long captivated economists, sparking diverse theories and extensive empirical research (Khan et al., 2022). Historically, the discourse around inflation and economic growth has been rich and varied. Early economic theories, particularly those of Keynes and Friedman, laid the foundational perspectives on how inflation could influence economies (Aganbegyan, 2022). Keynes highlighted the short-term trade-offs between inflation and unemployment, suggesting a complex interplay with economic growth. Friedman's monetarist perspective, on the other hand, emphasized the long-term neutrality of money, redirecting the focus towards inflation's monetary roots.

Progressing into theoretical frameworks, various models have been developed to explain the dynamics between inflation and growth. The Phillips Curve, for instance, proposed an inverse relationship between inflation and unemployment, indirectly implicating economic growth. However, this model's applicability has been questioned over time, especially considering the stagflation episodes of the 1970s (Bowles et al., 2020). Monetarist theories provided a more monetarily focused view, asserting that inflation is primarily a result of changes in the money supply. New Keynesian models introduced elements like price stickiness and short-term non-neutrality of money, offering nuanced views on the inflation-growth nexus. Empirical research provides a more grounded understanding of this relationship. Various studies have demonstrated that the impact of inflation on economic growth can differ significantly across countries and economic contexts. For instance, research focusing on developed economies often reveals a different inflation-growth dynamic compared to studies centered on developing economies (Stoica et al., 2020). Additionally, comparative analyses across different economic systems and periods have highlighted the diversity of experiences and policy outcomes.

Central to this discussion are key economic indicators like the Consumer Price Index (CPI) and Producer Price Index (PPI). The methodologies behind these indices are crucial for accurately measuring inflation. Similarly, the Gross Domestic Product (GDP) growth rate is an essential indicator of economic growth. The interplay between these indicators provides vital insights into how inflation and growth are interconnected in the practical economic scenario (Saymeh et al., 2013). Monetary and fiscal policies also play a significant role in shaping this relationship. Central banks utilize various tools, such as interest rate adjustments and controlling the money supply, to manage inflation and stimulate growth. Government fiscal policies, through mechanisms like spending and taxation, further influence this dynamic. The literature offers a range of perspectives on the effectiveness of these policies in different economic conditions (Combes et al., 2018). In the realm of contemporary challenges, phenomena like hyperinflation, stagflation, and the impacts of globalization are increasingly relevant. The interconnectedness of global economies has added complexity to the traditional narratives of inflation and economic growth, prompting a need for a more globalized perspective in economic analysis.

3. Research methodology

The present study has been carried out on a database containing the values of certain indicators at the Romanian level relating to inflation and economic growth over a 10-year period. The aim of the study is to check whether the value of GDP is influenced by the value of the consumer price index, the industrial production price index and foreign direct investment. If a dependence is confirmed between these variables, the objective of the research is to determine and analyse how GDP is influenced by the other variables and to draw conclusions based on econometric analysis.

In the first stage of the research, data from the NBR reports were processed. With the help of these, a database was created in which the values refer to economic indicators recorded at the Romanian level and covering a 10-year period, i.e. 2012-2021. The database was developed in the Excel program offered by the Microsoft suite. The indicators that were mainly targeted were GDP, CPI (consumer price index) and FDI (foreign direct investment). The main objective was to observe how GDP is influenced by the other indicators already mentioned. To do this, I ran a multiple regression model using IBM SPSS Statistics 26. GDP was defined as the dependent variable, the other indicators being independent variables. A particularly important part of this

study consisted in observing the influence that the independent variables have on the dependent variable, and then developing an explanation to justify this behaviour from an economic perspective. In the final stage, a histogram and a P-P Plot were constructed, based on which we formulated some conclusions regarding the validity of the chosen model.

4. Findings

The development and processing of economic information within the database played a key role in developing an econometric model to establish a relationship between the variables GDP (in billions of dollars), CPI and FDI (in billions of dollars). For data analysis and regression model validation, we used IBM SPSS Statistics 26 software. The purpose of the proposed model is to assess the dependence link between the dependent variable GDP and the independent variables CPI and FDI, as shown in Table 1.

Table no. 1 Variables analysed

Variables Entered/Removed ^a			
Model	Variables Entered	Variables Removed	Method
1	FDI (bn \$), CPI ^b	.	Enter
a. Dependent Variable: GDP (bn \$)			
b. All requested variables entered.			

Source: Own processing in SPSS 26

The dependent variable GDP represents Romania's gross domestic product over the period 2012-2021. Gross Domestic Product (GDP) is a macroeconomic measure reflecting the total market value of all goods and services for final consumption produced within a country during a year in all sectors of the economy. GDP is also the most widely used indicator for measuring economic growth. CPI, the consumer price index, is the most widely used indicator for measuring inflation. It is calculated using permanent weights for the goods and services included in the consumption basket. The consumer price index measures the overall change in the prices of goods purchased and charges for services used by the population in a specific period compared with a previous period. The independent variable FDI refers to foreign direct investment. These are financial capital flows made by foreign investors into a country to own or control local businesses. They bring economic benefits through the transfer of capital, technology and job creation, stimulating economic growth and development in the host country. Both CPI and FDI figures cover the period 2012-2021.

The aim of our analysis is to determine the relationship of GDP dependence on several influencing factors. For this, we use a multiple linear regression model of the type: The dependent variable GDP represents Romania's gross domestic product over the period 2012-2021. Gross Domestic Product (GDP) is a macroeconomic measure reflecting the total market value of all goods and services for final consumption produced within a country during a year in all sectors of the economy. GDP is also the most widely used indicator for measuring economic growth. CPI, the consumer price index, is the most widely used indicator for measuring inflation. It is calculated using permanent weights for the goods and services included in the consumption basket. The consumer price index measures the overall change in the prices of goods purchased and charges for services used by the population in a specific period compared with a previous period. The independent variable FDI refers to foreign direct investment. These are financial capital flows made by foreign investors into a country to own or control local businesses. They bring economic benefits through the transfer of capital, technology and job creation, stimulating economic growth and development in the host country. Both CPI and FDI figures cover the period 2012-2021.

The aim of our analysis is to determine the relationship of GDP dependence on several influencing factors. For this, we use a multiple linear regression model of the type:

$$GDP = \alpha + \beta_1 * FDI + \beta_2 * CPI + \varepsilon$$

Where:

- GDP is the dependent variable of the model;
- FDI, CPI are the independent variables;

- α , β_1 , β_2 are the regression model parameters;
- ε is the random error variable.

This stage of the research aims to demonstrate that the model developed adequately describes the economic problem under analysis and provides a high level of confidence. The aim is to determine the degree of sensitivity of the dependent variable to variations in the independent variables. Furthermore, table number 2 shows the value of the correlation ratio.

Table no. 2 Summary of the model

Model Summary ^b					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,979 ^a	,958	,946	8,70460	2,175
a. Predictors: (Constant), FDI (mld \$), CPI					
b. Dependent Variable: GDP (mld \$)					

Source: Own processing in SPSS 26

Table Summary provides information on the strong influence of the variables used in the econometric model design. The coefficient of multiple correlation (R) measures the strength of the relationship between the selected variables, and the coefficient of multiple determination (R square) indicates the proportion of the variation in goodwill explained by the variation in the independent variables. We observe that both R and R square exceed the threshold of 0.75, suggesting a very strong correlation between the variables of about 97.9%, and that 95.8% of the variation in GDP is explained by the variation in the independent variables.

FDI can contribute to GDP growth through investment in new businesses or expansion of existing businesses. These investments can generate jobs, boost output and economic growth. Through FDI, new production capacities can be created, technology and knowledge can be transferred, and innovations can be promoted, all of which contribute to GDP growth through increased economic output. Foreign direct investment often brings with it the transfer of technology and know-how. Foreign companies can introduce new technologies, efficient production practices and innovative methods in the host country. This technology transfer can improve productivity and efficiency in different sectors of the economy, leading to increased output and GDP (Hansen et al., 2006, p. 21). Foreign direct investment can create jobs in the host country. By opening new businesses or expanding existing ones, it can provide employment opportunities for the local population. This can increase incomes and living standards, which in turn can boost domestic demand and consumption. Foreign direct investment can play an important role in stimulating local investment and developing a country's private sector. Through partnerships and collaboration with foreign investors, local businesses can benefit from access to capital, technology and resources, which can increase their competitiveness and capacity to grow. Foreign direct investment can also help integrate a country into global supply chains. Through foreign investment, a country can become an attractive destination for the production or assembly of components or products that are exported to other countries. This can increase exports and bring additional revenue into the economy, which has a positive impact on GDP (Agrawal et al., 2011, p. 72).

The CPI measures the increase in prices of goods and services consumed by the population. If the CPI rises, it means that prices are rising in the economy, which can lead to a reduction in consumer purchasing power. In this case, consumers may spend less, which can have a negative impact on aggregate demand and thus on GDP. If inflation is persistent and prices continue to rise at an accelerating pace, consumers and businesses may become more cautious about spending and investment, which may negatively affect economic growth and GDP. The CPI can also influence consumer purchasing power. If prices rise rapidly over a period of time and consumer incomes do not adjust accordingly, then consumer purchasing power falls. A fall in purchasing power may lead consumers to spend less and look for cheaper alternatives or reduce discretionary spending. Aggregate demand can thus be negatively affected, which can lead to a fall in economic output and thus GDP. The CPI can also affect the cost of production for businesses. If the prices of goods and

services needed in the production process rise rapidly, then production costs for businesses may increase. This can reduce profits and discourage investment in new production capacity or business expansion. If investment is negatively affected, there may be a reduction in economic output and GDP. Monetary authorities and governments can use monetary and fiscal policies to influence inflation and the CPI. For example, by adjusting interest rates or fiscal policy, they can try to control inflation. If inflation is high and prices are rising rapidly, the authorities may take measures to reduce inflation, but these measures may also have an impact on GDP. For example, monetary tightening or tight fiscal policies can reduce spending and investment, which can negatively affect GDP (Savmeh et al., 2013, p. 353).

In order to validate the multiple linear model econometrically, we perform the anova test in Table 3.

Table no. 3 Anova test

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	12057,373	2	6028,686	79,565	,000 ^b
	Residual	530,391	7	75,770		
	Total	12587,764	9			
a. Dependent Variable: GDP (bn \$)						
b. Predictors: (Constant), FDI (bn \$), CPI						

Source: Own processing in SPSS 26

According to the results presented in the anova table, the values of the variance components are as follows: the estimated explained variance is 12057.373, the estimated residual variance is 530.391, and the estimated total variance is 12587.764. The Fisher test has a value of 79.565. The Sig value is significant in accepting the model econometrically. When its value is less than 0.05, the multiple linear model is 95% validated. In our case, the Sig value is 0, less than 0.05, which indicates that the selected independent variables have a significant influence on the variation of the dependent variable, GDP. Therefore, the chosen multiple regression model is representative. Table 4 shows the coefficients of the model.

Table no. 4 Model coefficients

Coefficients ^a								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95,0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	- 407,566	142,671		- 2,857	,024	-744,929	-70,203
	CPI	4,563	1,460	,272	3,125	,017	1,111	8,016
	FDI (bn\$)	2,101	,222	,824	9,449	,000	1,575	2,626
a. Dependent Variable: GDP (bn \$)								

Source: Own processing in SPSS 26

The table shows the regression parameters of the model, which allow us to determine the estimated equation. This equation allows us to rewrite the GDP according to the factors analysed, having the following form:

$$GDP = -407,566 + 2,101 * FDI + 4,563 * CPI$$

The intervals from which α , β_1 , β_2 can take values are (-744.929; -70.203), (1.575; 2.626), (1.111; 8.016) respectively.

Also, in the table we can observe the t-values corresponding to the independent variables, respectively 9.449 for FDI and 3.125 for CPI.

The most important parameter in the table is Sig, as it provides information about the significance and influence of the independent variables on the dependent variable, in this case

GDP. Lower values of Sig indicate a more significant influence of the independent variables on GDP and how they influence it. If several variables have equal values for Sig, their order can be determined according to the values of the parameter t. The variable with a higher value of t will have a stronger influence on the dependent variable.

In the case of our model the order is as follows, foreign direct investment (FDI - bn \$), followed by the consumer price index (CPI).

From an econometric perspective, the interpretation of the Coefficients table is as follows:

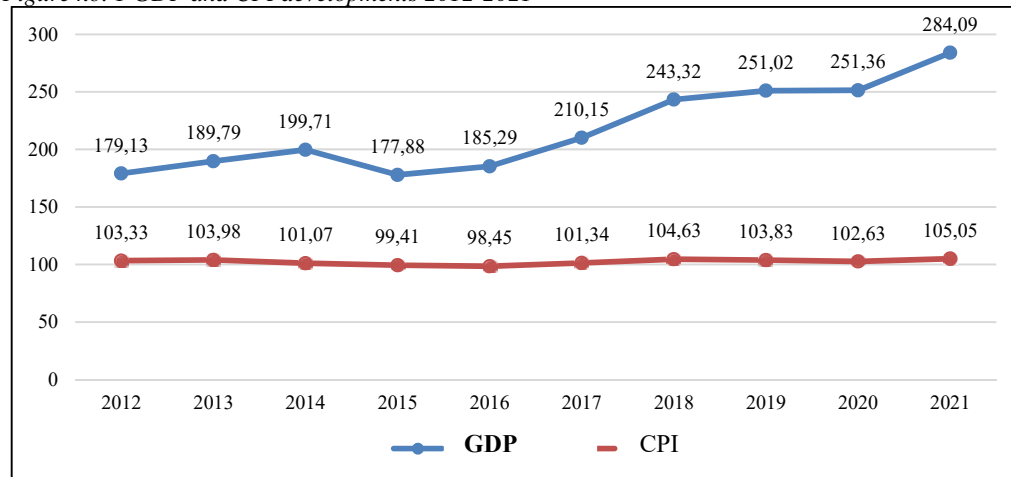
- If the value of the CPI variable increases by one unit and the value of the FDI variable remains constant, then GDP is estimated to increase on average by 4.563 units;
- If the value of the FDI variable increases by one unit and the CPI value remains constant, then GDP is estimated to increase on average by 2.101 units.

Foreign direct investment (FDI) as a growth-enhancing component has received a lot of attention in developed countries, even in developing and less developed countries in recent years. It has been a matter of greater concern to economists how FDI affects the economic growth of the host country's economy. In the closed economy there is no access to foreign instruments and savings, as this type of economy relies exclusively on domestic sources of savings and investment. But in the open economy, investment comes from both sources, either domestic savings or foreign capital flows such as FDI. FDI enables the host country to achieve a level of investment beyond its capacity to improve GDP and economic growth (Iqbal et al., 2014, p. 79).

There is a link between the CPI and GDP. If the CPI is growing faster than GDP, this may indicate high inflation. If consumer prices are rising faster than the value of economic output, then there is pressure on consumer purchasing power, which can lead to a reduction in demand for goods and services. As a result, GDP may be negatively affected. On the other hand, GDP growth at a faster pace than the CPI may indicate healthy economic growth and moderate inflation. If the economy is growing at a faster pace than prices, this may indicate that economic output is growing and that demand for goods and services is sustained. In this case, GDP can be positively influenced (Savmeh et al., 2013, p. 353).

This is also true in reality and the figure below illustrates the evolution of GDP and CPI indicators over the period under review.

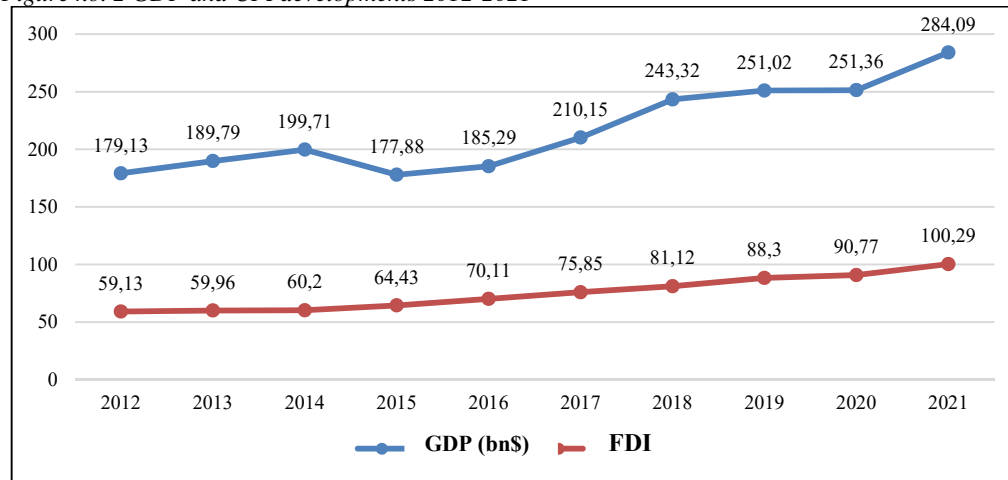
Figure no. 1 GDP and CPI developments 2012-2021



Source: Own processing in Microsoft Excel

The graph shows an upward trend in GDP, unlike the CPI which has remained relatively constant. The year 2015 is the only year in the period analysed in which the value of GDP decreased, with the largest increases in 2018 (from \$210.15bn to \$243.32bn) and 2021 (from \$251.36bn to \$284.09bn). We can also see that an increase in CPI does not always imply a decrease in GDP, like for example the period 2020-2021, as moderate inflation can be beneficial for economic growth. To observe the evolution of FDI over the period analyzed, we have made chart 2.

Figure no. 2 GDP and CPI developments 2012-2021



Source: Own processing in Microsoft Excel

From the graph it can be seen that foreign direct investment has been on an upward trend, increasing every year during the period analysed, reaching 59.13 billion euro in 2007. in 2012 to 100.29 bn. An upward trend in FDI may indicate an economic and stable environment, favorable government policies for foreign investment, and a favorable long-term growth outlook. Table 5 provides information on residual values, illustrating how well our model can forecast.

Table no. 5 Residuals Statistics

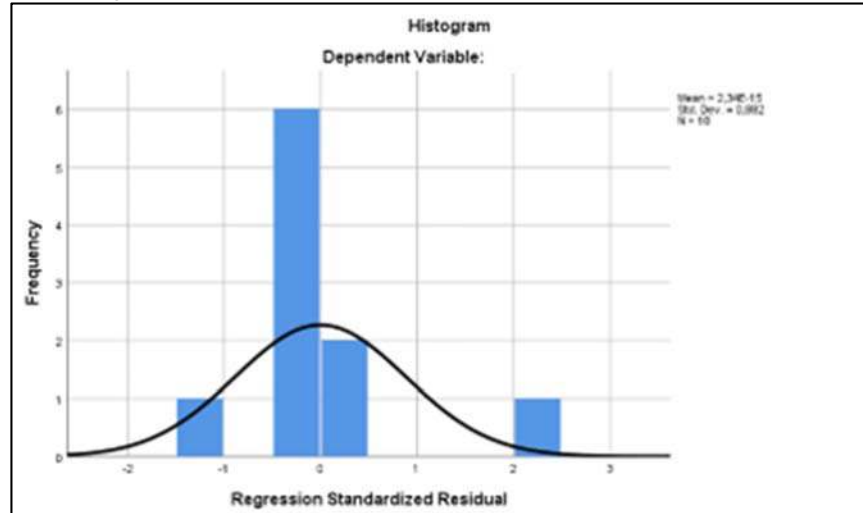
Residuals Statistics ^a					
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	180,1080	282,4886	217,1740	36,60202	10
Std. Predicted Value	-1,013	1,784	,000	1,000	10
Standard Error of Predicted Value	3,184	5,989	4,683	,945	10
Adjusted Predicted Value	174,7242	281,1577	217,6908	35,96800	10
Residual	-9,04322	19,60197	,00000	7,67674	10
Std. Residual	-1,039	2,252	,000	,882	10
Stud. Residual	-1,289	2,542	-,024	1,021	10
Deleted Residual	-13,91138	24,98575	-,51683	10,34691	10
Stud. Deleted Residual	-1,366	8,505	,572	2,830	10
Mahal. Distance	,304	3,360	1,800	1,059	10
Cook's Distance	,000	,592	,112	,191	10
Centered Leverage Value	,034	,373	,200	,118	10

a. Dependent Variable: GDP (bn \$)

Source: Own processing in SPSS 26

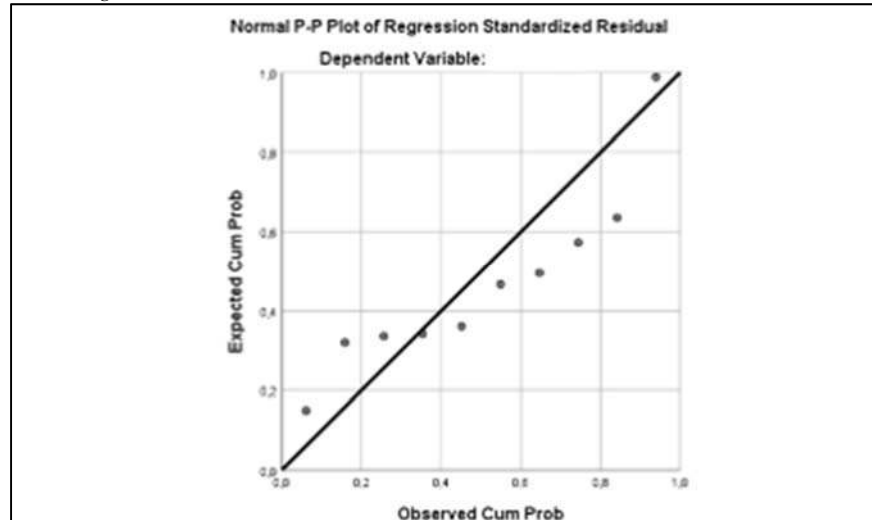
GDP is influenced by the selected independent variables, but sometimes the actual figures may vary from those identified by the multiple regression model. In this context, in the table, the minimum and maximum values of the residuals are particularly important. In our model, we identified that the minimum point of the residual is -9.04322, while the maximum point is 19.60197. The histogram and P-P Plot of the model are shown in Figure 3 and Figure 4 respectively.

Figure no. 3 Histogram



Source: Own processing in SPSS 26

Figure no. 4 Diagram P-P Plot



Source: Own processing in SPSS 26

The histogram plots the data and should have a shape similar to a Gaussian bell. The P-P Plot is used to assess the fit of the distribution of variables to a specified distribution. If the standardized residuals follow a normal distribution, the points should roughly line up on the normal distribution line, indicating a fit between the data and the specified distribution. Looking at our plots, we observe that the histogram shows an almost uniform distribution, but we can see that the distribution is imperfect, as in the P-P Plot, because the GDP variable is influenced by factors other than those considered in our model. From our analysis we can conclude that there is a correlation between the chosen variables. This correlation can be better observed in Table 6.

Table no. 6 Correlations

Correlations				
		GDP (bn \$)	CPI	FDI (bn \$)
Pearson Correlation	GDP (bn \$)	1,000	,648	,948
	CPI	,648	1,000	,456
	FDI (bn \$)	,948	,456	1,000
Sig. (1-tailed)	GDP (bn \$)	.	,021	,000
	CPI	,021	.	,093
	FDI (bn \$)	,000	,093	.
N	GDP (bn \$)	10	10	10
	CPI	10	10	10
	FDI (bn \$)	10	10	10

Source: Own processing in SPSS 26

Foreign direct investment and the consumer price index, have a significant influence on the variation of the dependent variable GDP. Using the data provided by the SPSS program, we had access to tables that provide relevant information about the multiple correlation ratio R and the multiple determination ratio R square. Both ratios recorded significant values, exceeding the 75% threshold, thus confirming the compatibility of the model. Also, the Sig value recorded is 0, which is within the 0.05 limit, and the $F > 0$ test demonstrates the existence of a strong relationship between the selected variables. It should be noted that the histogram does not have an identical shape to the Gaussian bell. This discrepancy shows that there are no perfect models in economics. The imperfection of the curve is the result of the influence of other factors on the GDP variable, which were not included in our study.

5. Conclusions

Methods of measuring both inflation and economic growth are important to highlight. They refer to certain indicators that are calculated when it is desired to determine the value of inflation or economic growth. Thus, the most commonly used indicators when referring to inflation are the consumer price index, the producer price index and the GDP deflator. As for economic growth, the most commonly used indicators for measuring it are gross domestic product and gross domestic product per capita.

Another important point to note is the theories and models explaining inflation. Demand-pull theory, cost-push theory, monetarist theory, structural theory and international transmission theory are the most popular theories explaining inflation. Of the inflation models, the most common are the monetary model, the cost model, the aggregate demand model and the expectations model.

In terms of the relationship between inflation and economic growth, the latter can be influenced both positively and negatively by the former. Stimulating consumption and investment, reducing real debt, supporting exports are some of the positive effects of inflation on growth. In antithesis, reduced consumer purchasing power, economic instability and uncertainty, unequal income distribution are some of the negative effects of inflation.

Price stability has become the overriding objective of modern central banks, which are primarily concerned with fighting inflation in order to increase economic growth, so monetary as well as fiscal policies play a particularly important role, as through them central banks and governments can help achieve a stable and sustainable economy.

Based on the correct econometric model, we can conclude that the value of GDP is influenced by changes in the independent variables that we have analysed in our model, i.e. FDI and CPI. The relationship between CPI and GDP can vary depending on economic conditions and the level of inflation. If inflation is moderate and GDP is growing at a healthy pace, this may indicate a favourable economic situation. However, high inflation and weak GDP growth may signal economic problems that need to be addressed. The impact of FDI on GDP may vary depending on government policies, the business environment, infrastructure and other country-specific

conditions. Despite this, in general, FDI can play a significant role in boosting economic growth and GDP. In addition, it should be noted that the econometric model presented is not perfect as there are other factors that influence GDP. The identification and analysis of these factors may be directions for future research.

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Internal Control Tools to Strengthen the Fight Against Fraud in the European Union

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Abstract

This paper aims to systematically reconstruct and analyze both typical and atypical models of fraud schemes prevalent in various sectors and channels of the modern landscape. It seeks to explore and delineate the evolving tools and strategies developed to combat the spread of fraud. The primary focus is not to provide an exhaustive analysis of the entire scope of specialized literature on fraud, but rather to offer an insightful description of various forms of fraudulent behavior within a company context, highlighting their prevalence and consequences. This approach allows for a nuanced understanding of fraud dynamics, contributing significantly to the field of fraud detection and prevention.

Key words: audit, fraud, internal control tools, irregularity, European Union

J.E.L. classification: K40, K42, K49

1. Introduction

The concept of internal control varies significantly depending on the sector in which it is applied. In the public sector, internal control is predominantly about verification activities executed by entities external to the monitored body, yet operating within its framework. This approach is often guided by international best practices, such as the COSO (Committee of Sponsoring Organizations of the Treadway Commission) framework and relies heavily on national supervisors to integrate these practices into existing supervisory systems effectively. On the other hand, in the financial sector, the definition of internal control is more specialized due to unique business requirements. Here, an internal control system is designed not only to ensure compliance and operational efficiency but also to manage market risks adequately. This sector has seen a more explicit and rigorous application of internal control systems, driven by both regulatory demands and the inherent complexities of financial transactions. The scenario in the private sector, however, presents a stark contrast. Lacking a clear and universally accepted definition of internal control, many private organizations have yet to adopt a system tailored to their specific needs. In several cases, the very concept of 'control' is narrowly perceived as synonymous with audit or basic accounting functions, overlooking its broader strategic implications. This myopic view often results in missed opportunities for enhancing organizational efficiency and mitigating risks.

This lack of a comprehensive understanding and application of internal control mechanisms in the private sector is particularly concerning in the context of fraud prevention. Fraudulent activities within companies can take various forms, each with unique characteristics and impacts on the organization. Without a robust internal control system, these entities remain vulnerable to both internal and external fraud schemes, which can have far-reaching financial and reputational consequences. Therefore, this paper emphasizes the critical need for a nuanced approach to internal control across all sectors, particularly in the private sector. By exploring and analyzing diverse fraud schemes and the evolving tools to combat them, the paper aims to highlight the importance of bespoke internal control systems. These systems should not only comply with regulatory requirements but also be agile enough to adapt to the unique challenges and risks specific to each organization. This approach is pivotal in fortifying the fight against fraud, thereby contributing

significantly to the broader landscape of fraud detection and prevention in the European Union.

2. Theoretical background

Companies that have begun to engage with the concept of internal control often encounter the challenge of inadequate support in constructing a comprehensive system. This highlights the need for a deeper understanding of internal control as a dynamic process integral to an organization's operations.

1. The internal control system is not a static entity; it is a process interwoven with the core activities of planning, execution, and monitoring within a business (Conyon et al., 2016, p. 21). Its effectiveness is maximized when it becomes a part of the organization's culture, involving individuals at all hierarchical levels, not just those at the top. While it is crucial to understand that an internal control system provides reasonable assurance towards achieving objectives, it cannot offer absolute certainty due to inherent limitations like human error or intentional circumvention of controls.

Indeed, this system is at its most effective when it is integrated into the structure of an organisation and becomes part of its corporate culture. Moreover, it consists not only of manuals and documents, but also of people at all hierarchical levels of a company, not just at the top. This definition of an internal control system also specifies how management and the board of directors can expect from the control structure only reasonable, not absolute, assurance on the achievement of objectives; therefore, no matter how well an internal control system is structured and implemented, it will never guarantee total assurance, as it is in any case vitiated by the limitations inherent in any type of system, such as human failures. human omissions or avoidance of controls by one or more individuals.

2. As outlined in the 1992 CoSO report, the internal control system comprises five interrelated components, adaptable to organizations of varying sizes (DeZoort et al., 2018, p. 74). These components are:

The control environment, whose constituent factors are:

- Integrity and ethical values;
- The value of competence;
- The board of directors or audit committee;
- Management philosophy and style;
- Organisational structure;
- Allocation of skills and responsibilities;
- Human resources policies and practices.

Risk assessment, the elements of which are:

- General business objectives;
- Specific objectives for each activity;
- Risk analysis and assessment;
- Change management.

The current global context, marked by the COVID-19 pandemic and geopolitical tensions such as the war in Ukraine, necessitates the adaptation and enhancement of internal control systems. The European Commission is working to augment existing tools and develop new strategies to address the unique challenges presented by these circumstances, particularly in the management of EU funding. This adaptation includes recognizing and mitigating new risks, adapting control activities to remote or hybrid working environments, ensuring effective communication in a rapidly changing context, and continuous monitoring to respond to evolving threats and opportunities.

In conclusion, the theoretical underpinnings of internal control systems in the modern context underscore the importance of a flexible, comprehensive approach. This approach must be responsive to the changing landscape of risks and organizational dynamics, ensuring robust fraud prevention and efficient management in various sectors.

3. Research methodology

This research will adopt a mixed-methods approach to evaluate the effectiveness of ARACHNE, EDES, and other EU anti-fraud instruments. The methodology involves a comprehensive analysis of data from the European Commission, ECA, and CSES surveys to quantitatively assess the usage and impact of these tools across EU Member States. A comparative study will examine the implementation of national anti-fraud strategies, augmented by specific case studies of Member States with active tool usage. Interviews with EU officials and auditors, coupled with survey analysis on the best practices from the Anti-Fraud Knowledge Centre, will provide qualitative insights. Additionally, the research will review the legal and policy frameworks underpinning tools like EDES and assess the technological aspects of tools like GetI, evaluating their contribution to enhancing analytical capacities in fraud detection and prevention.

4. Findings

The Commission encourages the use of ARACHNE, an integrated IT tool for data mining and data enrichment. It has been developed by the Commission to support managing authorities in administrative controls and management verifications of the Structural Funds (European Social Fund and European Regional Development Fund). It has also been extended to European Agricultural Fund for Rural Development (EAFRD) projects and will be used for all agricultural funds following the CAP reform.

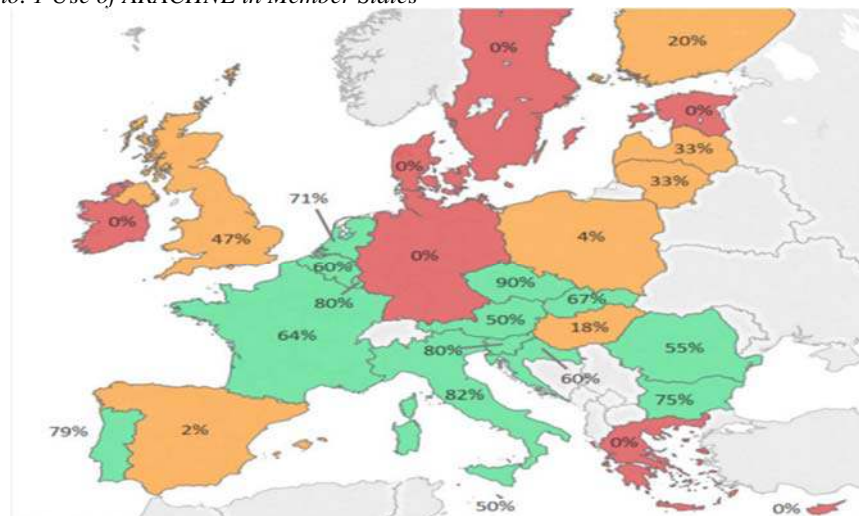
ARACHNE establishes a comprehensive database of EU projects implemented under the Funds, provided by managing authorities and paying agencies, and enriches this data with publicly available information to identify, based on a set of risk indicators, projects, beneficiaries, contracts and contractors, that may be susceptible to risks of fraud, conflict of interest and irregularities.

The tool provides extremely valuable risk alerts to enrich management checks, but provides no evidence of error, irregularity or fraud. ARACHNE can increase the efficiency of project selection, management checks and further strengthen fraud identification, prevention and detection.

In view of the risks that may arise, it is necessary and appropriate to make widespread and systematic use of tools such as ARACHNE which would allow the fight against fraud, irregularities, conflicts of interest and double funding to be stepped up.

Despite its merits, the extent to which Arachne is used by MAs varies. By September 2022, 21 Member States were using Arachne, of which 16 had integrated it into their management and verification processes for at least one operational program. According to Commission figures, Member States used Arachne for 165 operational programs in 2022, representing 54% of total EU cohesion policy funding for the period 2016-2022, excluding the European Territorial Cooperation Objective of the European Regional Development Fund. The use of ARACHNE can be seen in the following image.

Figure no. 1 Use of ARACHNE in Member States



Source: ECA, based on Commission figures

Despite its merits, the extent to which Arachne is used by MAs varies. By September 2022, 21 Member States were using Arachne, of which 16 had integrated it into their management and verification processes for at least one operational program. According to Commission figures, Member States used Arachne for 165 operational programs in 2022, representing 54% of total EU cohesion policy funding for the period 2016-2022, excluding the European Territorial Cooperation Objective of the European Regional Development Fund.

DG REGIO's Joint Audit Directorate for Cohesion Policy indicated that 56% coverage of operational programs for the 242 programs supported by DG EMPL and REGIO for the period 2016-2022 has been achieved by June 2021. Another study commissioned by DG REGIO found that the majority of MAs were not using Arachne (only one third of MAs were using Arachne as a risk assessment or fraud detection tool). Arachne is often used by authorities in combination with other IT tools, most commonly national IT tools and databases, but these have a narrower geographical scope. In countries where Arachne is not used, there are generally national and regional IT systems or other similar tools and databases offering similar functionalities. However, the majority of MAs using the tool considered that it added value.

The most active Arachne users seem to be Bulgaria, Czech Republic, France, Italy, Latvia, Romania and Slovakia.

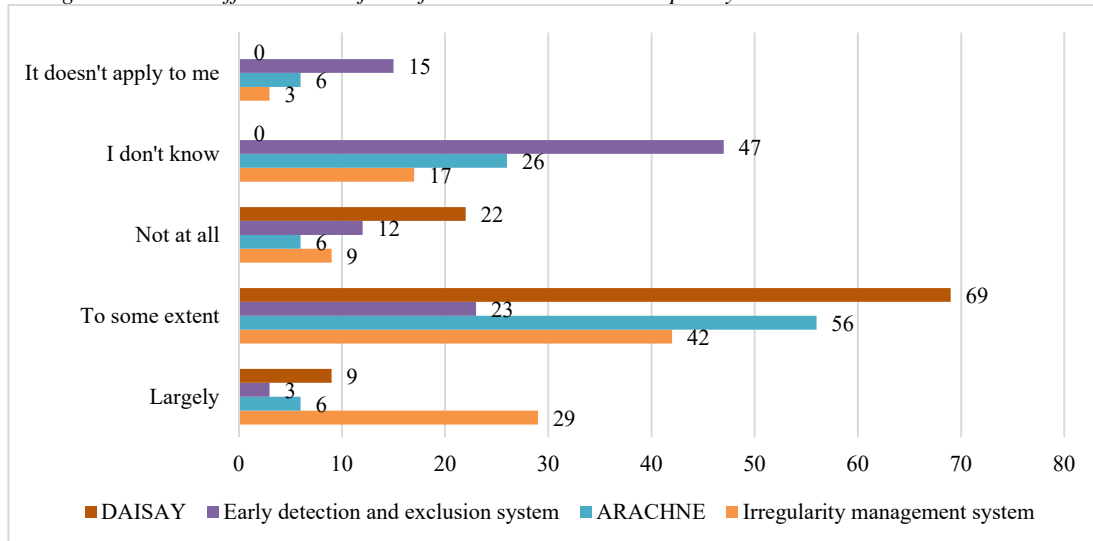
The Commission manages the Early Detection and Exclusion System (EDES). EDES is referred to in Articles 135-145 of the Financial Regulation applicable to the EU budget. It is an instrument to strengthen the protection of the EU's financial interests against unsafe entities and persons by excluding such economic operators from participating in procedures for the award of EU funds under direct and indirect management. Prohibited practices include a wide range of behaviours affecting professional integrity (e.g. fraud, corruption and serious professional misconduct) and poor performance (such as significant shortcomings in contract implementation). In particular, EDES allows:

- Early detection of entities or persons, which present a risk to the EU's financial interests;
- Exclusion of these economic operators from receiving EU funds under direct and indirect management and/or imposition of a financial penalty;
- Registration of the above information in the EDES database, which is accessible to the community of financial actors responsible for the implementation of Union funds;
- In the most serious cases of exclusion, publication of the names of the entities or persons concerned on the Commission's website.

EDES allows for a centralised assessment of exclusion situations while protecting the fundamental rights of the persons and entities concerned, in particular their right to be heard. The uniqueness and power of EDES lies in the power granted to EU institutions and bodies to act "in the absence of a final national decision or, where applicable, a final administrative decision". The

imposition of sanctions can be based on established "facts and findings" arising from audits, verifications or controls carried out under the responsibility of the authorising officer responsible, investigations by OLAF or non-final administrative decisions by national authorities or international organisations. The decision to impose a sanction on non-compliant economic operators can only be taken by the relevant authorising officer after first obtaining a formal recommendation from the centralised inter-institutional committee (European Commission).

Figure no. 2 The effectiveness of anti-fraud instruments developed by the EU

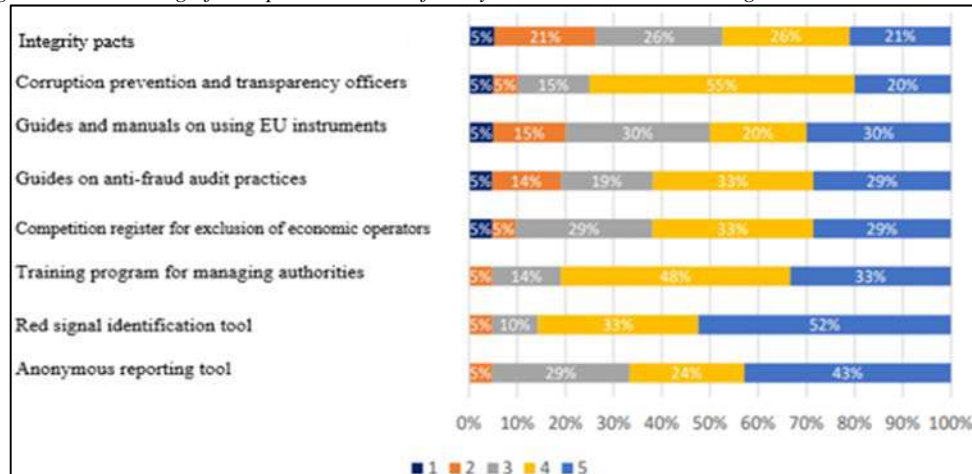


Source: CSES online survey

Among the initiatives OLAF supports is the Anti-Fraud Knowledge Centre. This online facility provides access to a wider range of material (a library, definitions and glossary, guidelines and legislation, etc.) and includes a best practice section.

The Commission's Anti-Fraud Knowledge Centre lists 37 best practices under a number of headings - whistleblowing systems, systems and tools, cooperation mechanisms, red flags, sanctions, training and guidance. In each case there is a brief description, an explanation of the key success factors and an indication of replicability elsewhere. Some good practices focus specifically on EU funds under shared management, while others have a wider role in tackling fraud in relation to public spending in general. We examine and add to the Anti-Fraud Knowledge Centre's good practices later in this section. In the survey for this study, we asked respondents to rank the various good practices identified by the European Commission's Anti-Fraud Knowledge Centre (this was done on a scale of 1 to 5, with 1 meaning that the practice is not useful for fraud prevention and 5 meaning that the practice is very useful). As can be seen in the graph below, whistleblowing systems, tools for identifying "red flags" and training programs ranked relatively well, although the situation is not clear (European Anti-Fraud Office).

Figure no. 3 Ranking of best practices identified by the Anti-Fraud Knowledge Centre



Source: CSES online survey

The GetI project aims to increase the analytical capacity of OLAF staff working on both operational and strategic tasks by improving the accessibility and visualisation of information, speed and flexibility in querying data. The diversity of data formats and the volume of unstructured data has in recent years generated a need for an environment, tools and functions that facilitate analytical work. Through a collection of open source and commercial software, GetI aims to automate many time-consuming tasks and implement modern technologies such as artificial intelligence.

National anti-fraud strategies

In 2021, EU Member States have communicated the development of more IT tools to strengthen the protection of the EU's financial interests, which will be of particular importance in addressing the challenges that have arisen with the war in Ukraine, the COVID-19 pandemic and new ways of managing EU funding.

Table no. 1 IT tools implemented by EU Member States in 2022

Member state	Instrument	Budget sector
Bulgaria	Use of a centralised electronic platform in public procurement	All expenditure
Czech Republic	Update procedures for verifying ownership structures and conflicts of interest	Cohesion policy
Denmark	Merging data to identify cases of double funding	Cohesion policy
Estonia	Launch of a cybercrime information and notification website	Horizontal
	Improving the Public Procurement Register	All expenditure
Germany	Self-assessment of fraud risk for ESF and ERDF federal programs	Cohesion policy
Hungary	Use of ARACHNE and EDES	Cohesion policy and the Most Deprived Fund
Lithuania	Purchase of analytical software and hardware for the implementation of anti-money laundering and counter-terrorist financing measures	Horizontal
	IT tools and regulatory measures	Agriculture
Netherlands	Enhanced digital grant application	Agriculture
	Risk assessment tool: selection of fraud-prone lotteries	Agriculture
Romania	Digitised checks by the competent bodies of the ESI to streamline public procurement controls	Cohesion policy
Spain	Direct access by AFCOS to Spanish social insurance databases	All expenditure
Sweden	Better procurement statistics	All expenditure

Source: www.eur-lex.europa.eu

5. Conclusions and recommendations

In conclusion we can say that fraud has always been the focus of attention of specialists and lawyers, it affects almost all areas of business from data breaches affecting end-customer privacy rights and payment security to ransomware attacks requiring large amounts of money from organisations. When not dealt with proactively, fraud can affect companies' financial results by pulling resources away from core activities and priorities, damaging brand reputation and wasting profits. In extreme cases, it can even cost lives. (Lederman, 2010, p.54)

After all of the above it can be seen that fraud prevention efforts have lagged behind with the incredible speed at which fraudsters have acted, fraudsters have been and still are a growing target.

Today, it is undeniable that the world we live in is going through a period of crisis and, as the media or various analysts or thinkers often point out, this is affecting various aspects of life. But a closer look at the situation in the light of all the above reveals a common denominator, a factor that lies, so to speak, at its source, namely that all crises cascade down from the one and only crisis, the crisis of values. The crisis of values does indeed lead to a loss of what are the cornerstones of an upright and ethical way of life based on the solid cornerstones of moral integrity.

There is an awareness that with the passage of time technological developments refine and improve the tools adopted by fraudsters to achieve their goal. At the same time, the evolution itself refines, on the one hand, the regulatory frameworks and, on the other hand, the prevention and detection best practices that entities adopt, with the necessary adaptations to the individual reality. Following a simple logical process, when a new fraudulent manoeuvre occurs, the bodies set up to reduce the risk of fraud study and implement tools designed to reduce the damage that occurs, with the ultimate aim of preventing it. (Reffett, et al., 2010, p. 15). Digital fraud technologies continue to evolve, even as financial institutions and businesses adopt the latest strategies to make digital payments more secure. The new generation of fraudsters is adapting quickly to innovative technologies. To prevent fraud, you should know your vulnerabilities and familiarise yourself with the right technologies to mitigate risks. As a final point, it should be noted that the most important investment an entity can make in avoiding the occurrence of fraud is prevention, which is essential to minimise risk exposure and reduce the risk of fraudulent acts committed by internal or external agents, and the real benefits will be known in the long term, as effective strategies will be developed to limit the occurrence of this phenomenon and consequently the associated economic losses.

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Strategies for Implementing Sustainability in Entrepreneurial Businesses

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Abstract

The aim of the research on "Strategies for Implementing Sustainability in Entrepreneurial Businesses" was to analyze the ways in which entrepreneurs can integrate sustainable practices into various aspects of their businesses, evaluating their impact on both economic success and benefits for the environment and society. To conduct this research, we conducted an online questionnaire-based survey from September 1 to September 15, 2023, targeting 50 entrepreneurs in Romania from sectors such as information technology (IT), cosmetics and personal care products, fashion, food, and renewable energy. Following the questionnaire administration, we observed that entrepreneurs are familiar with sustainability concepts. The most popular measures adopted by entrepreneurs include material recycling and energy consumption reduction, followed by the use of sustainable materials and the development of a sustainable supply chain. This reflects a focus on measures with rapid and tangible impact and suggests opportunities for adopting more complex approaches.

Key words: sustainability, entrepreneurial business

J.E.L. classification: O35, O36, P18, Q56

1. Introduction

By adopting sustainable practices, businesses can significantly reduce their negative impact on the environment. This is crucial in tackling issues like climate change, resource depletion, and biodiversity loss. Moreover, sustainable practices often have social benefits, such as improved working conditions and community support. As the world increasingly moves towards a sustainable future, aligning with global trends and standards like the United Nations Sustainable Development Goals (SDGs) is becoming important for businesses. This alignment is not only ethically responsible but also strategically advantageous.

Sustainability, which arose three decades ago, addresses the growing environmental degradation and the necessity to lessen the environmental and human impact of businesses. It's not easily defined in the business context, as it encompasses various guidelines focusing not just on immediate profits, but also on fostering a sustainable economy and preserving the planet for future generations. The United Nations has set objectives for a better, sustainable future, including access to clean water, affordable energy, and responsible consumption and production, aiming to reach these goals by 2030. Business sustainability pertains to a company's capacity to achieve its long-term goals in economic, social, and environmental areas without depleting resources for future generations. This involves implementing practices and strategies that promote sustainable growth in business, reduce environmental harm, and enhance the welfare of communities and employees.

Sustainable business practices focus on reducing environmental and societal impacts, safeguarding resources for the generations to come. For these businesses, it is crucial to be not only eco-friendly but also high-quality to compete globally (Todos, 2022). These enterprises contribute significantly to economic, ecological, and social spheres. The evolving nature of sustainability is shaped by the current market and global events, adapting to the changing world. Businesses balancing economic, environmental, and social goals are key to a sustainable future (Simionescu, 2023).

Every company adopting sustainability aims to make choices beneficial for the environment and society. This approach fosters new values and business growth opportunities, with a shift towards

technology and digitization to meet customer demands swiftly (Fülöp, 2022). Long-term business success relies on effective leadership, people-oriented management, continuous improvement, data-driven decisions, and customer focus (Savastano, 2022).

Sustainable business practices involve balancing a company's economic objectives with its social and environmental responsibilities, going beyond profit to enhance societal well-being and environmental care. The concept of sustainable business models, which is increasingly pertinent, encourages firms to improve their impact on the three sustainability pillars: economic, social, and environmental. Developing these models is complex due to potential conflicts in these areas (Cardeal, 2020). These models detail how organizations create, deliver, and capture value across these contexts (Vitalie, 2023). Increased sustainable development awareness, especially post-SDG adoption, has led to a focus on the environment, people, and planet, linking it to financial performance (Muhmad, 2021).

Sustainable success for a company means using resources responsibly, ensuring profit generation without harming environmental and societal balance. This includes using durable materials, recycling, employing renewable energy, and promoting recycling awareness (Manea, 2021).

With governments around the world tightening environmental regulations, implementing sustainability strategies can ensure compliance and avoid penalties. For businesses relying on complex supply chains, implementing sustainability ensures resilience and ethical operations across the value chain, which is increasingly demanded by consumers and stakeholders. Customers, investors, employees, and the wider community increasingly expect businesses to operate sustainably. Meeting these expectations is essential for maintaining good stakeholder relationships.

2. Literature review

Sustainability strategies help businesses to ensure their long-term viability. By focusing on sustainable practices, businesses can reduce costs, improve efficiency, and ensure that their operations are future-proof against environmental and regulatory changes. Sustainability can be a significant differentiator in the market. Businesses that adopt sustainable practices often enjoy a better reputation, which can lead to increased customer loyalty and market share. Additionally, sustainable businesses can attract and retain talent who are motivated by a company's commitment to responsible practices.

In today's business landscape, sustainable innovation strategies are crucial for maintaining competitive and viable business operations (Ch'ng, 2021). The global challenge of sustainable development encompasses three key dimensions: the interplay of culture, structure, and technology; the strategies of optimization, improvement, and renewal; and the various stakeholders involved (Jansen, 2003). Sustainable development is increasingly seen as a solution to critical global challenges both now and in the future (Hopwood, 2005).

The pursuit of social welfare and quality of life forms the core of any state's social policy (Manea, 2021).

Developing an innovative managerial strategy necessitates a clear understanding and alignment of the company's strategic innovation goals with its potential for innovation. This alignment is vital for pinpointing strategic initiatives that will enhance competitiveness. Companies striving to stand out in the market and navigate turbulent environments must implement such innovative managerial strategies to pave their way towards sustainability (Corbu, 2021). A community-focused approach positively impacts innovation and self-efficacy, primarily through the indirect effects of entrepreneurial communication (Dias, 2023). It's not just about gaining a competitive edge; integrating sustainability into business practices is also key to achieving efficient and socially responsible growth.

In contemporary business, management's role has grown in importance, extending beyond profit-seeking to consider the impacts of business activities on economic, social, and environmental aspects (Scoliuc, 2016). There's an increasing emphasis on sustainable organizational change, prompting a reevaluation of management, performance measurement, and monitoring systems within companies. A balance between a clean environment and a robust economy is crucial for human development in areas like health, education, culture, and security. Adhering to sustainable development principles ensures future generations recognize today's intelligent actions for achieving performance

(Savastano, 2022). More institutions are acknowledging and embracing sustainability, taking steps to minimize waste, invest in renewable energy, and support related organizations.

Entrepreneurs are increasingly integrating sustainable development goals, including reducing emissions and using reusable or biodegradable packaging. Sustainable businesses weigh environmental, economic, and social factors in their decision-making. To maintain market relevance and share, they continuously adapt, employing the latest technologies and innovating to enhance profitability and sustainability (Tohănean, 2020). Companies strive to ensure profits aren't overshadowed by debts, carefully monitoring their activities. Key sustainable development goals for businesses include using durable materials in manufacturing, utilizing green energy, adopting sustainable supply chains to cut costs and reduce waste and carbon emissions, and using raw materials more efficiently. Digitalization, such as artificial intelligence for package tracking, advanced databases, and ERP systems, can facilitate sustainable supply chains. Sustainable business models (SBMs) are those that integrate economic, social, and environmental value creation (Ringvold, 2023). Therefore, it's essential for organizations to adopt new business models that prioritize sustainable practices and resource optimization, making these models a strategic focus for management teams (Comin, 2020).

Implementing sustainability strategies helps in mitigating various risks, including regulatory risks, environmental risks, and social risks. By proactively addressing these issues, businesses can avoid potential fines, legal challenges, and reputational damage.

3. Research methodology

The aim of the research on "Strategies for Implementing Sustainability in Entrepreneurial Businesses" is to analyze how entrepreneurs can integrate sustainable practices into various aspects of their businesses, assessing their impact on both economic success and environmental and societal benefits. This research seeks to identify effective strategies, challenges, innovative solutions, and best practices that entrepreneurial businesses can adopt to encourage a business model that balances economic growth with social responsibility and environmental protection. To conduct this research, an online questionnaire survey was administered from September 1st to September 15th, 2023, targeting 50 entrepreneurs in Romania from sectors such as information technology (IT), cosmetics and personal care products, fashion, food, and renewable energy. The questionnaire was constructed using Google Forms and distributed through social media, specifically Facebook, and WhatsApp groups. The questionnaire allowed us to collect specific and structured data directly from the entrepreneurs. This information was essential for understanding the perceptions, experiences, and current practices of entrepreneurs regarding sustainability in business.

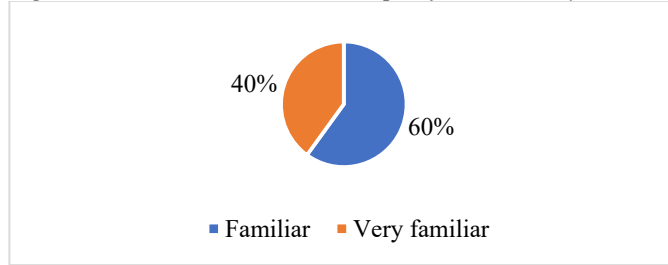
Questionnaires are an efficient way to collect data from a large number of respondents in a relatively short period, especially when distributed online. Entrepreneurs were chosen as the target group because they are often the primary decision-makers in their businesses. This means they have the direct capacity to implement changes and adopt sustainable strategies. Understanding their perceptions and actions provides valuable insights into how sustainability is integrated into business practices. Additionally, entrepreneurs are often leaders in business innovation and agility. They are more open to experimenting and adopting new practices, including sustainability, which can be crucial in addressing current environmental and social challenges.

4. Findings

At question number 1, how familiar are you with the concepts of sustainability in business? This question was screening. In case they were not familiar with the concepts of sustainability in business, the questionnaire would end. 60% of respondents are familiar with the concepts of sustainability in business: This proportion indicates that the majority of respondents have a basic or intermediate understanding of sustainability concepts in business. They likely know the general principles and the importance of sustainability in an entrepreneurial context but may need more information or resources to effectively apply these concepts in their business activities. While 40% of respondents are very familiar with the concepts of sustainability in business. This figure suggests that nearly half of the respondents have a deep and detailed understanding of sustainability in business. These

respondents are likely more aware of specific strategies, challenges, and trends in sustainability and may already be implementing sustainable practices in their businesses.

Figure no. 1. Familiar with the concepts of sustainability in business

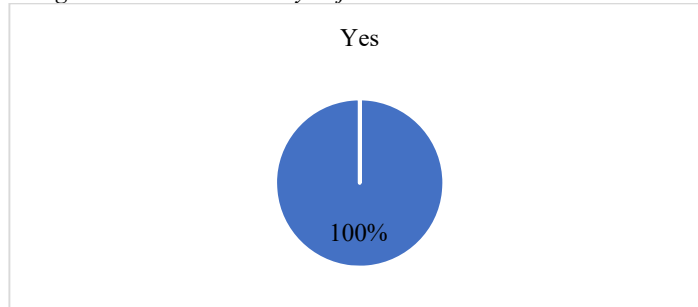


Source: Author's contribution

The data indicates a relatively high level of awareness and familiarity with sustainability among entrepreneurs. This is positive as it reflects a trend of recognizing the importance of sustainability in the business world. The fact that a larger proportion of respondents are only "familiar" suggests an opportunity for educational initiatives and development programs to enhance the understanding and implementation of sustainability in business.

Regarding question number 2, do you have established sustainability objectives in your business? This question was screening. In case they did not have established sustainability objectives in their business, the questionnaire would end. All respondents have established sustainability objectives in their businesses: This universal spread indicates a deep commitment and recognition of the importance of sustainability among the surveyed entrepreneurs. All study participants appear to be aware of the critical role of sustainability and have integrated it into their business strategies.

Figure no. 2. Sustainability objectives established in the business



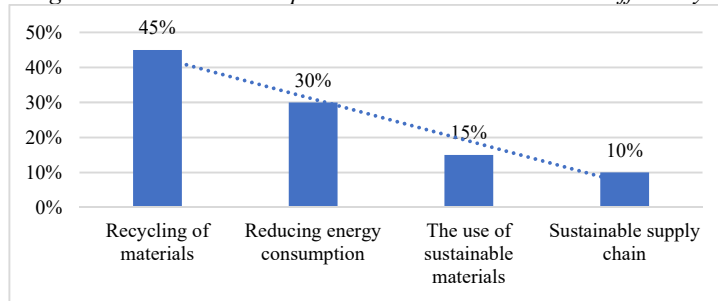
Source: Author's contribution

The response indicates a high level of awareness and commitment to sustainability in the entrepreneurial world. This suggests that sustainability concepts are not only known but actively put into practice. The presence of sustainability objectives among all respondents provides a strong foundation for the exchange of innovative ideas and practices in the field. Entrepreneurs can learn from each other by sharing experiences and successful strategies.

Regarding question 3, what measures have you implemented to increase resource efficiency? 45% of respondents mentioned that the most popular measure implemented by entrepreneurs is material recycling. This response suggests an awareness of the importance of waste reduction and resource reuse as part of a sustainability strategy. It is an indicator of efforts to minimize the negative environmental impact through efficient materials management. Additionally, 30% of respondents mentioned that the second most common approach is reducing energy consumption. This likely involves optimizing processes to be more energy-efficient and investing in technologies that consume less energy. It is a significant step towards reducing the carbon footprint of businesses. While 15% of respondents indicated that they use sustainable materials. This may involve selecting raw materials and materials that are environmentally friendly, as well as products that have a reduced environmental impact throughout their lifecycle. Finally, 10% of respondents mentioned that the least

mentioned measure is developing a sustainable supply chain. This strategy involves working with suppliers who adhere to sustainable practices and can be a sign of the complexity and challenges associated with restructuring supply chains.

Figure no. 3. Measures implemented to increase resource efficiency



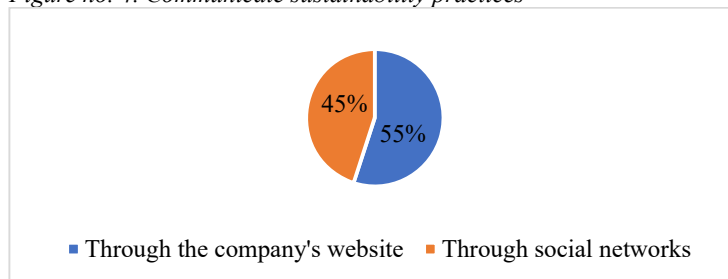
Source: Author's contribution

The data reflects a variety of approaches adopted by entrepreneurs to improve resource efficiency, demonstrating that there is no one-size-fits-all solution for sustainability. Prioritizing recycling and reducing energy consumption indicates a focus on measures that are often easier to implement and can provide quick and tangible results. The relatively low percentage for the use of sustainable materials and sustainable supply chains suggests that there is room for increasing the adoption of these more complex but essential practices for long-term sustainability.

When it comes to question #4, how do you communicate with employees and customers about sustainability practices? 55% of the respondents mentioned that they use their company's website as the primary channel for communicating their sustainability practices. This indicates a preference for an official and directly accessible means of sharing information with employees and customers. A company's website is often seen as the most credible and detailed source of information about policies and initiatives.

Additionally, 45% of the respondents mentioned that they use social media to communicate about their sustainability practices. This reflects a recognition of the power and reach that social media has among a wide and diverse audience. Social media allows for more dynamic and interactive communication, which can be effective in engaging and raising awareness among the public about sustainability issues.

Figure no. 4. Communicate sustainability practices



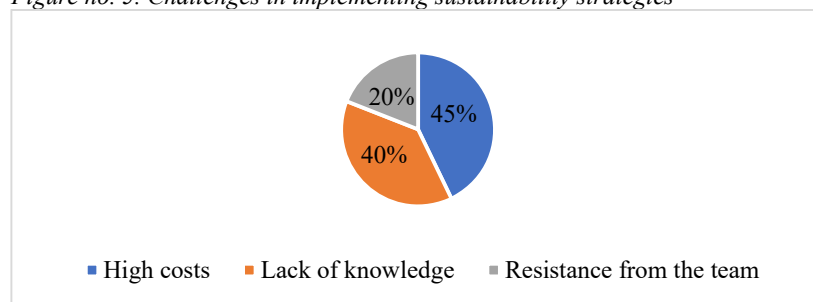
Source: Author's contribution

The data underscores the importance of digital channels in communicating sustainability practices. Both websites and social media are essential means to reach a wide audience and convey up-to-date information. The use of websites indicates a preference for authoritative and credible communication, while social media is used for more direct and personalized interaction with the public. A combination of websites and social media suggests a diversified approach to communicating sustainability practices, reaching different segments of the audience, and maximizing the impact of the message. Active communication about sustainability practices through these channels not only informs but also contributes to building an environmentally and socially responsible brand. Although websites and social media are effective, there is always an opportunity

to explore other communication channels to enhance engagement and awareness among employees and customers

And lastly, in response to question number 5, what challenges have you encountered in implementing sustainability strategies? 45% of the respondents mentioned that the biggest challenge is related to high costs. This suggests that implementing sustainability strategies is often perceived as costly, either due to the need to invest in new and more environmentally friendly technologies or because of operational costs associated with changing practices. This perception can be a major obstacle for many businesses, especially small and medium-sized enterprises. Additionally, 40% of the respondents cited a lack of knowledge as a major challenge. This can include a lack of understanding of the benefits of sustainability, unawareness of best practices or effective strategies, or difficulties in navigating the complexity of sustainability-related laws and regulations. Meanwhile, 20% of the respondents reported resistance from their teams in adopting sustainability strategies. This resistance can be caused by reluctance to change, distrust in the effectiveness of sustainability practices, or the need to modify established routines and processes.

Figure no. 5. Challenges in implementing sustainability strategies



Source: Author's contribution

The data highlights the need for access to financial resources or support programs to help cover the costs of implementing sustainable practices. The lack of knowledge indicates a clear need for more educational programs, workshops, and training sessions to increase awareness and understanding of sustainability in business. Team resistance underscores the importance of addressing organizational culture and change management in the process of implementing sustainability strategies. It is essential to develop communication strategies that address team concerns and emphasize the benefits of sustainability, both for the business and the environment.

5. Discussions

The survey results indicate that entrepreneurs recognize the importance of sustainability in business, including recycling and environmental protection. It's necessary to reshape the culture and organizational structure to incorporate sustainability values and principles. This integration should occur at various levels, from individual employees and managers, who should exhibit pro-sustainability leadership, to broader units like departments and divisions, up to the entire organization viewed as an open system. Adopting a holacratic organizational model can enhance the agility of a company on its path to sustainability. This model fosters synergy by effectively utilizing positive values at both individual and group levels (Jansen, 2003). Companies striving for sustainability are innovating in product development, marketing strategies, and customer engagement methods. They aim to seamlessly blend economic, social, and environmental aspects, creating distinct solutions that set them apart from competitors and firmly establish them on the sustainability path (Suslenco, 2021).

In the current industrial era, sustainable business performance is crucial for competitive success. The study investigates the impact of social and technological challenges on achieving sustainable competitive advantage and business performance (Haseeb, 2019). It is proposed that dynamic business modeling for sustainability, through a systemic design tool incorporating environmental, social, and economic value drivers, can address methodological gaps in current business model design tools (Cosenz, 2020).

6. Conclusions

As a result of the research, we have found that entrepreneurs are familiar with the concepts of sustainability. All respondents have established sustainability objectives in their businesses, indicating a universal commitment and recognition of the importance of sustainability.

The most popular measures adopted by entrepreneurs are recycling materials and reducing energy consumption, followed by the use of sustainable materials and the development of a sustainable supply chain. These reflect a focus on measures with rapid and tangible impact and suggest opportunities for adopting more complex approaches.

The majority of entrepreneurs use their company's website and social media channels to communicate about sustainability, indicating a preference for digital channels as effective and accessible means of disseminating information.

Furthermore, we have observed that the most significant challenges are related to high costs, lack of knowledge, and internal resistance. These highlight the need for financial investments, education, and effective organizational change management.

Therefore, there is a high level of awareness and commitment to sustainability among entrepreneurs, but also significant challenges that require personalized approaches. Resource efficiency is a major focus, but there is room for improvement and expansion of sustainable practices. While digital communication is essential in promoting and informing about sustainability practices.

The challenges faced require innovative solutions, including access to financing, education programs, and effective change management strategies.

Entrepreneurs in this research come from a variety of industries such as information technology (IT), cosmetics and personal care products, fashion, food, and renewable energy. However, the data cannot be generalized due to the small number of study participants.

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Local Development through Collaborative Action: A Study on the Central Dobrogea Local Action Group (GAL-DC) and its Project-Based Associative Framework

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Abstract

In recent years, the concept of local development through collaborative action has gained global prominence. This study focuses on the Central Dobrogea Local Action Group (GAL-DC) in Romania, examining its project-based associative framework. The study involved a questionnaire administered to 177 participants in Central Dobrogea, with data analysis using SPSS. Findings reveal complex patterns of public engagement, with GAL-DC demonstrating extensive influence and positive engagement with non-governmental organizations (NGOs) and Local Action Groups (LAGs). Residential distribution highlights GAL-DC's wide reach, while variations in political engagement reflect diverse involvement. NGO engagement suggests openness to participation, and sector priorities emphasize the significance of agriculture, the food industry, and commerce for local development.

Key words: local development, collaborative action, associative framework, project-based analysis, Romania

J.E.L. classification: F64, H00, Q50

1. Introduction

In recent years, the concept of local development through collaborative action has gained traction globally. Drawing inspiration from Annan-Aggrey *et al's* (2022, p.221) work on mobilizing 'communities of practice' for local development and the SDGs, as well as Cigler's (1999, p.88) insights on collaborative organizations, this research aims to uncover GAL-DC's role in fostering sustainable community-driven initiatives. Additionally, Hübel (Anghel), Stan and Tasente (2023a, p.1103) findings regarding social responsibility and local sustainable development, along with Kusago's (2019, p.197) perspective on community-based collaborative action research, provide valuable perspectives.

This study delves into GAL-DC's project-based approach, aiming to dissect its mechanisms, challenges, and opportunities for local development in Central Dobrogea. By analyzing GAL-DC's collaborative actions, it seeks to offer insights into the effectiveness of such structures in shaping the socio-economic landscape of the region.

2. Literature review

Local development through collaborative action has emerged as a critical approach to addressing complex socio-economic challenges, particularly in the context of regions like Central Dobrogea, Romania. This literature review explores the foundational concepts and relevant studies in this field, shedding light on the significance of collaborative initiatives and associative frameworks in promoting sustainable local development.

Eraydin (2019, p.85) emphasizes the importance of new forms of local governance in the emergence of industrial districts. This underscores the role of collaborative efforts in shaping local development, as industrial districts often rely on coordinated actions among stakeholders. Ferreira *et al* (2023, p.5) extend this perspective, examining collaborative innovation in local authorities and its implications for economic development projects. These studies highlight the fundamental role of collaborative action in fostering local development.

Romania serves as a unique backdrop for local development studies. Herciu *et al* (2023, p.306) delve into the concept of business models for the circular economy, offering insights into frameworks that drive sustainable practices. This resonates with the idea of project-based analysis, as circular economy projects often require collaborative efforts. Munteanu (2021) explores corporate governance's impact on financial reporting, indirectly alluding to the importance of robust frameworks for effective governance, a concept relevant to collaborative initiatives. Aivaz (2021, p.18) studied the interrelationships between infrastructure, medical staff and financial performance in healthcare companies in Constanta County, Romania. Munteanu and Mirea (2023, p.439) provide a glimpse into the understanding of commodity investments in Romania, emphasizing the role of informed decision-making in economic development. Novikova, De Fátima Ferreira and Stryjakiewicz (2020, p.44) analyze local development initiatives in European rural regions, highlighting the potential for social innovation - a key outcome of collaborative actions - in Romania's context. Additionally, Rus (2019; 2020) investigates tax evasion and local public finances, shedding light on fiscal aspects that intersect with local development efforts.

Macedo *et al* (2020, p.2) and Marín-González *et al* (2022, p.2) offer comprehensive insights into sustainability frameworks and cross-sectoral cooperation, important components in collaborative local development projects. These studies highlight the importance of comprehensive approaches that encompass multiple sectors and promote sustainable outcomes. In this regard, Hübel (Anghel), Stan and Tasente (2023b; 2023c; 2023d) delve into the influence of age, educational levels, and gender on socio-economic perceptions, highlighting the importance of demographic factors in local development initiatives. These findings add depth to the understanding of collaborative actions' impacts on diverse segments of society. On the other hand, Stan (2014, p.143) and Stan and Tasente (2023, p.172) explore the role of public-private partnerships and administrative capacity enhancement in urban and regional development. These studies underline the significance of collaborative models in enhancing local governance and infrastructure.

Teilmann (2011, p.2) discusses rural development experiences in Denmark, offering insights into the dynamics of local action groups - an approach akin to GAL-DC - in promoting regional development. Von Schnurbein, Potluka and Mayer (2023, p.319) analyze social innovation in urban development through collaborative processes, providing international perspectives that can inform local initiatives.

The imperative for sustainable development is paramount, shaping the outcomes of projects within the local community. So, Braşoveanu (2013; 2023) focus on environmental protection and legislation's role in sustainable development, addressing vital aspects of local development initiatives related to environmental sustainability. Also, the significant role of the tourism sector in supporting an associative framework through locally implemented projects is unquestionable, as it has the capacity to drive economic growth and facilitate community development. In this regard, Hübel (Anghel) and Condrea (2023a; 2023b) explore the influence of age, residence, and gender on perceptions of sustainable tourism. These studies contribute to the understanding of sustainable tourism as an integral component of local development.

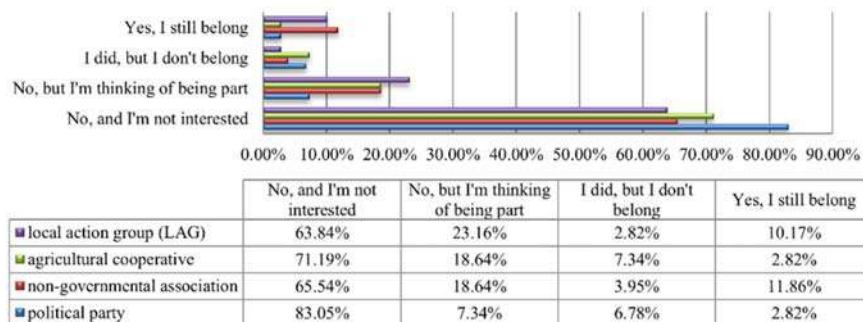
3. Research methodology

The research methodology employed in this study involved the administration of a questionnaire to 177 participants residing in various localities within Central Dobrogea (Casimcea, Ciocârlia, Crucea, Horia, Negru Vodă, Peștera, Rasova, Saligny, Saraiu, Seimeni, Tortoman and other localities). Subsequently, the data analysis was conducted using the Statistical Package for the Social Sciences (SPSS) software, ensuring a rigorous and systematic approach to data processing and interpretation.

4. Findings

In this section, the study's findings shed light on the complex interactions within different associative structures and the sectoral preferences for local development, offering valuable insights into the collaborative endeavors of the Central Dobrogea Local Action Group (GAL-DC). The survey data shows a complex pattern of public engagement with various associative structures (Figure no. 1). There is a notable disengagement from political parties, with 83.05% of respondents indicating that they are not interested or involved. On the other hand, there is a more favorable inclination towards non-governmental organizations (NGOs), agricultural cooperatives, and Local Action Groups (LAGs). Although the majority of individuals do not express interest in political parties, NGOs and LAGs demonstrate a relatively stronger engagement and potential interest, with 18.64% considering involvement in NGOs and 23.16% in LAGs. Active participation remains modest across all structures, with the highest in NGOs (11.86%) and LAGs (10.17%). The data suggests that the public prefers organizations that are directly involved in addressing specific community issues or have a clear, localized impact. On the other hand, there is a general skepticism or disinterest towards political party involvement. The public stance is nuanced, and there are opportunities to enhance engagement in associative structures, particularly those with a strong community focus or transparent, impactful initiatives.

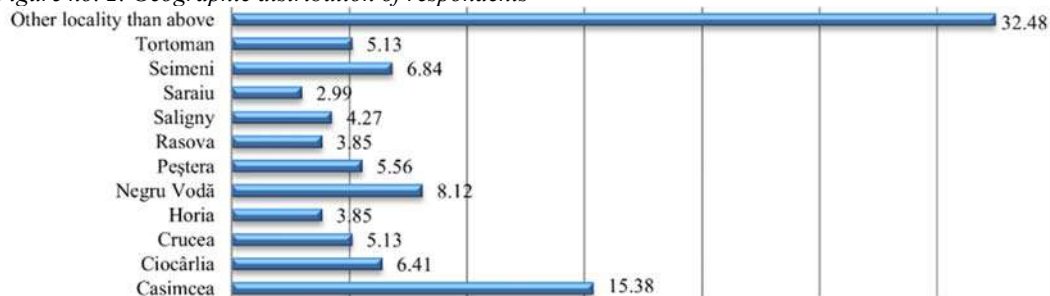
Figure no. 1. Type of association structure to which respondents belong



Source: Authors' work

The dataset outlines the residential distribution of participants in a study (Figure no. 2).

Figure no. 2. Geographic distribution of respondents

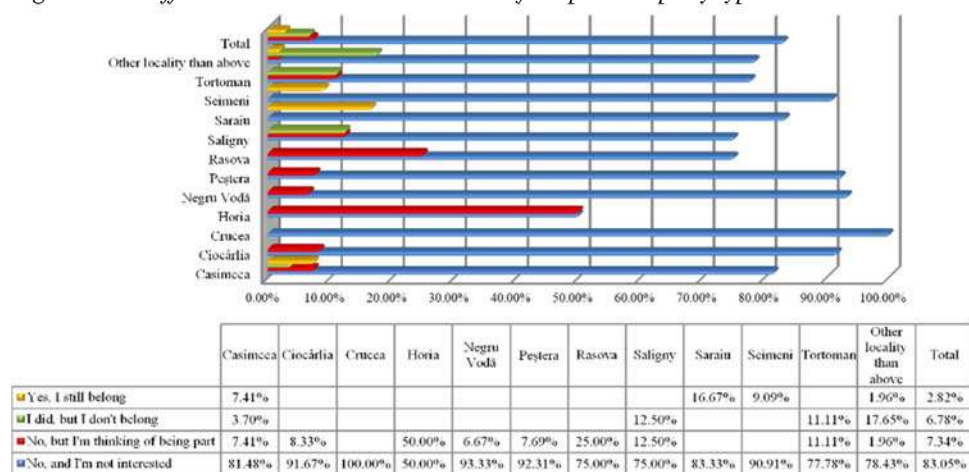


Source: Authors' work

The broad spread across various localities, with a notable 32.48% residing outside the listed towns, suggests GAL-DC's reach and influence extend across a wide area. While Casimcea shows the highest specific participation rate (15.38%), indicating either a higher level of engagement or a larger population, the overall distribution denotes diverse involvement from numerous localities within Central Dobrogea. This diversity in respondents' locations underscores the region-wide relevance of GAL-DC's initiatives and possibly reflects the varied impact of its developmental projects across different communities.

In response to the query: "Have you ever been or are you currently a member of an associative structure such as a political party?" the aggregated data reflects a pronounced disengagement with political parties across various localities in the context of the Central Dobrogea Local Action Group (GAL-DC), with 83.05% of respondents indicating no interest or involvement (Figure no. 3). Notable variations among localities suggest a spectrum of political disengagement and engagement, with areas like Crucea showing complete disinterest (100%) and others like Horia displaying a balanced consideration of political involvement (50% considering involvement). Although a general trend of disinterest prevails, instances of active consideration and involvement, as seen in localities such as Saraiu and Seimeni, underscore a nuanced, locality-specific political engagement landscape within the Central Dobrogea region. The low engagement with political parties in Central Dobrogea may be due to distrust in politics, a preference for local development initiatives, varying levels of political awareness, economic concerns, and differences in community demographics and history.

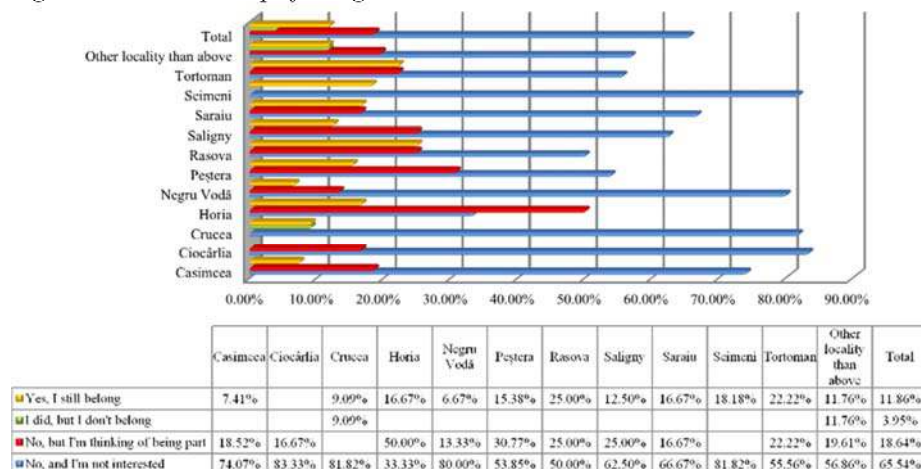
Figure no. 3. Affiliation to associative structures of the political party type



Source: Authors' work

The results from the Chi-Square analysis indicate a statistically significant association between the variables tested, as evidenced by the Pearson Chi-Square test (p-value = 0.027). However, the Likelihood Ratio and Linear-by-Linear Association tests do not show statistical significance at the 0.05 level (p-values of 0.077 and 0.148, respectively). This suggests that while there is some evidence of an association between the variables, the nature of this association might not be linear, and caution should be exercised in interpreting the relationship due to the mixed significance levels across different test results.

Figure no. 4. Membership of non-governmental association structures



Source: Authors' work

In answer to the question "Do you belong, or have you ever belonged to a non-governmental association?" the data reveal a predominant disengagement (65.54% not involved) across the Central Dobrogea region (Figure no. 4). However, a considerable proportion is considering involvement (18.64%), and a notable fraction is actively involved (11.86%). This indicates a nuanced landscape of NGO engagement, with variations across localities reflecting differing levels of interest, potential openness to engagement, and active participation in NGO activities within the community.

The results from the Chi-Square test and associated measures, based on 177 cases, reveal predominantly non-significant associations between the examined categorical variables. Specifically, both the Pearson Chi-Square test and the Likelihood Ratio indicate no significant relationship. However, the Linear-by-Linear Association suggests a possible linear trend between the variables, although this finding stands as an exception in the context of the overall non-significant results.

In answer to the question "Do you belong, or have you ever belonged to an associative structure such as an agricultural cooperative?" the data indicates a predominant disinterest (71.19% not involved) across the Central Dobrogea region (Figure no. 5). However, there's a substantial consideration for participation (18.64%), and a smaller fraction is actively involved (2.82%). This pattern suggests a nuanced landscape, with certain localities showing potential openness to engagement in agricultural cooperatives as part of local development initiatives.

Figure no. 5. Affiliation to associative structures such as agricultural cooperatives

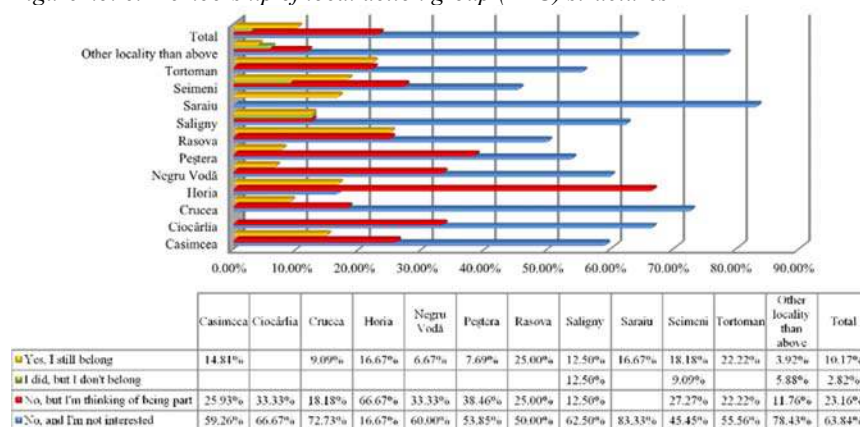


Source: Authors' work

The Chi-Square test results, comprising the Pearson Chi-Square, Likelihood Ratio, and Linear-by-Linear Association, indicate no statistically significant association between the categorical variables studied, given the p-values of 0.134, 0.078, and 0.242 respectively. These results suggest that the observed distributions are consistent with the null hypothesis of independence among the categories, albeit the Likelihood Ratio approaches the conventional significance threshold, suggesting a potential for further investigation.

Regarding the question of whether the respondent belongs or has ever belonged to an associative structure, such as a Local Action Group (LAG), overall, a significant proportion of respondents (63.84%) indicate no interest or involvement with LAGs, suggesting a degree of disengagement (Figure no. 6).

Figure no. 6. Membership of local action group (LAG) structures



Source: Authors' work

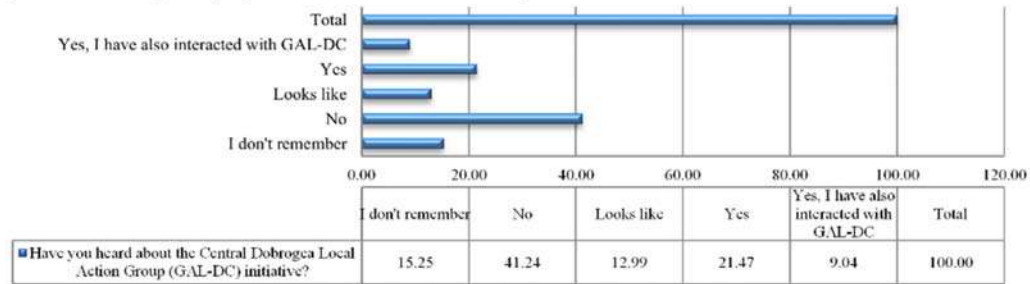
However, there is a substantial inclination towards considering involvement (23.16%), and a modest fraction is actively involved (10.17%). This pattern illustrates a nuanced landscape of engagement with LAGs: localities like Horia and Rasova show a notable openness towards LAGs, with high percentages of residents considering involvement (66.67% and 25.00%, respectively) and a fair level of active participation (16.67% and 25.00%, respectively). Conversely, localities such as Saraiu and 'other localities' exhibit higher levels of disinterest, yet still maintain a segment of the population that is actively involved (16.67% and 3.92%, respectively). This indicates a varying degree of awareness, interest, and active engagement with LAGs across the region, reflecting the diverse perceptions and potential of LAGs in fostering local development through collaborative action.

The results from the Chi-Square analysis, including the Pearson Chi-Square test, Likelihood Ratio, and Linear-by-Linear Association, indicate no statistically significant association between the examined categorical variables, given the p-values of 0.370, 0.269, and 0.431 respectively. These outcomes suggest that the observed distributions align with the null hypothesis, proposing independence among the categories. The data does not provide sufficient evidence to suggest a significant relationship or a linear trend between the variables based on the provided sample of 177 cases.

The level of awareness regarding the GAL Dobrogea Centru initiative indicates that a significant portion of respondents (41.24%) are not aware of GAL-DC, suggesting a potential gap in outreach or public awareness of the initiative. About 15.25% cannot recall hearing about GAL-DC, which might indicate either infrequent exposure or a lack of impactful communication about the group's activities. A modest fraction (12.99%) vaguely recognizes GAL-DC, implying some level of awareness but possibly limited understanding of the group's objectives or functions. A proportion of respondents (21.47%) affirm familiarity with GAL-DC, reflecting a degree of successful outreach and impact recognition. Notably, 9.04% have interacted with GAL-DC, indicating active engagement and possible direct involvement or benefit from the group's

initiatives. Overall, the data suggests (Figure no.7) varied levels of public awareness and engagement with GAL-DC, highlighting the importance of enhancing visibility, communication, and community involvement to bolster the group's role in local development.

Figure no. 7. Degree of information about the Dobrogea Centru LAG initiative

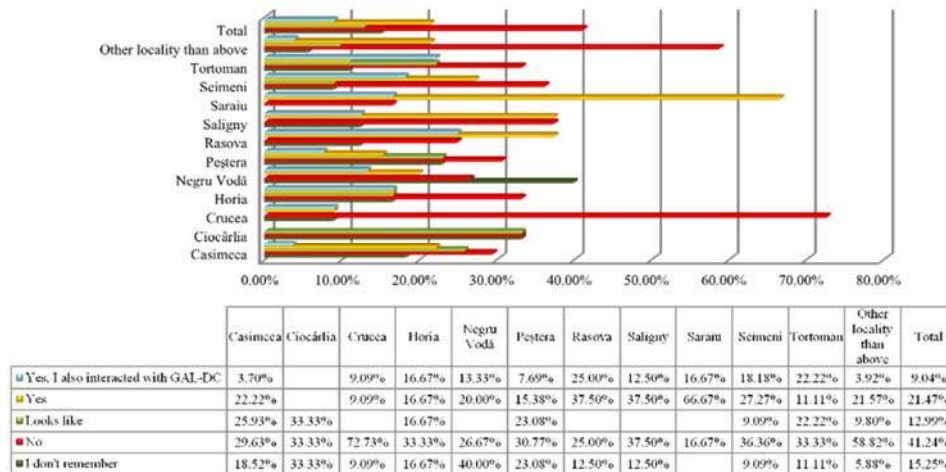


Source: Authors' work

The data regarding the GAL Dobrogea Centru initiative reflects a varied geographical distribution of awareness and engagement (Figure no. 8). Overall, there's a noticeable lack of awareness or recall (15.25% cannot recall, 41.24% unaware), suggesting challenges in the initiative's outreach or communication. However, a segment of the population exhibits vague recognition (12.99%), while a more informed group acknowledges the initiative (21.47%). Notably, a smaller yet significant fraction of respondents (9.04%) reports active interaction with GAL-DC, indicating specific regions of active participation.

Thus, the data on the GAL-DC initiative reveals a mixed level of awareness and engagement across different localities. Notably, certain areas demonstrate significant data points: Crucea shows a high percentage of unawareness (72.73%), yet it also records notable levels of confirmed awareness and interaction (9.09% each), indicating polarized levels of engagement. Horia displays an evenly distributed awareness spectrum, with each category (except 'I don't remember') capturing 16.67%, suggesting diverse levels of community engagement. Rasova and Saligny have higher rates of confirmed awareness (37.50%) and interaction (25.00% in Rasova and 12.50% in Saligny), pointing towards effective engagement in these localities. Saraiu stands out with a significant majority acknowledging the initiative (66.67%), reflecting potentially successful outreach or impactful activities there. These patterns underscore the initiative's uneven penetration across localities, pointing to the need for targeted strategies to enhance visibility, awareness, and involvement in the GAL Dobrogea Centru's activities.

Figure no. 8. Geographical distribution of the degree of information on GAL Dobrogea Centru



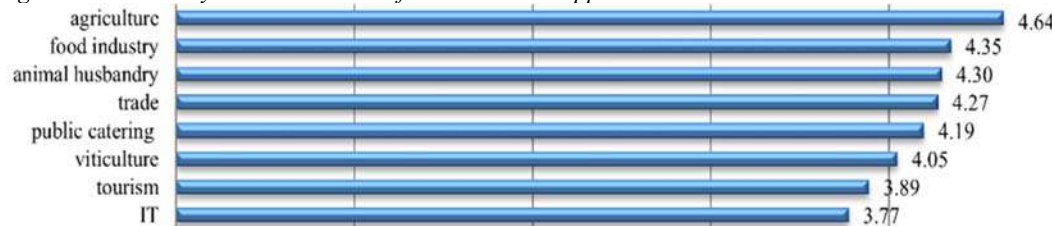
Source: Authors' work

The analysis of the data reveals significant results: the calculated Pearson Chi-Square value is 61.523 with 44 degrees of freedom, and the two-sided asymptotic significance is 0.041. This indicates a statistically significant association between the variables being studied. Likelihood Ratio yields a value of 65.084 with 44 degrees of freedom, and the two-sided asymptotic significance is 0.021. This finding also points to a statistically significant relationship between the variables. The linear-by-linear association test produces a statistic of 1.667 with 1 degree of freedom, and the asymptotic significance is 0.197. Although this statistic does not reach conventional statistical significance levels (typically set at 0.05), it provides insights into linear trends within the data. In summary, the data analysis indicates a statistically significant association between the variables, as confirmed by both the Pearson Chi-Square and Likelihood Ratio statistics. Additionally, the linear-by-linear association test contributes to understanding linear trends within the data.

In Figure no. 9, the graphical representation of the analysis of data on sectors that a community-based association should prioritize for support through locally implemented projects reveals valuable insights. According to the respondents, agriculture emerges as the most critical sector, with a substantial rating of 4.64 on a scale ranging from 1 (not important) to 5 (very important). This underscores the fundamental role of agriculture in the community's development.

Following closely, the food industry is deemed highly significant, receiving a rating of 4.35. Commerce also appears prominently, with a rating of 4.27, indicating its importance for local development. Other sectors such as animal husbandry (4.30), public catering (4.19), viticulture (4.05), and tourism (3.89) also receive notable ratings, emphasizing their relevance to the community's well-being. However, it's worth noting that information technology (IT) falls slightly behind, garnering a rating of 3.77. While still considered important, this suggests that the community places relatively less emphasis on IT compared to the aforementioned sectors.

Figure no. 9. Priority economic sectors for associative support at local level



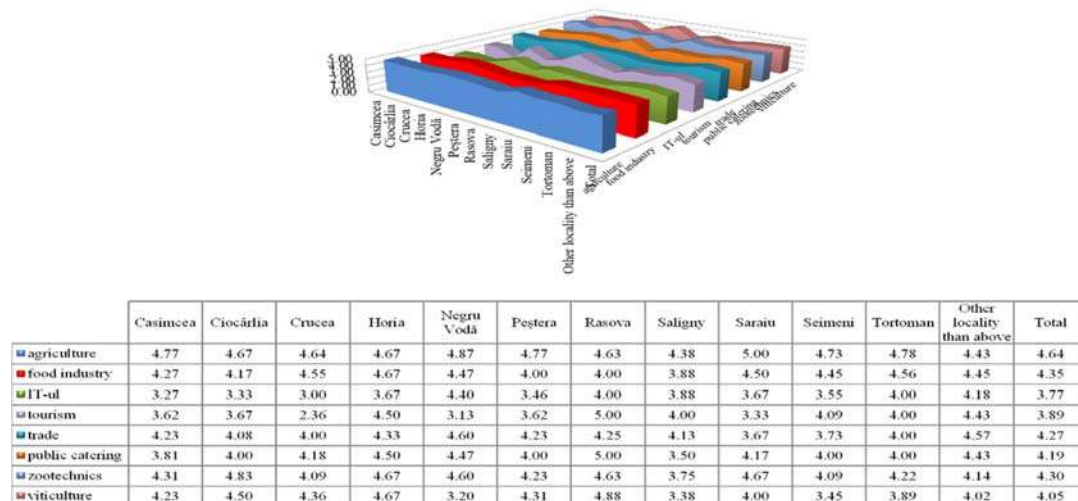
Source: Authors' work

In summary, the community's strong emphasis on supporting sectors like agriculture, the food industry, viticulture, and animal husbandry through local projects can be attributed to several key factors. Firstly, the region's economic structure plays a significant role. It is possible that the area has a historical reliance on these sectors for income and sustenance. Additionally, these sectors may offer opportunities for employment and income generation, making them essential for local economic development. Secondly, the specific needs and resources of the community likely influence these preferences. For instance, if the region has fertile land suitable for agriculture and viticulture, it makes sense that these sectors would be prioritized due to their potential for growth and profitability. Cultural significance could also be a factor, with certain sectors being deeply rooted in the community's traditions and heritage. This cultural attachment might drive support for projects related to viticulture and food production. Furthermore, economic viability is essential. Sectors like trade and public catering are likely seen as economically sustainable and capable of generating revenue, which could benefit the community. Local expertise and knowledge in these sectors may also be abundant, making it more feasible to implement successful projects. Lastly, environmental considerations cannot be overlooked. Agriculture and viticulture might align with the region's environmental conditions and sustainability goals, making them attractive choices for community development projects.

Therefore, the community's preferences reflect a complex interplay of economic, cultural, environmental, and practical factors that drive their prioritization of certain sectors for local development initiatives.

The data analysis by Figure no. 10 reveals varying economic priorities across different localities within the region. These variations indicate that the importance of specific economic sectors for local development projects differs from one locality to another. Comparing the localities with the highest and lowest scores for each economic sector sheds light on these differences.

Figure no. 10. Geographical distribution of economic sectors selected for associative support at local level



Source: Authors' work

In terms of agriculture, Saraiu stands out with the highest score of 5.00, indicating a strong emphasis on farming, possibly due to favorable agricultural conditions and historical traditions. In contrast, Crucea, while still valuing agriculture highly with a score of 4.64, may have other economic factors slightly reducing its priority.

The food industry receives the highest importance score of 4.47 in Negru Vodă, possibly influenced by local food processing businesses or regional culinary traditions. Conversely, Saligny scores the lowest at 3.88, suggesting a smaller presence of food-related industries.

Rasova assigns a perfect score of 5.00 to the IT sector, possibly due to the presence of tech-related businesses or a local focus on technology-driven development. On the other hand, Saligny scores the lowest at 3.88, indicating less emphasis on IT, possibly due to different economic priorities. Rasova also places the highest importance on tourism with a score of 5.00, suggesting attractive natural or cultural landmarks. In contrast, Saligny, while still valuing tourism (4.00), may not have as many tourism-related resources or attractions.

In terms of commerce, Negru Vodă assigns a high score of 4.60, possibly due to a strong local business community or commercial activity. Horia, although still valuing commerce (4.33), may have fewer commercial enterprises.

Saligny attributes relatively higher importance to food service (4.13), possibly due to a thriving restaurant or catering industry. Tortoman, while still valuing food service (4.00), may have a slightly smaller food service sector.

Rasova scores the highest for animal husbandry (4.63), likely related to local farming practices or livestock production. Horia values animal husbandry but scores lower at 3.73, possibly indicating a smaller agricultural focus.

In summary, the data underscores the diversity in economic sector preferences for local development projects across the region. These variations may be influenced by local resources, economic structures, and community needs. Tailoring development initiatives to align with these preferences can lead to more effective and community-driven outcomes.

The survey data reveals a complex scenario of public engagement with different associative structures, with notable disengagement from political parties and a more favorable inclination towards non-governmental organizations (NGOs) and Local Action Groups (LAGs). Residential

distribution highlights GAL-DC's wide-reaching influence across diverse localities, and variations in political party engagement reflect a spectrum of political engagement within the region. NGO engagement presents a nuanced landscape with potential openness to involvement and active participation. Sector priorities underscore the significance of agriculture, the food industry, and commerce for local development, influenced by local factors.

5. Conclusions

The concept of local development through collaborative action has gained global prominence. The study delves into GAL-DC's project-based approach, dissecting its mechanisms, challenges, and opportunities for local development. It offers insights into the effectiveness of such structures in shaping the socio-economic landscape of the region.

Survey data reveals complex public engagement patterns with different associative structures, highlighting GAL-DC's wide-reaching influence. Notable disengagement from political parties contrasts with a favorable inclination towards non-governmental organizations (NGOs) and Local Action Groups (LAGs). Residential distribution reflects GAL-DC's extensive influence, while variations in political party engagement underscore a spectrum of political involvement. The diverse field of NGO engagement suggests a potential openness to engagement. Sector priorities underscore the significance of agriculture, the food industry, and commerce for local development, influenced by local factors.

In summary, project-based associative framework demonstrates the potential for collaborative action to drive sustainable community initiatives within the local socio-economic context.

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The Hidden Mechanisms and Impact of International Economic Crime: A Bibliometric Perspective

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Abstract

In the intricate and interconnected global economic landscape, the presence of international economic crime poses a subtle yet profound menace to stability and equity. The objective of the present study is to uncover the concealed associations through which international economic crime exerts its influence, as well as to shed light on its impact on economic systems and global governance. by applying an bibliometric approach, our research analyzes the patterns, prevailing themes, and indirectly, the gaps in the current body of literature, thereby facilitating a deeper understanding of the dynamics and repercussions of this intricate quandary. Such an analysis is imperative for the formulation of effective policies to combat economic crime on an international scale, as well as for the enhancement of mechanisms for cross-border cooperation. Finally, this paper adds to the academic dialogue and the formulation of strategies to counter this form of crime, which is essential for ensuring a more transparent and equitable global economic environment.

Key words: economic criminality, humans, crime, socio-economic factors

J.E.L. classification: K14, K33, I15

1. Introduction

International economic crime encompasses a broad spectrum of unlawful actions, ranging from tax evasion and money laundering to fraudulent activities that transcend national borders and instances of corruption. These activities are frequently facilitated by the intricate and interconnected nature of contemporary financial systems, as well as the lack of transparency and disparities in global enforcement mechanisms (Munteanu, 2020). In the face of these complexities, economic crime persistently adapts and evolves in response to advancements in technology and changes in regulatory frameworks.

The ramifications of these illicit activities are extensive and diverse, impacting not only domestic economies but also global stability. Entire economies can suffer from distortions in their markets, diminished tax revenues, and decreased foreign investment (Munteanu et Mirea, 2023a). Moreover, economic crime erodes trust in institutional structures and exacerbates societal inequalities, thereby contributing to a detrimental cycle of poverty and instability.

The bibliometric investigation offers a methodical approach for mapping the current body of literature and identifying the predominant trends and gaps in research on economic crime. This facilitates a more profound comprehension of how effective policies and regulatory mechanisms can be formulated and implemented. By means of bibliometric analysis, scholars can trace the progression of fundamental concepts, collaborations among authors and institutions, as well as evaluate the influence of research on public policy.

Another pivotal element in the theoretical framework is the role of technology in both facilitating and combating economic crime. The emergence of financial technologies (FinTech) and cryptocurrencies has created new avenues for illicit activities, while concurrently providing innovative tools for monitoring and detection (Jakubowick et Munteanu, 2022).

Furthermore, the theoretical foundation of the study explores the significance of international cooperation. In an interconnected world, no country can effectively combat economic crime in isolation.

2. Theoretical background

The study's theoretical basis delves into the intricate complexities of economic crime within the framework of globalization. This occurrence not only undermines the integrity of financial markets, but also holds significant implications for social equality, the perpetuation of sustainable development, and the effective functioning of democratic institutions.

International economic crime presents a substantial challenge to global economies due to its intricate impact on governance, environmental sustainability, and the welfare of the public. Paraschiv and Stan (2023) shed light on the interwoven relationship between companies' profiles and their environmental endeavors, emphasizing the dual role these companies play in contributing to environmental degradation and seeking ways to alleviate it. By incorporating social responsibility, these corporate activities can foster sustainable local development, as Hübel (Anghel), Stan, and Tasente (2023) discovered, thereby significantly influencing the everyday experiences of individuals in both public and private sectors. Social responsibility is at the same time a mode of action, an attitude or a state of mind that a company adopts in its relationship with consumers or users but also with its business environment. The application of the principles of social responsibility involves companies in actions to balance profit-making activities with activities that benefit society in general and implies the development of businesses under the conditions of a positive relationship with the environment in which they carry out their activity (Stanciu, 2023; Grigorescu et. al, 2023).

The administrative framework within which these corporations operate is not without critical scrutiny. Stan and Tasente's (2023) evaluation of Administrative Capacity Building Projects in Romania, particularly through the POCA initiative, reveals the multidimensional role that such programs play in strengthening institutional capacities to combat economic crimes.

Digital governance, as observed by Apostol and Stan (2021) in their comparative study, presents another layer of complexity. The advance of digital tools in Romania and Bulgaria shows both opportunities and vulnerabilities in the fight against economic crime, especially in corporate governance and financial reporting, as noted by Munteanu (2021).

Understanding the nuances of economic crime also involves exploring specific sectors such as commodity investing. The bibliometric analysis provided by Munteanu and Mirea (2023b) draws attention to the factors that influence these investments, which can be manipulated for fraudulent purposes.

The tax field is not immune to these challenges. The works of Mircea-Iosif Rus (2019, 2020a) on the impact of local public finances and the dichotomy between tax evasion and tax fraud underline the need for robust financial governance systems capable of detecting and deterring economic crimes at the community level. Also, Rus's research on corporate governance in R&D activity in Romania (2020b) and the impact of financing such activities (2022) reveals the intricate links between financial governance, corporate ethics and economic sustainability.

The series of studies by Braşoveanu (2009, 2016, 2023) provide a broader ecological context, emphasizing the critical importance of regional development policies that consider environmental protection and citizens' rights to a healthy living environment. The legal and institutional framework for managing these issues, especially in sensitive areas such as the Black Sea region (Braşoveanu & Golumbeanu, 2016), is fundamental for preventing the exploitation of environmental and economic systems.

Through the bibliometric lens, the interconnectedness of these domains—corporate environmental influence, social responsibility, administrative capabilities, digital governance, and financial regulation—forms a complex web where economic crime can either flourish or be effectively challenged. As we continue to unravel the hidden mechanisms of such criminality, it is

becoming increasingly clear that integrated, cross-sectoral approaches are essential in developing effective strategies for economic resilience and sustainable development.

3. Research methodology

The rapid expansion of scientific literature in recent years has strengthened the applicability of bibliometric methods as crucial tools for the synthesis of accumulated knowledge (Hernandez-Perlines, 2022, pp.428). In the digital age, advanced indexing and database systems facilitate access to a huge volume of scientific works, providing crucial data such as titles, authors, affiliated institutions and references (Gutiérrez-Salcedo et al., 2018, pp.1275). These data are fundamental to building a clear picture of the evolution and influence of economic crime research.

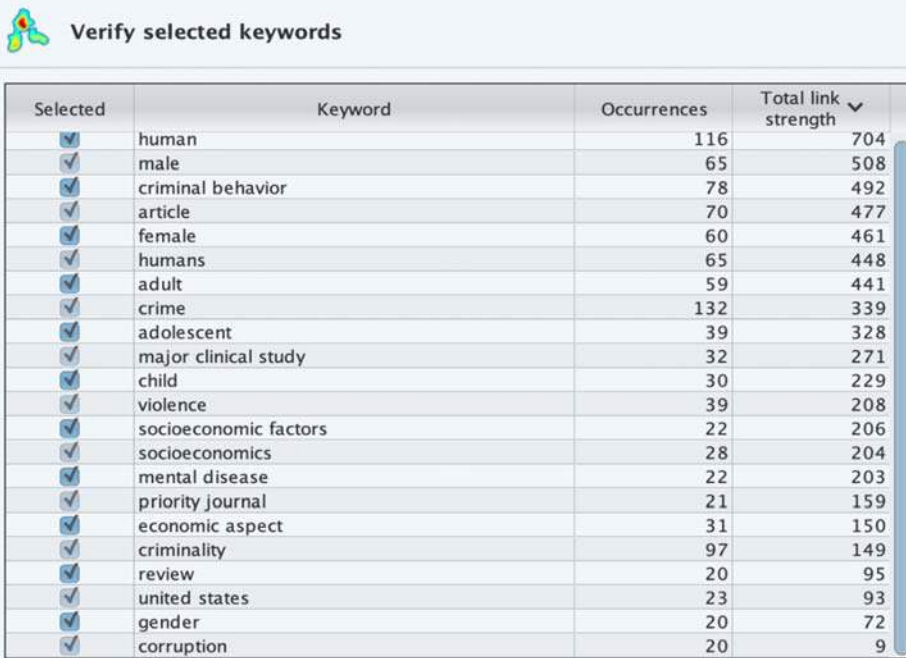
Bibliometric tools, through data collection and analysis, provide deep insight into scholarly impact and direct future investigations in the field. These methods help us quantify and visualize scientific progress and are widely used in systematic literature reviews, providing a reference base for researchers (Toro-Jaramillo, 2017, pp.229; Kraus et al., 2020, pp.1023).

For the current study, the preliminary analysis was carried out using an accessible tool, such as Microsoft Excel (Ribeiro-Navarrete et al., 2021; Araya-Castillo et al., 2021, pp.1), which allows a first organization and filtering of the data. Later, for a deeper and more complex analysis, I resorted to using the VOSviewer software, version 1.6.16 (Van Eck and Waltman, 2010, pp.523). It is customized for bibliometric analysis and is valuable due to its ability to integrate numerical analysis with graphical representations such as co-occurrence maps, thus facilitating the visual interpretation of the links between different aspects of research (Ribeiro-Navarrete et al., 2021, pp.1).

4. Findings

The study performed a comprehensive analysis of the frequency with which the keywords of the selected articles appear together in the literature, a process known as co-occurrence mapping. This technique, which reveals the structure of relationships between keywords, can be compared to a network of interconnected concepts.

Figure no. 1 Keywords



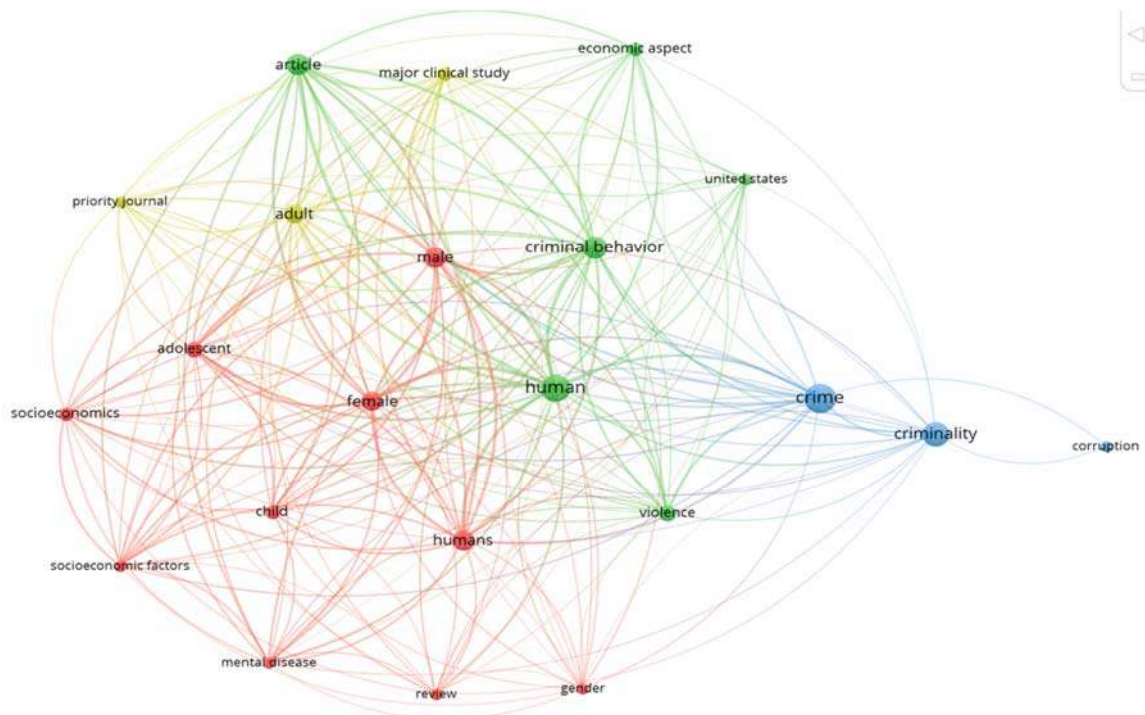
Selected	Keyword	Occurrences	Total link strength
<input checked="" type="checkbox"/>	human	116	704
<input checked="" type="checkbox"/>	male	65	508
<input checked="" type="checkbox"/>	criminal behavior	78	492
<input checked="" type="checkbox"/>	article	70	477
<input checked="" type="checkbox"/>	female	60	461
<input checked="" type="checkbox"/>	humans	65	448
<input checked="" type="checkbox"/>	adult	59	441
<input checked="" type="checkbox"/>	crime	132	339
<input checked="" type="checkbox"/>	adolescent	39	328
<input checked="" type="checkbox"/>	major clinical study	32	271
<input checked="" type="checkbox"/>	child	30	229
<input checked="" type="checkbox"/>	violence	39	208
<input checked="" type="checkbox"/>	socioeconomic factors	22	206
<input checked="" type="checkbox"/>	socioeconomics	28	204
<input checked="" type="checkbox"/>	mental disease	22	203
<input checked="" type="checkbox"/>	priority journal	21	159
<input checked="" type="checkbox"/>	economic aspect	31	150
<input checked="" type="checkbox"/>	criminality	97	149
<input checked="" type="checkbox"/>	review	20	95
<input checked="" type="checkbox"/>	united states	23	93
<input checked="" type="checkbox"/>	gender	20	72
<input checked="" type="checkbox"/>	corruption	20	9

Source: Authors' own results through VOSviewer program

To achieve this mapping, all key terms were considered as reference points, using an analysis method based on the total frequency of occurrences. The study imposed certain thresholds for the inclusion of terms in the analysis, establishing that a term was considered significant only if it was mentioned at least 20 times, i.e. in 20 studies. Thus, from the total of 94 articles selected from the SCOPUS database based on the keyword *economic crime*, although 3475 co-occurrences resulted, only 22 key terms exceeded the threshold set for the frequency of occurrence (figure no.1).

The results of the analysis were visualized through a graphical network, highlighting how the key terms clustered and interacted with each other. According to figure no. 2, the co-occurrence structure organized into four main groups, each represented by a distinct color and classified according to the density and strength of interactions: the first group in red, the second in green, the third in blue and the fourth in yellow. The size and position of each circle in the graph reflects the degree of association with other terms, and the lines between them illustrate mutual links and dependencies.

Figure no. 2 Co-occurrences of keywords



Source: Authors' own results through VOSviewer program

The interaction between these clusters can provide valuable insights into how different demographic and socioeconomic variables influence criminal behavior or how different forms of crime are perceived and addressed in society. Using different colors to distinguish between clusters also helps identify how research topics are interconnected, and the proximity of terms on the map can suggest closer or more direct relationships between topics. Overall, such a map is a valuable tool to guide further research, identifying areas of major interest or gaps in the existing literature and thereby facilitating the development of new research questions or new theoretical directions.

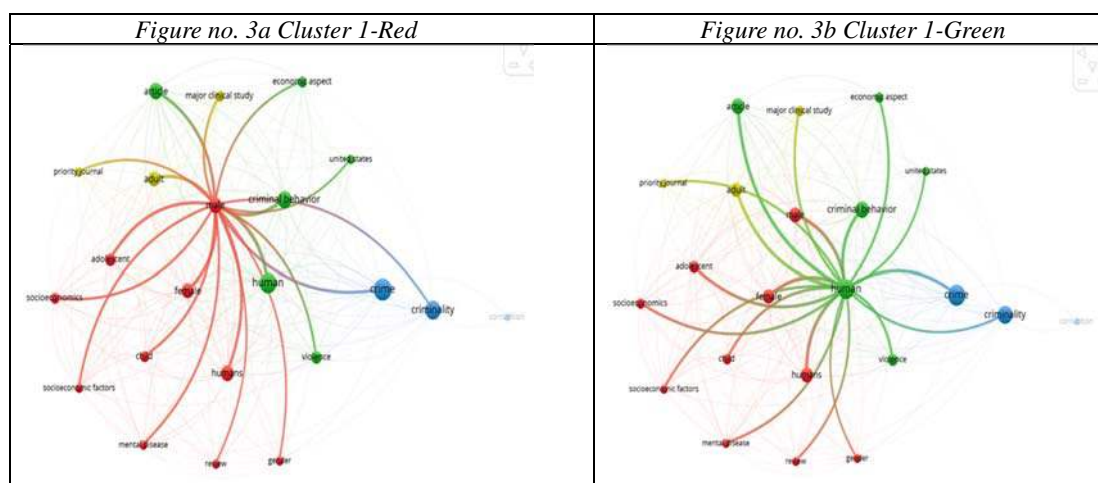
Cluster 1-Red, consisting of 10 keywords: *adolescent, child, female, gender, humans, male, mental disease, review, socio-economic factors, socioeconomic* is illustrated in figure no.3a. In a globalized world, international economic crime is no longer an isolated problem of financial systems, but becomes a factor affecting all layers of society, including its most vulnerable segments: children and adolescents. The association of these keywords suggests that young people, both female and male, are differently affected by turbulent economic realities, often generated by large-scale criminal activity. Children and adolescents face specific challenges at critical developmental stages, and mental disorders can be exacerbated by economic instability and inequality. In this context, gender

becomes a lens through which significant differences can be seen in the impact of socio-economic factors on mental health.

The obtained cluster 1 may indicate that variations in income, access to resources and other economic aspects influence adolescent development, with special attention paid to gender differences. Understanding these dynamics is crucial to developing effective interventions and support programs that take into account the specific needs of each gender and varying socioeconomic circumstances.

Considering these findings, our bibliometric study highlights the relationship between international economic crime and increased risk of mental disorders in adolescents. It is noted that in families affected by economic fraud or job loss due to corporate corruption, children and adolescents may experience increased levels of stress and anxiety, which may contribute to or exacerbate mental disorders.

Moreover, the links between the keywords of this cluster bring up the importance of gender equality in the economic context and how discrepancies can affect boys and girls differently. For example, in families where girls are forced to take on domestic responsibilities in the face of financial hardship, the added pressure can contribute to post-traumatic stress disorder or depression. In contrast, boys, often encouraged to be the primary providers from an early age, can be affected by conduct disorders or substance abuse when faced with the impossibility of meeting these expectations.



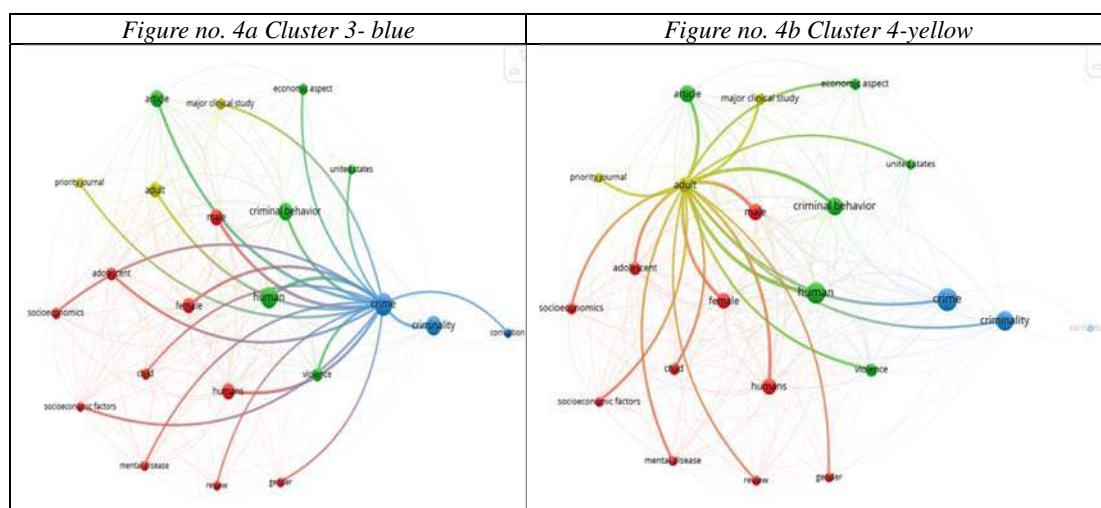
Source: Authors' own results through VOSviewer program

Cluster 2-Green, consisting of 6 keywords: *article, criminal behavior, economic aspects, human, united states, violence*, is illustrated in figure no.3b.

Criminal conduct, especially when linked to the economic realm, feeds off and perpetuates social inequalities and tensions. A good part of the published studies come from the United States, an economy with significant global influence, with the authors showing an interest in understanding how economic crime, through fraud, tax evasion and other similar crimes, contributes to the destabilization of the economic foundations of society. This, in turn, can lead to increased violence and the erosion of public confidence in economic institutions. The bibliometric analysis reveals a worrying trend: a direct correlation between the increase in economic crime and the intensification of violence, suggesting that these two elements feed each other. It is also noted that in situations of economic crisis, often caused by high-level criminal activity, individuals and groups may resort to violence in response to a sense of injustice and loss of financial security.

This cluster also brings to the fore the need to better understand the profile of economic criminals and the motivations behind their criminal behavior. This is essential for the development of effective policies to prevent and combat economic crime. Through extensive literature review, the article provides a synthesis of current research and identifies future directions for studies, laying the groundwork for multidisciplinary approaches in understanding this complex phenomenon.

Cluster 3- Blue, consisting of 3 keywords: *corruption, crime, criminality*, is illustrated in figure no.4a. Corruption, crime and criminality represent three interconnected elements that, together, make up a complex triad that affects the structure and functioning of societies globally. Our study, which adopts a bibliometric perspective, aims to investigate the hidden links that support this triad and assess the impact that international economic crime has on different national and international systems. In an era marked by accelerated globalization, corruption transcends national borders and becomes a phenomenon with international repercussions, undermining laws and economies, while economic crime manifests itself in a variety of forms, from tax fraud to money laundering and evasion fiscal.



Source: Authors' own results through VOSviewer program

Corruption, often seen as the conduct of access to power or economic resources, is a catalytic force for a wide range of criminal activities. By associating the keywords in this cluster, corruption can be seen as the abuse of power for personal gain, which can erode trust in public institutions and have a negative impact on economic efficiency. The impact of corruption is extensive, leading to distortion of markets, inhibition of economic growth, exacerbating social inequality. Economic crimes, a subfield of crime involving the illegal acquisition of funds or other economic advantages, have become a major concern of the international community. These not only affect the economy directly through financial losses, but can also have dire consequences for social and political stability.

Crime, in its broadest sense, includes a variety of illegal acts, from street theft to sophisticated cross-border crime. In the international economic context, crime takes forms that transcend borders and jurisdictions, making criminals difficult to track and prosecute. The effects of crime reverberate over all of humanity, negatively influencing the quality of life, the safety of citizens and the functioning of democratic institutions.

Cluster 4- Yellow, consisting of 3 keywords: *adult, major clinical study, priority journal*, is illustrated in figure no.4b. International economic crime represents a major challenge for the global community, with effects that transcend financial markets, directly influencing the lives of adult individuals and society as a whole. The bibliometric study we propose is an analytical approach that aims to provide a detailed understanding of the hidden mechanisms that facilitate economic crime and to assess its impact on social and individual structures. In this context, priority journal articles are an essential source of data for our analysis, providing major clinical trials and research perspectives that address the consequences of this form of crime, being able to identify the ways in which they influence the physical and psychological well-being of the population. So, priority journals, characterized by their high research rigor and relevance, become a crucial tool in the effort to map the landscape of this complex phenomenon and extract valuable information for the academic community and policy makers.

Economic crime, which includes a wide range of illegal activities - from fraud and corruption to money laundering and tax evasion - has a significant impact on the mental and physical health of adults. Major clinical studies show that the stress and anxiety associated with financial uncertainty and economic instability can lead to a number of health problems such as depression, high blood pressure and other chronic conditions. These problems are often exacerbated among those who are directly affected by the consequences of economic crime, such as victims of fraud or employees of companies involved in economic scandals.

In addition, the literature review in priority journals allows us to lean into the long-term implications of exposure to economic crime. Adults, who are often at the center of these economic turbulences, either as victims or witnesses, may experience a decline in quality of life and productivity, an aspect that requires increased attention in public policies and social intervention programs.

5. Conclusions

The results of our study provide a synthesis of the multifaceted impact of international economic crime on different demographic segments and social domains. The detailed bibliometric analysis highlighted the need for a holistic framework to understand and address the complexity of the phenomenon.

Beginning with adolescents, the study revealed how the interaction between economic factors and psychosocial development can negatively influence youth mental health. This underlines the imperative to develop educational policies and programs designed to protect and support them in the face of these risks. It also highlighted that understanding and combating economic crime must include special attention to the specific vulnerabilities of youth. In the context of the United States, the study identified a link between economic crime, violence, and criminal behavior. This demonstrates that an integrated approach combining economic, social, and behavioral perspectives is essential to address the challenges posed by these phenomena. Corruption, crime and criminality, as investigated in the third cluster, are recognized as not only legal or economic, but also ethical and social problems, requiring a global and coordinated strategy to respond effectively to these challenges. Our study contributes to the knowledge base with the goal of developing more effective approaches for a safer and more prosperous future. Finally, the analysis on adults underscores the profound and diverse effects of international economic crime. By focusing on major clinical trials and the literature, we aimed to elucidate the complex mechanisms that support and perpetuate economic crime globally. This contributes to the theoretical basis necessary for the development of preventive and intervention strategies that are adapted to the complexity of today's world.

In conclusion, by interconnecting these findings, the study provides a platform for developing a comprehensive response to economic crime that considers its wide-scale impact and provides tailored solutions for all affected groups. It paves the way for more effective policies and interventions, with the potential to positively influence the mental health of both young people and adults and strengthen social structures against the risks involved in international economic crime.

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Economic Challenges on Motherhood and Womanhood and the Issue of Gender-Based Violence (GBV) in the South African Society

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Abstract

This paper illustrates economic challenges on motherhood, womanhood, children, and the issue of GBV. It has become evident in numerous families that societal role of mothers has shifted immensely. As a result, many scholars decided to study the various components of motherhood. Hence, the objective of this paper is to comprehend motherhood in society and its acceptance in the domestic domain. Becoming a mother was not the mother's decision, it was a response to sociocultural pressure that held women accountable pertaining to children. Women had distinct motherhood experiences, but it is kept secret from the family and society. The issue of GBV cause mothers to face immense pressure in a morally acceptable motherhood society. Therefore, mothers have a very negative perception of motherhood, particularly in a highly demanding patriarchal society.

Key words: motherhood, womanhood, gender-based violence

J.E.L classification: A12, B55, I24, J12, J13, J17

1. Introduction

This paper is a meta-theory analysis or literature review on motherhood, womanhood and GBV. In our current era, one of the most prevalent human rights violations is violence against women, many of whom are mothers. The effects of this abuse and brutality are extensive, negatively impacting the lives of women and girls, as well as their families, communities, and society at large. The elimination and prevention of violence and abuse against women should be a top objective in all communities. Therefore, the two main objectives of this paper are, to describe the adverse consequences of gender-based violence (GBV) as destructive social ills in society. The first objective is to understand the value and significance of women and mothers in society, the second objective is suggesting practical theological ways to address and curb gender-based violence as a destructive form of warfare against women. Studies repeatedly demonstrate the enormous benefits for children of having a mother who is present, nurturing, involved, and concerned. However, many activist organisations disagree with the importance of mothers and women to children and society. Mothers' notable and influential traits, as well as the crucial role they play in the family and society, are often contested. Moreover, motherhood still presents significant and potentially fatal difficulties for women today. One of the most common violations of human rights in our time involves violence and abuse against women, many of whom are mothers. These harmful factors have far-reaching effects, endangering the lives of women, mothers, and girls, as well as their families and societies. The prohibition and prevention of this violent nature and abuse against women and mothers should be a top concern in every family and community.

The family holds great importance in both the church and broader society. The family is seen as having a covenantal nature and plays a significant role in caring for individuals (eds. Botha *et al.* n.d.:84). This article, however, acknowledges the importance of motherhood and the role mothers play in families and society. Also, this article recognises the mother-child bond, which is crucial for a child's healthy development since it serves as a strong force for social interaction and cohesion.

2. Literature review

The literature review in this paper is a met-theory analysis on motherhood, womanhood, children included and the issue of gender-based violence (GBV).

2.1. The concept of "motherhood" and meta-studies regarding to motherhood

Motherhood is a fascinating scholarly and academic topic, according to Huopalaainen and Satama (2019:102), with connections to an embodiment, the performance of gender, materiality, affectivity, femininity, and sexuality, as well as power, structural problems, and patriarchal oppression, and specifically a dense bodily experience that engages the senses (Huopalaainen & Satama 2019:99). Patriarchal societies disadvantage women because social duties are gendered, harmful, and risky to women. Hence, the risk of reducing the experience of motherhood to a patriarchal institution and motherhood as a role forced on women is raised by some authors and scholars who claim that the discourse of motherhood is exclusively focused on. The original meaning is lost if one concentrates too much on the influence of prevalent ideas of motherhood (Frizelle & Kell 2010:27).

In the studies of Miller-McLemore (1994:20), motherhood can be defined as mothers performing quite a few types of indispensable caring, and who must support one another. Hence, every child's fundamental need is fulfilled by the term *mother*, which conjures up those feelings of joyful, unconditional love and care. Motherhood is further an intentional action that cultivates a self-observance practice that leads to maternal thought (Rose 2015:11). Therefore, the act of motherhood is special and mostly an "untapped resource of theological reflection" (Miller-McLemore 1994:21). Interestingly and appropriately, especially in the context of this article, is that Miller-McLemore indicated in her book, *'Also a Mother: Work and Family as Theological Dilemma'*, that she faced life's challenges while being pregnant and on the verge of becoming a mother (Miller-McLemore 1994:21). Working full-time to support families presents innumerable challenges for mothers (Miller-McLemore 1994:21). Hence, the responsibilities placed upon women, especially as mothers, are considerably heightened due to the daily obligations and sacrifices that come with parenting. Finding a harmonious balance and sense of purpose in life, while juggling familial responsibilities, proves to be much more challenging and intricate than managing a traditional nine-to-five job and caring for one's family.

In conclusion, it is very significant in the context of this paper when Miller-McLemore asserts that ample theologians are mother figures but only a few have studied the intersection of motherhood and theology (1999:287).

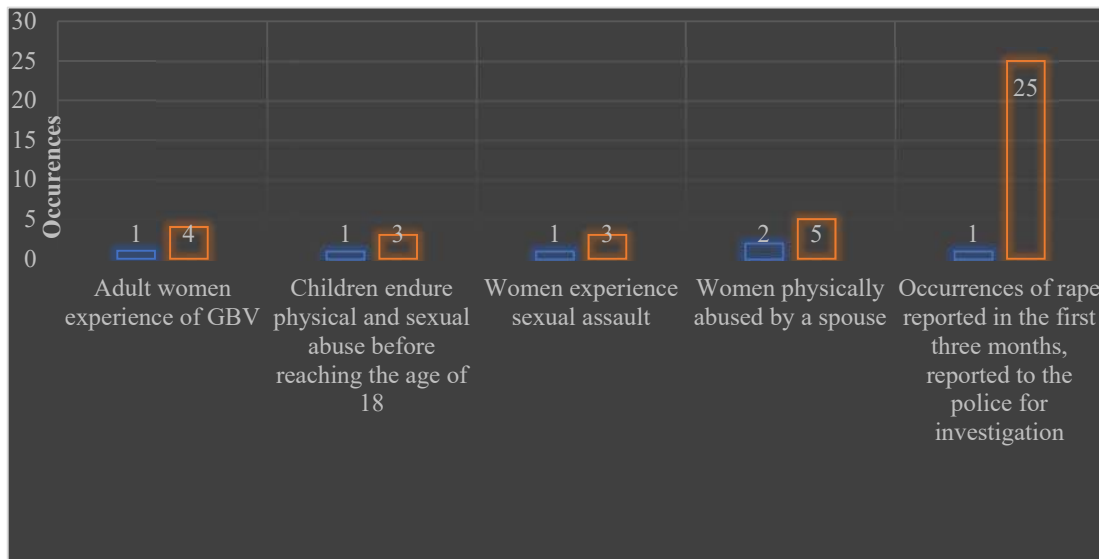
2.2. The gender-based violence (GBV) issue in society and its adverse effects on mothers and women in the South African Society: definition and statistics

Reflecting on the wording used by the United Nations General Assembly meeting conducted in 1993, Finchilescu and Dugard (2018:3) define 'gender-based violence' as "violence against women (mothers) means any act of gender-based violence that results in, or is likely to result in, physical, sexual, or psychological harm or suffering to women, including threats of acts, coercion, or arbitrary deprivation of liberty, whether occurring in public or private life". Wilson (2012:4) adds that GBV "broadly incorporates many behaviours that manifest as physical, sexual, or psychological damage to women and girls". Finchilescu and Dugard (2018:3) also mention that the term encompasses various actions, such as sexual harassment, assault, and rape. This article makes the case that sexual harassment encompasses any harm, illicit behaviour, or physical attack that one person might do against another; it can happen anywhere and is not gender specific.

Mayeza and Bhana (2021) note that GBV and sexual violence pose significant concerns for girls in South African schools. Particularly alarming were the numerous documented cases of GBV during the harsh COVID-19 lockdown, which confined families within their homes. Interestingly, during the lockdown period, more time was spent on addressing abusive relationships and the resulting psychological damage, than on the actual effects COVID-19 had on people worldwide (Mahlangu *et al.* 2022).

In South Africa, one out of four adult women experiences GBV, according to Mahlangu *et al.* (2022). Additionally, their research reveals that one in three children will endure physical and sexual abuse before reaching the age of 18. Motene (cited by Mile 2020:4) argues that statistics only tell half the truth because some crimes go unreported to the police or don't result in charges being brought against the perpetrators. One out of three women will experience sexual assault, and two out of every five women will be physically abused by a spouse (Mohammed, cited by Mile 2020:4). Additionally, Lekabe (cited by Mile 2020:4) indicates that a staggering 380 rapes were reported in educational institutions during the 2019–2020 period, demonstrating the high prevalence of GBV. Vallabh (2022) further contends that African American women are 35% more likely to experience abuse than their white counterparts in America (20,8% of the population).

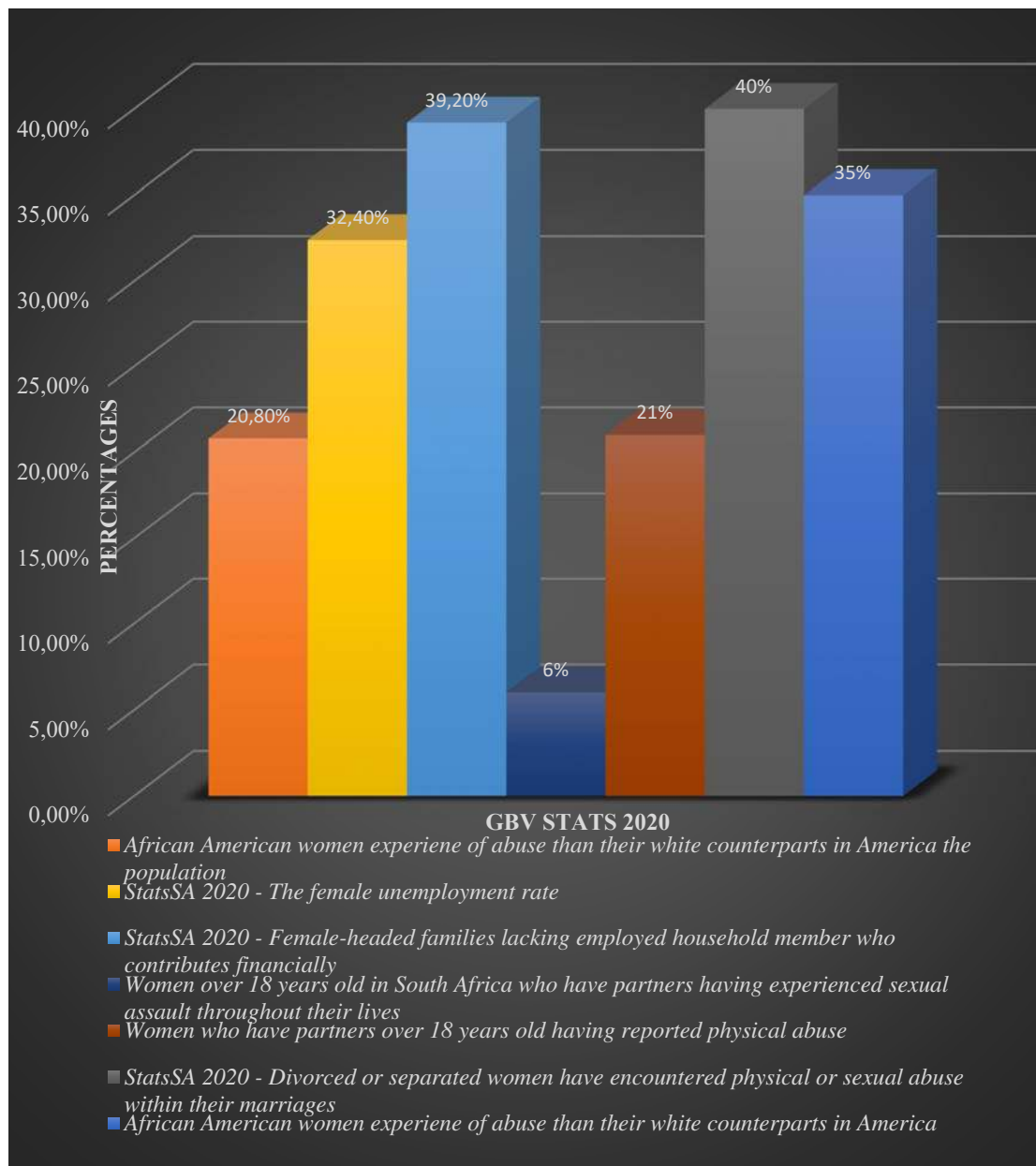
Figure no. 1 GBV and Rape Statistics 2020-2022



Source: Mahlangu *et al.* 2022 and Mohammed (Mile 2020:4)

According to Statistics South Africa (StatsSA 2020), the female population in South Africa is approximately 30.5 million, accounting for 51.1% of the country's total population. As of June 2020, the country's overall population was reported to be 59.62 million, based on StatsSA's 2020 data. The female unemployment rate in the country is 32,4% (StatsSA 2020). Additionally, 39,2% of female-headed families lack an employed household member who contributes financially (StatsSA 2020). Regarding assaults, StatsSA (2020) reveals that 49.8% of all investigated cases in the years 2018–2019 were committed by acquaintances of the victims. Approximately 6% of all women over 18 years old in South Africa who have partners have experienced sexual assault throughout their lives, while 21% (over 18 years old) have reported physical abuse. It is also concerning that 40% of divorced or separated women have encountered physical or sexual abuse within their marriages (StatsSA 2020).

Figure no. 2 GBV Stats 2020



Source: Statistics South Africa (StatsSA 2020) and Vallabh (2022)

Mahlalela (2022) indicated that 10,818 occurrences of rape were reported in the first three months of 2022, but only one out of every 25 of these cases was reported to the police for investigation. Payne and Cruywagen (2022) present the crime data for South Africa from October to December 2021, which include the following statistics: 674 cases of rape; 15,142 incidents of common assault; 104 instances of sexual assault; and 232 murders attributed to domestic violence.

Figure no. 3 Crime data for South Africa from October to December 2021



Source: Mahlalela, Payne and Cruywagen

2.3. What are the reasons behind GBV?

Why do mothers (women) and girls experience GBV? Despite several attempts by the South African government to address all types of violence in South Africa, women and girls still endure GBV (Mayeza & Bhana 2021). Poor academic performance, absenteeism, anxiety, despair, and psychological trauma are all consequences of GBV in South African schools (Mayeza & Bhana 2021).

A 15-year-old girl named Mahlalela writes poetry to describe the experiences of GBV victims in South Africa. She believes that victims' requests should be given more consideration (Mahlalela 2022). According to Vallabh (2022), young black women from underprivileged neighbourhoods are the most vulnerable and frequently experience GBV. In South Africa, the police and the government are failing to protect all women from the harmful behaviour of men (Vallabh 2022). Making GBV illegal is insufficient (Vallabh 2022). Women should have access to the police so they can report their abuse and file complaints against the offenders (Vallabh 2022). Women are occasionally abused by family members and the community when they do have access to the police (Vallabh 2022). There is no structure in place to help the victims of prejudice against women, which they are also subjected to (Vallabh 2022).

In conclusion, psychological counselling is crucial to addressing the wrongdoing of the perpetrator (Mayeza & Bhana 2021). Schools must establish a secure setting where instruction and learning can occur fearlessly and freely (Mayeza & Bhana 2021). Criminals must bear the costs of their behaviour and deeds and be held accountable for the wrongs they have committed in families and society. It is crucial that local churches address GBV by giving women the tools they need to advocate for their right to nonviolence in South Africa.

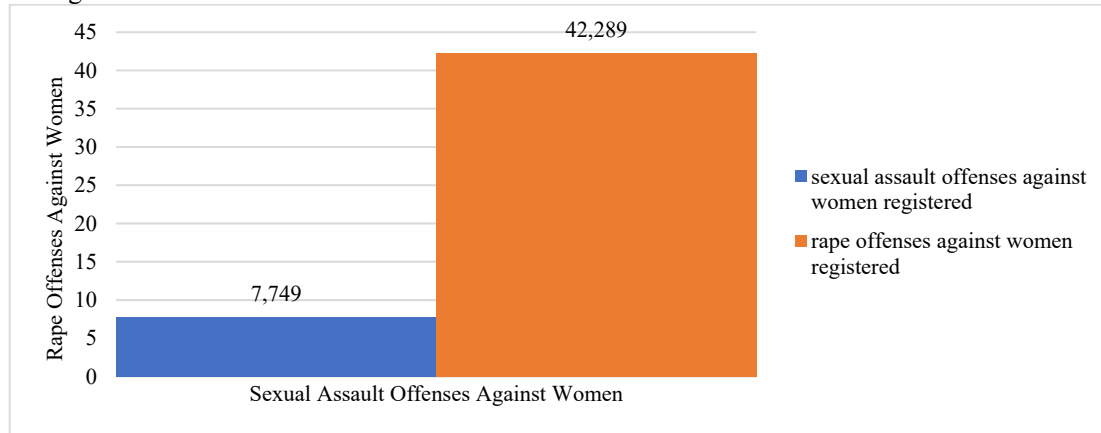
2.4. Womanhood and crimes against women in the South African society

2.4.1. Serious crimes against women

Rape, sexual assault, physical violence, and verbal abuse are very serious crimes, and have been present throughout history, dating back as far as the existence of human civilisation. *What does rape*

mean in the context of this article? Rape occurs when a man coerces a female into sexual activity without mutual consent. Rape is described as widespread and common in South Africa by Gouws (2022:1). Gouws bases her claim on the crime data of the South African police, which show that in 2019/2020, 42,289 rapes and 7,749 sexual assault offenses against women were registered. Gouws also noted that the rate of rape in South Africa is the highest in the world, surpassing that of war-torn nations. The fact that men rape women for power rather than out of lust or sexual desire makes it evident that rape is a social and societal problem (Gouws 2022:2).

Figure no. 4 Crime Data of the South African Police 2019/2020



Source: Gouws (2022:2)

2.4.2. Political interferences

Gouws (2022:2) rejects the African National Congress (ANC) Women's League's suggestion that men who commit rape should undergo chemical castration at the ANC's policy conference in Gauteng. Gouws contends that because men believe they are the owners of the women, castration will never put an end to rape (Gouws 2022:2).

The Conversation published an article on August 4, 2022, by Amanda Gouws, a political science professor at the University of Stellenbosch, in response to the rape of eight young women in Krugersdorp. Near an abandoned mine in Krugersdorp, more than 80 undocumented, illegal mineworkers allegedly assaulted eight young women who were filming a music video (Gouws 2022:2). According to Eyewitness News (Gouws 2022), 17 men's DNA will be analysed as part of the ongoing Krugersdorp gang rape inquiry.

ANC member Pule Mabe said to News24 that this tragedy should serve as a wake-up call and that the South African government needs to act against these unauthorised miners and immigrants (Pijoo 2022). Gouws (2022:2-3) indicated that the state is "missing the point" in his argument. They are pursuing illegal miners while ignoring the pressing issue of the rape and sexual assault of eight young women.

In her account, Landman (2012:5) shares the story of Mmankwanti, a woman who experienced sexual assault by the father of her unborn child. At the time, Mmankwanti was preoccupied with financial concerns and the well-being of her pregnant child. Financially dependent on her mother and already having two additional children, Mmankwanti's mother was more concerned about her daughter's safety than the actual rape. In other words, the mother prioritised her child's health over her personal anguish from being raped. Lerato, whom Landman (2012:6) also interviewed, is the subject of another story. When she was five years old, the daughter of Lerato (now 13) was sexually assaulted by her mother's stepbrother. Lerato was affected by this incident and had ideas of being sexually assaulted.

In summary, Lerato is willing to take the chance of going to jail because she feels so deeply guilty for her daughter's rape-related pain. The latter was offered by their church's pastor, who based his suggestion on Proverbs 22:15 (The Good News Bible): "A good spanking will teach them how to behave, but children just naturally do silly, careless things". As the mother who feels responsible for

not shielding her child while she was assaulted and abused, Lerato must now deal with her mental trauma. But the fact of the matter is, nobody has the right to rape or sexually abuse another person.

2.4.3. Are motherhood and womanhood valuable domains in our current society?

Motherhood and womanhood still present significant and potentially fatal problems to women and mothers simultaneously. Even so, they continue to play a crucial role in the family and community, and this function is a strong motivator for social contact and cohesion. In terms of pregnancy and connection, the paper by Erato *et al.* (2022:743) brought attention to the fact that mothers who have lost pregnancies describe motherhood as being more fundamental than mothers who have not. The mother-child bond is also essential for a child's proper growth. Although motherhood is still seen as the pinnacle of womanhood, there hasn't been enough research done on the concept in South Africa (Frizelle & Kell 2010:26).

McQuillan *et al.* (2008:3) assert that women often perceive motherhood as a barrier to achieving career success. Therefore, the price of motherhood and womanhood is frequently undervalued by women. Technological innovations such as dishwashers, formula, and birth control pills, to name a few, have reduced the practical burdens of motherhood for many women throughout the 20th century. Nevertheless, the value and essence of motherhood have evolved over time. Scholars have studied a wide range of diverse facets of mothers and motherhood over the past 20 years (Schmidt *et al.* 2022:57). Regarding experience, very little has been written about women's experiences throughout most of history and the past 30 years according to the study by Rose (2015:3). To the point, no studies to my knowledge have assessed whether the value and importance of motherhood is a constant trait. Due to experiences, it might alter.

In the paper by Erato *et al.* (2022:742), the value and essence of motherhood can be viewed as a woman's preference for her maternal identity and motherhood. In conjunction with the paper of Erato *et al.* (2022), this article has the notion of the significant value of motherhood and womanhood in the domains of the family and society, most specifically in the lives of children. Every child's fundamental need is fulfilled by the term *mother*, which conjures up images of joyful, unconditional love and care. Even studies consistently demonstrate the positive effects on children's life of having a mother who is present, nurturing, attentive, and involved. Children eventually will exhibit fewer externalising behaviours when parents utilise constructive discipline with them, reminding them and discussing the norms and expectations with them (Okorn *et al.* 2022:129). Notwithstanding, the value and importance of motherhood, womanhood, and mothers to children, family and society are opposed by numerous activist groups. Many criticise the special talents that women and mothers possess, as well as the crucial role that they play in the family.

The practice of motherhood, which refers to the task of mothering and encompasses meeting the physical, emotional, and socialisation requirements of children, is theorised to be one of the two terrains of motherhood that are interconnected, according to Frizelle and Kell's (2010:27) study.

In addition, there is the key question of what makes a good mother, which is entwined with concepts of gender, womanhood, and childhood. The social identity of motherhood is mediated by mothering and entails women creating their own conceptions of who they are as mothers. Because it recognises how mothers actively create their identity as mothers, the emphasis on social identity is crucial. The notion of parenthood, according to Schmidt *et al.* (2022:59), has been increasingly construed normatively as a responsible act. Parents, especially mothers, are expected to devote time and effort to raising their children. This includes developing a strong emotional bond with their children by putting their needs above their own. When a mother is actively engaged with her child and physically present, she is more attuned to his/her needs and desires (Schmidt *et al.* 2022:62). Furthermore, mothers play a crucial role in ensuring their child's physical and cognitive growth, making them the most capable individuals to secure their children's successful development and future (Schmidt *et al.* 2022:63).

3. Research methodology

To accomplish their predetermined research aims, researchers use methodology as a strategic framework or navigational guide. According to Vyhmeister (2008:38), methodology serves as the means by which the previously stated goal is carried out. It clarifies, in essence, how researchers intend to collect, examine, and evaluate information in order to answer their research questions or hypotheses. It is imperative to employ particular approaches designed to effectively tackle the distinct challenges and complexities of individual research problems, given the diversity of study themes (Smith, 2008:157). As such, the methodology used in this research paper is a literature review. The authors of this paper utilize journals, papers, and literature reviews to pinpoint trends, occurrences, and scenarios (Tveitereid & Ward (2022:7). The academic journals, magazines, and books with both national and international publishing houses are among the academic work that the authors look through for the literature analysis. Also, the North-West University (NWU) electronic databases ATLAS, EBSCO HOST, NEXUS, SCOPUS, ISI, and ISAP were used to conduct a thorough literature review. In addition, this work is guided by the following research question: In order to enable women and mothers to occupy their rightful position within the family, society, and even the church, how can gender-based violence be curbed?

4. Findings

4.1. The value and significance of women and mothers in society

Miller-McLemore (1994:215) confirmed the value and significance of motherhood and womanhood by elucidating it as the function of *caring women* and describes it as a type of spiritual tribulation or labour centered in love (Wolfteich 2017:155). According to Wolfteich (2017:157), a mother serves as a spiritual guide for her children and bears equal responsibility for their upbringing as their father. According to Jansen and Wifler (2019:16–19), the resurrection of our Lord and Savior Jesus Christ transforms women, and the definition of female remains universal. According to Leskosek (2011), womanhood nowadays is defined as being a woman who loves her house and is drawn to motherhood by her innate desire to raise her children in a family, whether they are married or not.

According to Frahm-Arp (2016), mothers also make sure their children get quality time with both parents, live in a clean and healthy environment, and obtain a decent education. For a child to grow up in a stable family and a loving home, they need to get enough love, care, and stability. According to Richter et al. (2010), children who are the target of war suffer not just from humiliation but also from a sense of disorientation and loss.

In summary, women are the cornerstones of their households and communities. Being mothers to both their own and other children makes them easy prey for abuse and violence. As a result, both the damaging version of GBV inflict great suffering for women, mothers, including children. When GBV is committed against women and mothers, they typically suffer a considerable loss of self-worth, human dignity, shame, and character.

4.2. Practical theological ways to address and curb gender-based violence as a destructive social ill against women

The number of women and mothers abuse by men in South Africa has increased dramatically, indicating that criminal sanctions are insufficient to deter men from committing violent crimes (Yesufu 2022:90). In order to denounce and file charges against the perpetrators of GBV, women and mothers should have appropriate access to the police (Vallabh 2022). Women and children should receive support in many forms as GBV survivors, such as medical care, housing, and psychological support. It should be a top priority for people to become advocates and learn how to speak out against GBV. It is necessary to hold workshops, training sessions, and equipping events to educate households, churches, and families. GBV must be eradicated by society (Mavis & John 2020:49). Rather than being condemned, written off, or given harsh criticism, men should be

included and actively involved in efforts to stop men from abusing women. Ending violence and gender-based violence against women and children requires collaboration with men.

5. Conclusions

This article focused on the concepts of 'motherhood', 'womanhood', and children and the issue of gender-based violence. In the South African society, motherhood and womanhood are being ravaged by several social destructive ills, including GBV. A patriarchal idea is the exclusion and marginalisation of mothers and women from family, society, and even the church. Furthermore, if patriarchy is to be reduced, it must affect all social structures and formations. Unfortunately, the current world does not always offer a promising future for mothers, women, and children. Within society, it is essential to recognise and appreciate the immense capacity and moral responsibility that mothers and women possess in upholding the integrity of families and society. They deserve commendation and admiration for their invaluable contributions.

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Enhancing Governance and Public Administration Reform in BRICS Countries: Challenges and Opportunities

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Abstract

The BRICS countries, namely Brazil, Russia, India, China, and South Africa, are dynamically driven emerging economies that have experienced rapid growth and significant political transformations in recent decades. This article examines the challenges and opportunities faced by the BRICS countries in enhancing governance and implementing comprehensive public administration reforms. Each country has its unique political, social, and economic context, resulting in diverse challenges. These include corruption, bureaucratic inefficiencies, lack of transparency, inadequate public service delivery, and uneven regional development. This paper aims to explore the challenges and opportunities in governance and public administration reform within the context of BRICS, the unique characteristics and commonalities of BRICS countries, identifies key challenges in governance and public administration, and proposes strategies to harness the opportunities for reform. The findings of this research provide valuable insights for policymakers and practitioners in BRICS countries and beyond.

Key words: BRICS, Governance, Growth, Public Administration Reform, Challenges

J.E.L. classification: B52, F02, O16, P11

1. Introduction

The BRICS coalition - Brazil, Russia, India, China, and South Africa - stands as a potent force with considerable global sway, representing diverse economic, cultural, and political landscapes (Hurrell, 2018). As these nations fortify their global standing, the efficacy of governance and public administration within each becomes instrumental in steering their paths toward sustainable development, prosperity, and global competitiveness (Kaufmann & Kraay, 2019).

Governance and public administration reform serve as fundamental pillars for any nation-state's success, establishing the groundwork for efficient policy execution, service delivery, and societal progress (Pollitt & Bouckaert, 2017). Yet, within the BRICS framework, these elements present both challenges and opportunities necessitating thorough examination and strategic interventions (Mukherjee, 2019).

This paper aims to dissect the intricate facets of governance and public administration across the BRICS nations, spotlighting complexities, inherent challenges, and promising prospects within their reform agendas (Santos & Marchi, 2021). By delving into each country's unique socio-political context, this study aims to offer insights into the diverse strategies and policies essential for enhancing governance frameworks and public administration systems within the BRICS nations (Stoker, 2019).

The challenges confronting governance and public administration in these countries are diverse and multifaceted (Ramkumar & Sridharan 2018). Issues like bureaucratic inefficiencies, corruption, regulatory complexities, institutional weaknesses, and socio-economic disparities impede effective governance (Grindle, 2017). Moreover, technological advancements' rapid pace and global interconnectedness complexities demand adaptive governance and innovative public service delivery approaches (Graham & Dutton, 2019).

However, amid these challenges, significant opportunities for reform and enhancement exist. The BRICS nations hold substantial potential in leveraging collective strengths, sharing best practices, and fostering mutual learning in governance and public administration. Initiatives promoting transparency, accountability, e-governance, capacity building, and participatory decision-making can catalyze transformative change in these nations (de Mattos & Peksen, 2020).

This article synthesizes scholarly literature, policy documents, and empirical evidence to unravel the nuances of governance and public administration reform in the BRICS countries. By amalgamating existing knowledge and presenting fresh insights, this study aims to contribute to the discourse on fortifying governance frameworks and public administration systems in these influential nations.

Through a systematic analysis of challenges and opportunities, this article aims to furnish policymakers, scholars, and practitioners with a nuanced understanding of the complexities involved in reforming governance and public administration within the BRICS countries (Kragelund & Engel 2021). Ultimately, it seeks to proffer recommendations and strategies facilitating these nations in surmounting challenges and capitalizing on opportunities to establish more effective and responsive governance structures.

2. Literature review

Governance and public administration reform are critical aspects for the development and progress of nations. Within the BRICS framework encompassing Brazil, Russia, India, China, and South Africa, several scholarly works highlight the challenges and opportunities inherent in reforming these systems.

2.1 Challenges in Governance and Public Administration Reform

Bureaucratic inefficiencies significantly hinder effective governance within the BRICS nations, posing challenges to their public administration systems. Studies by Mukherjee & Chakrabarti (2019) highlight the adverse impact of bureaucratic red tape, administrative complexities, which slow decision-making processes on the efficacy of public services. These inefficiencies encompass systemic issues, causing delays in decision-making and hampering the delivery of public services. Complex administrative procedures contribute to these delays, leading to missed opportunities for economic growth. Red tape and administrative bottlenecks create obstacles within government agencies, resulting in excessive regulations, unnecessary paperwork, and rigid adherence to protocols that frustrate citizens and businesses seeking government services.

Moreover, the rigid bureaucratic structures of BRICS countries often lack flexibility and adaptability, making it challenging to respond promptly to evolving challenges. Corruption and rent-seeking behaviors within government institutions exacerbate bureaucratic inefficiencies by distorting decision-making processes and diverting resources away from essential areas. Additionally, a lack of adequate capacity and skills among public servants contributes to service delivery inefficiencies.

Addressing these inefficiencies demands multifaceted approaches. Streamlining administrative procedures, reducing red tape, leveraging technology for process optimization, implementing merit-based recruitment processes, and fostering transparency and accountability are essential steps for reforming bureaucratic systems within the BRICS nations. Policymakers must prioritize comprehensive administrative reforms aimed at simplifying processes, promoting accountability, and encouraging innovation. The efforts to modernize administrative practices enhance training for public servants, and create mechanisms for citizen feedback which can gradually mitigate these inefficiencies, paving the way for more responsive governance.

In the realm of corruption and lack of transparency, the issue remains pervasive within some BRICS countries, hindering governance reforms. Gupta (2020) and Zhang & Zhang (2020) stress the challenges posed by corruption and the critical need for enhanced transparency and accountability mechanisms in public administration to overcome these hurdles.

Studies consistently highlight concerns about corruption levels within these countries, eroding trust in government institutions and diverting resources away from essential services, further exacerbating socio-economic disparities. The lack of transparency exacerbates corruption within the public sector, emphasizing the need for increased transparency in governance processes, including decision-making and resource allocation.

Weaknesses in accountability mechanisms perpetuate corruption, emphasizing the importance of robust oversight institutions and effective anti-corruption measures. Promoting transparency is seen as a vital solution, empowering citizens to hold governments accountable and reducing opportunities for corrupt practices.

International cooperation in anti-corruption efforts plays a crucial role in sharing best practices and strategies, emphasizing collective efforts in tackling this challenge. Addressing corruption requires sustained efforts, including implementing robust anti-corruption laws, fostering a culture of integrity, and promoting transparency in government processes, both nationally and internationally, to foster effective governance and public administration reforms within the BRICS countries.

2.2. Opportunities for Reform in Governance and Public Administration

Technological integration, especially through e-Governance initiatives, emerges as a pivotal avenue for instituting reforms in governance across the BRICS nations. Mukherjee & Chakrabarti (2019) and Gupta (2020) assert the potential of technology in streamlining public services, enhancing transparency, and fostering citizen engagement within these nations.

The integration of technology presents transformative prospects, elevating efficiency, transparency, and citizen participation in public administration. Digital transformation in service delivery stands out as a remedy for enhancing robust public administration in BRICS countries.

Embracing technology modernizes service delivery mechanisms, reducing bureaucratic hurdles and facilitating efficient service provision to citizens (Gupta, 2020; Misra & Reddy, 2019).

Moreover, technology-driven solutions significantly contribute to transparency and accountability within governance structures. Mukherjee & Chakrabarti (2019) and the World Bank report on "Governance Reform in the BRICS" (2021) emphasize how digital systems enable data transparency, process tracking, and enhanced monitoring of government activities, curtailing opportunities for corruption and bolstering accountability.

In public administration reforms, citizen engagement through e-Governance plays a pivotal role. Han *et al.* (2018) and Zhang & Zhang (2020) highlight technology's role in fostering direct communication between governments and citizens, facilitating feedback mechanisms, public consultations, and inclusive decision-making, promoting more comprehensive governance practices. Data-driven decision-making further enhances informed policy formulation and resource optimization (Dode, 2018; Gupta, 2020).

E-governance initiatives also have the potential to bridge the digital divide and ensure inclusivity among citizens. Accessibility and inclusivity become paramount, with a focus on ensuring technology accessibility for marginalized groups to access government services and information (World Bank, 2021; Misra & Reddy, 2019).

However, amidst technological adoption, cybersecurity and data privacy emerge as critical concerns. Stringent cybersecurity policies and data protection regulations are essential to safeguard sensitive information and maintain public trust in e-governance systems (Zhang & Zhang, 2020; Han *et al.*, 2018). Strategic capacity building and infrastructure development are imperative for the holistic implementation of public administration reforms. Investing in training programs for government officials and upgrading technological infrastructure supports e-governance initiatives effectively (Gupta, 2020; Mukherjee & Chakrabarti, 2019).

Collaborative initiatives for capacity development and the exchange of best practices among BRICS countries further accentuate the opportunities for learning and reform (World Bank, 2021; Misra & Reddy, 2019).

Finally, policy innovation and adaptation are crucial to addressing emerging challenges. Flexible policy frameworks and innovative approaches serve as opportunities to overcome governance obstacles within the BRICS context (Wu & Liu, 2017; Zhang & Zhang, 2020).

In conclusion, despite facing substantial challenges, the BRICS nations have ample opportunities for improvement in governance and public administration. Addressing inefficiencies while leveraging technological advancements, capacity building, and policy innovation can significantly enhance governance frameworks within these influential nations.

2.3 Case Studies

Brazil's Public Sector Reform. The case study scrutinizes Brazil's public sector reform, delving into its governance structure challenges and opportunities. It assesses historical institutional inertia, bureaucratic hurdles, and reform implementation issues.

It explores the potential of modernizing administrative practices, boosting transparency, and enhancing service delivery, envisioning positive changes in Brazil's public administration. These studies reveal challenges and opportunities across BRICS nations, offering crucial insights to enhance governance and public administration within the BRICS context.

Russia: Digitalization and Anti-Corruption Reforms. Russia, an influential BRICS member, has shown political commitment in implementing administrative reforms, notably in digitalization and E-Governance Initiatives. These efforts encompass digital government services, enhancing efficiency, accessibility, and transparency. The nation emphasizes Anti-Corruption Measures and Transparency Initiatives through administrative restructuring, decentralization, and transparency safeguards at regional and local levels. Public Service Reforms prioritize improving service quality, civil servants' skills, and regulatory changes for business growth and streamlined administrative procedures. These multifaceted reforms underscore Russia's dedication to modernizing governance and public service for better responsiveness and enhanced efficiency.

India's Aadhaar System. A practical case study in the adoption of technology is the Indian Aadhaar's Unique Identification Project. It is a biometric identification system, representing a significant governance initiative aiming to provide a unique identification number to residents. This case study analyzes the challenges faced during its implementation, such as concerns about data security, privacy issues, and legal challenges. It also explores the opportunities presented by Aadhaar in streamlining service delivery, reducing fraud, and enhancing inclusivity in accessing government services. (Sharma, 2018)

China's Anti-Corruption Campaign. China's resolute stance against corruption is evident through President Xi Jinping's anti-corruption campaign, marking a major governance reform. This case study scrutinizes challenges in combating pervasive corruption within China's political system, focusing on implementation complexities, political implications, and institutional roles in enforcing accountability. It explores opportunities stemming from the campaign, promoting transparency, accountability, and the rule of law within China's governance. (Zhang, & Yang, 2019)

South Africa: Public Sector Reforms(E-Government) and Anti-Corruption. The South Africa case study analyzes challenges in public sector reforms, including bureaucratic inefficiencies, service delivery issues, corruption, and the necessity for enhanced governance structures (Pillay, 2018). It explores prospects for reform through inclusive policies, capacity building, and institutional strengthening (Nyamongo & Gachuhi, 2020). These studies highlight governance and public administration reform aspects in South Africa, addressing challenges and outlining opportunities for improvement in areas like public sector reforms, e-governance, and anti-corruption initiatives.

3. Research methodology

The research methodology adopted a structured approach to gather pertinent data, analyzing literature and examining challenges and opportunities within BRICS. This article provides a thorough *meta-analysis* by reviewing diverse sources such as literature, journals, and documented case studies of BRICS nations, encompassing academic papers, books, reports, and scholarly articles on governance, public administration, and reforms. Data collection sources included official government statistics, international organizations' reports, surveys, and empirical studies covering governance indicators, public administration metrics, and socio-economic data. The selected case studies focused on specific governance reforms, highlighting contributing factors to successes or failures. Established frameworks like World Governance Indicators and OECD Governance Framework were used for structured evaluations of governance effectiveness.

4. Findings

The challenges in governance and public administration reform across BRICS nations are multifaceted. Our findings aligned with various studies conducted by a plethora of researchers.

Studies by Han *et al.* (2018) and Mukherjee & Chakrabarti (2019) highlight bureaucratic red tape, delays in decision-making, and administrative complexities as significant hindrances to effective governance reforms within BRICS countries. Gupta (2020) and Zhang & Zhang (2020) emphasize the pervasive nature of corruption, which leads to transparency deficits, a lack of accountability, and erosion of public trust in governance structures within BRICS nations; while Dode (2018) and Misra & Reddy (2019) identify institutional fragmentation, capacity gaps, and weaknesses in the rule of law as critical challenges undermining effective governance and public administration reforms.

The World Bank report (2021) and Gupta (2020) highlight socio-economic disparities in income, access to services and opportunities, posing challenges to inclusive governance, necessitating targeted policy interventions. Amidst these challenges, there exist opportunities for reform. In Mukherjee & Chakrabarti (2019) and the World Bank (2021) underscore the potential of technology-driven solutions and e-governance initiatives in streamlining services, enhancing transparency, and fostering citizen engagement within BRICS nations.

Misra & Reddy (2019) and Gupta (2020) emphasize the significance of capacity building, skill development, and mutual knowledge sharing among BRICS countries to leverage collective strengths for governance reforms. Zhang & Zhang (2020) and Han *et al.* (2018) on the other hand, stressed the importance of policy innovation, adaptive governance frameworks, and learning from global best practices to address emerging challenges and foster effective reforms. The World Bank report (2021) and Dode (2018) emphasize the need for inclusive policies aimed at reducing socio-economic disparities, ensuring equitable access to services, and empowering marginalized communities for more effective governance. These findings depict the varied challenges faced by BRICS nations in governance and public administration reforms. Simultaneously, they spotlight promising opportunities for reform and improvement, serving as a foundation for strategies to enhance governance frameworks within the BRICS context.

5. Conclusions

Enhancing governance and public administration reform within the BRICS countries represents a multifaceted endeavor marked by numerous challenges and promising opportunities. The in-depth exploration of this subject matter, encompassing research, case studies, and scholarly literature, unveils a landscape ripe for transformation but fraught with obstacles that necessitate deliberate interventions. Several critical points emerge from these analyses:

It is important to mention that the challenges in governance and public administration reform within BRICS nations face intricate and deeply ingrained challenges, ranging from bureaucratic inefficiencies, corruption, institutional weaknesses, to socio-economic disparities which present substantial barriers that impede progress toward effective governance structures. These identified challenges underscore the urgent necessity for reform initiatives. Prioritizing transparency,

enhancing accountability, modernizing administrative practices, and addressing socio-economic disparities are fundamental in establishing responsive and inclusive governance systems. Despite prevailing challenges, significant opportunities for reform abound. Leveraging technology, fostering knowledge sharing, embracing policy innovation, and implementing inclusive policies provide viable avenues for fostering more efficient, transparent, and equitable governance among the BRICS nations.

The research findings emphasize the pivotal role of collaborative endeavors. BRICS countries can benefit from shared experiences, exchange of best practices, and engagement in mutual capacity building to collectively address common challenges and leverage strengths for effective governance reforms. A crucial aspect involves the continuous evaluation of reform efforts. Regular assessment, monitoring and adaptive strategies based on evolving global trends and lessons learned from successes and failures are imperative for sustaining effective governance reforms.

In conclusion, while persistent challenges characterize the reform of governance and public administration within BRICS countries, a landscape of promising opportunities for transformative change exists. Addressing these challenges and capitalizing on opportunities demand unwavering commitment, innovative strategies, and collaborative approaches to pave the way for responsive, inclusive, and effective governance systems within the BRICS context.

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Innovation at the Global Level: An Analysis of the Global Innovation Index in the Period 2021-2023

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Abstract

The last decades have seen an increase in entrepreneurial development based on innovation. Having access to innovation and setting up a business in a country that can serve as an innovation-enabler can increase the degree of attractiveness of that respective country. Governments around the world have adopted innovation-centered views and implemented relevant policies to serve as a driver for reaching high competitiveness and to ensure a more rapid economic and, implicitly, social progress. The aim of the paper is to present the top ten countries in the world in their evolution specific to the Global Innovation Index (GII) for the 2021-2023 period. The research methodology is based on a qualitative method. The paper shows that the top ten ranked countries in the world using this specific index remained the same for the investigated period, also maintaining a fairly constant relative position for the three years subject to analysis, Switzerland being the acknowledged leader.

Key words: innovation, Global Innovation Index, entrepreneurship, country

J.E.L. classification: L26

1. Introduction

Information becomes knowledge and knowledge can generate great ideas, bring solutions to existing problems, and can improve overall living conditions. Mankind has registered progress based on the conversion of ideas into practice and, therefore, innovation becomes pivotal for progress.

Innovation has been under the lens of many scholars, academics, managers (Schroeder *et al*, 1989) and policymakers alike. Innovation is pivotal as it becomes a promoter of change, pushing humanity towards reaching success starting from the individual level and going towards business, countries and reaching the entire global level. Due to innovation, progress is registered in terms of improving and diversifying products, technologies, and systems (Carr *et al*, 2016). Innovation is portrayed through the lens of certain features that can either bring completely new changes on existing conditions or it can entail adopting something new that was previously applied and, thus, actually meaning the implementation of inventions or the application of creativity and, respectively, ideas (Goswami *et al*, 2005).

Innovation drives economic progress and through it companies (Grădinaru *et al*, 2020) and countries reach a high level of competitiveness. Thus, entrepreneurs and policymakers tend to be more and more innovation-centered, pushing innovation not only at the pure research and development level (and, thus, technology itself), but driving it towards new types of business models, and also having a strong social sense. Led by two fundamental phenomena regarding the "increase of international integration of economic activities and the raising importance of knowledge in economic processes" (Archibugi *et al*, 2002, p.98), the globalization of innovation has led countries to base their competitiveness on their level of innovation integration.

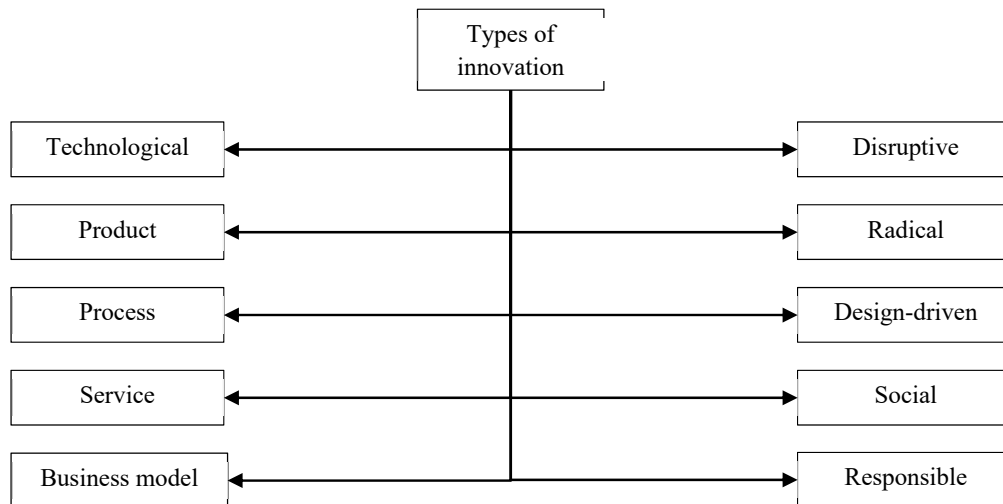
The aim of the paper is to present the evolution of the top ten countries in the world according to the Global Innovation Index (GII) in the period 2021-2023. The research methodology is based on a quantitative method. The paper is organized as follows. The next section of the paper is presenting the theoretical background. Section 3 is dealing with the findings specific to the analysis of the GI in the period subject to analysis. The paper ends with conclusions.

2. Theoretical background

Innovation has earned its assertive and positive value due to its technological applicability (Godin, 2020) that, in turn, is a driver for general progress (even though it is often linked to the economic one). After all, innovation is a promise for finding solutions to problems, increasing performance and boosting comfort or safety (Smil, 2023).

Innovation has various types (Figure no. 1) or shapes (Kotsemir *et al*, 2013) such as technological, product, process, service, (Kogabayed *et al*, 2017, p.64 apud Afuah, 1998), business model, disruptive, radical, design-driven, social, or responsible (Edwards-Schachter, 2018). Furthermore, innovation is prone to high influences coming from various key stakeholders such as government policy makers, implementers or strategists, and managers working in private firms or organizations providing business development services and NGOs (Heeks *et al*, 2013).

Figure no. 1. The types of innovation



Source: adapted from (Kotsemir *et al*, 2013; Kogabayed *et al*, 2017, p.64 apud Afuah, 1998; Edwards-Schachter, 2018)

Academics have formulated multiple definitions for innovation that have multifaceted factors that shape it (Table no. 1).

Table no. 1 The 2021 Global Innovation Index

Author	Definition
Keller <i>et al</i>	Innovation is the implementation of a new or significantly improved product (good or service) or process, a new marketing method, or a new organization method in business practices, workplace organization, or external relations.
Baregheh, Rowley and Sambrook	Innovation is the multi-stage process whereby organizations transform ideas into new/improved products, service or processes, in order to advance, compete and differentiate themselves successfully in their marketplace.
Schumpeter	Innovations create value by definition, being new to all and useful to some actors, but also tend to destroy value, being harmful to some actors.
Quintane <i>et al</i>	Innovation should be considered as duplicable knowledge considered new in the context it is introduced to and demonstrated useful in practice.

Singh and Aggarwal	The operationalization of creative potential with a commercial and/or social motive by implementing new adaptive solutions that create value, harness new technology or invention, contribute to competitive advantage and economic growth.
Gault	The implementation of a new or significantly changed product or process.
Wijnberg	A stylistic innovation is a product, or a characteristic of a product, which is recognized by the relevant selectors as a new and legitimate response to a set of preferences which the selectors cannot specify in such a way that other actors could perform the actual determination of how far the product satisfies those preferences, and the value of which consists of the very differences the selectors perceive between the product under consideration and earlier and other products from the same category.

Source: adapted from (Keller et al., 2018, p.12638; Baragheh, Rowley and Sambrook, 2009, p.1334; Grandstrand and Holgersson, 2019, p.8 apud Schumpeter, 1942; Quintane et al., 2011, p.939; Singh and Aggarwal, 2020, p.9; Gault, 2018, p.619; Wijnberg, 2004, p.1422)

From the abovementioned definitions, certain key elements distinguish themselves as being relevant to innovation: introduction of novelty (Manuylenko, 2015), improvement, a transformational process, value-generation or creation (potential), knowledge-based, invention and change. This is why companies around the world are making huge efforts to become innovative. In this respect, most innovative companies are successful ones. In an ever-changing environment (Toma, 2013; Toma *et al*, 2015), their business success is based on a plethora of major elements as follows:

- continuous innovation (Marinescu *et al*, 2016);
- entrepreneurial spirit (Grădinaru *et al*, 2017; Zainea *et al*, 2020);
- creativity (Toma *et al*, 2018);
- strategic-oriented (Toma *et al*, 2016a; Toma *et al*, 2016b);
- strong leadership (Cornescu *et al*, 2004);
- lean thinking (Naruo *et al*, 2007; Marinescu *et al*, 2008);
- total quality management (Toma *et al*, 2009);
- social responsibility (Toma *et al*, 2011; Imbrișcă *et al*, 2020);
- corporate citizenship (Toma, 2008) etc.

3. Research methodology

In order to arrive at the research objective, the methodology adopted by the authors of this paper was based on qualitative research. The information handled to interpret the situation of the top ten most innovative economies in the world according to the Innovation Index criteria comes from sources of secondary data, scientific publications such as books, articles and reports (ranks). The literature review was conducted using electronic databases.

4. Findings

The chapter's highlight is the analysis of the top ten countries in the world ranked using the innovation criteria. The main trackers used within their dashboard are represented by science and innovation investment, technological progress, technology adoption and socioeconomic impact (WIPO, 2023, 22).

The data used in this specific analysis comes from the Global Innovation Index rank for the 2021-2023 period. The research was based on the country rank and their specific achieved scores and was extended towards the continent level. The investigation starts with the year 2021 (Table no. 2).

Table no. 2 The 2021 Global Innovation Index

Rank	Country	Continent	Score
1	Switzerland	Europe	65.5
2	Sweden	Europe	63.1
3	United States of America	North America	61.3
4	United Kingdom	Europe	59.8
5	Republic of Korea	Asia	59.3
6	Netherlands	Europe	58.6
7	Finland	Europe	58.4
8	Singapore	Asia	57.8
9	Denmark	Europe	57.3
10	Germany	Europe	57.3

Source: adapted from (WIPO, 2021, 4)

In 2021, Switzerland was the leader of the ranking according to the Global Innovation Index. The score difference between it and the 10th (and 9th since Denmark and Germany have the same country score) ranked country is quite sizeable, of 8.2. The gap relative to its follower is of 2.4. There are seven countries from Europe, two from Asia and one from North America. The second part of the study is specific to the rank from 2022 (Table no. 3).

Table no. 3 The 2022 Global Innovation Index

Rank	Country	Continent	Score
1	Switzerland	Europe	64.6
2	United States of America	North America	61.8
3	Sweden	Europe	61.6
4	United Kingdom	Europe	59.7
5	Netherlands	Europe	58.0
6	Republic of Korea	Asia	57.8
7	Singapore	Asia	57.3
8	Germany	Europe	57.2
9	Finland	Europe	56.9
10	Denmark	Europe	55.9

Source: adapted from (WIPO, 2022, 19)

The leading country in 2022 based on innovation is Switzerland, leading the 10th ranked one, Denmark, by 8.7 points in terms of achieved score. 2.8 points is the difference relative to the United States of America, the runner-up. Europe is dominating the rank with seven countries, Asia is second with two countries in the top ten and North America only has one. The last year subject to analysis is 2023 (Table no. 4).

Table no. 4 The 2023 Global Innovation Index

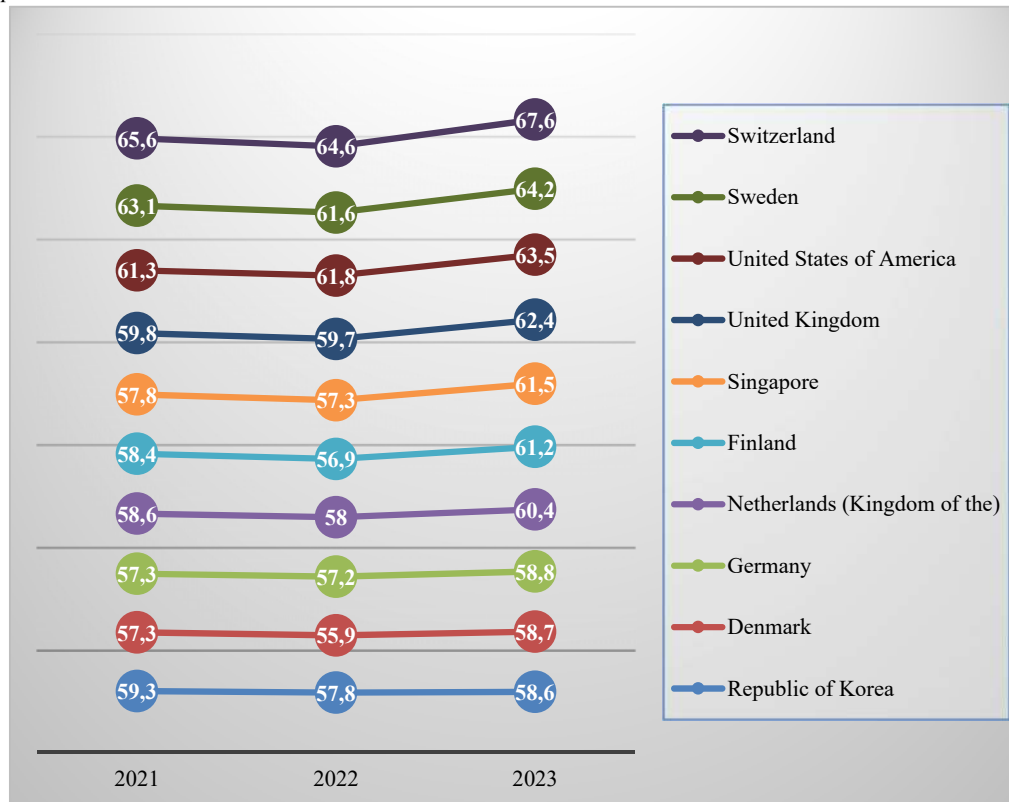
Rank	Country	Continent	Score
1	Switzerland	Europe	67.6
2	Sweden	Europe	64.2
3	United States of America	North America	63.5
4	United Kingdom	Europe	62.4
5	Singapore	Asia	61.5
6	Finland	Europe	61.2
7	Netherlands (Kingdom of the)	Europe	60.4
8	Germany	Europe	58.8
9	Denmark	Europe	58.7
10	Republic of Korea	Asia	58.6

Source: adapted from (WIPO, 2023, 19)

The 2023 countries' rank based on innovation is led by Switzerland. The leader exceeds the score obtained by the Republic of Korea, the 10th ranked country, by 9 points that actually represent a noticeable gap. The second ranked country is 3.4 points away from the first position. The continent with the most countries in the top ten rank in the world according to the index is Europe (seven), followed by Asia (two) and North America.

An analysis of the entire period is required to see a timed evolution of most innovative economies in the world (Figure no.2).

Figure no. 2. The evolution of the top ten countries in the world according to the GII in the 2021-2023 period



Source: adapted from (WIPO, 2021, 2022, 2023)

Based on the 2021-2023 data specific to the GII, the following observations can be drawn:

- The same countries constitute the top ten in the world.
- Europe is the dominant continent, placing seven countries on the rank: Switzerland, Sweden, the United Kingdom, Finland, the Kingdom of the Netherlands, Germany and Denmark. Asia has two countries, Singapore the Republic of Korea. North America is represented by the United States of America.
- Switzerland has been the constant leader managing to steadily increase its scoring difference relative to its follower.
- Sweden and the United States of America have managed to remain amongst the top three.
- The United Kingdom held the 4th place.
- Republic of Korea registered the biggest decrease, going down five position, losing its 5th place from 2021 and reaching the 10th in 2023.
- The Netherlands fluctuated, ranking 6th, 5th, and 7th.
- Finland was even more volatile than the Netherlands, starting from the 7th place in 2021, reaching the 9th spot and ending on the 6th one.

- Singapore was the country with the highest position increase, registering a sizeable increase on the ranking, starting from the 8th spot and landing on the 5th in 2023.
- Denmark held a relatively steady position amongst the lowest ranked countries, finishing in 2023 on the 9th place, the same as in 2021.
- Germany held its 8th position in 2023, starting from the 10th in 2021.
- The difference between the leading country and the one on the last position on the rank subject to analysis continued to grow, starting with a difference of 8.2 points, increasing to 8.7 and to 9 in 2023.

5. Conclusions

Innovation has been seen as a the driver for advancements and the aid economies need to grow. Based on the findings of the research, Switzerland kept its leading position in the last years as the most innovative economy in the world. Europe has been the continent placing most economies in the top ten international rank according to the Global Innovation Index. The ranking is a powerful tool that could serve as a strong informational basis for policymakers that want to take innovation-centered decisions and for businessmen in terms of at least company placement and growth potential.

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Inflation Dynamics in Post-Independence Rwanda

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Abstract

This study examines the inflation dynamics in Rwanda from the 1970s to 2021, focusing on policies, trends, challenges, and opportunities in managing inflation. Secondary data sources were used for analysis. The findings show that Rwanda has adopted a multi-faceted approach to inflation control, including macroeconomic policies, economic diversification, and infrastructure investment. The study identifies three distinct episodes of high inflation in the 1970s, early 1990s, and 1994. Since the early 2000s, inflation trends have been erratic, with notable episodes in 2004, 2008-2009, 2012, and 2020. Challenges in managing inflation include import reliance, weak monetary policy transmission, and vulnerability of the agriculture sector. Opportunities for Rwanda lie in economic diversification, improved coordination between fiscal and monetary policy, and sound macroeconomic policies. The study emphasizes the need for a comprehensive approach to inflation management, considering Rwanda's unique circumstances, to achieve stability and inclusive growth through sound policies, diversification, and infrastructure investment.

Key words: Price Level, Inflation, Deflation, Rwanda

J.E.L. classification: E31, E52, 055, 043

1. Introduction

Rwanda, a country that has faced significant challenges with inflation, presents a compelling case study for understanding sustainable economic stability. Following the period of genocide against the Tutsi, Rwanda encountered alarming peak inflation rates of 47.3 percent and 48.2 percent in 1994 and 1995, respectively (Kumar, et al., 1996; Ggombe and Newfarmer, 2017; World Bank, 2022). In response, the government swiftly implemented prudent monetary policies, along with fiscal, structural, and exchange rate measures. As a result, the country has experienced relatively low and stable inflation rates in recent years (Rutayisire, 2010; Malunda and Musana, 2012; Ggombe and Newfarmer, 2017; National Bank of Rwanda, 2021). However, despite these achievements, there remain persistent challenges that require attention to ensure sustained low inflation and foster economic growth. This study aims to comprehensively analyze Rwanda's inflation trends since the 1970s, review the underlying policy frameworks, identify inflation management challenges, and propose potential solutions. By shedding light on these dynamics, our research aims to guide policymakers in implementing effective measures that protect vulnerable populations from the negative impacts of inflation. Given the limited existing research on inflation in Rwanda, this study aims to fill the knowledge gap by conducting a meticulous analysis of inflation indicators over an extended period. Additionally, the study explores the unique socio-political context of Rwanda and its commitment to sustainable development, examining how factors such as political stability, economic diversification, and environmental sustainability influence inflation dynamics. Furthermore, as an active member of the East African Community (EAC) and the African Union (AU), Rwanda provides an intriguing case study for understanding inflation dynamics and facilitating

policy alignment at the regional and international levels. By enhancing our understanding of inflation dynamics, we aim to foster regional cooperation, integration, and informed policymaking for sustainable economic growth in Rwanda.

2. Theoretical background

Inflation is a complex economic phenomenon that can have negative effects on the economies of both developed and developing countries, including a misallocation of resources, a decline in economic efficiency, uncertainty and distortion in the price system, a reduction in the purchasing power of individuals and households and redistribution of wealth from savers to borrowers (see for example Sargent and Wallace, 1981; Cecchetti and Krause, 2002). Therefore, maintaining low and stable inflation is crucial for promoting sustainable economic growth and development. This study provides insights into the inflation dynamics in Rwanda in terms of policies, trends, challenges and recommendations for promoting low and stable inflation and sustainable economic growth. By studying inflation dynamics, policymakers can develop policies to protect the most vulnerable populations from the negative impacts of inflation. This study will contribute to the existing literature on inflation in developing economies, particularly in Africa, and is expected to be of interest to researchers and scholars interested in the economics of inflation.

3. Research methodology

The study adopts an exploratory approach to analyse and synthesise Rwanda's inflation policies and trends. Secondary data from reports, academic studies, and publications are utilised to enrich the analysis. The study also delves into the literature on inflation management in Rwanda and the specific inflation-related challenges the country faces. By addressing the research gap on inflation in Rwanda, this exploratory study provides valuable insights into the policy framework and the challenges involved in managing inflation. The study aims to fill the research gap on inflation dynamics in Rwanda and provide insights into the policy framework and challenges in managing inflation in the study county.

4. Findings

4.1. Evolution of the Policy Framework for Managing Inflation in Rwanda

The policy framework of Rwanda, on the management of inflation, has undergone profound changes since attaining independence in 1962 (Bigsten and Isaksson, 2008; Ggombe and Newfarmer, 2017). The progression of Rwanda's policy framework for inflation management can be classified into three distinct episodes, chronologically identified as the policy framework pre-dating 1994, the policy framework spanning from 1994 to 2000, and the policy framework implemented after 2000 (Bigsten and Isaksson, 2008; Malunda and Musana, 2012; Ggombe and Newfarmer, 2017).

❖ Pre-1994 Policy Framework

In 1962, upon gaining independence, Rwanda adopted a central planning approach to economic development, which involved heavy government intervention in the economy (Ggombe and Newfarmer, 2017). The early years following independence witnessed the implementation of such an approach (Bigsten and Isaksson, 2008; Ggombe and Newfarmer, 2017).

Rwanda's financial system operated under the McKinnon-Shaw model of repression, which was typified by government intervention in the financial system through the imposition of interest rate ceilings, exchange rate controls, and direct credit control, as described by Rutayisire (2015). This era of financial authoritarianism was distinguished by the implementation of direct monetary instruments, as highlighted by Malunda and Musana (2012), and Irankunda (2014).

During this particular episode, the policy framework imposed stringent limitations on trade and foreign exchange transactions, in conjunction with a fixed exchange rate regime (Malunda and Musana, 2012). As demonstrated in Gathani and Stoelinga (2013) and Ggombe and Newfarmer (2017), The development policy of Rwanda adopted a state intervention approach to galvanise local production, while the growth of the economy was primarily propelled by the burgeoning tea and coffee sector, in tandem with the expansion of manufacturing, engendered by the import-substitution industrial strategy.

Under the centrally planned economic policy framework, all importers and imports were subject to quotas, and the conduct of import operations hinged on a license that authorised the disbursement of external currency (Malunda and Musana, 2012). Exporters were mandated by law to repatriate currency earned from the sale of exports, and the authorisation of export licenses was exclusively within the purview of the National Bank of Rwanda (NBR). Notably, NBR received and managed all export earnings. The economic policies during the period led to distortions and overvaluation of the Rwandese Franc (Malunda and Musana, 2012).

During the 1970s, as per the findings of Gathani and Stoelinga (2013), the Ministry of Finance, acting on behalf of the government, imposed price controls on all goods sold within Rwanda, to curb inflationary pressures and minimise price competition from imported commodities. Consequently, the government enforced price controls on goods and services, which instigated shortages and the proliferation of black markets (Rutayisire, 2015). These market interventions gave rise to significant macroeconomic imbalances by the late 1980s (Rutayisire, 2015). Even though inflation was kept largely under control during this period, the economy remained stagnant, and poverty levels persisted at high rates.

Throughout the eighties, Rwanda initiated an economic liberalisation program that was designed to foster private-sector expansion and curtail governmental intervention in the economy. The government eliminated price controls, permitting market forces to dictate prices and liberalised trade and investment policies. Consequently, Rutayisire (2010) notes that price controls were abolished through various measures in 1991. These policy reforms engendered a surge in economic activity, but inflation rates began to escalate towards the end of the 1980s (World Bank, 2022).

After grappling with significant macroeconomic imbalances in the late 1980s, the Government of Rwanda elected to embrace an indirect economic stabilisation approach in the early 1990s (Rutayisire, 2015). This strategy, supported by the IMF and other development partners, placed low inflation at the core of its policy framework in the quest for macroeconomic stability (Rutayisire, 2015).

The epoch preceding the genocide against the Tutsi (1990-91) also signified the onset of the elimination of impediments to trade and foreign exchange transactions, alongside the gradual reinstatement of the market economy (The Commonwealth, 2016). In conjunction with the World Bank and the IMF under the SAP, the Government of Rwanda launched multiple reforms aimed at promoting macroeconomic stability and reviving industrial production and growth (Kumar et al., 1996; Gathani and Stoelinga, 2013; Ggombe and Newfarmer, 2017). Among these reforms was the overhaul of the exchange rate system in 1990, which entailed the liberalisation of foreign exchange markets, the sanctioning of residents to hold accounts in foreign currencies, and the market-driven determination of exchange rates (Irakunda, 2014).

In 1992, the government was dispensed with direct credit control. Additionally, the marketing, processing, and exportation of coffee were liberalised, and export taxes were abolished (Ggombe and Newfarmer, 2017).

The implementation of structural and other macroeconomic reforms leading up to the genocide against the Tutsi was impeded by the civil war that took place from 1990 to 1993, thus curtailing the progress of these changes (Kumar et al., 1996). As a result, economic growth reforms were only partially implemented, according to Andersen (2002). This interruption in the implementation of reforms had a profound impact on the trajectory of Rwanda's economy, as it hindered the country's efforts to overcome the challenges that had previously plagued the economy.

❖ Policy Framework from 1994 to 2000

The 1990s witnessed political instability and outbreaks of violence in Rwanda, which had a devastating impact on the economy. Inflation rates were highly erratic, with some years witnessing double-digit inflation (World Bank, 2022). In August 1994, Rwanda was reeling from one of the most atrocious crises of any state in modern history. After a four-year civil war, the country experienced a genocide against the Tutsis, which led to the estimated slaughter of over a million people in just 100 days (Vandeginste, 2014). The genocidal government's officials and the army, along with two million Rwandans (a third of the population), fled to neighbouring countries. The peak inflation rate was estimated in 1994 and 1995, during the genocide against the Tutsi, when hyperinflation ravaged the country (World Bank, 2022).

In the aftermath of the ruinous effects of the genocide against the Tutsis on the Rwandan economy in 1994, the government initiated a comprehensive reconstruction program hinged on robust economic policies, stability, and peace (Porter and McCreless, 2008). The reconstruction program also embarked on long-term national reconstruction reforms aimed at restoring peace, stability, and national reconciliation (The Government of Rwanda, 2001, Ggombe and Newfarmer, 2017). These reconstruction reforms aimed to lay the groundwork for economic growth and improvements in the well-being of the populace, as well as the reconstruction of economic and social institutions, as seen in (Malunda and Musana, 2012), (The Commonwealth, 2016) and (Ggombe and Newfarmer, 2017).

Between 1994 and 2000, several reforms to the policy framework in Rwanda that embraced a market economy were intensified, which included, among other things, the overhaul of the financial sector (monetary and financial regimes), the acceleration of the liberalisation of the exchange rate, trade, and investment policies, and measures to privatise state-owned enterprises (The Government of Rwanda, 2001; Irankunda, 2014).

The Government of Rwanda implemented a series of reforms in the financial sector, which involved the elimination of direct control of lending and deposit interest rates in favour of market forces, the removal of credit rationing and the elimination of requirements that banks lend to specific sectors, as well as strengthening of the National Bank of Rwanda's independence in regulating the economy (The Government of Rwanda, 2001). The direct credit controls were removed in 1992 and the full liberalisation of interest rates came into effect in 1996 (Rutayisire, 2010).

Since 1995, the Central Bank of Rwanda has adopted a monetary targeting framework, wherein broad money serves as a nominal anchor, reserve money is regarded as an operating target, and price stability is viewed as the ultimate policy objective (Irankunda, 2014; Karuhanga and Nyirakanani, 2015). To regulate the liquidity in the economy the central bank implements monetary policy using three instruments, namely OMOs, the discount rate and the reserve requirement (Irankunda, 2014).

As a component of the broader reforms instituted in Rwanda during this epoch, the financial and monetary sectors underwent liberalisation, which culminated in the assimilation of novel currency exchange regulations, the establishment of new private commercial banks, and the privatisation of state-owned banks, as noted by Irankunda (2014). Rwanda advanced towards progressively market-driven interest rates and exchange rates. These reforms also aimed to promote competition, innovation, and efficiency in the financial sector.

Concerning the exchange rate, the Government of Rwanda during the second half of the 1990s introduced a flexible exchange rate regime and allowed the Bureau de Change and commercial banks to trade foreign currencies using market-determined rates (Irankunda, 2014). In the case of exchange rate policy, the reforms commenced with the launch of the SAPs in the 1990s. Following the reform, the exchange rate of the Franc Rwandais against other currencies was determined by the market forces of demand and supply, foreign exchange bureau were established, residents were permitted to hold accounts in foreign currencies with commercial banks, the inward and outward investments were authorised, and current account operations were liberalised (Rutayisire, 2015).

The endeavour to liberalise the foreign exchange market was partially intended to facilitate convenient access by private economic actors to global currencies, as expounded by Porter and McCreless (2008). The government liberalised the exchange rate regulations in 1998 and executed full current account liberalisation (Irankunda, 2014). Under this scheme, the National Bank of Rwanda (NBR) offers a predetermined amount of foreign exchange on a marginal price basis,

occasionally intervening to mitigate disturbances. However, the precarious financial state of some commercial banks impeded participation in the inter-bank, securities, and foreign-exchange markets.

As part of the broader policy reforms aimed at promoting economic growth, Rwanda passed the Privatisation and Public Investment Law in 1996. This law conferred upon the government the authority to liquidate, restructure, and divest, either partially or wholly, any non-performing public enterprise. The privatisation involved also previously state-owned banks (Malunda and Musana, 2012). The privatisation of public enterprises in Rwanda intended to control inflation indirectly by promoting competition, improving efficiency, reducing the fiscal burden on the government, and attracting more investment (Malunda and Musana, 2012).

As part of the policy reforms aimed at trade and investment, the Rwandan government gradually reduced external tariffs to a new tariff structure of 25-15-5-0 percent in 1999. The government also eliminated export taxes and implemented a more market-oriented regulatory framework to revitalise the coffee sector, which is one of the principal sources of foreign exchange revenues. According to available literature, although inflation was not the main objective of these reforms, these measures are argued to contribute to reducing inflationary pressures (Malunda and Musana, 2012).

❖ Policy Framework after 2000

After the emergency planning that was implemented from 1994 through 2000, Rwanda underwent a paradigm shift towards long-term development planning, beginning in 2000 (The Commonwealth, 2016). This shift was part of the policy reforms aimed at laying the groundwork for sustainable economic growth and development.

In the early 2000s, the government embarked on policies and strategies aiming to transform the country into a knowledge-based economy (Bigsten and Isaksson, 2008). It adopted the long-term development Vision 2020, which aspires to take the nation into a middle-income position by 2020. The vision is constructed on six pillars, emphasising agricultural productivity, private sector competitiveness, infrastructural development, regional economic integration and cooperation, building social capital and good governance, and comprehensive human resources development (Ministry of Finance and Economic Planning, 2000). The vision was translated into mid-term implementation strategies namely the Poverty Reduction Strategic Paper (PRSP) and the First and Second Economic Development and Poverty Reduction Strategies (EDPRS 1 and 2) (The Commonwealth, 2016; Bigsten and Isaksson, 2008).

During the period, Rwanda's policy framework for managing inflation continued to include a combination of monetary policy, fiscal policy, exchange rate policy, and macroprudential policy. The government also implemented various other measures to promote price stability, including efforts to boost domestic production and reduce import dependence (The Commonwealth, 2016).

As part of the policy reforms geared towards controlling inflation, Rwanda instituted a series of sweeping changes to enhance the efficacy of monetary policy (Irakunda, 2014). These changes included the introduction of a new central-bank law and the implementation of indirect monetary policy instruments. The autonomy of the central bank in pursuing macroeconomic objectives in Rwanda was further consolidated and enshrined in law no 55/2007, which was ratified on 30/11/2007 (Irakunda, 2014). To absorb or inject liquidity, the central bank initially employed weekly auctions and an overnight deposit facility. However, in 2008, the central bank replaced these instruments with repo operations (Irakunda, 2014). Additionally, the central bank utilises foreign exchange sales as a supplementary monetary policy instrument, primarily to mitigate any unexpected liquidity fluctuations in the market (National Bank of Rwanda, 2008). In February 2009, the national bank of Rwanda reduced the reserve ratio from 8 to 5 percent to address short-term liquidity issues.

After revamping its policy framework for managing inflation in the post-independence era, Rwanda has continued to make significant strides in modernising its monetary policy framework over recent. In January 2019, the National Bank of Rwanda (NBR) adopted a price-based monetary policy framework, which replaced the previous monetary targeting framework (Vlček, et al., 2020). This new framework allows the central bank to use the interest rate as its main policy tool to achieve its inflation target (Vlček, et al., 2020). The price-based monetary policy framework is expected to enhance the effectiveness of monetary policy in achieving price stability and promoting sustainable

economic growth in Rwanda.

From the fiscal point of view, the government continued to implement measures aiming at limiting recourse to domestic financing while ensuring that the overall budget is in line with the available resources (Karuhanga and Nyirakanani, 2015). The improvement in the fiscal situation was also linked to enhanced tax and customs administration and tax reforms (Karuhanga and Nyirakanani, 2015). These reforms encompass the implementation of numerical fiscal rules, the establishment of fiscal institutions, and the utilisation of medium-term budgetary frameworks (MTBFs), in conjunction with the augmentation of budgetary procedures associated with the formulation, approval, and implementation of yearly budgetary plans.

Rwanda also implements the Macroeconomic convergence criteria set under the envisioned East Africa Monetary Union (see Kuteesa, 2012). The convergence criteria were set to ensure that members realize a unifying and stable policy state after the monetary union. The convergence criterion for inflation is a ceiling of 8 percent (see Kuteesa, 2012).

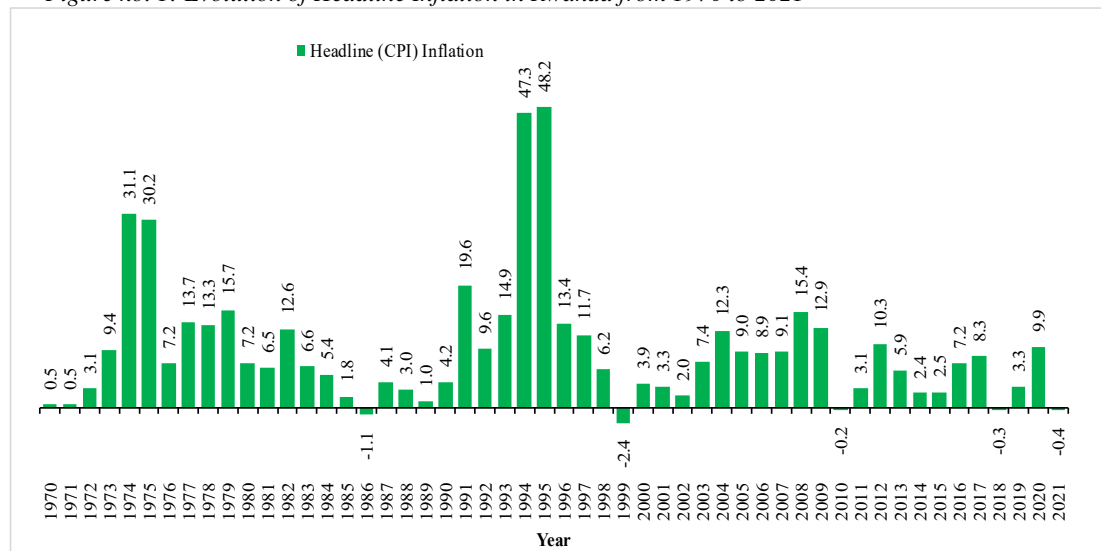
As part of the broader macroeconomic policy reforms, Rwanda also implemented the liberalisation of current account operations, including imports, exports, and services, was also undertaken, and some of the previous restrictions on capital flows were either reduced or eliminated. The period also saw Rwanda fully liberalising the capital account in 2010 to allow foreign portfolio inflows (Irakunda, 2014) similar to other study countries. These reforms were not aimed solely at curbing inflation, but they did have an impact on inflation rates.

4.2. Inflation Trends in Rwanda

Inflation trends in Rwanda over the last five decades can be examined through three key periods: the pre-1994 trend, the trends from 1994 to 2000, and the trends after 2000. Each of these periods is analysed in chronological order to provide a comprehensive understanding of how inflation has evolved in Rwanda over time. The various policy reforms and macroeconomic factors that have influenced inflation in each period are also explored, drawing on insights from empirical literature by Bigsten and Isaksson (2008), Ggombe and Newfarmer (2017) and others.

Figure no. 1 illustrates the evolution of Rwanda's overall (headline) inflation rate from 1970 to 2021.

Figure no. 1: Evolution of Headline Inflation in Rwanda from 1970 to 2021



Source: Author's compilation based on data from World Bank (2022)

❖ Inflation Trends in Rwanda Before 1994

During this period as illustrated by Figure 1, the country's headline inflation trajectory has been somewhat erratic with a general slight decreasing trend. Headline inflation averaged 8.8 percent with a median of 12.95 percent (World Bank, 2022). Headline inflation also ranged between a minimum of -1.1 percent recorded in 1986 and a maximum of 31.1 percent recorded in 1974 (World Bank, 2022).

It can also be noted that the Rwandan economy experienced three epochs of extreme inflation over the period 1969 – 1994 as can be evidenced by Figure 1. The first period of high inflation was that of 1974 and 1975 where headline inflation averaged 30.7 percent, the second period was that of 1979 where headline inflation reached 15.7 percent and the third period was that of 1991, 1992 and 1993 where headline inflation averaged 14.7 percent (World Bank, 2022).

The first episode followed the first global oil price shock that occurred in 1973-74 that also affected other countries in the region (Bigsten and Isaksson, 2008). The shock emanated from the embargo enforced by the Organisation of the Petroleum Exporting Countries (OPEC) against all nations deemed to be backers of Israel during the Yom Kippur War, which led to surges in energy costs (Kilian, 2014). This embargo engendered significant economic and geopolitical distress for countries worldwide, including Rwanda (Kilian, 2014). The subsequent global oil shock in 1979 produced a comparable effect in Rwanda, elevating inflation to 15.7 percent, albeit lower than the initial shock (Kilian, 2014; World Bank, 2022).

In the early 1990s (1991, 1992 and 1993), Rwanda experienced high levels of inflation, which was largely the result of political instability and civil unrest that had begun in the late 1980s. In 1990, the Rwandan Patriotic Front (RPF) launched an armed struggle against the government, which led to a period of intense fighting and instability (Bigsten and Isaksson, 2008). During this time, inflation in Rwanda reached very high levels, with annual inflation rates averaging 14.7 percent in 1991, 1992 and 1993 (World Bank, 2022). This was due in part to the disruption of economic activity caused by the conflict, as well as to the government's attempts to finance the war effort by printing more money (Andersen, 2000). The period's elevated inflation was also attributed to the famines that transpired in 1989-1990, 1991, and 1993 (Bigsten and Isaksson, 2008).

Additionally, the economic policies pursued by the government during this period (such as price controls on key goods and services) were not always conducive to controlling inflation as alluded by Ggombe and Newfarmer (2017).

❖ Inflation Trends in Rwanda from 1994 to 2000

The year 1994 was marked by the genocide against the Tutsis, which lasted from April to July of that year. As a result of the genocide, the country experienced a severe breakdown of law and order, with widespread violence and destruction of property (Ggombe and Newfarmer, 2017). This had a significant impact on the economy, including on inflation which surged to 47.3 percent in 1994 (World Bank, 2022). This was largely due to the disruption of economic activity caused by the conflict, which led to shortages of goods and services and a sharp increase in demand for necessities (Andersen, 2000; Ggombe and Newfarmer, 2017). In addition, the government was also forced to finance the costs of the war and the post-genocide recovery efforts, which resulted in a significant increase in the money supply and further fuelled inflation (Mawejje and Odhiambo, 2020).

In 1995, as the country began to emerge from the immediate aftermath of the genocide against the Tutsi, inflation in Rwanda rose to 48.2 percent, largely as a result of the devastating impact of the genocide on the economy (World Bank, 2022).

In the second half of the 1990s, Rwanda underwent a period of economic recovery and stabilisation, following the genocide against the Tutsi and the civil war in the early part of the decade (Kumar, et al. 1996(b)). During this period, inflation in Rwanda began to gradually decline, although it remained relatively high compared to other countries in the region (World Bank, 2022).

In 1996, annual inflation in Rwanda stood at around 13.4 percent, but it began to decrease steadily over the next few years (World Bank, 2022). By 2000, annual headline inflation had fallen to around 3.9 percent (World Bank, 2022). This decline in inflation was due in part to the government's efforts

to stabilise the economy and promote growth, including the implementation of tight monetary policies and the promotion of private-sector development (Andersen, 2000). The government also worked to reduce its budget deficit, which had been a major contributor to inflation in the past (Andersen, 2000). In addition, the country benefited from increased foreign aid and investment during this period, which helped to stimulate economic growth and reduce inflationary pressures (Andersen, 2000).

❖ Inflation Trends in Rwanda After 2000

As can be seen from Figure 1, headline inflation in Rwanda exhibited a mixed trend between 2001 and 2021. Three periods of high inflation can be identified during this episode that includes 2004 when inflation reached 12.3 percent, 2008 and 2009 when inflation averaged 14.2 percent, 2012 when inflation reached 10.3 percent and 2020 when inflation reached 9.9 percent (World Bank, 2022).

In 2004, Rwanda experienced a significant spike in inflation due to a combination of factors, including a global food and fuel price shock, regional instability, and droughts. Annual inflation rates reached as high as 12.3 percent in 2004, up from 7.4 percent in the previous year (World Bank, 2022; National Bank of Rwanda, 2005).

The high inflation witnessed in Rwanda during 2008 and 2009 was the culmination of several domestic and global factors. These included the adverse impact of rising food and fuel prices on the global market, as well as the country's vulnerability to domestic challenges such as drought, depreciation of the national currency, expansionary monetary policy, and a burgeoning fiscal deficit (National Bank of Rwanda, 2009).

Inflation more than tripled in 2012 to 10.3 percent from 3.1 percent in 2011, driven mainly by food prices and the depreciation of the domestic currency (National Bank of Rwanda, 2013; World Bank, 2022). The high inflation in Rwanda in 2012 was mainly caused by a combination of external and internal factors, including rising food and fuel prices, exchange rate depreciation, and droughts in neighbouring countries (National Bank of Rwanda, 2013). The government and central bank responded with policies aimed at tightening monetary conditions and promoting economic stability (National Bank of Rwanda, 2013). Thereafter, inflation dropped consistently to reach 2.5 percent in 2015 on the back of declining food prices boosted by favourable weather conditions (National Bank of Rwanda, 2016; World Bank, 2022).

In 2020, the inflation rate increased to 9.9 percent mainly due to the impact of the COVID-19 pandemic, which disrupted supply chains and increased the cost of imported goods (National Bank of Rwanda, 2021; World Bank, 2022). The escalation of headline inflation in 2020 was further propelled by the inflation of food prices, which occurred against the backdrop of impairment to food crops caused by torrential rains (National Bank of Rwanda, 2021). Additionally, the upward adjustment of public transportation fares in May 2020, consequent to the implementation of COVID-19 protocols, contributed to the inflationary pressures (National Bank of Rwanda, 2021).

4.3. Challenges and Opportunities in Managing Inflation in Rwanda

Maintaining price stability is a crucial aspect of economic growth and development for any nation. The government of Rwanda has made considerable efforts towards stabilising its economy and promoting growth but has encountered several challenges that hinder effective inflation control in Rwanda.

❖ Challenges

One of the significant challenges identified by the present study in managing inflation in Rwanda is the external factors or shocks. Rwanda heavily relies on imports for essential goods and services, such as oil products, machinery, and equipment (Hausmann and Chauvin, 2015). As argued by Hausmann and Chauvin (2015), the lack of domestic production capacity and the high cost of production makes it difficult to reduce the reliance on imports, leading to vulnerability to global

shocks such as changes in global commodity prices and fluctuations in foreign exchange rates. These shocks can have a significant impact on the economy and contribute to inflationary pressures.

Another major challenge faced by the Central Bank of Rwanda in managing inflation identified by the current study is the inefficient transmission mechanism of monetary policy. The transmission mechanism refers to the process by which changes in monetary policy affect the economy (Berg et al, 2013). In Rwanda, based on the available literature, the transmission mechanism is weak, which can make it difficult to control inflation (Kigabo, 2018). One way in which this inefficiency manifests is that changes in policy interest rates may not always translate into changes in lending rates and credit availability, ultimately limiting the effectiveness of monetary policy in controlling inflation (Kigabo and Kamanzi, 2018). Another reason for the inefficiency of the transmission mechanism in Rwanda could be the lack of infrastructure and development in the financial sector, which limits the ability of the Central Bank to implement monetary policies effectively (Irakunda, 2014; Kigabo, 2018; Kigabo and Kamanzi, 2018).

Another challenge in inflation management is the limited access to credit faced by both businesses and households. This lack of access to credit can lead to a variety of problems, including increased demand for money, which in turn can contribute to inflationary pressures (Ali and Duponchel, 2014). This issue can also stifle economic growth and development, as businesses and households struggle to access the financial resources they need to thrive (Ali and Duponchel, 2014). To address this challenge, policymakers must focus on promoting financial inclusion and improving access to credit. This can be achieved through a variety of measures, such as expanding the availability of microcredit and other forms of small-scale lending, as well as creating incentives for banks and other financial institutions to lend to underserved communities. By taking these steps, the Government can help to ensure that all businesses and households have access to the credit they need to succeed, thus promoting overall economic stability and growth.

The present study identifies limited fiscal space as another challenge that affects the management of inflation in Rwanda (Lledo and Perrelli, 2021). The country has limited resources to respond to external shocks and economic downturns, which can make it difficult to implement countercyclical policies that can help stabilise the economy and control inflation (Budnevich, 2002). As argued by Budnevich (2002), countercyclical policies such as increasing government spending or reducing taxes can help to stimulate economic growth and cushion the economy against external shocks.

In addition to the challenges discussed earlier, Rwanda also faces several structural constraints that can hinder effective inflation control. One of these constraints includes limited domestic production capacity (Malunda, 2012). The limited domestic production of basic goods and services, such as food and energy, can make Rwanda vulnerable to supply shocks and price fluctuations in the international market. This can lead to increased prices for these goods and services, which can contribute to inflationary pressures. To overcome this structural constraint, the government of Rwanda may need to adopt policies that promote domestic production capacity and improve financial inclusion.

Additionally, the agriculture sector's vulnerability to weather shocks and disease outbreaks can cause supply-side shocks, leading to inflationary pressures. Rwanda's economy heavily relies on agriculture, and any disruption to the sector can result in a shortage of food supply, thereby increasing the prices of food and other essential commodities (Huggins, 2009). This can have a significant impact on inflation, particularly given that food accounts for a large share of the inflation basket in Rwanda (World Bank, 2022). To address this challenge, the government of Rwanda may need to adopt policies that promote agricultural diversification and climate-resilient agriculture. These policies could include investments in irrigation systems, crop insurance programs, and research and development to develop new crop varieties that are resistant to weather shocks and diseases. By promoting a more diversified and resilient agricultural sector, Rwanda can reduce its vulnerability to supply-side shocks and help to maintain price stability.

❖ Opportunities

In addition to the challenges, Rwanda also has several opportunities that can be leveraged to manage inflation effectively. Economic diversification is one such opportunity. Rwanda has already made significant progress in diversifying its economy away from agriculture and towards manufacturing, services, and tourism (Mazimhaka, 2007). This can help reduce the country's dependence on imports and boost domestic production of key goods and services, thereby reducing inflationary pressures. Improved fiscal and monetary policy coordination in Rwanda also presents a significant opportunity for managing inflation. In the past, the lack of coordination between the government and the central bank led to conflicting policy decisions that exacerbated inflationary pressures (Ndarihoranye, Alang'o and Omwono, 2020). However, in recent years, policymakers have taken steps to improve communication and coordination between the two institutions (Ndarihoranye, Alang'o and Omwono, 2020). Regular meetings and consultations are now held, and a formal framework for policy coordination has been established (Ndarihoranye, Alang'o and Omwono, 2020). As a result, the government and the central bank are now working together more effectively to achieve the common goal of maintaining price stability and promoting economic growth. This coordinated approach has helped to reduce uncertainty and boost confidence in the economy, making it more attractive to foreign investors.

5. Conclusions

Rwanda has implemented significant changes in its policy framework to manage inflation, including a flexible exchange rate regime, inflation-targeted monetary policies, and efforts to boost domestic production and reduce import dependence. The country has experienced several episodes of high inflation, with distinct periods in the 1970s, early 1990s, and 1994. Since 2000, inflation trends have been mixed, with notable peaks in 2004, 2008-2009, 2012, and 2020. Challenges in managing inflation include heavy reliance on imports, weak monetary policy transmission, and vulnerability in the agriculture sector. To address these challenges, Rwanda should prioritize policies that promote economic diversification, infrastructure investment, and sound macroeconomic management. The study also identifies opportunities in managing inflation, such as improved coordination between fiscal and monetary policies and leveraging economic diversification. By seizing these opportunities and implementing effective policies, Rwanda can reduce inflationary pressures, foster long-term economic growth, and promote inclusive development. The study emphasizes the importance of managing inflation for Rwanda's economic stability and the well-being of its people.

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Integrating Ecotourism into Regional Development: A Study on Natura 2000 Sites in the North-East Region of Romania

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Abstract

Romania has aligned itself with objectives related to the conservation and protection of biodiversity, the safeguarding of natural habitats, and the protection of wild species by identifying and assessing Natura 2000 sites. These are recognized and protected not only at the European level but also internationally. They can be connected to broader ecological networks, such as the Pan-European Ecological Corridors and international biodiversity protection networks, playing a significant role in promoting sustainable development by integrating nature conservation with socio-economic activities. Additionally, they provide opportunities for biodiversity conservation, sustainable resource utilization, tourism development, and involvement of local communities.

The study aims to identify the main forms of tourism practiced, as well as those with potential within the 15 Natura 2000 sites in the North-East region of Romania. In a comparative manner, it highlights best practices and measures necessary for promoting ecotourism and other sustainable economic activities that support nature conservation.

Key words: Natura 2000 site, tourist valorization, sustainable tourism

J.E.L. classification: Q26, Z32

1. Introduction

The commitment of the European Union and its member states to protect and conserve biodiversity and natural habitats has been implemented through a series of regulations and ongoing efforts to ensure the long-term protection of these valuable areas. The conservation of natural habitats and wild fauna and flora, the main objective of establishing the European Natura 2000 network, is complemented by other aspects addressed in environmental policy through multiannual plans. The new program, adopted in 2022 (European Commission, 2022), aims to achieve six priority objectives: reducing greenhouse gas emissions and achieving climate neutrality; increasing adaptability, strengthening resilience, and reducing vulnerability to climate change; promoting a regenerative growth model and accelerating the transition to a circular economy; zero pollution, including for air, water, and soil, and protecting the health and quality of life of Europeans; protecting, conserving, and restoring biodiversity and improving natural capital; reducing pressures on climate and the environment related to production and consumption, especially in the areas of energy, industrial development, buildings and infrastructure, mobility, and the food system.

Regarding tourism policies, although there is a priority oriented towards the green transition (Council of the European Union, 2022), Natura 2000 sites are not explicitly included in the plans. The objectives focus on general aspects to support cooperation between the public and private sectors (Aruștei *et al.*, 2014) regarding research and innovation projects and pilot projects that develop models and transferable practices for sustainable tourism throughout the EU, including on islands

and in ultra-peripheral regions (Talmaciu *et al.*, 2020).

In the last century, natural ecosystems in Europe have changed, leading to the decline of many ecosystem services (European Parliament, 2023). In this context, Natura 2000 sites play an extremely important role in biodiversity protection in the European Union. Romania has aligned itself with objectives related to the conservation and protection of biodiversity, the safeguarding of natural habitats, and the protection of wild species by identifying and assessing Natura 2000 sites within its national territory. However, there are many barriers to harnessing these sites in accordance with locally made plans. Our study aims to identify the main forms of tourism practiced, as well as those with potential within the 15 Natura 2000 sites in the North-East region of Romania. In a comparative manner, it highlights best practices and the necessary measures to promote ecological tourism and other sustainable economic activities that support nature conservation.

2. Literature review on cultural ecosystem services

2.1. Categories of ecosystem services

Ecosystem services are considered outputs from ecosystems, based on which people obtain social and economic benefits. The flow of ecosystem services depends to a large extent on the sustainable management of natural capital. Ecosystems offer numerous interdependent services that interact in intricate ways. There are situations where the provision of multiple ecosystem services benefits from synergy (European Commission, 2000), but there are also situations where the generation of one ecosystem service is diminished as a result of exploiting another ecosystem service.

The value of ecosystem services is often overlooked by decision-makers. Many services appear to be public property and available to everyone for free. Human experiences connected to the environment, particularly ecosystems, are intricate social constructs characterized by symbolic dimensions and multidimensional aspects (Winthrop, 2014). The approach based on the ecosystem services network represents a systematic process by which we can ensure that the benefits provided by natural ecosystems are taken into account by decision-makers. Through the evaluation of ecosystem services, we can enhance awareness regarding the imperative for nature conservation. This process furnishes additional compelling reasons for conservation, subsequently bolstering both public and private support, and refining decision-making among accountable entities (Talmaciu *et al.*, 2022).

There are four major categories of ecosystem services: provisioning services (production of food, raw materials, and water supply), regulating services (carbon storage, regulation of extreme events, and air, water, and soil pollution), cultural services (contact with nature, recreation, knowledge of nature, or its spiritual value), and supporting services (primary production, soil formation, nutrient cycling), all of which are interconnected.

The process of assessing and translating ecosystem services into economic and financial language is inherently complex, with subjective elements, given that it includes components from areas that are challenging to bring together – ecological, social, and economic, with benefits especially manifesting in the long term and differentiated for stakeholders (Talmaciu, 2015). Simultaneously, it demonstrates its efficacy in resolving conflicts that may arise among potential beneficiaries of ecosystem services (Small *et al.*, 2017). This involves facilitating compromises among these parties to promote a more sustainable management of ecosystems.

2.2. Cultural ecosystem services and goods

In a comprehensive context, cultural ecosystem services encompass non-material advantages derived from people's engagement with nature. Various definitions attribute cultural services to experiences resulting from interactions with nature, recreational activities, or the intangible satisfaction derived from the existence of nature and its spiritual values. These non-material benefits encompass cognitive enrichment, personal development, reflection, recreation, and aesthetic experiences that individuals obtain from ecosystems. There is still no universally accepted framework for defining and evaluating cultural services, but certain categories appear to be included: ecotourism and recreation; goods for health; spiritual and religious goods; cultural heritage and

identity; ecological education. Cultural services, such as recreational and those associated with physical/mental health benefits, are linked to much more intangible values than those related to spiritual goods and cultural identity (Pascua *et al.*, 2017).

Of all the benefits provided to people by ecosystems, cultural services are probably the most frequently overlooked, in part due to the difficulty of identifying/measuring their value through traditional estimation methods. Although considered integral to various types of ecosystem services and acknowledged as significant, they have been given scant attention in the literature and in site valorization plans. Research endeavors aimed at evaluating cultural services usually entail gathering qualitative data from users and visitors through surveys, interviews, or participatory methods.

There are several potential indicators for evaluating cultural services. The number of visitors depends on a series of factors: the availability of alternatives (the range of circumstances/environmental settings suitable for recreational activities); accessibility (the quality and quantity of transport infrastructure and the distance between the site and populated centers); site attributes (the structure and quality of the habitat, visitation infrastructure). Individuals' aesthetic preferences for various natural environments are heavily influenced by the ecological state of the surrounding area. One primary motivation for visitors to explore protected areas is the enjoyment of a spiritual experience in nature, marked by solitude, beauty, tranquility, and harmony (Tengberg *et al.*, 2012). Numerous cultural services exhibit interconnections and overlap to a certain degree. Many Natura 2000 sites serve as natural settings where individuals can engage with nature and are favored locations for relaxation, recreation, and tourism. People visit these natural environments for a variety of purposes, such as physical exercise, relaxation, enjoying fresh air, appreciating scenic beauty, and observing wildlife.

Natura 2000 sites potentially provide physical, mental, and social benefits for the health of the population. There is evidence indicating a positive correlation between physical and mental health and exposure to nature. The intricate manner in which contact with nature contributes to people's well-being and, consequently, their health is not well comprehended at present. Although there is limited information on how biodiversity influences health, greater diversity of environments tends to lead to better health, undoubtedly with a cultural component in this regard. While it is challenging to establish direct connections between these aspects and the benefits at the scale of a site, they can provide a useful tool for argumentation and communication about the importance of the natural environment for public health. In the future, it will be essential to measure the impact of the quantity, quality, and accessibility of the natural environment on the extent of physical activity and to examine their correlation with health benefits and the potential reduction in costs associated with treating specific diseases. In addition to possible physical exercise, access to Natura 2000 sites can contribute to human health and well-being through the mere exposure of individuals to nature, leading to numerous physiological, emotional, and mental benefits, reducing stress and improving the quality of life. The economic evaluation of this category of services is associated with the assessment of recreational services since a direct determination with methods allowing a precise assessment of this service category is not possible due to impediments in identifying the direct contribution to human health of site services. For these reasons, relaxation in an environment with the specific characteristics of the site is considered to have both direct and indirect impacts on human health.

Natura 2000 sites that hold religious and spiritual significance are among the oldest protected natural areas and are essential for the spiritual well-being of many religious groups (Pascua *et al.*, 2017). Assessing spiritual and religious services in economic or monetary terms is exceptionally difficult given their intangible nature. Efforts to quantify these services pose notable philosophical and religious challenges. The spiritual values associated with a site, which people hold dear, have a significant non-instrumental component, making them unsuitable for economic analysis. The natural world has the power to elicit emotions such as inspiration, harmony, peace, and security. Translating these emotions into economic terms poses a challenge. The significance of sacred or aesthetically pleasing locations can contribute to the faith of religious communities, shaping their perspectives on the natural environment.

There exist cultural bonds between humanity and the environment that play a role in shaping cultural identity. In Europe, certain landscapes have, for centuries, depicted the interplay between human society and nature, carrying significant cultural importance and value. Assessing ecosystem services related to cultural identity and heritage presents challenges. Similar to other cultural

services, markets may provide a monetary gauge and indicate their appeal to tourists. A significant hurdle in evaluating the values of cultural identity and heritage lies in determining the spatial extent of these services and identifying the individuals and communities to include in the assessment. Various indicators, such as the number of visitors, visitor surveys, and the correlation between visitation motivation and the site's cultural identity/heritage significance, have been recognized. However, quantitative indicators may fall short in capturing many facets of cultural heritage and identity.

A widely used tool (Zakariya *et al.*, 2019) is the Landscape Character Assessment (LCA), which identifies the features that give a locality its uniqueness. LCA can be employed in various situations, such as designing indicators to calibrate changes in the landscape and inform regional planning, local development, environmental assessment, and the management of protected areas.

Ecological education is based on the premise that the environment surrounding the sites serves as an outdoor educational framework, where contact with nature can lead to the development of knowledge about nature and positive educational effects in general. Ecological education has gained prominence as a priority for numerous educational institutions worldwide. The objectives of specific programs organized by educational institutions include a substantial enhancement of knowledge and attitudes concerning both direct and indirect relationships with the environment (Borza, 2020).

Educational tourism and ecotourism have garnered heightened interest in recent years, leading to the implementation of local, national, and international projects aimed at fostering the development of these tourism forms (Manolescu *et al.*, 2015). These initiatives come with distinct advantages for stakeholders in the tourism industry.

The proportion of different types of cultural ecosystem services and goods varies substantially from one site to another, with the decision of local authorities and communities to capitalize on them remaining essential.

2.3. Tourism valorization of cultural ecosystem services

The inclusion of Natura 2000 sites in the vision of regional development is a complex and time-consuming process. Natura 2000 areas are very often located in less developed areas, given their geographic (areas with difficult access) and administrative (on the periphery of regions, near borders where economic development has been hindered by specific closed-border protocols) characteristics. During crisis situations, leveraging local tourist resources proves to be a viable solution, safeguarding the resilience of destinations (Talmaciu *et al.*, 2021). Nations or regions characterized by a relatively modest tourism potential, or those traditionally viewed as non-touristic, are turning towards niche tourism forms (Manolescu *et al.*, 2021). They focus on locally exploiting their tourism resources in this approach.

Tourism valorization plans for Natura 2000 sites involve the participation and expertise of multiple specialists to ensure the prioritization of funding for recreational resources without affecting ecosystems (Rocchi *et al.*, 2020; Borza *et al.*, 2015).

There are opinions suggesting that the balance within natural sites is fragile and, therefore, any economic-social activity must be limited. However, studies show that a high level of biodiversity at a site does not automatically imply reduced tourist activity (Cortina *et al.*, 2014) and that the impact of visitors on sites is relatively low compared to other activities (e.g., animal farms, logging, biological invasions, trail maintenance). The implementation of tourist activities must complement measures ensuring ecological stability. This can be achieved by adjusting the number of visitors to the system's capacity, maintaining trails, and selectively removing opportunistic plants (Queiroz *et al.*, 2014). Eco-tourism has the potential to contribute to the conservation of biodiversity by generating revenue for the management of Natura 2000 sites, as long as it is overseen in a manner that avoids adverse impacts on the site.

The predominant recreational activities in the sites are diverse: sports-related (hiking, cycling, walking trails, horse-riding, quads driving, paragliding), as well as wine and food tasting, mushroom picking, mountaineering or climbing for alpine sites, and education (e.g., guided tours) alongside short trips, vacations, relaxation, and enjoying nature (Schirpke *et al.*, 2018).

Certain sites are recognized for their exceptional scientific value (Cruz *et al.*, 2009): habitats for endemic species, living laboratories for testing invasive species eradication, and habitat restoration; they are places where activities of international scientific projects take place. However, activities for the general public can also be organized, such as bird-watching and botanical circuits.

Coastal areas are privileged sites – recreational services include beach activities, bathing, and diving, whereas activities away from the coast include sailing, wildlife watching, and fishing (Russi *et al.*, 2016).

Some integrated sites can generate significant income for the community. A relevant case study (Pabian *et al.*, 2009) shows that there are direct revenues associated with activities within the site (entrance fees, hunting licenses, horse riding, provisioning services like mushrooms and honey extraction). Tourist activities stimulate investments in the area (guesthouses, restaurants), museums, educational and scientific centers, as well as sports facilities representing hubs for local development, providing jobs, including highly skilled ones. Summer festivals join workshops, lectures, and seminars.

Another interesting characteristic of the sites is their multicultural nature. Often located in peripheral zones, near borders, they offer a mosaic of traditions, rituals, and languages that find expression in folk music, local habits, and architecture, making them suitable for ethnic tourism, diaspora tourism, or family reunion events.

One solution to avoid/minimize landscape fragmentation is the development of a coherent ecological network (WWF, 2023) that combines existing patches of habitat with other still functional natural sites (Kadlečík *et al.*, 2021). Natura 2000 sites can contribute to creating a regional brand if the vision for exploiting their components and integrated communication are priorities in regional development (Manolescu *et al.*, 2019).

3. Research methodology

The analyzed Natura 2000 sites are located in the Northeast Region of Romania, an economically underdeveloped region. Moreover, two out of the three counties where the 15 sites are situated are the least developed nationally, both economically and in terms of tourism (Vaslui and Botosani).

The research was conducted in stages: documentation from the sources of institutions and local public authorities; direct observation through site visits and completion of observation sheets; analysis and interpretation of data.

The variables considered were qualitative, focusing on the resources within the 15 Natura 2000 sites that can be exploited as goods and cultural ecosystem services, based on components such as ecotourism and recreation; health; spiritual and religious attractions; heritage and cultural identity; ecological education.

By analyzing the presence of these resources, the site's positioning in relation to other tourist attractions, the existence and development of tourist infrastructure, in a comparative manner, the types of ecosystem services characteristic of each site were highlighted, as well as the possibilities for development to better capitalize on tourist resources while preserving the natural habitat and involving local communities.

4. Findings and discussion

Based on the results obtained from documentation and direct observation, the main components of cultural heritage, landscape characteristics, and attractions that can be considered tourist objectives for a critical mass of visitors were highlighted in a synthetic manner (table no. 1).

These components form the basis for categorizing the types of exploitation of cultural ecosystem services and goods through various forms of tourism, such as ecotourism and recreation; goods for health; spiritual and religious goods; heritage and cultural identity; ecological education, as well as other niche forms.

All sites are suitable for ecotourism and health tourism. Sites with high potential include ROSPA0119 Horga – Zorleni, where the natural setting with exceptional value favors the development of agritourism. The forested areas covering the hills and the clean air allow the development of recreational tourism. Additionally, ROSCI0309 The Lakes around Măscurei

represent a site that is attractive for sport fishing on the lake in Bacău County, as well as for water-related activities (swimming, games, and swimming) due to the suitable natural environment.

Table no. 1. The results of the descriptive analysis of the studied sites

Code / Natura 2000 site name	Cultural Heritage	Landscape	Tourist Attractions
ROSCI0041 Coasta Rupturile Tanacu	Human habitation traces dating back to the Neolithic era, Cucuteni Culture.	Herbaceous vegetation on the slope, furrowed by coast runoff.	Museum of Traditions; Wooden Church of St. Nicholas; Wooden Church of St. Michael and Gabriel Voivodes.
ROSCI0080 Fânașurile de la Glodeni	Archeological site at Rateșu Cuzei, with settlements dating from pre-Neolithic, Neolithic Cucuteni culture, Bronze and Iron Ages - Latene and Hallstatt, Roman, Migration, Medieval periods.	Open landscape, hills with gentle or steeper slopes occupied by meadows; due to the rugged terrain, a variety of grassland habitats has been created in small spaces, generating a diversity of landscapes.	Hunting potential.
ROSCI0117 Movila lui Burcel	Religious and cultural-historical heritage.	Hill, meadow.	Monastery of Saints Constantine and Helena; Statue group; Folk and religious event.
ROSCI0133 Pădurea Bădeana (Tutova)	Archaeological sites. Tutova Valley – rich in folklore and ethnography.	Forest-specific for medium altitudes; includes diverse plant and animal species.	Village Museum "Casa Răzașului"; Centuries-old oak tree with icons in the Bădeana Natural Reserve; A pool at Bădeana, with a sports field, and a playground park.
ROSCI0158 Pădurea Bălteni- Hârboanca	Ethnic roots (Ruthenians); Ceramic remnants from the 2nd-3rd centuries; Neolithic inventory and Roman coins.	Bălteni Grove: lowland, with periodically flooded micro-depressions, especially in spring	Oakwood churches; "Stone Bridge" in Căntălărești; Archaeological sites
ROSCI0169 Pădurea Seaca – Movileni	Events in the Moldovan rural area	Specific to the hilly area, with a gentle hill appearance, featuring forests and agricultural lands	Trails through the forest.
ROSCI0213 Râul Prut	Architectural and religious monuments, archaeological sites, wood sculpture workshops.	The Prut River meadow, populated by species of herbaceous plants that form the composition of tall herb communities.	The memorial house and mansion of Costache Negruzzi; the village museum "At Grandma's House"; the Jewish Cemetery.
ROSCI0286 Colinele Elanului	Archaeological sites.	Predominantly in the plains, with meadows and occasional pastures interspersed with thickets of wild roses and hawthorn	The Constantin Corbu Manor in Mălăiești; The archaeological site at Giurcani.
ROSCI0309 Lacurile din jurul Măscurei	Folk craftsmen or practitioners of traditional trades.	Dominated by the water's sheen, complemented by willow groves and tall herbs.	The wooden church of St. Nicholas from the former Strâmba hermitage; Three old wooden churches, listed as historical monuments.

ROSCI0330 Oșești – Bârzești	Traditions: the brass band from Cozmești; weaver in Vulturești; wood processing in Vulturești.	Gentle hills, with forests and agricultural lands; authentic landscapes with a strong archaic-traditional touch.	Vulturești Village Museum - ethnographic objects.
ROSCI0335 Pădurea Dobrina – Huși	Numerous historical monuments.	Dominated by hilly, wooded terrain, with steep slopes resembling a submontane landscape.	Dimitrie Cantemir Monastery.
ROSCI0360 Râul Bârlad între Zorleni și Gura Gârbovățului	Human settlements dating back to the Paleolithic era, evidenced by remnants of material culture (primitive tools made of stone, bone, or wood), in archaeological sites.	Dominated by the developed riparian vegetation along the Bârlad River and the floodplains of its main tributaries; occasional patches of salt marshes are present.	Numerous points of interest related to religious, historical, cultural, and recreational/sporting aspects.
ROSPA0096 Pădurea Miclești	Wooden churches dating back approximately 200 years; archaeological sites; traditional crafts.	Pronounced fragmentation, including steep slopes that favor land degradation processes, with narrow interfluvial plateaus appearing as ridges or hills.	The Dimachi-Arghiropol Manor in Gugești; The fortress in the village of Bunești.
ROSPA0119 Horga – Zorleni	Traditional crafts: pottery and wicker weaving workshop; series of settlements from the late Bronze Age, the early Iron Age, and a settlement from the beginning of the Middle Ages; fossiliferous point.	Wooded areas covering the hills.	Ruins of the Soci Fortress; Bujoreni Monastery; Grăjdeni Monastery; Heroes' Monument; Linden Tree Festival.
ROSPA0130 Mața - Cârja – Rădeanu	Historical and religious monuments.	The overall appearance of the meadow is that of a wide depression; accumulation forms (ridges) and negative forms (former lakes, depressions, ponds).	The fishery complex Cârja-Mața-Rădeanu (Vădeni); Pogănești Forest Nature Reserve.

Source: authors' contribution

The sites with the highest potential in the analyzed areas for the development of various forms of tourism are highlighted in Table no. 2.

Table no. 2. The sites with high potential in the development of various forms of tourism

Type of tourism	Ecotourism and health	Spiritual and religious	Cultural and historical heritage	Ecological education
The sites with high potential	ROSPA0119 Horga – Zorleni ROSCI0309 Lacurile din jurul Măscurei ROSCI0169 Pădurea Seaca – Movileni ROSCI0286 Colinele Elanului ROSCI0360 Râul Bârlad între Zorleni și Gura Gârbovățului ROSPA0130 Mața - Cârja – Rădeanu	ROSCI0117 Movila lui Burcel ROSCI0133 Pădurea Bădeana ROSCI0041 Coasta Rupturile Tanacu	ROSCI0133 Pădurea Bădeana ROSPA0096 Pădurea Miclești ROSCI0158 Pădurea Bălteni-Hârboanca ROSCI0335 Pădurea Dobrina – Huși ROSPA0119 Horga – Zorleni ROSCI0080 Fânașurile de la Glodeni ROSCI0213 Râul Prut ROSCI0330 Oșești – Bârzești	ROSCI0133 Pădurea Bădeana ROSCI0117 Movila lui Burcel ROSCI0158 Pădurea Bălteni-Hârboanca

Source: authors' contribution

For spiritual and religious tourism, ROSCI0133 Pădurea Bădeana and ROSCI0117 Movila lui Burcel are of special importance. Thus, at the western edge of the Pădurea Bădeana site, there is a tourist attraction of spiritual and ecological importance, but little known to the general public. It is popularly known as "The Oak with Icons" or "La Stejări," and locals consider it a place charged with supernatural powers. Older locals believe that the oak is over 500 years old and is the only specimen left from the time of Ștefan cel Mare's peasants.

In the case of the Movila lui Burcel site, the existence of the monastic settlement and the religious practices specific to Orthodoxy conducted here gives the place a specific spiritual value, even if the establishment was relatively recently built (after 1989). On the other hand, the construction of the monastery and ancillary buildings, as well as the behavior and decisions of those involved in religious service, have had, in most cases, a negative impact on the biodiversity values of the site. To the extent that religious practices can be combined with biodiversity protection practices, the two can crystallize into a locally distinctive and interesting brand. There are certainly elements that identify the specific historical value and cultural identity: it is the legend of the place, with historical value, which announces the "spirit of the place." However, visitors who come to the area are more attracted to the religious value conferred by the existence of the monastic settlement. It is not recommended for the number of tourists to exceed a certain threshold, given the relatively small area of the site and the risk of vegetation damage if many people are on the site at the same time (as is the case with folklore and religious events). The threshold of sustainability must be determined, and site administrators must take specific measures to limit the damage to protected species. Characteristic of this site is that these tourists are grouped over time, while it is desirable for these areas with low sustainability to have a lower and more dispersed number of visitors over time, throughout the year.

For tourism based on the exceptional cultural and historical heritage, the majority of the analyzed sites are of great importance.

Thus, within the ROSCI0133 Pădurea Bădeana, there are the villages of Polocin and Pogonești, localities possessing archaeological sites: the 4th-century AD Necropolis at Pogonești-La Movilă, the medieval settlement at Polocin – "La Cruce," the Sântana de Mureș Necropolis at Polocin – "La Colea," the biritual Necropolis from the migration period at Polocin – "Islaz," and the boyar residence at Pogonești-La Beci, some dating back to the 4th century. Archaeological camps are periodically organized in this area. From a folklore and ethnographic perspective, the richest area in Vaslui County is Valea Tutovei. Folk costumes are still worn in the villages of Pogonești and Ivești. These two villages are representative folklore centers, with folk art being widely cultivated.

ROSPA0096 Pădurea Miclești is also a representative site for crafts and folklore: here we find folk costumes; specific musical instruments, sculptures, and paintings; spoon and barrel makers; traditional handmade carpets; brass bands of popular performers on wind and percussion instruments. Within the ROSCI0158 Pădurea Bălteni-Hârboanca is the village of Brăhășoiaia, founded at the end of the 18th century, exclusively populated by Ukrainian (Ruthenian) refugees from northern Bukovina, occupied by the Habsburg Empire. However, over time, the language spoken by the locals disappeared. The ROSCI0335 Pădurea Dobrina – Huși site has an exceptional historical heritage, with 152 historical monuments. ROSPA0119 Horga – Zorleni holds a rich archaeological and ethnographic material, attesting to the uninterrupted presence on the current territory of Vaslui County of Dacian black pottery, preserving ancient forms and ornamentation techniques to this day.

Ecological education-based tourism also has high potential in the territory of most of the analyzed sites.

Within the ROSCI0133 Pădurea Bădeana, international astronomy camps have been organized for over 5 years (Pădurea Bădeana being preferred for its exceptionally favorable position for studying the stars), the existence of rare species of flora and fauna allowing the organization of excursions, summer schools, and practical teaching hours, all contributing to the development of cultural-scientific tourism.

The ROSCI0117 Movila lui Burcel and ROSCI0158 Pădurea Bălteni-Hârboanca sites have the potential to offer educational resources (rare species), and opportunities for educational excursions. In these sites, numerous educational activities to understand the biodiversity of the site have taken place in recent years, involving students from schools in neighboring communities, activities prompted by the implementation of environmental projects.

As niche tourism forms that can be mentioned are gastronomic/wine tourism within the ROSCI0335 Pădurea Dobrina – Huși - the fame of these places is represented by the vineyards and remarkable wines of Huși, as well as dark tourism, with events intensely publicized at Tanacu Monastery as a source.

Tourist infrastructure is poorly developed in all analyzed sites. Sites with pronounced anthropic components, such as ROSCI0117 Movila lui Burcel, but also sites located near extensive communities - ROSCI0133 Pădurea Bădeana, ROSCI0158 Pădurea Bălteni-Hârboanca, or those spread over a larger territory - for example, ROSCI0213 Râul Prut or ROSCI0360 Râul Bârlad between Zorleni and Gura Gârbovățului, are comparatively more advantaged from this point of view.

5. Conclusions

The integration of Natura 2000 sites into the development of communities and, implicitly, into regional development is a strategic endeavor that must be based on a long-term vision and detailed documentary and participatory information. Although the analysis of Natura 2000 sites in the North-East Region of Romania has shown, on the one hand, that there are significant resources that can be valorized, and on the other hand, that the growth potential is limited, and tourist infrastructure can be considered deficient, there are good practices at the international and national levels that can be integrated into tourism development plans. Thus, following the analysis and determination of the sustainability threshold to avoid habitat deterioration, multiple measures can be used for the development and valorization of cultural ecosystem services and goods. The development of integrated thematic routes/trails based on similar or complementary resources and their promotion through extensive community networks, the use of environmental and development funding in partnership through projects targeting the creation of tourist products and appropriate infrastructure, the expansion of services that can be offered to locals and occasional visitors, the establishment of institutional networks, especially with schools and universities in the region, for promoting and increasing tourism resilience, are measures that can significantly contribute to the integration of these sites into regional tourism and, implicitly, to community development.

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Immediate Geopolitical and Economic Considerations on the Israel-Hamas Conflict in the First Two Weeks since 7 October 2023

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Abstract

On October 7, 2023, a forceful military action of the Palestinian organization Hamas in Israel triggered dreadful humanitarian consequences for Israel, which immediately adopted resolute measures against Hamas, with subsequent impact on heightened geopolitical risks in the Middle East. The purpose of this article is to explore the historical context of geopolitical situation in Israel, the social, economic and political main challenges. The paper also discusses potential solutions that might prove adequate to restore the relations in the Middle East and appease the existing conflicts. The analysis explores the geopolitical considerations on foreign relations normalization processes in Middle East, with a focus on "2002 Arab Peace Initiative". Furthermore, it presents the possible geoeconomic impact of the Israel-Hamas conflict on Europe, discussing the main risks for the global economy. The preliminary conclusions indicate the "two-state solution" still emerging as the most appropriate to achieve lasting peace in the Middle East.

Key words: Israel, Hamas, Geopolitical Risks, Geoeconomic Outlook, 2002 Arab Peace Initiative
J.E.L. classification: F01, F51, H12, I30

1. Introduction

The aims of the paper are to explore is to explore the historical context of geopolitical situation in Israel, the social, economic and political main challenges, in a context of recent escalation of tensions in the Middle East, and to bring into discussions the economic linkages that are exposed to the geopolitical risks, with a stance to the larger frame of the global geoeconomic impact on the global economy. The paper also analyzes the strains to normalizing relations in the Middle East and questions various viewpoints on what solutions might prove to be feasible to achieve a de-escalation of tensions and a lasting peace in the region.

On October 7, 2023, a forceful military action of the Palestinian organization Hamas in Israel triggered dreadful humanitarian consequences for Israel, which immediately adopted resolute measures against Hamas, with subsequent impact on heightened geopolitical risks in the Middle East. The Hamas attack occurred in 2023, a year marking the 75th Anniversary since the state of Israel was established.

After the Six-Day War of 1967, Israel captured the Gaza Strip (located on the Israeli-Egyptian border) and placed it under military administration. In this context, Israel has engaged in the challenging undertaking of managing the Palestinian situation, while Israel was developing settlements and strengthened its presence in this area. This geopolitical development led to the First Intifada, a name for the Palestinian uprising against the Israeli occupation. The First Intifada lasted from 1987 to 1993, and fostered the emergence of Hamas as a militant Islamist group. Over time, the Hamas gained political power as secular leftist groups such as Fatah and the Palestine Liberation Organization (PLO) gradually lost influence (Slater, 2020).

The Oslo Accords of 1993 (signed in Washington DC, USA) and 1995 (signed in Egypt), are a set of agreements between Israel (represented by the Israeli prime minister Yitzhak Rabin) and the Palestine Liberation Organization negotiator Mahmoud Abbas (Office of the Historian of the US Department of State, 2023).

The Oslo Accords ended the First Intifada and led to the creation of the Palestinian Authority as the governing body of the Palestinian people, stipulating that the PLO would recognize Israel's right to existence. Eventually, the resentment over the continued delays in implementing the Oslo Accords and the growing tensions over the Israel's governance over the Palestinians had negative effects. The Second Intifada began in the fall of 2000, which marked an intensified Israeli-Hamas violence. Israel strengthened the border security and control over the frontier with Gaza and, in 2005, Israel had to withdraw completely from the Gaza territory after nearly 40 years of occupation (Bunton, 2013).

Following the disputes between Hamas and Fatah, Hamas took control of Gaza in 2006-2007, gradually becoming a hybrid force in the process of consolidating the acquired powers– partly a terrorist-designated organization and partly a pseudo-state political group. Hostilities between Hamas and Israel led to the First Gaza War and Operation “Cast Lead” in December 2008 (McDonald, 2009). The Second Intifada ended in 2012, with the Egyptian government brokering an agreement to end the armed conflict.

2. Theoretical background

A series of papers published until the present day on Israel's geopolitical and geoeconomic strategic relations with the Arab countries in the Middle East, U.S.A, Russia and China discuss how the interplay of interests, including of economic nature, allowed for Israel to balance risks with opportunities, advancing to secure borders and a more prosperous economy.

A viewpoint is that terrorist actions in Israel increased in frequency and magnitude on an international conjecture where Israel seemed to make progress in international relations and openness related to Arab countries (Kydd et al., 2002).

Another stance places a greater emphasis on the concurrent situation among various Palestinian factions in the struggle to augment the political power and the strategic relevance as opponents to Israel. Exacerbating attacks on Israel seems to be a statement and a proof of political power and claim to legitimacy representing Palestine internationally (Bloom, 2004).

A different approach to researching Palestinian actions reveals that another scope of armed interventions upon Israel is to obtain significant concessions from Israel in the process of negotiating the terms and conditions for Palestinians (Berrebi et al., 2005)

Regardless of the rich literature on the historic relations of Israel and Palestinians, it seems that discussions on geopolitics and geoeconomic impact of terrorist actions in Israel are in an incipient phase, in a new paradigm of diplomatic shifts and an already undergoing process of normalizing relationships in the Middle East.

3. Research methodology

The research methodology to approach the geopolitical risks and geoeconomic implications stemming from the Israel-Hamas conflict pertains to analysis of political evolutions over time and the synthesis of documented authentic scientific and public resources, giving substance to the main findings.

The paper is developed using the following methods / techniques of investigation and analysis: (i) qualitative research, to explore from a regressive stance how the geopolitical considerations interplay with the sovereign interests in the Middle East, (ii) descriptive research and observations to investigate how the risks might affect the European economy, as well as the global economy, particularly on the energy channel and international prices of fuels, (iii) analytical research interpreting the Middle East economic relations developments, and (iv) applied research, on how potential solutions might foster a more durable peace, appeasing the diplomatic tensions, geopolitical risks and geoeconomic impact in Europe and the Global Economy, with a view on the efforts of the international community to restore previous conditions in the Middle East.

4. Findings

4.1. Israel's Economy as of September 2023

Israel's gross domestic product (GDP) grew by 3.1 percent in the second quarter of 2023 compared to the same period of previous year according to the most recent estimations of Israeli authorities on October 16, 2023. (Central Bureau of Statistics, 2023a). On components, the import of goods and services decreased by 9.7 percent, while the private consumption expenditure grew by only 0.5 percent.

Per capita, GDP growth advanced by 1.2 percent, but demand slowed as private consumption expenditure per capita dropped by 1.3 percent and in more detail, the household expenditure for products and services (including food, private services, postal services, fuel and electricity) fell by 1.6 percent. Private demand seemed to weaken in the second part of this year, after a robust economic growth of 6.5 percent in 2022.

In the public sector, the expenditure on consumption advanced by 3.8 percent in the second quarter of 2023 compared to the same period of the previous year, while the defense expenditures fell by 1.5 percent.

Israel's economy confronted a drop by 0.7 percent regarding the investments in fixed assets in the second quarter of 2023, potentially signaling that companies prepare to limit the fixed capital and prepare for limited investments, in anticipation of a slowdown of the economy (Central Bureau of Statistics, 2023b).

As an export oriented open economy, the export of goods and services (excluding diamonds and start-up companies) increased by 0.3 percent after falling by 0.4 percent in the first quarter of 2023. The export of services increased by 1.1 percent. The export of goods from the industry sectors, excluding diamonds, decreased by 3.6 percent in the second quarter. There was also a decrease in the export of diamonds and an increase in the export from start-up companies.

In a persistently high inflationary context, the Bank of Israel raised the monetary policy rate to 4.75 percent, supporting a gradual decrease in inflation, which reached 3.8 percent per annum.

However, in the aftermath of the events triggered by Hamas on October 7, 2023, the Bank of Israel launched a program to support the foreign exchange rate of the shekel, resorting to the reserves management and a intending to sell up to USD 30 billion in order to moderate the volatility. In addition, the Bank of Israel announced the provision of sufficient liquidity to the market through SWAP mechanisms up to USD 15 billion, to ensure the continued proper functioning of the markets. In September 2023, the Foreign Exchange Reserves stood at USD 198.5 billion, potentially allowing for a resolute support of the national currency and the banking sector. (Bank of Israel, 2023).

According to IMF, Israel's general government balance was robust in 2022, at +0.6 percent, while the public debt to GDP slightly exceeded 60 percent, while the current account excess was +3.7 percent of GDP. The GDP in nominal prices for 2022 stood at USD 475 billion and the unemployment rate of 3.8% showed an economy close to full employment status (International Monetary Fund, 2023a).

Israel launched an international issuance of war bonds on October 12, 2023 and raised \$200 million, out of which around 75 percent from US local governments and 25 percent from diaspora in US (Israelbonds, 2023), despite the fact that the conflict with Hamas increased the cost of financing to around 5.5 percent and the cost of insuring Israel's debt against default in the 5-year credit default swaps market (George, 2023). to 119 basis points on October 12, 2023, from 58 points on October 6, 2023 (Investing, 2023).

Subsequent to the onset of the Israel-Hamas conflict, the global rating agencies decided to place the long term sovereign debt ratings under monitoring for review. On October 17, 2023 Fitch Ratings decided to place Israel's 'A+' IDRs on Rating Watch Negative (Fitch Ratings, 2023), followed on October 19, 2023 by Moody's Investor Service who placed Israel's 'A1' rating under review for downgrade (Moody's, 2023).

4.2. Current Geopolitical Situation and Challenges in Israel

In the more recent past, tensions between Israel and Palestine entered a new stage of escalating violence. The main risks are stemming from the onset of the armed actions in Jerusalem, the cross-border fighting between Israel and Hamas armed groups in Gaza, the marches from Cisjordania / West Bank (a relative border conventionally drawn in 1967 with Jordan) and the escalating tensions over the Golan Heights (neighboring Syria). Violence acts in cities in Israel with mixed ethnic groups - significant numbers of Jewish and Palestinian citizens - have escalated since 2021, including in the Gaza Strip.

In my view, taken in historical context, these confrontations are on track to become some of the worst kind in the recent history of the Israeli-Hamas conflict. Israel's immediate response in the Gaza Strip, after the occurrence of the armed attack by the Hamas organization on October 7, 2023, sends a strong signal regarding the need for actions to combat terrorism and to reconsider geopolitical relations.

In retaliation to the most recent Hamas actions in October 2023, Israel launched airstrikes on the Gaza Strip, and Israeli Prime Minister Benjamin Netanyahu announced that Israel is at state of war with Hamas. Chatham House experts believe that while conflicts in Gaza are not new, this war is likely to be a long and devastating conflict that may cancel any prospect of negotiations between Israel and the Palestinian Authority. In the regional context, a broader viewpoint is that the armed conflict in Israel will have far-reaching consequences for the immediate neighborhood, as well as for the Middle East and the international community (Albanese et al., 2023).

On October 15 this year, the European Council adopted a common position of the European Union on the Israeli-Palestinian conflict, whereby the European Union condemns in the strongest possible terms Hamas and the brutal and indiscriminate terrorist attacks in Israel, considering as essential to prevent the escalation of tensions regional geopolitics (European Council, 2023).

Therefore, European Union's common position underlines the right of Israel to adopt appropriate defense measures in accordance with humanitarian law and international law. In addition to the importance of ensuring the protection of civilians, the EU calls on Hamas leaders to immediately, fully and unconditionally release the hostages.

4.3 Regional Geopolitical Considerations on Foreign Relations Normalization Processes in the Middle East

In this wider framework, the armed conflict between Israel and Hamas, may have consequences upon the beginning of the normalization of Israel's relations with Saudi Arabia (Sohal, 2023) and may affect Israel's relations with Egypt as neighbor to Gaza Strip.

At the same time, Saudi Arabia's process of normalizing relations with Iran reflects an attempt to reach a rapprochement to reduce the regional tensions in the Middle East, as both countries are founding members in the Organization of Petroleum Exporting Countries but act as regional competitors to one another. Saudi Arabia is also in talks with the US regarding a possible civilian nuclear program (Al Arabyia, 2023).

On March 10, 2023 Saudi Arabia and Iran reached an agreement in the context of the trilateral meeting organized by China (Government of Saudi Arabia, 2023). Iran and Saudi Arabia have agreed to restore diplomatic relations seven years after severing bilateral communication. The two states mutually reopened their embassies in Tehran and Riyadh in June 2023. The agreement, brokered by China, also included the implementation of a security cooperation agreement signed in 2001 and an older pact, from 1998, to improve cooperation in trade, investment, technology and culture. The Islamic Republic of Iran and the Kingdom of Saudi Arabia affirmed the respect for "state sovereignty" and "non-interference in internal affairs". The move marked a significant easing of tensions, particularly related to the regional conflicts in Syria and Yemen.

For Saudi Arabia, this agreement with Iran represents an opportunity to orient relations with China, in the context in which Saudi Arabia and Russia ensure the co-presidency of OPEC+, and the Moscow-Beijing-Tehran axis has a strategic role in the Middle East and South Asia -East. The US State Department stated that it supports the political dialogue between the two states (US Department of State, 2023b), and Anthony Blinken discussed regional security and US policy on Iran on

September 18, 2023 during a meeting with the foreign ministers of the member states of Gulf Cooperation Council (US Department of State, 2023c).

From 2020 onwards, under Abrams Accords, Bahrain, the United Arab Emirates, Morocco and Sudan have announced the normalization of relations with Israel (Reuters, 2023a). Most recently, in 2023, the United Arab Emirates signed a trade agreement with Israel, the first of its kind between Israel and an Arab state. The normalization of relations between Israel and the Arab countries are a prerequisite for Israel to position itself on the global trade map, considering the India-Middle East-Europe trade corridor, which could bring investments in connectivity in Israel, especially with the Kingdom of Saudi Arabia (Berman, 2023).

4.4 The "2002 Arab Peace Initiative" and Lessons for the Current Conflict Easing in Israel

For the US, mediating the normalization of relations between Israel and Saudi Arabia is of particular importance, being considered a special security interest of the US foreign policy. Saudi Arabia was a big supporter of the 2002 Arab Peace Initiative (Economic Cooperation Foundation, 2023), which foresees the normalization of the relations with Israel conditional on Israel's withdrawal from the Palestinian territory and the Golan Heights next to Syria.

The peace initiative at that time included the establishment of the Palestinian state as well as finding a "fair solution" for social coexistence. In the same vein, Israel could strengthen diplomatic ties with Saudi Arabia, but rounds of dialogue are needed as Saudi Arabia's ambitions raise strong opposition pertaining to security concerns over the Saudi civil nuclear program and precautions over the Iranian nuclear program (Times of Israel, 2023).

The geopolitical consulting firm RAND Corporation stated in a 2014 study, that the "two-state" solution in the Israeli-Palestinian space is the most feasible approach, at least from an economic point of view (Anthony et al., 2015). In the current context, the Israeli-Palestinian conflict has had reverberations in Europe and the Middle East. For example, as an immediate measure, European states strengthened security measures on civilian targets and the Jewish population (Germany, Great Britain), while demonstrations of support for Palestine took place in Turkey, Lebanon, Syria, Yemen, Iraq and Iran (Euronews, 2023), a signal of escalating tensions and an Arab disconnect with Israel.

4.5 Possible Geoeconomic Impact of Israel-Hamas Conflict on Europe and Risks to the Global Economy

There is a growing consensus that the geoeconomic impact of the Israel-Hamas conflict is expected to increase in the near future, and Europe could face renewed economic and political issues, after the Russian-Ukrainian conflict occurred in 2022 and is still ongoing. The new conflict triggered by Hamas in Israel occurred in a frail international economic recovery after the Covid-19 pandemic.

Morocco hosted in Marrakech the Annual Meetings joint IMF-World Bank meetings, in the week of October 9-13 this year. The analysis presented by the IMF in the flagship report "World Economic Outlook", shows that the global economy has not yet recovered the post-pandemic gaps. The projections in the IMF's base scenario on global economic growth show a slowdown from 3.5 percent in 2022 to 3.0 percent in 2023. The inflation is proving more persistent than it was expected in the previous estimations in 2023 over the medium term, although it is forecasted to decline from 8.7 percent in 2022 to 6.9 percent in 2023 and to just 5.8 percent in 2024 (International Monetary Fund, 2023b).

The IMF's chief economist estimated that a 10 percent increase in global oil prices would cause a 0.15 percent drop in global GDP and a 0.4 percent increase in global inflation (Gourinchas, 2023). A sustained oil price at or above \$100 will hurt growth and contribute to the persistence of inflation as a factor exogenous to monetary policy (Tamma, 2023), so the scenario for major global central banks will span a longer period of time with higher interest rates – a "higher for longer" interest rates scenario (Adrian, 2023) which could potentially lead to a slower global economic growth and a pressure on all loans at risk of repayment

On the other hand, the World Bank states that the phenomenon of poverty has reversed the downward trend at global level (in 2022 the number of the population exposed to extreme poverty increased by approximately 75-95 million people). In addition, conflicts such as those in Ukraine

and in Israel have the adverse effect of amplifying the factors that hinder the development and prevents the achievement of the UN's long-term sustainable development goals (World Bank, 2023).

5. Conclusions

Preliminary Conclusions on Israel-Hamas Conflict drawn in the Two Weeks passed since October 7, 2023

In this context, Hamas attacks on Israel could have repercussions on the oil market if this conflict expands to include Hezbollah or Iran as supporters of Hamas. There will likely be calls in the near future for the international community to step up sanctions on Iran's oil exports, which have increased over the past six months (Cahill, 2023).

In addition, talks to normalize relations between Saudi Arabia and Israel could be suspended amid the deepening Israeli-Palestinian conflict, closing an important avenue for US-Saudi cooperation. A key issue to watch in the near future is whether the disruption of oil supplies from Iran or a sustained rise in oil prices supported by OPEC+ has the potential to change geopolitical dynamics in the Middle East. The Secretary of the US Treasury, Janet Yellen, stated that it is premature to analyze international measures at this time regarding the actions of Hamas, as the evolution of this conflict must be followed in the near future (Reuters, 2023b).

The European Union considers the "two-state solution" as the most appropriate way to achieve lasting peace in the Middle East. In this regard, widespread engagement with the legitimate Palestinian Authority as well as regional and international partners that could play a positive role in preventing further escalation of tensions in the region is required.

6. Acknowledgement

The opinions expressed in this paper reflect the personal viewpoint of the author and do not involve, do not reflect official positions or do not engage the responsibility of any of the institutions with which the author is affiliated. The purpose of this article is to analyze data and information from available public sources as indicated in references, in a complete form and according to specified methodology. Therefore, it is not in the scope of the article to reproduce tables and charts, but to use the relevant data to answer to questions about causes, effects, time, locations, impacts, costs, responsibilities, actions, benefits. This article focuses on a very specific subject and, as broad topic, it may require future observations, analysis and in-depth surveys, remaining open for further research.

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Eco-Innovation – Pioneer of the Green Economy in the Development of the Entrepreneurial Environment. Study Case: Eco-Innovation Performance across Post-Socialist Countries in Europe

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Abstract

Innovation has the potential to increase the competitiveness and efficiency of economies. Environmental innovation helps companies improve the use of valuable resources and generate sustainable solutions that reduce the negative impact of the economy on the environment. In this paper, we provide a background on eco-innovation and methods to measure it. The purpose of this study is to underline the importance of eco-innovation for business reputation and to identify the main discrepancies between the post-socialist countries in terms of eco-innovation. Despite significant differences between countries and economic sectors, there are not enough companies implementing eco-innovation on the scale that is needed. Of all the post-socialist countries, the Czech Republic is the best practical example for eco-innovation activities. Despite the opportunities that environmental innovation presents to companies, more efforts are required to close the implementation gap.

Key words: eco-innovation, green economy, entrepreneurship, sustainability

J.E.L. classification: Q32, Q56

1. Introduction

The green economy focuses on creating sustainable businesses and developing a powerful and sustainable economy. As a driver of the green economy, eco-innovation is a relatively new concept, but its significance and impact are far-reaching.

Eco-innovation is an opportunity for companies because it reduces costs, drives new opportunities for growth and innovation, and strengthens the reputation of companies. Furthermore, green solutions will inspire a new generation of manufacturing and high-tech services, increase the competitiveness of Europe and create green jobs.

Recent world conferences have recognized that environmental degradation and climate change have reached crisis levels and, if no urgent action is taken, could result in irreversible changes in people, economies and ecosystems.

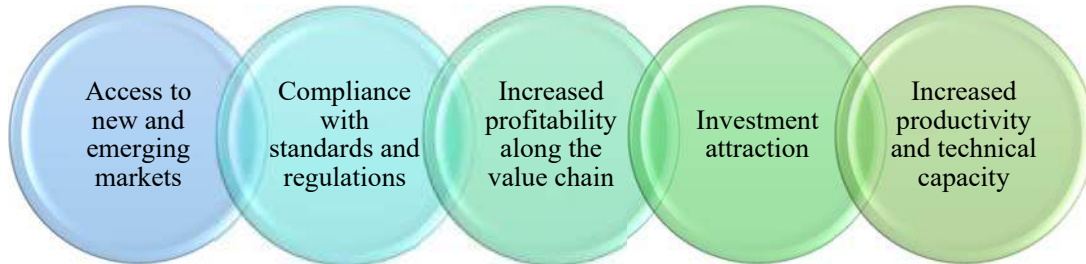
Innovation and entrepreneurship are considered the main drivers of economic development, and the innovation process is considered to be a key element of economic growth.

The development of society in general and the economy in particular strongly depends on technological and scientific progress and the emergence and implementation of innovations. Innovation is the basis for economic development.

Entrepreneurship and innovation are becoming interconnected elements of economic progress. Innovation enables entrepreneurs to emerge and develop, and entrepreneurship generates innovation. All entrepreneurial approaches must be market-orientated.

On a corporate level, innovation is considered a mean to increase sales and capture new market segments. At the national level, innovation becomes the driving force behind economic growth and the most important asset in global competition.

Figure no. 1. Drivers of value added from eco-innovation (own adaptation)



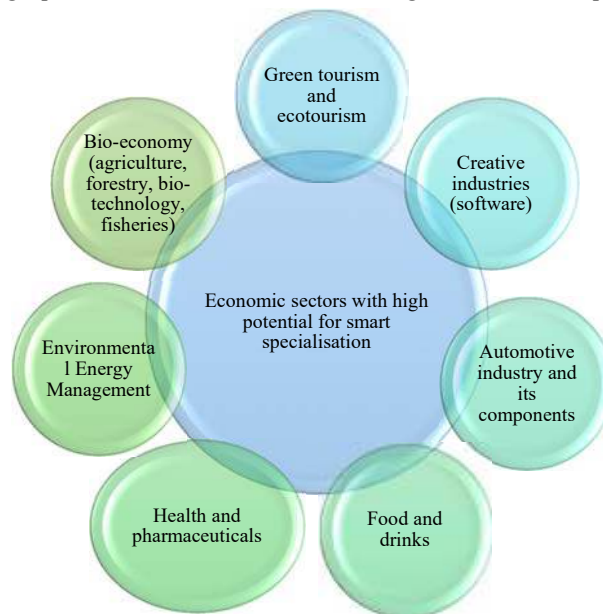
Source: <https://www.unep.org/eco-innovation>

This approach enables the creation of sustainable value chains with competitive businesses and compliance with environmental standards.

Innovation, when used properly, is an inexhaustible source of growth for any company. New technologies, devices, tools, and designs are needed to overtake, and even surpass, market leaders.

Eco-innovation, briefly, involves harnessing the talents of many people and enhancing competitiveness in the global marketplace. Economies are driven by new ideas and new processes.

Figure no. 2. Strategic priorities - economic sectors with high eco-innovation potential (own adaptation)



Source: <https://www.unep.org/eco-innovation>

Eco-innovation, briefly, involves harnessing the talents of many people and enhancing competitiveness in the global marketplace. Economies are driven by new ideas and new processes.

2. Literature review

People are currently using more natural resources than the planet can sustain in the long term. The biological capacity of the earth (including the capacity to extract and absorb wastes and emissions) has already been exceeded by about 50% (WWF et al., 2012).

Innovation always produce effective ways to give people what they want or need. Entrepreneurship aims to create new opportunities and achieve economic profit, and these opportunities can emerge through innovation (Roşca-Sadurschi L., 2017).

Eco-innovation has a key role in promoting and implementing green growth, as it promotes all forms of innovation that reduce environmental impacts and strengthen resilience to environmental constraints (Jang et al., 2015).

Therefore, the European Commission defines the concept of eco-innovation as "any innovation that leads to significant progress towards the goal of sustainable development by reducing the environmental impact of our production patterns, increasing the resilience of nature to environmental pressures, or achieving a more efficient and responsible use of natural resources" (European Commission/Environment - Eco-innovation, the key to Europe's future competitiveness).

A similar definition is given by other authors in their article, whereby eco-innovations are activities focused on innovation in products, processes, and organizational philosophies to improve the state of the environment (Mavi & Mavi, 2021).

According to Europe INNOVA (2006), eco-innovation is the creation of new and competitively priced goods, processes, systems, services and procedures designed to meet human needs and provide a better quality of life for everyone, with minimal life-cycle use of natural resources per unit of production and minimal release of toxic substances.

Ryszko (2016) stated that businesses can, through technological eco-innovation, not only improve their corporate image and achieve higher customer satisfaction, but also generate increased market share, increased profit, sales profitability, etc. As technological eco-innovation reduces environmental impact and improves business performance, it simultaneously contributes to the environmental and economic pillars of sustainable development.

The "Eco-Innovation Action Plan (EcoAP)", which was part of the Europe 2020 strategy approved by the European Commission, aims to achieve sustainable development goals. The essential objective of the EU Eco-Innovation Action Plan is to "fund opportunities to bridge the gap between technology and market penetration to increase European competitiveness. The Plan includes seven actions directed at both supply and demand, research and industry, and policy and financial instruments".

The actions, which are foreseen in this plan, are undertaken by the European Commission, national and regional authorities, industries and research organizations (European Commission/Environment - Eco-innovation, the key to Europe's future competitiveness).

Through eco-innovation, the UN Environment Package supports SMEs in the regions to develop and implement a business model that will enable the creation of sustainable businesses throughout their life cycle and throughout the value chain in which they will participate.

Eco-innovation involves a series of changes or new solutions for products (goods/services), processes, market analysis, and organizational structures that lead to improved performance and competitiveness of a company. This approach can help small and medium enterprises (SMEs) penetrate new markets, increase productivity, attract new business investment, increase profitability along the value chain, and help them comply with regulations and standards (UNEP, Eco-Innovation).

Eco-innovation is the protection, adoption or operation of a product, production process, service, management or business method that is new to the organization (development or adoption) and that leads, during its life cycle, to a reduction in environmental risk, pollution and other negative impacts of resource use (including energy use) compared to relevant alternatives" (Kemp and Pearson, 2007).

3. Research methodology

The research methodology included an analysis of statistical indicators on the annual European Eco-Innovation Index. The Eco-Innovation Index shows the performance of each European country in terms of eco-innovation inputs, activities, and outputs. Moreover, the index compiles resource efficiency outcomes and socio-economic outcomes. The years considered for the index considered for research are 2022 and 2023. This index is important for observing the progress of EU countries in terms of environmental innovation. Furthermore, each European country must identify the areas that can be improved in the field of eco-innovation, because the future of the European landscape includes aspects related to sustainability and green practices.

4. Findings

In this section, we have conducted an analysis of eco-innovation performance across post-socialist countries in Europe: Romania, Bulgaria, Slovakia, Hungary, Czech Republic, and Poland.

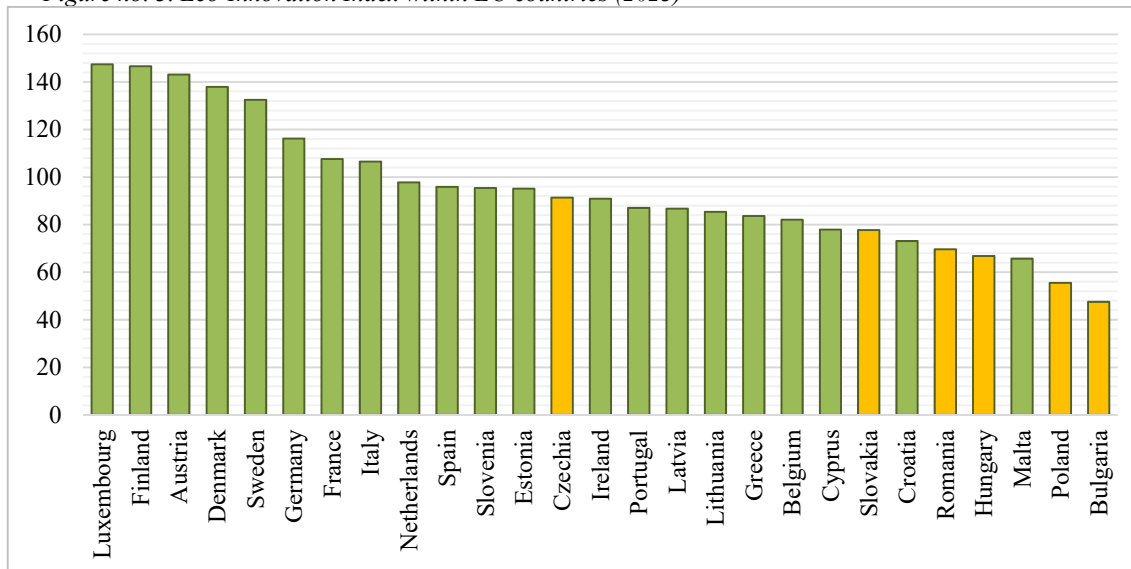
The **Eco-Innovation Index** is a European tool that highlights the gaps between member states in environmental innovation. The main areas covered by this index are eco-innovation inputs, eco-innovation activities, eco-innovation outputs, resource efficiency outcomes, and socio-economic outcomes. The figure below shows the scores of European member states in terms of eco-innovation. The performances recorded by each member state are grouped into three performance groups:

- Eco-Innovation Leaders group;
- Average Eco-Innovation performers group;
- Eco-Innovation Catching-up group.

In 2023, the leaders in eco-innovation are Luxembourg, Finland, Austria, Denmark, Sweden and Germany. Of the six European states included in the analysis, it can be seen that the Czech Republic occupies a higher position than the other states. The Czech Republic is within the average eco-innovation performers group. In the last two places are Bulgaria and Poland, which are classified as European countries catching up with eco-innovation. Furthermore, Hungary, Romania and Slovakia are also countries catching up with eco-innovation. All six European countries are former-industrial countries characterized by struggles in becoming more sustainable.

The Czech authorities ratified the Strategic Framework for Sustainable Development in 2010. This regulation aimed to establish long-term sustainable objectives for the effective use of resources. The Czech economy evolved positively over the last years and the environmental quality of life has improved. Furthermore, the Czech EIT Climate-KIC Regional Innovation Scheme (RIS) Hub is an initiative that targets environmental innovation and climate change (Climate-KIC, 2023). Climate change has become an active subject of debate in the Czech Republic. Other drivers of eco-innovation in this country are government policies, investments in research and innovation, environmental education among citizens, and public-private partnerships.

Figure no. 3. Eco-Innovation Index within EU countries (2023)

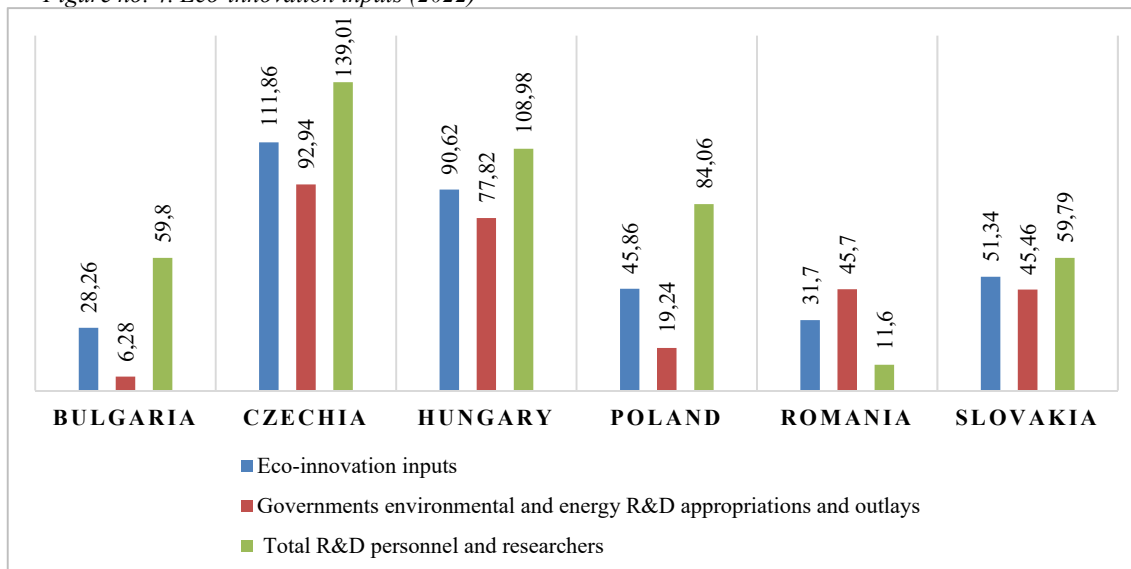


Source: Author's elaboration based on the European ECO-Innovation Scoreboard 2023

In terms of **eco-innovation inputs**, we have analyzed two indicators: governments environmental and energy R&D appropriations and outlays and total R&D personnel and researchers. The first indicator shows the attention paid by the governments of the European states to investments in protecting the environment. An example in this case is renewable energy. The second indicator concerns the people involved in research and development activities. The ultimate purpose of both indicators is to trigger eco-innovation activities within the European countries.

Eco-innovation inputs recorded higher scores in Czech Republic and Hungary. Therefore, these two countries have made greater investments in protecting the environment, by addressing research and development opportunities. Moreover, Poland shows an increased progress in terms of total R&D personnel and researchers, compared with Slovakia, Bulgaria and Romania. Romania and Bulgaria have the lowest scores related to governments' environmental and energy R&D appropriations.

Figure no. 4. Eco-innovation inputs (2022)

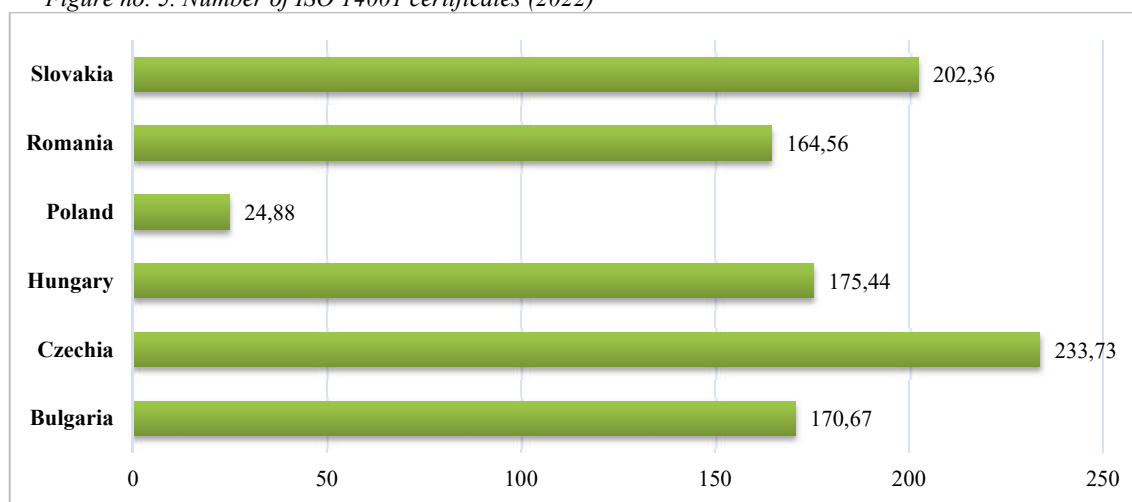


Source: Author's elaboration based on the European ECO-Innovation Scoreboard 2022

ISO 14001 certification is an essential instrument for companies that want to manage their environmental impact in a responsible and sustainable manner. Nowadays, consumers are more interested in companies that are aware of environmental issues and that implement sustainability issues in their long-term strategies. From this perspective, ISO 14001 certification enables businesses to promote their products and services on local, national and international markets and thereby achieve a competitive advantage. The future of the European market will encompass a growing commitment to sustainable development and to developing goods and services in a sustainable way, without compromising resource scarcity and the natural environment. Environmental protection, recycling, waste minimization, energy efficiency, less pollution, social responsibility are all concrete examples of measures that companies with ISO 14001 certification are undertaking for environmental management in accordance with international practices.

Among the six countries considered in the analysis, it can be noted from the table below that most ISO 14001 certifications are owned by enterprises in Czech Republic, Slovakia and Hungary. The Czech Republic is one of the medium-sized group of eco-innovation performers. The rest of the countries are part of the eco-innovation catching-up group, which suggests that they must work very hard to achieve a real progress in this field in coming years.

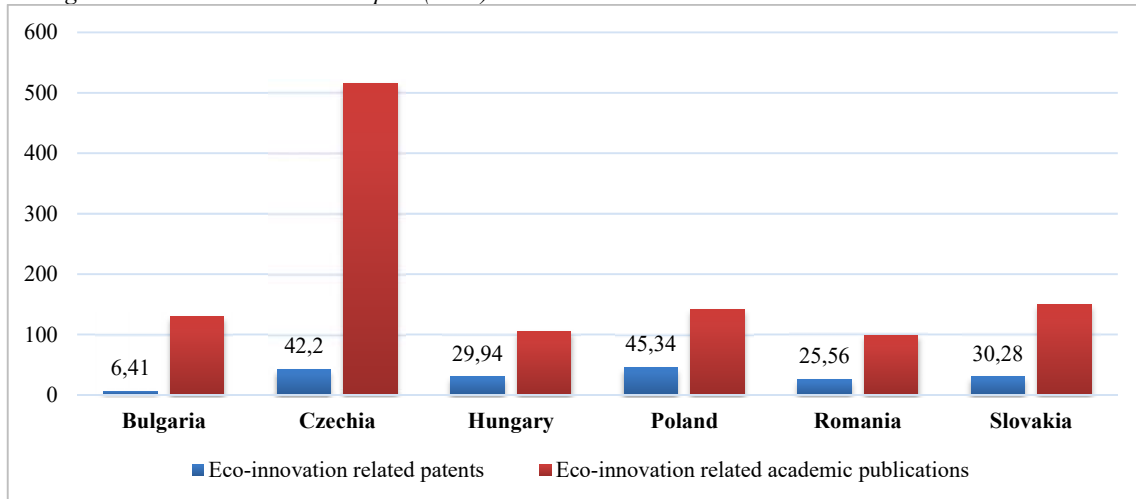
Figure no. 5. Number of ISO 14001 certificates (2022)



Source: Author's elaboration based on the European ECO-Innovation Scoreboard 2022

Eco-innovation outputs is another indicator of significant importance in the field of eco-innovation. As a structure, it includes two indicators: eco-innovation patents and eco-innovation related academic publications. Patents suggest new investments made in the field of eco-innovation. From this point of view, Poland is the leader in eco-innovation patents. Eco-innovation related academic publications signify the number of scientific publications in the field of environmental innovation. The Czech Republic is the leader in terms of eco-innovation publications.

Figure no. 6. Eco-innovation outputs (2022)

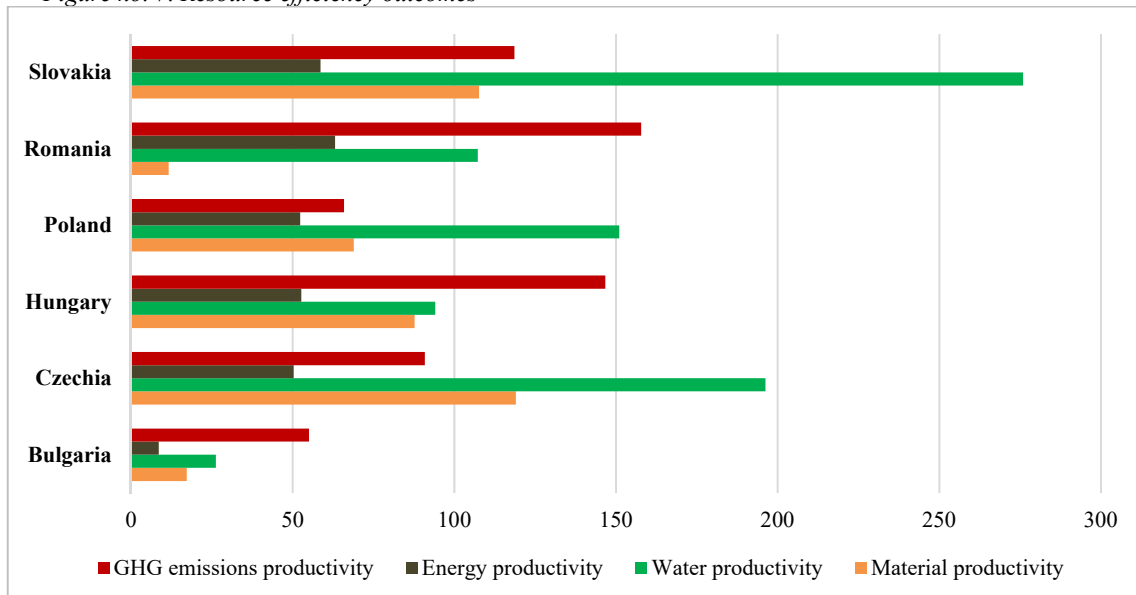


Source: Author's elaboration based on the European ECO-Innovation Scoreboard 2022

Resource efficiency outcomes refer to practices to improve resource productivity. An example of resource efficiency is renewable energy, which began to be implemented in many European states after the war in Ukraine disrupted supply chains. GHG emissions productivity, energy productivity, water productivity, and material productivity are the main resource efficiency indicators that have been considered for the Eco-Innovation Index.

In terms of GHG emissions productivity, which means greenhouse gases, Romania and Hungary display the highest scores. Bulgaria and Poland reported in 2022 the smallest GHG emissions productivity. Furthermore, energy productivity scored higher in Romania and Slovakia, compared to the other post-socialist countries. It can be seen that water productivity presents higher scores in Slovakia and Czech Republic. Finally, the Czech Republic and Slovakia are leaders in terms of material productivity.

Figure no. 7. Resource efficiency outcomes

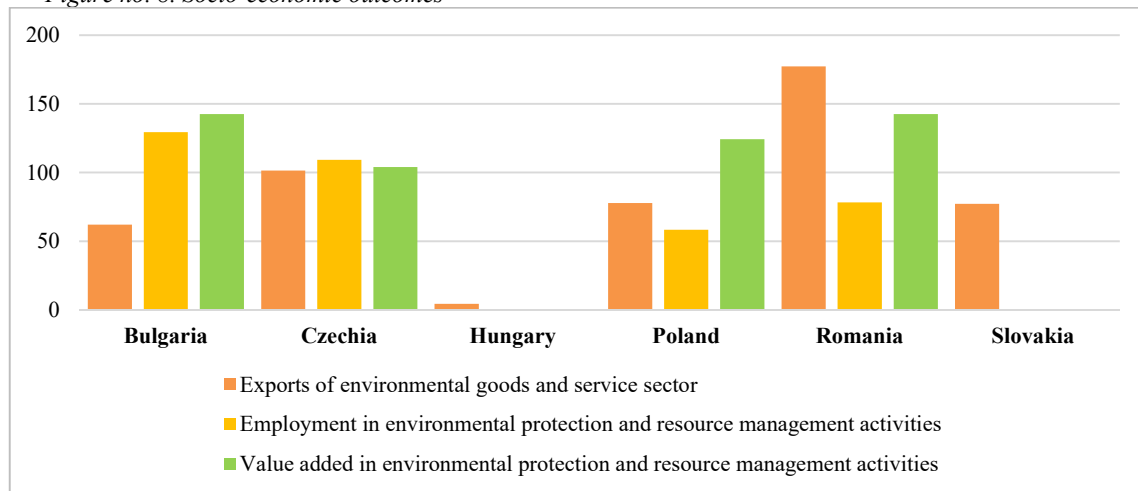


Source: Author's elaboration based on the European ECO-Innovation Scoreboard 2022

Socio-economic outcomes highlight the significant effects that eco-innovation activities have on the economy as a whole. From this perspective, the main indicators are exports of environmental goods and service sectors, employment in environmental protection and resource management activities, and value added in environmental protection and resource management activities.

When examining the exports of environmental goods and services sector, it can be observed that Romania is a leader in this section. Therefore, eco-innovation activities, although they are not so developed in Romania, contribute to the export activities of the country. In addition, Bulgaria and the Czech Republic have stated a high level of employment in environmental protection and resource management activities. A low level of employment in eco-innovation activities can be observed in Poland and Romania. Finally, the value added to environmental protection and resource management activities is superior in Romania, Bulgaria, and Poland.

Figure no. 8. Socio-economic outcomes



Source: Author's elaboration based on the European ECO-Innovation Scoreboard 2022

The Czech Republic, located in the center of Europe, is a state that stands out in the field of eco-innovation, achieving high scores for most indicators specific to this field. This situation reflects the commitment of this state to environmental conservation, strong policies, and an active approach to promoting innovation in sustainable practices.

The more forms of cooperation are based on fundamental principles such as responsiveness, flexibility, trust, professionalism, and diversity, the healthier and more attractive the entrepreneurial ecosystem will be for companies.

In Romania, as a prerequisite for achieving long-term socio-economic development goals and overcoming the current crisis, the establishment of an innovative economy requires both at the national level and at the level of the main actors of entrepreneurship. There is a need for the dynamics of the innovation process at the level of ecosystems and individual economic agents.

Table no. 1. Directions and prerequisites of eco-innovation

Directions	Prerequisites
Raising awareness about environmental issues and sustainable development to promote behavior change.	Well-prepared and innovative human Capital
Forming a Green alliance with IFI and other UN agencies.	Access to European funding programs
Improve environmental knowledge and skills to promote low-carbon technologies, resource efficiency, employment opportunities and economic growth.	Improved access to information
Promoting green jobs and economic opportunities with a focus on small and medium-sized enterprises.	Increasing demand for organic products
Extending measures to make urban development more sustainable and improve the quality of life.	Consumers with a positive attitude towards organic products

Source: Author's elaboration

At the micro level, eco-innovation marks a transition to a green economy, and SMEs are implemented by SMEs to introduce eco-innovative processes and therefore green business models.

5. Conclusions

The implementation of eco-innovation is a difficult process and is not suitable for all small and medium-sized businesses. Therefore, understanding the barriers and opportunities at the individual company level, as well as the main gaps in policy and education, can help to better understand the context and conditions of eco-innovation in Romania.

At the European level, the Czech Republic and Slovakia are the post-socialist countries that are the most developed in terms of eco-innovation activities, mainly in the areas of eco-innovation inputs, ISO 14001 certificates, and eco-innovation outputs. Furthermore, Romania is a leader in terms of the exports of environmental goods and services sector.

The Romanian business environment suffers not from a lack of ideas, but from a decrease in the ability to implement ideas. In order to develop Romania's business environment, it is necessary to invest in entrepreneurial education, innovation and digitalization. At the same time, we need programs and public policies that encourage and support the creation of new businesses.

The practicality of this study is also evident from the research results, which highlight the fact that Romania is one of the countries with the worst performance in adopting eco-innovation and that it is important to consider opening up new research opportunities.

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Enhancing International Public-Private Partnerships by Entering New Markets like Asia and Africa

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Abstract

This article attempts to provide some effective models for implementing this kind of collaboration involving the public and private sectors, starting with the distinctions that exist globally concerning the formation of “public-private partnerships”. China, India, and South Africa have emerged in the past ten years, as global leaders within the “public-private partnerships” field, as they view it as a crucial tool for the development of infrastructure. Even though these regions encounter project failure factors when implementing projects in “public-private partnership”, they can support “public-private partnership” growth through efficient risk management and the creation of various tools that promote “public-private collaboration”.

Key words: public-private partnership, China, India, South Africa

J.E.L. classification: F53, F63, G28

1. Introduction

Successful “public-private partnerships” (PPPs) and those that have yielded no benefits can be observed globally. Furthermore, some contracts work, but not as well as they should. For these collaborations to realize their full potential, some adjustments are required. A prevalent issue in “public-private partnerships” is poor risk sharing and ignorance about success criteria, which contribute to some of the failures of these kinds of agreements. A well-planned project will succeed, but to realize its full potential, it also needs supportive legislation, effective supervision, and certain financial, environmental, and social requirements.

Throughout the past 20 years, certain “public-private partnership programs” have gotten stronger, while others have stagnated. Programs have also expanded into new countries, namely China, India, and South Africa. Compared to many industrialized nations, the top markets among emerging economies, including China and, recently, India, have gone far further in involving the private sector in infrastructure creation and maintenance. Initiatives for delegating some tasks to private businesses are also being carried out in Africa as well as in Asia. The increasing popularity concerning “public-private partnerships” in recent years makes it pertinent to examine how they have developed in Asia and Africa. “Public-private partnerships” have become less important in Europe and the US but are becoming more important in the regions mentioned above.

2. Theoretical background

„By utilizing the resources of a commercial partner, public-private partnerships offer innovative approaches to finance public initiatives. They are lengthy agreements among the governmental and private sectors” (Amovici et al., 2020). “Public-private partnership” has demonstrated capabilities to reduce whole-life costs, lessen the financial load on the public sector, enhance risk control and services for infrastructure, and promote lasting partnerships that foster accountability and transparency (Wang et al., 2020). Two key features that set “public-private partnership” projects apart from other forms of finance are owned by the private entity involved in the project: timely delivery of investments and budgetary constraints (Nastase et al., 2022). There isn't just one “public-private partnership” structure that works. A government's “public-private partnership” structure

usually changes over time, frequently in reaction to particular difficulties the program is encountering. The "public-private partnership policy" must be stated clearly to build a framework for "public-private partnerships" in government. Different "public-private partnership policy" variations are used in different nations. There are numerous configuration options for a "public-private partnership" frame. The possibilities available are frequently determined by the legal framework of the nation and the norms that direct the creation of institutions, policies, and regulations (World Bank, 2022).

The local government, which the PPP contract refers to as the "public sector" is required to assume a governance role for the duration of the asset given that one of the "public-private partnerships" objectives is to change the role of government from one of implementer to governor. The effectiveness of the public sector's entire life cycle management, which can be seen in the oversight, delegation, cooperation, negotiation, and direction of the private sector to provide the best value for money during the whole life cycle, affects "public-private partnership infrastructure initiatives" in a major way (Wang et al., 2020). "Public-private partnership" is more important because many governments, in both rich and developing nations, urgently require long-term planning to deal with the growing urbanization, population increase, and deterioration of the environment. Numerous countries have demonstrated insufficient financing or resources, even when it comes to safeguarding public health during pandemics. This adds credence to the idea that "public-private partnership" is a wise development strategy. The "private sector" can require financial assistance and government backing in isolated cases, as demonstrated by the COVID-19 global pandemic. As a result, these partnerships benefit both parties. (Jayasena et al., 2022).

3. Research methodology

We employed the qualitative approach of article analysis and interpretation to better understand the fundamentals of "public-private partnerships" and institution reports to illustrate the development of "public-private partnerships" in two different regions to conduct this study. The approach worked well for the goal of showcasing "public-private partnerships" growth in China, India, and South Africa, showing how these countries have climbed to the top places in the implementation of this type of partnership in recent years.

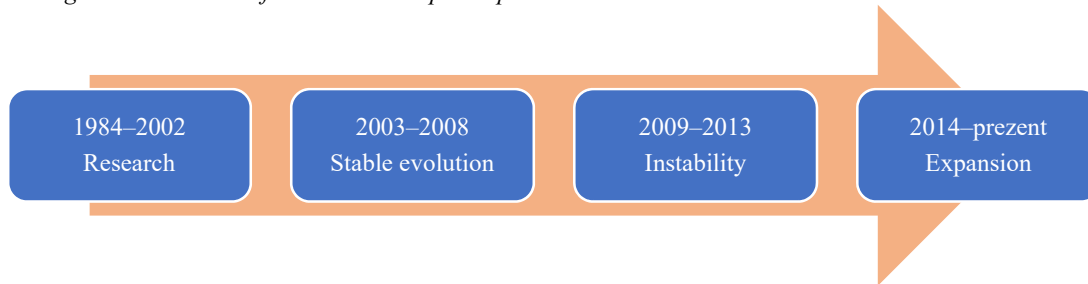
4. Findings

4.1. "Public-private partnership" in Asia

4.1.1. "Public-private partnership" in China

China first launched "public-private partnerships" in the 1980s. In the mid-1990s, these partnerships were officially implemented and refined on a broader scale. During this time, the "public-private partnership" development went through several stages, during which unstable variables periodically occurred. (Cheng Z. et al., 2016). Figure No. 1 will illustrate the many phases that the "public-private partnership" underwent in tandem with the shift in China's macroeconomic environment.

Figure no. 1 Phases of the PPP development process in China



Source: processing after (Zhang et al., 2019)

Until the end of 2018, 8,649 “public-private partnership projects” had been verified by the Ministry of Finance, and several institutions, regulations, and guidelines had been regularly published. There were 8788 “public-private partnership projects” in China as of the end of January 2019 (Luo, 2022). 10,312 “public-private partnership projects” totaling 16.4 trillion yuan in investment were filed in the “National PPP Integrated Information Platform's Project Management Database” during 2021's first half. These nationwide initiatives span 19 different fields, such as energy, transportation, conservation of water, sustainability and preservation, municipal technology, comprehensive urban development, forestry, agriculture, and science and technology. (CPPPC, 2022). A total of 10,034 “public-private partnerships” were in place by the end of 2021, according to data obtained through the “Center for Government Cooperation and Social Capital” (Gong, 2022).

Currently, in China, an ordinary “public-private partnership project” goes through four stages in its entirety: the beginning, bidding, execution, and transfer. The selection of the private partner through the auction procedure is a prerequisite for a “public-private partnership project” to proceed to the execution stage. In the implementation phase, which might last up to 30 years, the financial structure plays a critical role in determining the project's success. The central government of China is not required to actively finance “public-private partnership projects” since local governments are in charge of providing infrastructure in the country. Consequently, local governments and private partners serve as the primary funding sources for “public-private partnership projects”, with the payment mechanism often determining the investment share (Zhang et al., 2019).

“Public-private partnership projects” have developed quickly in China due to several elements that are crucial to the achievement of this kind of collaboration. Due to vigorous promotion by both the federal and local governments, “public-private partnership projects” have experienced tremendous growth. However, many “public-private partnership projects” encounter several implementation challenges and are not carried out in a way that satisfies the interests of both partners. (Yang et al., 2022).

Table No. 1 lists the elements that affect whether a public-private collaboration in China is successful or unsuccessful.

Table no. 1. The elements that make a public-private collaboration succeed or fail in China

Nr. Crt.	Principal elements influencing PPP's success in China	Principal elements influencing PPP's failure PPP in China
1	A constant state of the economy	Absence of a supportive institutional setting
2	An open and effective procurement procedure	A lack of confidence between the public and private sectors
3	A favorable social and political climate	Inadequate level of market competition
4	Intelligent government oversight	Excessive government meddling
5	Efficient distribution and exchange of risks	Inadequate research on the feasibility
6	Trustworthy and superior services	Insufficient project planning by the government
7	Service fulfillment	A lack of funds
8	Collaborations and long-term connections	Unsuitable supervision
9	Project's financial performance	An imprecise forecast of the level of production

Source: processing after (Yang et al., 2022; Cheng et al., 2021)

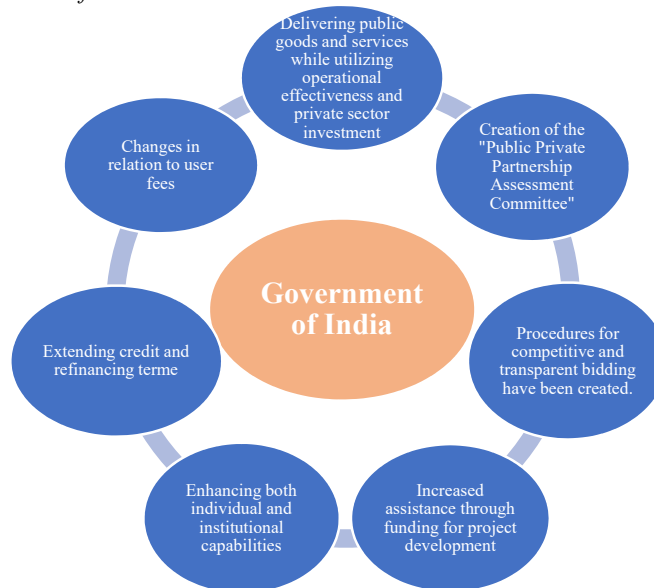
To address the growing problems with its execution, the Ministry of Finance and other ministries published a set of instructions on promoting the approved development of "public-private partnerships". These guidelines mandated that local governments successfully attract social capital and improve the standard of supply at all levels. (Yang et al., 2022).

4.1.2. "Public-private partnership" in India

The Indian economy over recent years has experienced robust growth in the majority of its sectors. The nation's infrastructure, including its highways, ports, airports, urban bus and metro systems, health care facilities, and educational facilities, must be developed to ensure equitable and sustainable growth. As a result, the Indian government has concentrated on creating some tools and initiatives that will allow "public-private partnerships" to encourage investment from the private sector in this country. These are essential for driving investment in modern infrastructure, ensuring that the focus is on delivering services and facilitating the effective operation as well as upkeep of both new and old assets during their lifetimes (ADB, 2022). India has shortcomings in terms of funding capability in addition to a huge infrastructure deficit. "Public-private partnerships" can bridge the financial gap and fulfill demands. The majority of "public-private partnership projects" are managed and funded by the private sector, removing the necessity for the government to get funding from borrowing or its sources of revenue (taxes). This is a benefit in countries like India where the public sector's capacity to acquire funds is constrained.

"Public-private partnerships" free up funds for the public sector, allowing for more capital spending and easier access to infrastructure resources (Begum and Kumar, 2021). India has developed one of the biggest "public-private partnership programs" worldwide over the past ten years and established itself as an innovator in the field of public-private cooperation by methodically launching a "public-private partnership program" for the supply of high-priority public services and facilities (DEA, 2023). As a result, a complex ecosystem of organizations, developers, investors, sources of capital, rules, and processes has emerged for "public-private partnerships". "Public-private partnership" growth trends, particularly in the previous ten years, support the need for an extensive policy structure that establishes the guidelines for carrying out more projects across a range of industries to support the country's goals for equitable growth (World Bank, 2022). Enhancing the quality and standard of social and economic infrastructure services throughout the nation is a top priority for the Indian government, the measures taken by the Indian government, are particularly shown in Figure No. 2.

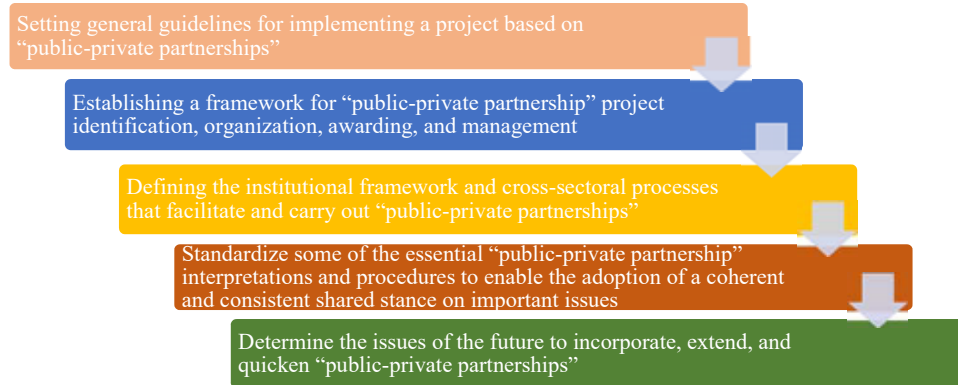
Figure no. 2 The Indian government's initiatives to raise the standard and enhance the quality of social and economic infrastructure services



Source: processing after (World Bank, 2022)

"The National Public-private partnership Strategy" in India seeks to enable this development of the "public-private partnership" approach's application consistently and efficiently, through the initiatives shown in Figure No. 3

Figure no. 3 The Indian government's initiatives to increase the usage of PPPs



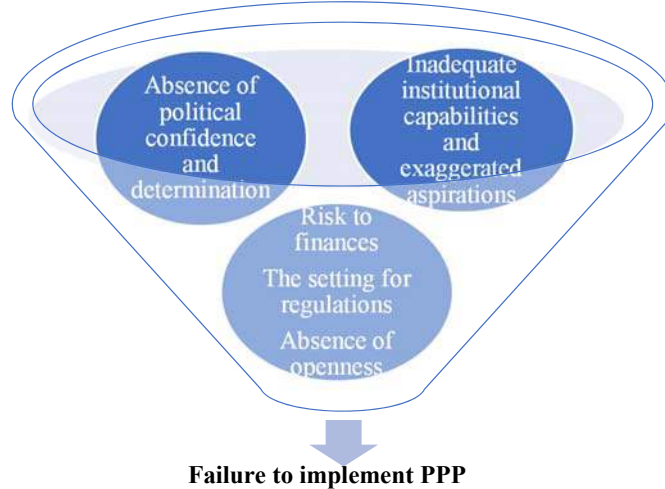
Source: processing after (DEA, 2011)

The "public-private partnership strategy" enhances limited resources, fosters greater competition, and aids in both efficiency and cost reduction. The success that "public-private partnership" has brought about in the road and transportation industry may now be used to measure its benefits. "Public-private partnerships" have replaced other development options as the standard in many industries in less than ten years. "Public-private partnership" is used to improve other infrastructure sectors, such as ports, railroads, airports, and aviation. (MHUA, 2023)

4.2. "Public-private partnership" in Africa

In Africa, "public-private partnerships" are becoming more widely recognized as a crucial tool for planning, developing, funding, and/or managing infrastructure that was previously provided by the public sector. Many African governments are stepping up their efforts to promote "public-private partnerships" because of the public sector's inadequate resources, mounting pressure on government finances, and worries about the effectiveness of services provided by state-run businesses and organizations (ICA, 2023). "Public-private partnerships" will accelerate the expansion of the continent's economy and make it easier for the private sector to participate in the policy-making process (AUDA, 2021). In Africa, "public-private partnerships" are becoming more widely considered by the private sector as a useful means of reducing some of the risks related to individually financed and managed enterprises. Some of the obstacles causing delays and difficulty can be removed by working with public sector partners (ICA, 2023). The business sector has faced several obstacles when it comes to participating in "public-private partnerships", listed in Figure No. 4.

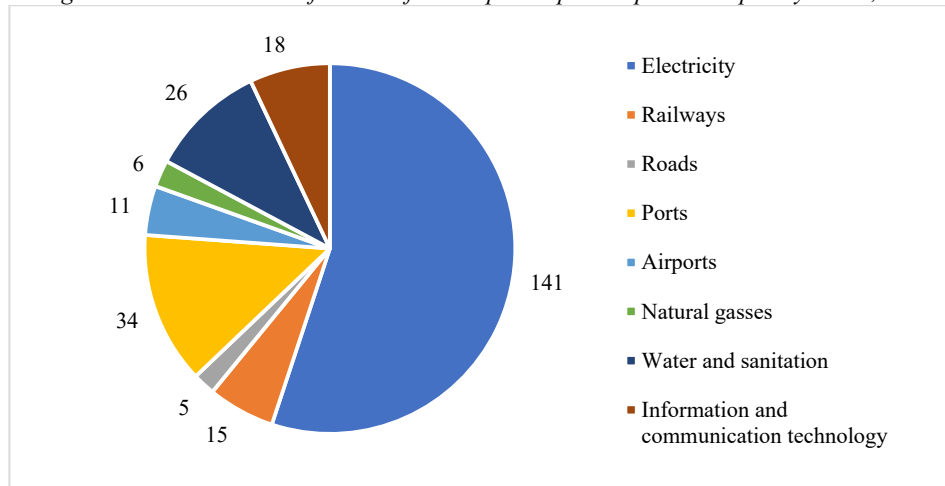
Figure no. 4 Barriers to Africa's PPP Implementation



Source: processing after (ICA, 2021)

There is a clear preference in Africa for the electrical sector when it comes to the areas where “public-private partnerships” should be developed as can be seen in Figure No. 5

Figure no. 5 Distribution of recent African “public-private partnerships” by sector, 1990 – 2019



Source: processing after (UNECA, 2020)

Additionally, a significant interest in funding transportation infrastructure, airports, railroads, and ports is evident. More than half of all successful “public-private partnership” initiatives from 2008 to 2018 took place in five African states: South Africa, Morocco, Nigeria, Egypt, and Ghana. Many more nations, like Burkina Faso (20) and Botswana (8), are engaged in numerous “public-private partnerships” (UNECA, 2020). With 84 “public-private partnerships” overall, South Africa leads the continent, ahead of Nigeria with 42. Some of Africa's oldest “public-private partnership projects” are being carried out in Nigeria, like the “Tinapa Business and Leisure Resort in Cross Rivers State”, the “Muhammad Domestic Airport Project in Lagos”, and several port terminal concessions. Kenya has witnessed the “public-private partnership” model's success in many industries, notably the construction of Africa's first sizable hydropower “public-private partnership”, the “Bujagali Hydroelectric Plant”. Morocco has invested a total of \$18.245 billion in “public-private partnerships”, while South Africa has invested the most, at \$21.218 billion (CABC, 2020).

South Africa is known for its well-regarded “public-private partnership program” and for only having to pay small amounts of money to cover contingent liabilities associated with PPPs. Along with having a competent “public-private partnership” unit that has demonstrated effectiveness in

assessing and managing future obligations, South Africa also benefits from relatively solid public sector governance. Furthermore, the nation's robust economy has benefited it as well. Growing economies raise tax revenues and consumer fee income for governments, which might be utilized for financing "public-private partnership" support services. This implies that there is a decreased likelihood of warranties being used and contracts being ended. (UNECA, 2021).

Treasury Regulation 16 is the law governing "public-private partnerships" at federal and local levels. Regulation 16 lays down institutional roles, standards, and approvals for the "public-private partnership process" (World Bank, 2023). To ensure that a "public-private arrangement" in South Africa is successful, the government considers many factors, including who is responsible for approving the idea for a PPP contract, the contract's potential obligations, whether the National Treasury will be part of the project, and, if so, which department, the phases of project preparation, and the elements in the process that the National Treasury must authorize for the project to proceed, how the public would be informed about the planned "public-private partnership" and its prospective obligations through government financial reports and other papers (UNECA, 2021).

A comprehensive "Public-private partnerships manual" outlines "public-private partnership" procedures and institutional duties. The manual offers comprehensive information at each stage of the "public-private partnership" procedure, broken down into discrete modules, and explains how Treasury laws should be understood. The handbook's modules are available for individual updates and are published on National Treasury practice notes. Regarding the requirement for project services, the public sector additionally takes on future obligations in "public-private partnerships" wherein the project company's primary source of income is customer fees. Contracting organizations are required to locate and assess "public-private partnership projects", oversee the bidding process, and choose the winner of the bid by adhering to the comprehensive instructions and specifications (such as typical documents and checkpoints for every phase) outlined in the manuals. Contracting organizations are required to locate and assess "public-private partnership projects", oversee the bidding process, and choose the winner of the bid by adhering to the comprehensive instructions and specifications (such as typical documents and checkpoints for every phase) outlined in the manuals (World Bank, 2023).

The African Development Bank projects that by 2025, the continent's infrastructure funding requirements might reach up to \$170 billion annually, leaving a \$68 to \$108 billion annual financial deficit. "Public-private partnerships" are expected to play a major role in bridging this gap (AUDA, 2021).

5. Conclusions

This study achieved its goal by tracing the development of "public-private partnerships" across Asia and Africa, regions where through the enthusiasm over the previous ten years, the number of these collaborations between the public and commercial sectors has increased. The primary outcome of the study was achieved through the implementation of a research methodology that brought to light the current development state of "public-private partnerships" on both continents. This included an emphasis on the regulation of these partnerships, the fields in which they are developing, the factors that contribute to their success, and the risks that each region faces.

Regarding the regulation of the "public-private partnership", there are particularities of each region. In China, the Ministry of Finance is the entity that disseminates advice for the advancement of "public-private partnerships" but local governments bear the responsibility of directly financing projects. In India, the government has concentrated on developing a supportive environment for the growth of "public-private partnerships" and encouraging private investments through a variety of strategies. In Africa, South Africa is the best-performing country for "public-private partnerships". It has an effective program, the government carefully considers every aspect, and it has laws that govern partnerships at both the local and national levels. Although the focus on different sectors varies depending on the shortcomings they face and whether a "public-private partnership" can be the cost-effective solution, interest can be seen in the following areas generally: energy, transportation, ports, airports, trains, water and sanitation, education, health, and technology. Even though governments can intervene promptly to create development-friendly environments, allocate and share risks effectively, ensure that tasks are completed, and ensure project profitability, there are

still factors that can lead to "public-private partnership" failures, such as mistrust between partners, a lack of transparency, and irrational expectations.

Concerning the study's limitations, we should emphasize that the information presented here is restricted to "public-private partnerships" in two areas, although these kinds of partnerships exist globally. This may point the way for future research endeavors. As for my contributions, the study that was done presents some effective models of implementation, which contributes to the enrichment of information about the concept.

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A Demographic Exploration of Associative Entities in the Local Action Group

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Abstract

Demographic exploration within sustainable local development is pivotal for understanding associative entities in a specific region. This study delves into Romania's demographic views, with a focal point on Local Action Groups (LAGs) in Central Dobrogea. Associative entities encompass political parties, non-governmental associations, agricultural cooperatives, and LAGs, serving as catalysts for positive change, policy influence, and community resilience. This research analyzes 177 respondents' data using SPSS, finding no significant associations between age/gender and participation in associative entities. The work emphasizes the potential influence of demographic characteristics, particularly age and gender, on individuals' perceptions, priorities, and participation in these entities. Age shapes perceptions of socio-economic issues, while gender influences perspectives within the context of sustainable local development. Consequently, this study provides insights into the demographic dynamics of associative entity participation, highlighting their enduring relevance in shaping a more sustainable and resilient local community.

Key words: sustainable local development, demographic exploration, associative entities, local action group, Romania

J.E.L. classification: F64, H00, Q50

1. Introduction

Demographic exploration, particularly within the context of sustainable local development, plays an essential role in understanding the dynamics of associative entities in a given region. This study delves into the demographic landscape of Romania, examining the participation of individuals in various associative entities, with a specific focus on Local Action Groups (LAGs) from Central Dobrogea.

LAGs have emerged as significant actors in fostering sustainable local development within rural areas of Romania. These non-profit organizations consist of representatives from the local community and form public-private partnerships that encompass various stakeholders from the socio-economic sector within the respective region (Ilie *et al*, 2021, p.370).

Associative entities, which encompass political parties, non-governmental associations, agricultural cooperatives, and local action groups, represent key components of civic engagement and community involvement. These entities serve as catalysts for driving positive change, influencing policy decisions, and promoting resilience within local communities (Hübel (Anghel), Stan and Tasente, 2023a, p.44). Understanding the demographic composition of individuals

engaging with these entities is fundamental for devising strategies that can effectively contribute to sustainable local development.

This study is guided by the belief that demographic characteristics, such as age and gender, hold the potential to influence individuals' perceptions, priorities, and participation in associative entities. For instance, Hübel (Anghel), Stan and Tasește (2023a, p.45) examined how respondents' age influences their perceptions of socio-economic issues in the context of sustainable local development. Similarly, the role of gender in shaping perceptions of socio-economic issues within the realm of sustainable local development has been assessed (Hübel (Anghel), Stan and Tasește, 2023b, p.78). Furthermore, Kostas and Roumeliotou (2009, p.230) explored the predictors of social trust in local communities, highlighting the intricate interplay between demographic and socioeconomic factors.

This research aims to analyse data from various demographic groups in order to provide insights that can inform policies and initiatives aimed at bolstering sustainable local development in Romania.

2. Literature review

In the field of sustainable local development, investigating demographic dynamics and the role of associative entities is important. This literature analysis focuses on the context of local development and explores the complex relationships between demographic, economic, social, and environmental factors and the associative structures within local communities.

In the context of sustainable local development, the exploration of demographic dynamics and the role played by associative entities within the Local Action Groups (LAGs) emerges as a focal point of scholarly investigation. Domingues and Monteiro (2023, p.196) propose a methodological framework for evaluating local development, emphasizing the importance of robust assessment methods, a notion that aligns with the aim of our research to explore demographic factors within associative entities' participation, thereby contributing to a more comprehensive evaluation of local development.

Draçi and Laska (2023, p.194) delve into the role of the community and public services in decision-making for local development. Their work underscores the significance of community involvement, a theme that resonates with our exploration of associative entities' participation, which often involves community collaboration in Romania. More, Strandberg *et al* (2021, p.1) explore the outcomes of mixed deliberation on a municipal merger, emphasizing social trust and political efficacy. Forde (2020, p.16) offers insights into facilitating rural communities' enterprise opportunities through participatory processes, a concept aligned with the collaborative nature of Local Action Groups (LAGs) in sustainable local development. This highlights the relevance of studying LAGs within the broader context of rural development.

The studies by Hübel (Anghel) and Condrea (2023a; 2023b) and Hübel (Anghel), Stan and Tasește (2023c; 2023d) delve into various aspects of perception, age, and sustainable development. Their research findings contribute to how demographic factors, such as age, can influence perceptions related to sustainable development issues.

Marsden, Lamine and Schneider (2020, p.2) present a research agenda for global rural development. Miller *et al* (2023, p.31) offer recommendations for future research agendas, including those related to rural policies and Nagy and Filip (2022, p.107) emphasize the importance of establishing partnerships for rural development, aligning with the collaborative nature of LAGs and their potential impact on sustainable local development. These recommendations can guide in uncovering insights relevant to sustainable local development through the lens of associative entities. Brașoveanu's works (2013; 2023) explores environmental protection, legislation, and legal institutions in promoting sustainable development, providing valuable context for the role of associative entities in sustainable local development.

Examining the role of Local Action Groups (LAGs) in rural economic development yields valuable insights that can contribute to a comprehensive exploration of LAGs. A thorough understanding of their impact on economic development is essential for evaluating their effectiveness. So, Rus (2019, 2020) explores tax evasion and local public finances, highlighting financial aspects relevant to sustainable local development and the potential role of associative

entities in addressing fiscal matters. In this regard, Munteanu (2021) investigates corporate governance's impact on financial reporting and Staic, Uliu and Vladu (2022, p.622) analyze the influence of financing on sustainable local development. Herciu et al. (2023, p.306) propose an innovative approach to sustainability and Aivaz (2021, p.18) examines correlations between infrastructure, and financial indicators, offering insights into factors influencing sustainable development. More, Grigorescu *et al* (2023, p.2) contribute to understanding of competency in sustainable development, which can inform our exploration of the knowledge and expertise required for effective participation in associative entities.

This literature review demonstrates the multidimensional nature of the research topic and provides a foundation for the exploration of demographic factors within associative entities in the context of sustainable local development in Romania. It underscores the relevance of understanding the dynamics and impacts of such entities, particularly Local Action Groups (LAGs), on local development and community engagement.

3. Research methodology

The purpose of this research was to conduct a demographic exploration of participation in associative entities, specifically Local Action Groups (LAGs), within the context of sustainable local development in the Dobrogea Centru region of Romania. The objectives of the research were to analyze the demographic characteristics (age and gender) of respondents in relation to their involvement in LAGs, assess their current and past participation, and gather insights through open-ended questions regarding the reasons behind their involvement or non-involvement.

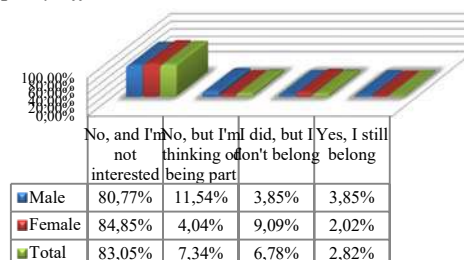
To achieve these objectives, a questionnaire was employed as the primary research instrument. The questionnaire consisted of a combination of closed-ended and open-ended questions to gather quantitative and qualitative data from a total of 177 respondents residing in the Dobrogea Centru region of Romania. The data collected through the questionnaire were then subjected to exploratory data analysis using the statistical software SPSS. This analysis aimed to identify patterns, correlations, and associations between demographic factors (age and gender) and participation in LAGs.

4. Findings

In the context of sustainable local development in Romania, this demographic exploration provides valuable insights into the patterns of participation in different associative entities.

The data (Figure no. 1) reveals that a significant majority, 80.77% of males and 84.85% of females, show no interest in joining political parties, highlighting a widespread disinterest in political participation across genders. Only a minority, 11.54% of males and 4.04% of females, are considering joining a political party, indicating a tentative openness but with a notable gender disparity. Past membership is reported by 3.85% of males and 9.09% of females, suggesting a slightly higher disengagement rate among females post-membership. Current active participation is minimal for both genders, with 3.85% of males and 2.02% of females actively involved, underscoring an overall trend of limited engagement in political party structures. The data collectively paints a picture of widespread disengagement from political party involvement, nuanced by gender-specific trends in historical and potential future engagement.

Figure no. 1. Political party affiliation within associative structures

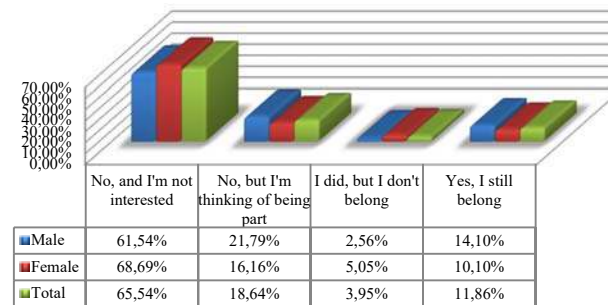


Source: Authors' work

The Chi-Square test results, with a Pearson value of 5.712 (df=3, p=0.126), Likelihood Ratio of 5.827 (df=3, p=0.120), and a Linear-by-Linear Association of 0.052 (df=1, p=0.819), on 177 valid cases, suggest no statistically significant association or linear trend between demographic factors and participation in Local Action Groups. The p-values exceed the conventional significance level (0.05), indicating that the observed associations are likely due to chance rather than a meaningful relationship.

The data (Figure no. 2) indicates gender-specific engagement with non-governmental organizations (NGOs). A majority of both males (61.54%) and females (68.69%) express no interest in NGO involvement, suggesting a prevalent disinterest across genders. A notable portion, 21.79% of males and 16.16% of females, are considering NGO participation, indicating potential future engagement. Past membership is relatively low for both genders, with 2.56% of males and 5.05% of females having been involved but no longer active, suggesting a moderate rate of disengagement post-membership. Current active participation is moderate, with 14.10% of males and 10.10% of females involved, pointing to a relatively higher engagement among males. In summary, the data reflects a general trend of disinterest in NGO involvement, with nuanced gender differences in contemplation, past involvement, and current engagement.

Figure no. 2. Engagement in non-governmental associative structures

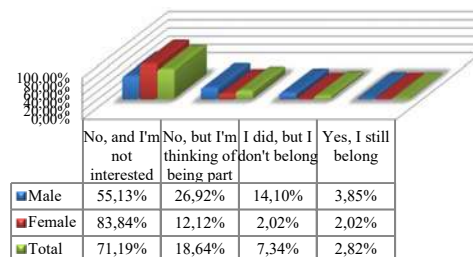


Source: Authors' work

The statistical output suggests an analysis of the association between demographic factors and participation in associative entities within a Local Action Group, using a Chi-Square test. The Pearson Chi-Square value of 2.354 (df=3, p=0.502), Likelihood Ratio of 2.374 (df=3, p=0.498), and Linear-by-Linear Association of 0.678 (df=1, p=0.410), all computed on 177 valid cases, do not indicate a statistically significant association. The p-values are well above the standard threshold of 0.05, suggesting that any observed differences in participation across demographic groups are likely due to chance rather than a meaningful or systematic association.

The data (Figure no. 3) presents the level of engagement with agricultural cooperatives, categorized by gender. A majority of males (55.13%) and a significantly larger majority of females (83.84%) express no interest in joining agricultural cooperatives, indicating a pronounced gender disparity in disinterest, particularly among females.

Figure no. 3. Involvement in agricultural cooperative structures



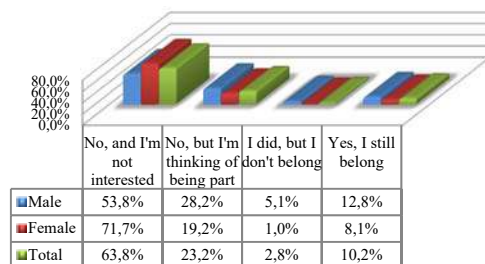
Source: Authors' work

Males appear more open to the possibility of joining, with 26.92% considering participation, compared to 12.12% of females. Previous involvement is reported by 14.10% of males and a much lower 2.02% of females, suggesting a higher historical engagement among males. Current active participation is minimal for both genders, with 3.85% of males and 2.02% of females involved, indicating a low level of current engagement across genders. In summary, the data reflects a general trend of disinterest in agricultural cooperative involvement, with notable gender differences.

The statistical data indicates a strong and statistically significant association between demographic variables and involvement in agricultural cooperatives within a Local Action Group. The Pearson Chi-Square value of 19.365 (df=3, $p<0.001$), Likelihood Ratio of 19.970 (df=3, $p<0.001$), and Linear-by-Linear Association of 15.311 (df=1, $p<0.001$), calculated from 177 valid cases, demonstrate that the relationship between demographic factors and participation in agricultural cooperatives is highly unlikely to be due to chance. This implies a significant, systematic connection between the demographic profiles of the respondents and their engagement with agricultural cooperatives.

The data (Figure no. 4) outlines gender-specific involvement in Local Action Groups (LAGs). A majority of males (53.8%) and a significantly larger majority of females (71.7%) indicate no interest in LAG participation, revealing a pronounced gender disparity in disinterest, particularly among females. Males are more open to the possibility of joining, with 28.2% considering participation compared to 19.2% of females. Prior involvement is relatively low for both genders, reported by 5.1% of males and a much lower 1.0% of females, indicating a higher historical engagement among males. Current active participation is moderate, with 12.8% of males and 8.1% of females involved, suggesting a relatively higher engagement among males. Overall, the data reflects a general trend of disinterest in LAG involvement, with significant gender differences.

Figure no. 4. Participation in Local Action Groups (LAGs) from an associative standpoint

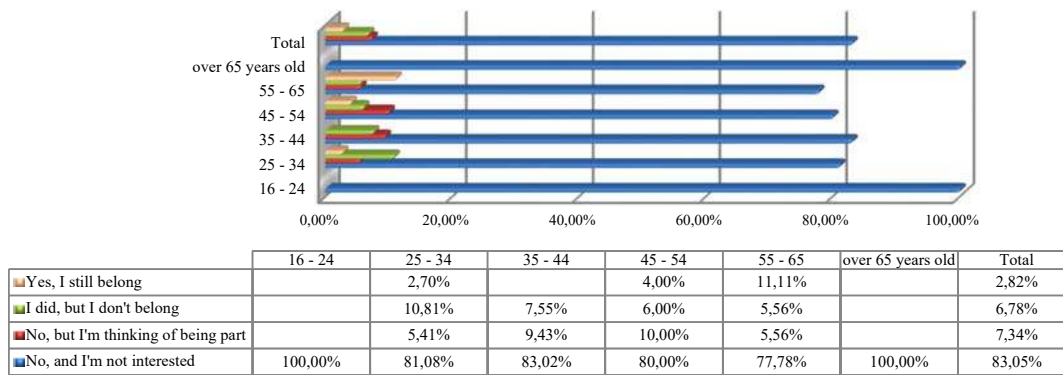


Source: Authors' work

The Chi-Square test results, with a Pearson value of 7.295 (df=3, $p=0.063$) and a Likelihood Ratio of 7.399 (df=3, $p=0.060$), suggest a marginal association between demographic factors and participation in Local Action Groups (LAGs) on 177 cases. However, the Linear-by-Linear Association shows a statistically significant trend with a value of 4.731 (df=1, $p=0.030$), indicating a notable linear relationship between demographics and LAG involvement, despite the overall association not reaching conventional significance levels.

The data by Figure no. 5 presents the level of engagement in political parties across different age groups. There's a universal lack of interest among the youngest (16-24) and the oldest (over 65) age groups, with 100% not interested in political party participation. The 25-34, 35-44, and 45-54 age groups show a majority disinterest as well, with figures of 81.08%, 83.02%, and 80.00% respectively. However, these age groups also show a small percentage considering joining (ranging from 5.41% to 10.00%) and a minority with past (ranging from 6.00% to 10.81%) and current membership (ranging from 2.70% to 4.00%). The 55-65 age group, while still showing a majority disinterest (77.78%), has the highest percentage of current members (11.11%). Overall, the data reflects a general trend of disinterest in political party involvement across age groups, with a slight uptick in engagement among the 55-65 age group.

Figure no. 5. Patterns of political party affiliation across age groups

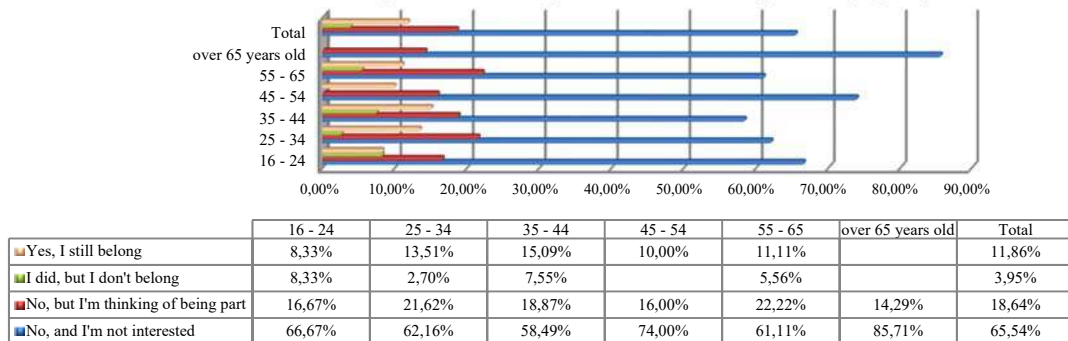


Source: Authors' work

The Pearson Chi-Square value is 12.210 (df=15, $p=0.663$), and the Likelihood Ratio is 14.798 (df=15, $p=0.466$), both suggesting no statistically significant association between age groups and political party involvement among the 177 cases. The p-values, well above the conventional 0.05 threshold, imply that any observed differences in political party participation across age groups are likely due to chance rather than a meaningful or systematic relationship. The Linear-by-Linear Association value of 0.541 (df=1, $p=0.462$) further supports the lack of a significant linear trend or association between age and political party involvement. In summary, the data indicates no significant association or trend between age demographics and participation in political parties within the Local Action Group.

The data by Figure no. 6 reflects engagement with non-governmental organizations (NGOs) across different age groups. The majority across all age groups show a lack of interest in NGO involvement, with percentages ranging from 58.49% in the 35-44 age group to 85.71% in the over 65 age group. Interest in considering joining an NGO is relatively higher among the younger age groups, with 16.67% in the 16-24 age group and 21.62% in the 25-34 age group, and it decreases with age. Past membership in NGOs is relatively low across all age groups, peaking at 8.33% in the 16-24 age group. Current active membership in NGOs shows a slight increase in middle age groups, particularly in the 35-44 age group (15.09%) and the 55-65 age group (11.11%). In general, the data indicates a trend of disinterest in NGO involvement across all age groups, with a slight tendency for higher contemplation and participation in the middle age groups.

Figure no. 6. Engagement in non-governmental organizations across different age groups

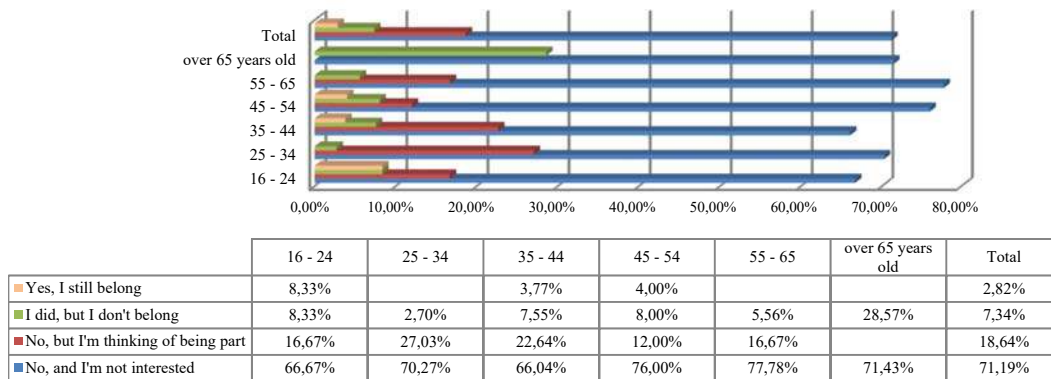


Source: Authors' work

The statistical analysis reveals that there is no statistically significant relationship between different age groups and their involvement in non-governmental organizations (NGOs). This is indicated by the high p-values for both the Pearson Chi-Square ($p=0.898$) and the Likelihood Ratio ($p=0.745$) tests. The Linear-by-Linear Association test also does not show a significant linear trend in the data ($p=0.281$). These results are based on a total of 177 valid cases.

Figure no. 7 shows the data analysis regarding participation in agricultural cooperatives among different age groups. It can be seen that individuals aged 16 to 24, approximately 66.67% have not shown interest in or are not currently part of agricultural cooperatives. 16.67% are considering joining, 8.33% have been members but are no longer, and 8.33% are currently active members. In the age group of 25 to 34, the majority, which is 70.27%, have not expressed interest or are not currently involved in agricultural cooperatives. 27.03% are considering joining, and 2.70% have been members in the past. Among individuals aged 35 to 44, approximately 66.04% are not interested or not part of agricultural cooperatives, while 22.64% are considering joining, 7.55% have been previous members, and 3.77% are current members. For the age group of 45 to 54, the majority, which is 76.00%, are not interested or not part of agricultural cooperatives. 12.00% are considering joining, 8.00% have been members in the past, and 4.00% are current members. In the age group of 55 to 65, the majority, 77.78%, are not interested or not part of agricultural cooperatives, 16.67% are considering joining, and 5.56% have been previous members. Among respondents over 65 years old, 71.43% are not interested or not part of agricultural cooperatives, while 28.57% are currently active members.

Figure no. 7. Agricultural cooperative membership distribution across age demographics



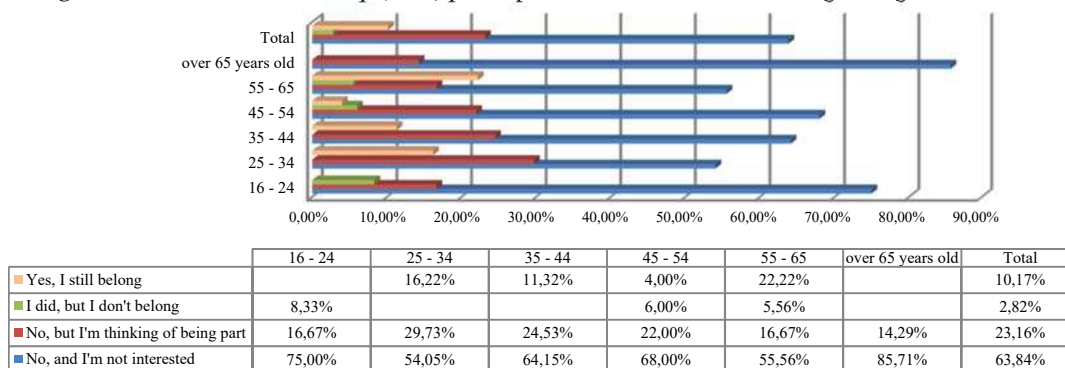
Source: Authors' work

The statistical analysis conducted on the data related to participation in agricultural cooperatives theme did not yield significant results. The Pearson Chi-Square test resulted in a p-value of 0.535, the Likelihood Ratio test had a p-value of 0.456, and the Linear-by-Linear Association test had a p-value of 0.789. These p-values are all above the commonly accepted significance level of 0.05, indicating that there is no strong statistical evidence to support a relationship between age groups and participation in agricultural cooperatives among the respondents. Therefore, we fail to reject the null hypothesis, suggesting that age is not a significant factor in determining participation in agricultural cooperatives in this study.

The data by Figure no. 8 reveals varying levels of engagement in Local Action Groups (GAL) across different age groups. Among the younger age group (16-24), 75.00% show no interest in GAL participation, which could be attributed to a lack of awareness or other priorities in their age range. Meanwhile, 16.67% are contemplating joining, suggesting a potential interest in community involvement. Additionally, 8.33% have been members in the past, indicating some level of engagement, and an equal 8.33% are current members, showcasing active youth participation. In the 25-34 age category, 54.05% are disinterested, possibly due to career and family commitments, while 29.73% are considering involvement, indicating a more open attitude towards community participation. Another 16.22% have previously been part of GAL, suggesting that some may have had positive experiences in the past. Moving to the 35-44 age group, 64.15% are not inclined towards GAL participation, which could be linked to increased family and work responsibilities. However, 24.53% are considering it, possibly due to a growing awareness of community issues. Additionally, 11.32% have been former members, indicating a history of involvement, and 3.77% are currently active members, highlighting ongoing commitment. For individuals aged 45-54, 68.00% exhibit no interest in GAL, possibly as a result of career stability and family obligations. Nonetheless, 22.00% are considering, indicating potential for increased

participation. Moreover, 6.00% have been past members, showcasing a history of engagement, and 4.00% are presently involved, reflecting current dedication. In the 55-65 age bracket, 55.56% are uninterested, which might be linked to retirement and reduced community involvement at this stage. However, 16.67% are contemplating, suggesting a willingness to re-engage, and 5.56% have previous GAL experience, indicating a prior interest in community activities. Among those over 65, 85.71% are not interested, potentially due to retirement and reduced mobility. However, 14.29% are still active members, demonstrating that some seniors remain engaged in community associations. These findings indicate diverse levels of engagement in GAL across age groups, influenced by factors such as life stage, awareness, and past experiences.

Figure no. 8. Local Action Group (LAG) participation trends across various age categories



Source: Authors' work

The statistical analysis conducted on the data related to participation in Local Action Groups (GAL) reveals the following results: Pearson Chi-Square Test: The Pearson Chi-Square statistic is 17,252a with 15 degrees of freedom, yielding an asymptotic significance of 0.304 ($p > 0.05$). This result suggests that there is no statistically significant association between individuals' participation in GAL and their demographic characteristics. Likelihood Ratio Test: The Likelihood Ratio statistic is 20.646 with 15 degrees of freedom, resulting in an asymptotic significance of 0.149 ($p > 0.05$). Similar to the Pearson Chi-Square test, this indicates a lack of statistically significant association between GAL participation and demographic variables. Linear-by-Linear Association: The Linear-by-Linear Association statistic is 0.078 with 1 degree of freedom, and the asymptotic significance is 0.780 ($p > 0.05$). This test also supports the conclusion that there is no significant linear association between GAL participation and demographic factors. In summary, the statistical tests conducted on the data do not provide evidence of a significant association between individuals' participation in GAL and their demographic characteristics. The p-values for all three tests are greater than the commonly used significance level of 0.05, indicating that any observed differences in participation are not statistically significant.

In the comprehensive demographic exploration conducted within the scope of the study various types of associative entities, including political parties, non-governmental associations, agricultural cooperatives, and local action groups, were examined in the context of age and gender demographics in Romania. The statistical analyses, encompassing Pearson Chi-Square, Likelihood Ratio, and Linear-by-Linear Association tests, consistently indicated a lack of significant associations between demographic variables (age and gender) and participation in these associative entities. This implies that the inclination to engage with these entities, important for advancing sustainable local development, remains relatively consistent across different demographic groups in Romania.

5. Conclusions

In conclusion, this study conducted a comprehensive demographic exploration within the context of sustainable local development, focusing on the participation of individuals in various associative entities, including political parties, non-governmental associations, agricultural cooperatives, and local action groups in Romania. The aim was to understand how demographic factors, such as age and gender, influence individuals' engagement with these entities, which are essential for fostering sustainable local development.

The findings of this research suggest that there is a consistent level of participation in these associative entities across different demographic groups in Romania. The statistical analyses, including Pearson Chi-Square, Likelihood Ratio, and Linear-by-Linear Association tests, indicated a lack of significant associations between demographic variables and participation in these entities. This implies that individuals of various ages and genders exhibit a similar inclination to engage with these organizations, highlighting the universality of their importance in advancing sustainable local development.

The role of associative entities in promoting sustainable local development in Romania cannot be understated. These organizations serve as crucial vehicles for civic engagement, community involvement, and driving positive change. While demographic factors may influence perceptions and priorities, they do not significantly affect the propensity to participate in these entities. Therefore, policies and initiatives aimed at enhancing sustainable local development should consider the broad and consistent appeal of these associative entities to individuals across demographic spectra.

In essence, this study contributes valuable insights into the demographic dynamics of associative entity participation in the context of sustainable local development in Romania. It underscores the enduring relevance and accessibility of these entities, irrespective of demographic characteristics, in shaping the path towards a more sustainable and resilient local community.

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ISO 37001 - A Global Anti Bribery Standard

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Abstract

ISO certification is a recognition of the fact that an organization meets international standards in its field of activity. The anti-bribery management system, recommended by the ISO 37001/2016 standard, is designed to help organizations in the fight against corruption, and to build a culture of integrity and transparency aimed at reducing the incidence of bribery in organizations. Starting from the premise that a company's commitment to exemplary ethical principles in business is a critical element of any successful organization with an appreciated image, the present paper has purpose of highlighting the role played by the implementation of the anti-bribery standard in the company's strategy, as well as the benefits that are generated by its application. Ethical practices in business through the ISO 37001 certification also involve going through some stages that will be detailed and taking also into account the action of influential factors in gaining the trust of business partners, authorities and clients.

Key words: standard, anti-bribery, certification, strategy

J.E.L. classification: E26, K20, K22, L15, M14

1. Introduction

Currently, bribery remains one of the major problems both nationally and internationally.

The foundation of any business relationship is correct behavior ethically and in full compliance with laws and regulations national and international laws in force. In this context, ISO (International Standard Organization) certification is a recognition of the fact that an organization meets international standards in its field of activity.

The ISO 37001 standard - Anti-corruption management systems - Implementation requirements and recommendations, provides the requirements and guidance for establishing, implementing, maintaining and improving an anti-corruption management system. The system proposed and recommended by this international standard can be independent or integrated into a general management system. The problem dealt with refers to both bribery in the public, private and non-profit sectors, as well as to bribes given by or to an organizational entity including its staff, but also to bribes mediated by third parties. (<https://www.srac.ro/ro/iso-37001-sistem-de-management-anti-mita>).

These aspects presuppose the active involvement of top management in order to create and maintain an anti-bribery culture and a climate conducive to the manifestation of ethics in business, both within the company and in relation to business partners. Involvement, in turn, requires staff awareness and responsibility in relation to facts relating to bribery; allocation of resources to support the requirements of the anti-bribery management system; permanent and documented information through reports on the company's anti-bribery system; permanent monitoring of the anti-bribery management system; zero tolerance for situations likely to put the company in position to violate anti-bribery principles.

(https://renania.ro/documents/POLITICA_ANTI_MITA_RENANIA_ro.pdf)

ISO 37001 is the first international standard that proposes that organizations implement anti-bribery measures and controls to prevent, detect and deal with bribery, regardless of whether such bribery is given by or on behalf of the organization, its employees or partners Business.

The ISO 37001 standard is applicable to any type of organization, both in the public and private sectors, regardless of the size of the organization or the field of activity and certification according to ISO 37001 is confirmation that anti-bribery control measures are implemented.

(https://www.certind.ro/sisteme-de-management/8/managementul-anti-mita-ISO-37001_16)

In fact, ISO 37001 addresses one of the most challenging problems at the international level and proposes a determined approach to eliminate a serious form of corruption.

2. Theoretical background

The ISO 37000 series provides a global level way to tackle a destructive criminal activity that is valued at more than one trillion dollars of dirty money annually. (<https://www.iso.org/iso-37001-anti-bribery-management.html>)

Without a doubt, at the international level, bribery as an aspect of corruption in business is a significant barrier to trade, and at the microeconomic level it has a negative impact both on the image of the company and on employee morale.

According to data published by the World Bank Group, every year approximately \$1.5 trillion in bribes are given by organizations and individuals, with the effect of reducing the quality of life, intensifying poverty and losing confidence in both the public and private sectors. (https://www.certind.ro/sisteme-de-management/8/managementul-anti-mita-ISO-37001_16).

Economic crime, a globally endemic problem, manifests itself in a variety of forms and mechanisms, challenging the integrity and efficiency of economic and financial systems. In this context, the adoption of a robust anti-bribery management system, such as that described in ISO 37001, becomes essential for institutions and states. The study by Florea and Aivaz (2021) contributes to the understanding of the lack of dimension and the hierarchical classification of economic crime in EU states, providing an overview of how different countries face the challenges of corruption in 2021. These hierarchical classifications can contribute to the development and implementation of ISO 37001 compliance strategies, highlighting the fact that the measures adopted are proportional to the level of risk specific to each country. An important role in the prevention of economic crimes is played by European institutions, a series of studies highlighting the importance of cross-border cooperation and a coordinated approach in the adoption of standards such as ISO 37001 to effectively combat bribery and corruption that can proliferate in times of crisis (Florea et Aivaz, 2022; Florea, Aivaz, Vancea, 2021).

In the same framework, the exploratory analysis of the activity dynamics of the General Anti-Tax Fraud Directorate in the period 2014-2020 in Romania, carried out by Aivaz, Munteanu and Chiriac (2022), demonstrates how actions at the national level can be informed and improved by aligning with international standards such as ISO 37001. This study emphasizes the need for a well-structured anti-bribery management system that can serve as the main tool in making the fight against fraud and corruption more efficient.

The anti-bribery management system is thought in this way to stimulate the creation of an anti-bribery culture within an organization combined with the introduction of controls appropriate, in order to detect bribery and to reduce its incidence.

The standard analyzed in this work recommend requirements and guidelines for establishing, implementing, maintaining and improving an anti-bribery management system. It is important to state that the proposed system can be independent or integrated into a management system. (<https://www.iso.org/files/live/sites/isoorg/files/store/en/PUB100396.pdf>).

To comply with the standard, the organization must implement a series of measures and controls, is flexible and can be adapted to a wide range of organizations, irrespective of size, sector, structure, geography, or jurisdiction, doesn't matter the size of the company.

The anti-Bribery Management Systems was designed to help an organization establish, implement, maintain and improve an anti-bribery compliance program. It includes a series of measures and controls that represent global anti-bribery good practice. (<http://committee.iso.org/sites/tc309/home/projects/published/iso-37001-anti-bribery-management/faqs-on-iso-37001.html>).

Starting from the premise that a company's commitment to exemplary ethical principles in business is a critical element of any successful organization with an appreciated image, the present paper has purpose of highlighting the role played by the implementation of the anti-bribery standard in the company's strategy, as well as the benefits that are generated by its application.

2. Research methodology

The present paper aims to conduct an overview and an analysis as well, concerning the role of the anti-bribe management system in the companies, in conformity with international standards.

The main method used is represented by the qualitative research using the documentation aiming to highlight the benefits that this approach could bring for an organization.

Taking into consideration the destructive power of the corruption through bribe for the business environment, the purpose of the work is to make aware governments, public authorities and companies of the need to implement the recommendations of the ISO standard in the actual economic global context.

Based on observation and analysis of the influence factors and benefits, in correlation with the rules proposed by the normative documents, a scheme of stages to be followed in the process of introducing the system is proposed. The formulated conclusions also suggest the possibility that the anti-bribery management system can be integrated with other applied management systems that concern quality, the environment or social responsibility.

3. Findings

ISO 37001 was developed by a Project Committee established by ISO in 2013. The committee comprised experts from the following participating and observing countries and liaison organizations and was published on 15th October 2016. (https://giaccentre.org/chess_info/uploads/2020/12/GIACC.BROCHURE.ISO-37001.ENGLISH-1.pdf).

This international standard ISO 37001 is based on international anti-bribery experience and was developed with the aim of providing organizations of all types with the necessary elements to prevent, detect and combat bribery under the conditions of re-compliance with anti-corruption laws and voluntary commitments. (<https://www.antimita.ro/iso-37001>)

ISO 37001 requirements are generic and are intended to be applicable to all types of organizations or even departments, regardless of size or affiliation. (<https://www.iso.org/iso-37001-anti-bribery-management.html>)

ISO 37001:2016 is applicable only to bribery in its various forms to different public or private natural or legal persons. (<https://www.iso.org/standard/65034.html>)

Its adoption and consequently its certification proves a responsible approach on the part of an organization that through this approach can gain more trust and at the same time strengthen its image on competitive markets, thus proving that it ensures ethical business practices and procedures. (https://www.tuv.com/romania/ro/service-page_130260.html)

From the perspective of the factors that can influence an organization's decision to introduce a bribery control system, aspects related to: ethical factors can be considered; legal risk; safety and quality risk; reputational risk. (https://giaccentre.org/chess_info/uploads/2020/12/GIACC.BROCHURE.ISO-37001.ENGLISH-1.pdf)

The application of the anti-bribery management system requires compliance with requirements that refer to: adopting a policy and developing anti-bribery procedures; management responsibility and commitment; appointment of a person in charge; permanent communication with both staff and business partners; training, checking and periodic monitoring of employees; scheduled risk assessments; the application of the due diligence procedure; the existence and application of preventive and control measures, the monitoring of their application and the conduct of audit actions. (<https://www.srac.ro/ro/iso-37001-sistem-de-management-anti-mita>)

ISO 37001 is designed both to support the introduction of an anti-bribery management system and to streamline and strengthen security measures that already exist.

The adoption of the anti-bribery management system also presents multiple benefits, among which the most notable would be: reducing the risk of bribery; the guarantee offered to its own management, employees, clients, financiers, etc., that internationally recognized practices regarding anti-bribery controls have been introduced. Also, in the unwanted case of a criminal investigation, it can provide evidence that measures have been taken to prevent bribery. (<https://www.iso.org/iso-37001-anti-bribery-management.html>)

From a similar point of view, we can summarize that the ISO 37001 intended advantages are as follows:

- Create a competitive advantage and differentiator
- Maximize earnings and minimize losses
- Create an anti-bribery culture
- Benchmark and/or improve an anti-bribery compliance program
- Generate a desire recognition in the market
- Set expectations with third parties and suppliers
- Provide a methodology to document controls, processes and procedures – monitoring and investigations (https://giaccentre.org/chess_info/uploads/2020/12/GIACC.BROCHURE.ISO-37001.ENGLISH-1.pdf)

Also, ISO 37001 certification verifies ethical business practices, increasing the degree of trust a company can present to customers and shareholders. The company's commitment to exemplary business ethics is a critical element of any successful and reputable organization. Trust is a powerful tool for building and maintaining a positive image in the relationship with business partners and authorities, as well as customer trust. (https://www.tuv.com/romania/ro/service-page_130260.html)

The implementation of ISO 37001 involves the following stages:

- ✓ Diagnostic audit to establish the context and opportunity of the approach;
- ✓ Defining policies and procedures according to existing risks, including their evaluation;
- ✓ Allocation of responsibilities;
- ✓ Implementation of financial or non-financial control measures;
- ✓ Ensuring preventive investigation tools;
- ✓ Staff training and awareness;
- ✓ Communication of anti-bribery measures;
- ✓ Ensuring integrity warning mechanisms;
- ✓ Ensuring the tools for identification, treatment and reporting of incidents;
- ✓ Monitoring performance indicators;
- ✓ Carrying out audits to establish compliance with the requirements of the standard. (<https://www.antimita.ro/iso-37001>)

The ISO 37001 recommendations are designed so that they can be integrated into existing management processes and are based on the ISO high-level structure (HLS) for management system standards. From this point of view, it can be easily integrated into other pre-existing management systems in the company, such as those related to quality, environment or information security. (<https://www.mdlpa.ro/uploads/articole/attachments/61a87b75b6d99639444309.pdf>)

As part of a POCA (Administrative Capacity Operational Program) project carried out in Romania in the period 2014-2020, diagnostic analyzes carried out at the level of each public institutions involved.

Thus, implementation teams were structured in the context of the development of this project, at level of each institution, One of the important conclusions of the diagnostic analysis carried out at the level of each institutions is that the quality management system, built in accordance with the ISO 9001:2015 standard, can be easily integrated with the internal managerial control system (ICSM) already implemented and The SMC (quality management system) can be expanded by including the anti-bribery management system that is currently the subject of the ISO 37001:2021 standard. (<https://www.mdlpa.ro/uploads/articole/attachments/61a87b75b6d99639444309.pdf>)

The anti-bribery management system is a certifiable management system, the certification of compliance with the requirements of this system is done by an independent certification body accredited for ISO 37001:2021 certification. (<https://www.antimita.ro/iso-37001>) In this context, specialized certifiers can certify an organization's compliance with the standard in the same way as they do for others ISO standards. Thus, although we cannot always speak of solid guarantees that there will be no bribery, certification or compliance can support the implementation of measures that can significantly reduces the risk of this unwanted phenomenon. (<https://www.iso.org/files/live/sites/isoorg/files/store/en/PUB100396.pdf>)

The ISO 37001 certification stages provided by an accredited certification body are as follows: preliminary audit (optional, at least 3 months before the certification audit); formulating the audit plan in the form of a calendar; initial certification audit in 2 stages; certification (within 2 weeks of successfully passing the audit); surveillance audit 24 months after certification; recertification before the expiration of a 3-year period. (<https://www.antimita.ro/iso-37001>)

Once the certificate is obtained, all employees in the organization become responsible for the design, planning, implementation, management and continuous maintenance of the anti-bribery management system. Thus, management is responsible for supporting the program by prohibiting bribery and for allocating sufficient resources to implement and manage the program. At the same time, all employees are responsible for knowing and complying with the anti-bribery policy, completing training and reporting actual or potential cases of non-compliance. (<https://committee.iso.org/sites/tc309/home/projects/published/iso-37001-anti-bribery-managemen/faqs-on-iso-37001.html>).

And moreover, there are other ISO standards related to ISO 37001, such as: ISO 19600/ Compliance management systems - Guidelines; ISO 26000 Guidance on Social Responsibility; ISO 31000 Risk Management - Principles and Guidelines.

Unlike these standards which state principles that can be used freely as guidance, ISO 37001 establishes requirements for compliance with the Standard, which enables an organization to pursue certification, if desired. (<https://committee.iso.org/sites/tc309/home/projects/published/iso-37001-anti-bribery-managemen/faqs-on-iso-37001.html>)

Considering the particular nature of anti-bribery management systems, additional specific competence requirements have recently been issued for the auditing and certification of anti-bribery management systems (Technical Specification ISO/IEC TS 17021-9). (<https://committee.iso.org/sites/tc309/home/projects/published/iso-37001-anti-bribery-managemen/faqs-on-iso-37001.html>)

The core elements of an anti-bribery and corruption compliance program in accordance with ISO 37001 remain: leadership, planning, support, operation, improvement and performance evaluation.

5. Conclusions

Considered one of the most serious problems of the economic environment everywhere, bribery is currently considered a major challenge that, despite national and international efforts, remains very difficult to combat.

ISO 37001 appeared on the background of an older British standard, BS 10500, starting on the one hand from the premise that bribery is a major factor undermining efficiency and fair business and on the other hand that trust and transparency are the basic elements of the credibility of any business.

This international approach actually represents a globally recognized way of fighting face-to-face with a criminal activity that produces and runs dirty money, being at the same time a way of reducing corruption.

The international anti-bribery standard thus allows institutions from any field of activity and of any size to prevent, detect and tackle head-on all types of manifestations of this destructive phenomenon by practicing policies, supervision, employee training, evaluations, due diligence for bribery projects, business, controls, investigations and reports.

The ISO 37001 Anti-Bribery Management Systems standard is intended to support public organizations or private to prevent and identify bribery and corruption by establishing character requirements normative. The standard is an international one, applicable regardless of existing anti-corruption legislation at the level of a state. In Romania, the requirements of the standard are very similar to the requirements already existing in the legislation to prevent and combat corruption so that the implementation the standard is facilitated by a favorable legislative framework.

ISO 37001 can be purchased from any national ISO member or through the ISO Store.

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The Impact of Tax Avoidance in the European Union

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Abstract

In the context of contemporary debates on fiscal and economic policy, the impact of tax avoidance in the European Union was a frequently discussed topic at the negotiating table.

In this paper, we followed the inflows of foreign direct investments and corporate tax collected to the state budget, trying to find out if a state with a high tax rate from the European Union could have an amortized impact of profit shifting, due to foreign direct investment inflows, also tracking how the corporate tax collected at the state budget changes, as the respective state reduces taxes.

Following the research, we found out that paradoxically, as the state decreased the tax rate, corporate tax collected increased and also in certain years, the level of foreign direct investment exceeded corporate tax collected, which would indicate an amortized impact of tax avoidance.

Key words: tax avoidance, European Union, foreign direct investment, corporate tax

J.E.L. classification: F21, F23, H26

1. Introduction

In the context of contemporary debates on fiscal and economic policy, the impact of tax avoidance within the European Union, as well as globally, has been a frequently addressed topic at the negotiation table, having significant implications for both member states and for the integrity and efficient functioning of the community block.

Globalization and economic integration have allowed companies to expand globally and have the opportunity to employ profit-shifting strategies in jurisdictions with lower tax rates. This practice has been a major concern for the European Union as well as globally, as it undermines the principle of tax fairness and affects the ability of states to mobilize financial resources for the economy and society.

The latest approach to tax-shifting strategies is found within the OECD/G20 initiative aimed at establishing a global tax uniformity. This initiative involves allocating a part of the profits generated by a multinational company to the country where it was made, along with setting a minimum global tax rate.

In order to determine a real impact of profit-shifting strategies on the European Union, it is also important to take into account the advantages generated by the presence of multinational companies in a state, of great importance being the contribution of foreign direct investments.

Certainly in high-tax countries, multinational companies will apply various strategies to reduce the tax base, but this loss could be compensated, at least in part, by inflows of foreign direct investment.

Therefore, within the framework of this paper, we have proposed to follow the evolution of foreign direct investments and corporate taxes collected in France, a member state of the European Union, taking into account the high tax rates.

The purpose of this paper is to determine whether the evolution of foreign direct investment from the European Union states is significant to partially compensate the impact of tax avoidance in the European Union.

Certainly, the situation must be handled differently, depending on the particularities and market of each state. Therefore, the question would arise, why would a multinational company not invest in a state that has a promising market, even if it has a higher tax rate, given that it could apply profit shifting strategies? If the company even so invests in a state with a high tax rate, would the foreign direct investment at least partially offset the profit transferred?

In this context, if the reform plan proposed by the OECD/G20 would reduce tax avoidance, would it reduce foreign direct investment in states with a high tax rate, so that a positive result attracts a negative one?

This paper is a part of a larger research through which we aim to determine the impact will have the new tax reform plan proposed by the OECD/G20 in the European Union. Therefore, this paper has the role of drawing the major aspects that we must keep in mind.

2. Literature review

Extensive empirical research indicates that foreign direct investment (FDI) by multinational enterprises (MNEs) is negatively influenced by profit taxation, showing a significant decline in both the location and size of these investments when taxes increase (Egger, Merlo and Wamser, 2014).

In another paper, analyzing the traditional structure of foreign direct investment (FDI) data, it was observed that they fall immediately in response to the higher tax rate, but it cannot be definitively concluded whether investors, faced with high burdens, seek to avoid them through some third countries. Taxes have been found to influence the choice between a direct or indirect investment route (Erokhin, 2023).

Therefore, there are opinions regarding the inflow of foreign direct investment into countries with high tax rates, either directly or indirectly.

With regard to taxation, since the 1990s, academic studies have focused on empirically identifying tax-motivated profit shifting, noting that US foreign subsidiaries are less profitable than purely US firms, a phenomenon partly explained by special characteristics of foreign firms such as be it younger age or special post-purchase depreciation. It is suggested that the remaining difference in profitability is due to profit shifting activities. In addition, it has been shown that profits from sales of US subsidiaries are higher in low-tax countries compared to high-tax countries (Weichenrieder, 2009).

It is a well-known fact in the specialized literature and globally, given the interests of the tax avoidance approach, that Multinational Enterprises (MNEs) resort to tax havens to profit from international tax arbitration and to improve the efficiency of their capital. These practices are seen as distorting global financial markets and eroding national tax bases, often becoming subjects of media interest. However, MNEs continue to diversify their activities in tax havens, investing in multiple such jurisdictions (Jha and Awate, 2022).

In another paper, foreign direct investment (FDI) in developing countries has been found to be positively influenced by FDI in neighboring tax havens. However, this assumption is undermined by uncertainties related to the nature of FDI, that is, whether the investments are real or the result of tax avoidance practices. In addition, it is important to consider the possibility of developing countries borrowing money from the financial institution located in tax havens to support their savings, which would influence the data on the level of FDI in these countries and the origin of investments (Chiari, 2023).

3. Research methodology

In this paper we aim to find out if the evolution of foreign direct investments from European Union states is significant to partially offset the impact of tax evasion in a European Union state with a high tax, namely in France.

We thus propose a descriptive research through which we will collect and classify the data to analyze them in a historical context by comparison, trying to describe the events that could have caused a change in the evolution of the data. The data we have in mind refer to the evolution of the

corporate tax rate, the evolution of corporate tax collected to the state budget and the evolution of foreign direct investment inflows from France.

What we are looking for is to find out if a reduction in the tax rate has a change in foreign direct investment inflows and also if France, which is a country in the European Union with a high corporate tax rate, has an upward evolution and significant increase in foreign direct investment, so that it can at least partially offset the profit-shifting activity of multinational companies.

4. Results

In the following table, we will present the data we collected regarding the evolution of the corporate tax rate in France.

Table no.1. The evolution of the corporate taxation rate in France in the period 2013-2022

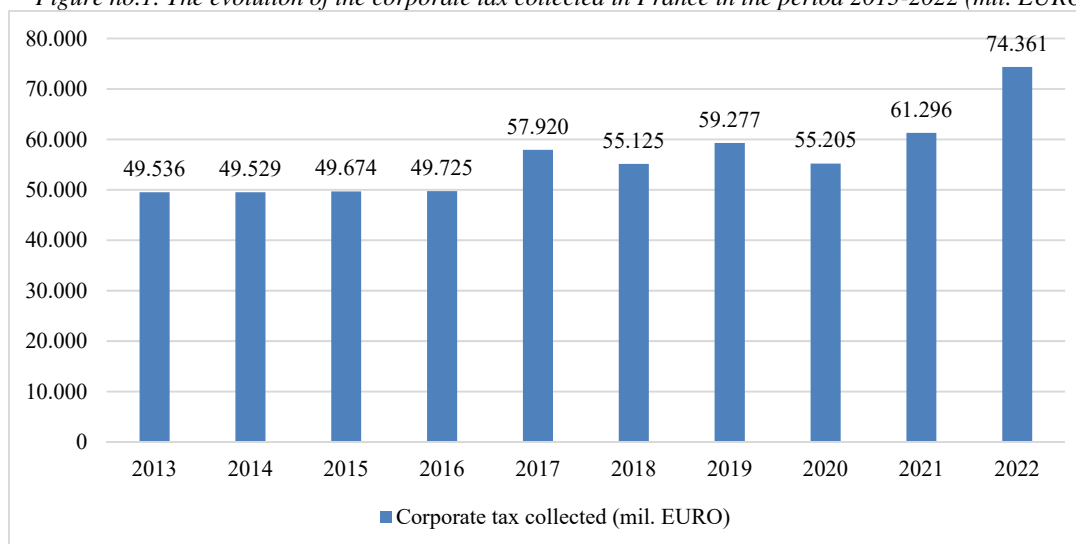
Country	2013 (%)	2014 (%)	2015 (%)	2016 (%)	2017 (%)	2018 (%)	2019 (%)	2020 (%)	2021 (%)	2022 (%)
France	33.33	33.33	33.33	33.33	33.33	33.33	31	31	27.5	25

Source: European Commission, TEDB - "Taxes in Europe" database

According to Table no.1., in France, the corporate taxation rate remained constant during the period 2013-2018 at a level of 33.33% and from the year 2019 a downward trend began from the percentage of 31% in the year 2019 to a percentage of 25% in 2022.

Regarding the corporate tax collected at the state budget in France, we have collected the data and centralized them in a graph, as follows:

Figure no.1. The evolution of the corporate tax collected in France in the period 2013-2022 (mil. EURO)



Source: Eurostat, Tax revenue statistics

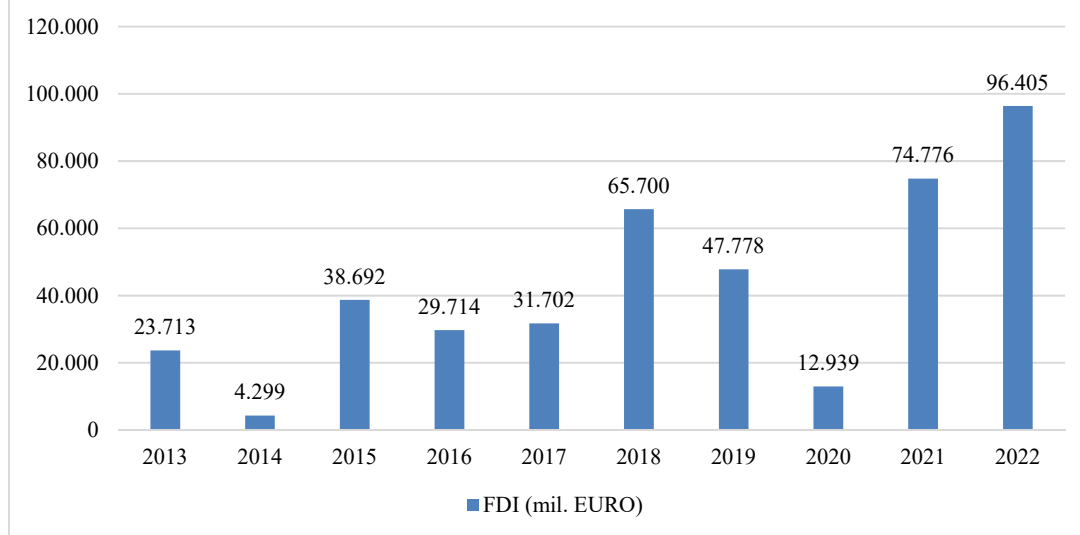
According to Figure no.1., the evolution of corporate tax collected at the state budget in France during the period 2013-2022 was an upward one. In the period 2013-2018, when corporate tax was 33.3%, the corporate tax collected increased from 49.536 mil. EURO in 2013 to 55.125 mil. EURO in 2018, respectively an increase of 11,28%.

In the period 2019-2022, when the level of the corporate tax rate began to decrease from 31% in 2019 to 25% in 2022, corporate tax collected began to increase from 59.277 mil. EURO in 2019 to 74.361 mil. EURO in the year 2022, representing an increase of 25,45%.

Therefore, it is found that the decrease of the tax could be one of the causes of the collection of a larger number of taxes to the state budget.

Regarding foreign direct investment inflows in France, we have collected the data and centralized it in another graph as follows:

Figure no. 2. The evolution of the foreign direct investment in France in the period 2013-2022 (mil. EURO)



Source: The World Bank, World Development Indicators

According to Figure no.2., inflows of foreign direct investments in France in the period 2013-2022 had an upward evolution but with significant corrections in certain years. In the period 2013-2017, when France practiced a corporate tax rate of 33,3%, foreign direct investments increased from 23.713 mil. EURO in 2013 to 31.702 mil. EURO in 2017, an increase of 33.69%.

It is interesting that one year before the tax reduction from 33,3% to 31%, respectively in 2018, FDI increased to 65.700 mil. EURO, by 107.24% compared to 2017. Moreover, in 2022, when the corporate rate reached 25%, FDI increased to 96.405 mil. EURO.

5. Conclusions

Regarding the impact of tax avoidance in the European Union, looking from the perspective of France, a state that practices a higher tax rate, compared to Germany or other states in the EU bloc, it has been observed that a reduction in the tax rate, paradoxically, can be a reason for an increase in taxes collected at the state budget, probably due to the reduction of profit-shifting strategies or the entry of a larger number of companies into the market.

It was also observed that reducing the tax rate can generate more FDI, but their evolution can also be decreasing during a period.

Probably the most interesting aspect, in the case of a country that practices a high tax rate, is the fact that the evolution of FDI is favorable, with France registering in certain years of the period 2013-2022 a level of FDI that exceeds even the corporate tax collected at the state budget.

In this context, the impact of tax avoidance in the European Union would be important to look at from the perspective of foreign direct investment inflows, which could amortize it.

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The Evolution of the World Motor Vehicle Production in the Period 2018-2022

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Abstract

The automotive industry has always represented a key sector within the economy of any country. Moreover, its significant contribution to the gross domestic product of many countries transformed this industry into one of the main pillars of the global economy. Therefore, numerous countries have built and produced various motor vehicles on different continents. The purpose of the paper is to briefly present and analyze the evolution of the world motor vehicle production on the four continents (Europe, America, Asia-Oceania, and Africa) in the period 2018-2022. The research methodology is based on a qualitative research method. The paper shows that the pre-pandemic period was a better period for the automotive industry than the pandemic period. Also, it demonstrates that Asia-Oceania dominates the production hierarchy by continents.

Key words: motor vehicle production, motor vehicle, automotive industry, car

J.E.L. classification: D2, E23, F01, L62

1. Introduction

Due to its numerous positive effects on economic development, the automotive industry has always represented a key sector within the economy of any country. Moreover, its significant contribution to the gross domestic product of many countries transformed this industry into one of the main pillars of the global economy. Last year, 85.4 million motor vehicles were manufactured worldwide, a rise of 5.7% in comparison with 2021 (European Automobile Manufacturers' Association (ACEA), 2023).

The hard work of scientists and engineers made possible the appearance of the first internal combustion engines at the end of the eighteenth century (Viskup, 2020). The second half of the nineteenth century witnessed the invention and expansion of the gasoline engine in Europe, which constituted the roots of the later automotive industry. In Germany, Nikolaus Otto designed the four-stroke gas-fuelled internal combustion engine, and Gottlieb Daimler and Wilhelm Maybach invented a petrol-fuelled engine but Karl Friedrich Michael Benz succeeded in building an automobile powered by an internal combustion engine in 1885 (Kirchberg *et al*, 1981), the first proper car in the history of humanity (Roser, 2017).

The rapid technical advancements highly contributed to the development of the automobile industry. On the other hand, the scientific management works of the American Frederick Winslow Taylor and the French Henri Fayol greatly helped entrepreneurs and businessmen in this industry (Toma *et al*, 2014). In this respect, Henry Ford designed and produced high-volume automobiles in the beginning of the 1900s in the United States of America (USA), based on the economy of scale (Toma, 2005; Toma *et al*, 2021).

Since its emergence, the automotive industry has continuously expanded all over the world. Therefore, numerous countries have built and produced various motor vehicles on different continents. In the last century, huge corporations appeared and developed worldwide, such as General Motors, Ford Motor, Daimler Benz, Toyota Motor, Fiat and Volkswagen (Grădinaru *et al*, 2020).

The purpose of the paper is to briefly present and analyze the evolution of the world motor vehicle production on the four continents (Europe, America, Asia-Oceania, and Africa) in the period 2018-2022. The structure of the paper is as follows: the second chapter displays the theoretical background. The next chapter illustrates the research methodology. The findings are shown in the fourth chapter. The conclusions are presented at the end of the paper.

2. Theoretical background

Since its beginnings, the automotive industry has become a topic of interest for researchers and practitioners worldwide. A plethora of studies related to this subject have been published, especially after the end of World War II. The etymology of the word automobile derives from two words: the Greek word 'autós' (self) and the Latin word 'mobilis' (movable).

It is said that the automotive industry encompasses "all those companies and activities involved in the manufacture of motor vehicles, including most components, such as engines and bodies, but excluding tires, batteries, and fuel" (Rae *et al*, 2023, p. 1) and includes "industries associated with the production, wholesaling, retailing, and maintenance of motor vehicles" (US Bureau of Labor Statistics, 2023, p. 1). In other words, the automotive industry contains „the wide range of organisations involved in the development, manufacturing, marketing and selling of automobiles (cars, trucks, buses, etc.)" (Sage, 2023, p. 1). Its main products are passenger automobiles, light trucks, and commercial vehicles. The motor vehicles comprise the following (Table no. 1):

- passenger cars;
- commercial vehicles: light commercial vehicles, heavy trucks, and buses & coaches.

Table no. 1. Vehicle type definitions

Vehicle type	Definition
Passenger cars	motor vehicles with at least four wheels and no more than eight seats in addition to the driver's seat, used for the transport of passengers
Light commercial vehicles	motor vehicles with at least four wheels and a maximum mass between 3.5 and 7 metric tons, used for the carriage of goods
Heavy trucks	motor vehicles with at least four wheels and a mass of over 7 metric tons, used for the carriage of goods
Buses & coaches	motor vehicles with at least four wheels, a mass of over 7 metric tons and no more than eight seats in addition to the driver's seat, used for the transport of passengers

Source: (International Organization of Motor Vehicle Manufacturers (OICA), 2023)

From a geographic point of view, the world motor vehicle production is distributed on all continents. In 2022, China, Japan and Germany stood for the world's largest producers of cars and commercial vehicles (Placek, 2023). Since the end of the 2007 economic crisis, Toyota Motor and Volkswagen have competed in a highly turbulent business environment (Toma *et al*, 2015) for global supremacy in the automotive sector. Their extraordinary achievements and business success are based on a mixture of major elements, such as strategic thinking (Toma *et al*, 2016a; Toma *et al*, 2016b), visionary leadership (Cornescu *et al*, 2004), lean management (Naruo *et al*, 2007; Marinescu *et al*, 2008), total quality management (Toma *et al*, 2009), entrepreneurial spirit (Zainea *et al*, 2020) and creativity (Toma *et al*, 2018a), social responsibility (Toma *et al*, 2011; Imbrișcă *et al*, 2020) and corporate citizenship (Toma, 2008a), and marketing mix (Toma, 2013; Catană *et al*, 2021). Also, they have implemented competitive business models in the age of digitalization (Toma *et al*, 2018b; Toma *et al*, 2019) and used valuable managerial methods and techniques such as Six Sigma (Toma, 2008b) and balanced scorecard (Toma *et al*, 2010).

3. Research methodology

To achieve paper's purpose the author utilized a qualitative scientific research method. The literature review was based on the information found in several secondary data sources, such as articles, reports and books from the domains of economics and the automotive industry. Then, they were analyzed, categorized and synthesized. Finally, the author elaborated the paper.

4. Findings

The motor vehicle production witnessed several changes worldwide in the period 2018-2022. In the pre-pandemic period (Tables no. 2 and 3) the production hierarchy by continents remained the same: Asia-Oceania was the first, followed by Europe and America.

Table no. 2. The world motor vehicle production by continents in 2018

Rank	Region	Production (number of vehicles)
1	Asia-Oceania	52,656,826
2	Europe	22,262,540
3	America	20,847,618
4	Africa	1,102,036

Note: Audi, BMW, Jaguar Land Rover (JLR), Mercedes, Scania and Daimler Trucks not reported.

Source: (OICA, 2019)

Table no. 3. The world motor vehicle production by continents in 2019

Rank	Region	Production (number of vehicles)
1	Asia-Oceania	49,333,841
2	Europe	21,579,464
3	America	20,148,849
4	Africa	1,113,651

Source: (OICA, 2020)

In the pandemic period (Tables no. 4, 5 and 6) Asia-Oceania led the production hierarchy, followed by Europe and America in the period 2020-2021, and by America and Europe in 2022.

Table no. 4. The world motor vehicle production by continents in 2020

Rank	Region	Production (number of vehicles)
1	Asia-Oceania	44,276,549
2	Europe	16,904,429
3	America	15,692,927
4	Africa	776,247

Note: Audi, BMW, JLR, Mercedes not reported.

Source: (OICA, 2022)

Table no. 5. The world motor vehicle production by continents in 2021

Rank	Region	Production (number of vehicles)
1	Asia-Oceania	46,768,800
2	Europe	16,338,165
3	America	16,190,835
4	Africa (excluding Egypt)	907,302

Note: Audi, BMW, JLR, Mercedes not reported.

Source: (OICA, 2022)

Table no. 6. The world motor vehicle production by continents in 2022

Rank	Region	Production (number of vehicles)
1	Asia-Oceania	50,020,793
2	America	17,756,263
3	Europe	16,216,888
4	Africa (excluding Egypt)	1,022,783

Note: Audi, BMW, JLR, Mercedes not reported.

Source: (OICA, 2022)

Starting from the above-mentioned data, the evolution of the world motor vehicle production exhibited some important features in the period 2018-2022, as follows:

- The pre-pandemic period was better than the pandemic period.
- The year 2018 was the best year of the period.
- Asia-Oceania clearly dominated the production hierarchy by continents.
- Asia-Oceania attained a world production record in 2018.
- Europe and America were the main competitors of Asia-Oceania.

5. Conclusions

The invention and development of the motor vehicle significantly changed the history of humanity. Since its emergence, the automotive industry has witnessed a continuous development all over the world.

This paper seeks to expand the scientific literature regarding the automotive industry. First, the paper illustrates that motor vehicle production contributes to the development of both national economies and the global economy. Second, it shows that the pre-pandemic period was a better period for the automotive industry than the pandemic period. Third, the paper demonstrates that Asia-Oceania dominates the production hierarchy by continents.

Further studies might expand this research by linking the world motor vehicle production with the production obtained by big automotive corporations.

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Section III

Economic and Social Studies

Action Nominalizations in Business English: A Corpus Study

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Abstract

Action nominalizations are employed in business English to attain a higher degree of condensation, abstraction, and accuracy. This paper reports on a corpus-based study of the actual usage patterns of -tion nominals in business news. In contrast to previous corpus-based studies of nominalizations, we adopt a syntactic approach and focus on the realization of the argument structure of -tion nominals. The primary aim of the paper is to shed light on the formal characteristics of the action nominalization patterns in business English, as well as to identify tendencies in the usage of -tion nominals in business writing.

Key words: action nominalization, argument structure, nominal, corpus, occurrence frequency

J.E.L. classification: A22, A23

1. Introduction

Nominalization is defined as a noun phrase which has the underlying semantic structure of a clause (Leech, 2006). An example of nominalization is *the doctor's examination of the patient* derived from the underlying clause *The doctor examined the patient*. Being derived from a verb, the noun *examination* is labelled as a deverbal nominal. It corresponds to the main verb of the sentence and *the patient* is its object. The subject of the underlying clause can be expressed by a genitive *the doctor's*. Adverbs can be represented in the noun phrase by adjectives: *The doctor's quick examination of the patient* = 'The doctor quickly examined the patient'. *The doctor* and *the patient* are analyzed as obligatory constituents, or arguments, in the structure of the underlying clause and they are preserved in the structure of the nominalization.

In this paper we attempt to bring quantitative corpus evidence in favor of the inheritance of the verbal argument structure. The examination of the actual usage patterns of deverbal nominals in business English relies on the data selected from two BYU corpora: COCA and iWeb. Our research is descriptive in nature and it attempts to examine the syntactic configurations in which nominalizations occur in business English.

The paper is organized as follows. In section 2, we give a brief account of the theoretical background. Section 3 comprises an overview the relevant research on the syntactic configurations of action nominalizations in business English. Section 4 is a short review of related work concerning corpus-based studies of nominalizations. In section 5 we introduce the methodology used for the analysis of the corpus data. Section 6 will present the quantitative findings, followed by their analysis and prospects for future work. Finally, the paper concludes with relevance remarks.

2. Theoretical background

The inheritance of argument structure has been thoroughly investigated in relation to derived nominals. The general question is whether derived nominals exhibit any systematic relationship with their corresponding verb in their ability to take arguments or whether their behavior is unpredictable.

Word order facts in nominalizations of transitive verbs have been accounted for by Valois (1991) who has shown that the projection of arguments in the Noun Phrase is similar to that in the Verb Phrase. Subjects in nominals are associated with the external arguments of the base verbs, while Objects in nominal configurations correspond to the internal arguments of the base verbs. Thus, a simple sentence with a transitive verb, such as *examine* that assigns the thematic roles of Agent and Patient to its arguments is the source of the derivation of the following patterns of nominalizations:

(1)

The doctor examined the patient.
Agent Patient

- | | |
|---|-------------------------------|
| a. the doctor's examination of the patient | SN(<i>of</i>)O |
| b. the examination of the patient by the doctor | N(<i>of</i>)O(<i>by</i>)S |
| c. the examination of the patient | N(<i>of</i>)O |
| d. the patient's examination | ON |
| e. *the examination of the doctor | *N(<i>of</i>)S |
| f. *the doctor's examination | *SN |

The Subject of the basic sentence, *doctor*, appears in a prenominal genitive position in (1a) or in an adjunct *by*-phrase in (1b). The underlying Object, with the thematic role of Patient, can appear as an Object *of*-phrase (1a, b, c) in the nominalization, or in the prenominal genitive position in (1d). Thus, the prenominal genitive position can be occupied either by the Agent or by the Patient (1 a, d).

The ungrammatical examples in (1e) and (1f) indicate restrictions in the occurrence of the Agent argument. The Agent cannot normally occur in an *of*-phrase as in (1e). The presence of the Object *of*-phrase is obligatory for an Agent to appear in prenominal position (1f).

Closely tied to the topic of the inheritance of the verbal argument structure is the debate over the so-called 'event' nouns (Grimshaw 1990, Alexiadou 2001), which are at the root of the contrast between the event vs. result interpretation of nominals. They claim that there are two types of nominals: event and result nominals. Event nouns obligatorily have an argument structure as part of their lexical representation: they assign specific thematic roles, just like verbs. Result nouns do not take real arguments, which bear specific thematic roles, but rather a kind of semantic participants that are more loosely associated with them.

3. Action nominalizations in business English

3.1. An inventory of *-tion* nominals in business English

In this paper we focus on action nominals that are commonly used in business English. The selection of these nominals is dictionary-based: Friedman (2012), Combley (2011). To distinguish between deverbal and non-deverbal nominals, we will consider their etymology and the word formation processes involved in the production of these nominals.

Thus, *-tion* nominals in business English can be grouped as follows:

- deverbal nominals, derived from verbal stems by suffixation in *-tion* in English:
amortization, authorization, capitalization, centralization, commercialization, customization, contribution, differentiation, distribution, diversification, globalization, implementation, industrialization, mechanization, modernization, optimization, recapitalization, reindustrialization, relocation, securitization, simulation, etc.
- nominals originally borrowed into English directly from Middle Latin or Late Latin or via Old or Middle French, derived from verbs in the source language (cf. Partridge, 2006):
administration (L), *allocation* (ML), *acquisition* (OF), *certification* (ML), *compensation* (L), *consumption* (OF), *consolidation* (LL), *deduction* (OF), *liquidation* (LL), *mediation* (ML), *negotiation* (OF), *organization* (ML), *partition* (OF), *presentation* (OF), *production*

(OF), *promotion* (OF), *rehabilitation* (F), *repatriation* (LL), *resolution* (OF), *restitution* (OF), *subscription* (OF), *substitution* (OF), *transaction* (OF), *valuation* (F), etc.

- c. nouns, native or borrowed, that are not derived from verbs, but are the source of verbs in English by back-formation, i.e., by clipping *-tion*:
manipulation (F) (> *to manipulate*), *privatization* (> *to privatize*), *remuneration* (OF) (> *to remunerate*), *reduction* (OF) (> *to reduce*), *reevaluation* (> *to reevaluate*), *simulation* (OF) (> *to simulate*), *subscription* (OF) (> *to subscribe*), etc.

The following section examines the syntactic behavior of several nominals included in this preliminary inventory of *-tion* nominals used in business English. The analysis will show that whether nominals are derived from verbs or vice versa, there is a close correlation between the participants (e.g., Agent, Patient, Beneficiary, etc.) involved in the action expressed by the verb and those occurring with nominals.

3.2. The argument structure in nominalizations

Generally speaking, all deverbal nominals can either appear without or with arguments inherited from the corresponding verbs. To illustrate this property, consider the deverbal nominals typical of the business vocabulary: *globalization* and *commercialization*, derived from the verbs *to globalize* and *to commercialize*. They are used as argumentless nominals in (2) and as argument-taking nominals in (3):

(2)

Globalization and commercialization could have significant benefits for all countries.

Globalization enables the fast movement of money between countries.

(3)

Globalization of business is resulting in decreased local diversity.

The commercialization of football has turned it from a sport into a business.

Taking as a point of departure word order in action nominalizations of transitive verbs in general English, as shown in (1), we will examine the various possible linear orderings of the nominal, the subject and the object in nominalizations in business English, illustrating each with representative examples:

Table no. 1. Nominalization patterns

Word order	Nominalization patterns	The underlying clause
SNofO	the company's internal valuation of assets the provider's administration of energy	The company valued the assets. The provider administered energy.
NofObyS	the valuation of assets by the company the administration of energy by the provider	The assets were valued by the company. Energy was administered by the provider.
NofO	the valuation of assets the administration of energy	It valued the assets. It administered energy.
NofO IO/PO	the valuation of assets for the owners the distribution of energy to the consumers	It valued the assets for the owners. It distributed energy to the consumers.
NPO	the negotiation on/ over pensions.	They negotiated on/ over pensions.
ON	*the assets' valuation the employee's relocation	It valued the assets. They relocated the employee.

Source: Author's contribution

The observation that we can now make is that there are three syntactic configurations SN(*of*)O, N(*of*)O(*by*)S and N(*of*)O for action nominalizations corresponding to clauses with transitive verbs (*to value sth.*, *to administer sth.*). Additionally, if a Recipient or Beneficiary is mentioned in the argument structure of the verb (*to distribute sth. to sb.*, *to value sth. for sb.*), the structure N(*of*)O IO/PO is available for the related nominalizations. The structure NPO occurs with nominals derived from prepositional verbs (*to negotiate over/ on sth.*).

A closer examination of the argument structure in nominalizations reveals that a [+human] noun denoting an individual almost never occupies the subject position in the SN(*of*)O structure, but rather nouns denoting institutions, organizations, or enterprises viewed as groups of individuals, as in (4a), or a country name, as in (4b). These nouns have a collective meaning and indicate the Agent of the action:

- (4)
- | | |
|--|------------------|
| a. Investec's administration of a hugely complex offshore trust | SN(<i>of</i>)O |
| (COCA: 461: The Guardian 14-04-06 GB) | |
| Allied's valuation of Business Loan Express | SN(<i>of</i>)O |
| (COCA: 362: NEWS: 2005: WashPost) | |
| successful example of the Bush administration's promotion of private contractors | |
| (COCA: 43: NEWS: 2008: NYTimes) | |
| the architect behind the Wynne government's privatization of Hydro One | |
| (iWeb: 360: nupge.ca) | |
| the state's 2009 privatization of medical transportation services | |
| (iWeb: 385: www.dallasnews.com) | |
| b. Japan's administration of these islands | SN(<i>of</i>)O |
| (COCA: 464: CTV News 14-04-23) | |

The nominalization with the N(*of*)O(*by*)S structure has a passive reading with the Agent of the action occurring in a passive *by*-phrase. Such nominal configurations are uncommon, most likely because agentless passives are typically employed in scientific or professional discourse:

- (5)
- | | |
|---|-------------------------------|
| procurement of military supplies by a government | N(<i>of</i>)O(<i>by</i>)S |
| the allocation of resources by government to compensate for these failures | |
| (iWeb: 432: economicsonline.co.uk) | |
| continuous administration of the TTD by the government for more than 80 years | |
| (COCA: 836: The New Indian Express, 18-10-03) | |

Since reporting an action or an event does not necessarily require the human agent to be mentioned in professional language, the N(*of*)O structure is the most frequently occurring one:

- (6)
- procurement of medicine/ goods/ services
 - consolidation of state control/ the industry/ commerce/ power
 - privatization of state industries/ businesses/ enterprises
 - allocation of resources/ payments/ funds

The N(*of*)O IO/PO structure can be encountered with nominals derived from ditransitive verbs, that involve the presence of a Recipient or Beneficiary of the action (*to assign sth. to sb.*, *to distribute sth. to sb.*, *to remit sth. to sb.*, *to administer sth. for sb.*, *to procure sth. for sb.*, *to value sth. for sb.*, etc.):

- (7)
- | | |
|---|-------|
| through the allocation of resources to specific activities | NO IO |
| (iWeb: 438: referenceforbusiness.co) | |
| to increase their clients' allocations to U.S. stocks this year | SN IO |
| (iWeb: 708: www.businessinsider.com) | |

Table 1 points to a gap in the nominal area: there are no nominalizations of the type in (1d) with the structure ON in business English, i.e., the Object phrase cannot appear in genitive position due to the fact that the Object is realized by a [+abstract] or [+concrete] NP. However, when the Object is [+human] the prenominal genitive position is available, as below:

- (8)
- | | |
|---|---|
| They relocate the employees. | the employees' relocation |
| They repatriate/ protect the employees. | the expatriate's repatriation/ protection |
| S V DO | [+human] O N |

Besides the ON structure of nominalizations, the compounds made up of Noun + Noun are also available in the language, as illustrated in (9), but the semantic difference is that between a specific and a non-specific, general meaning, as shown in (10):

- (9)
- | | |
|---|---------------------|
| the employees' relocation | employee relocation |
| the expatriate's repatriation/ protection | expat repatriation |
| O N | noun nominal |

- (10)
- This requirement gives rise to a termination of an individual employee's employment on the basis of redundancy...
- Employee relocation is defined as the process of moving a new or existing employee...

The compound structure, widely used in journalistic writing, allows for multiple premodification that leads to conciseness and compression of style in newspaper headlines:

- (11)
- Mobility Feature: Secret to Profitable, Human-Centered Employee Relocation*
(<https://impactgroup.hr.com/businesspost/an-expats-journey-home-nickys-repatriation-story/>)

The NPO structure occurs with nominals derived from verbs with obligatory preposition, such as: *negotiate on sth.*, *to compensate for sth.*, *to contribute to sth.*, *to mediate between*, etc.:

- (12)
- Industrialized countries forced international negotiations on global warming NPO
(COCA: 30: ACAD: 94: Environment)

In this section, we have shown that, as expected, business English nominals occur in the same syntactic configurations as action nominals in general English.

4. Previous corpus studies on nominalizations

Though most previous research of nominalization is theoretical, there are few corpus-based studies that can connect theory to practice. These studies share a word-based approach and a reliance on suffixes for identification of nominals in corpora. All focus on how nominals vary in different registers.

Biber (1986) investigated nominalizations in *-tion*, *-ment*, *-ness*, and *-ity* and showed that nominalizations occur more often in written texts than in spoken texts. Biber et al. (1998) have shown that academic prose has a frequency of nominalizations almost four times larger than fiction and speech. Biber et al. (1999) investigated nominalizations in four registers (i.e. conversation, fiction, newspaper, and academic prose) and argued that the frequency of nominalization increases from conversation to fiction, newspaper language, and academic prose.

In contrast to previous corpus-based studies of nominalizations, Liu et al (2014) use a syntactic approach and an innovative methodology, applied to two media corpora, to show that there are significant differences in the use of nominalizations across two English varieties: China English and British English. With regard to suffixed nominalizations, they argue that Chinese Media

English uses significantly more nominalizations than British Media English and that the preference for the nominal style has been increasingly evident with serious topics such as business.

Compared to previous corpus research, our study is not about variation in nominalization usage across registers, genres or varieties, but it examines the structure of nominalizations used in professional language, particularly in business news reports and business-related web content. This research may be viewed as a follow-up to the corpus-based study of agent nominalizations (Bejan, 2020), which focused on the analysis of *-er* nominals in business students' written assignments.

5. Research methodology

For the analysis of the argument structure of nominals used in business English, we rely on the data collected from two corpora: COCA corpus and the iWeb corpus that belong to a collection of 17 corpora, called English corpora, formerly known as BYU-Corpora (Brigham Youth University).

The COCA corpus (The Corpus of Contemporary American English) comprises more than one billion words from eight genres: spoken, fiction, popular magazines, newspapers, academic texts, TV /movies subtitles, for the period 1990-2019 and, as of 2021, words from blogs, and other web pages/ sites.

The iWeb corpus, released in 2018, includes 14 billion words, 22 million web pages, 95,000 websites and it provides wide information on the top 60,000 words in the corpus, including frequency information, definitions, synonyms, WordNet entries, related topics, concordances, clusters, websites that have the word as a "keyword", and KWIC/concordance lines. Both iWeb and COCA are designed specifically for language learners, teachers, and researchers.

6. Findings

A simple search of action nominals in business reports or business-related texts in the two corpora has shown that, as expected, nominals can appear in various syntactic contexts, either as heads or as complements of NPs, as in (13a, b), or as heads of simple or multiple compounds, as shown in (14a) and (14b) respectively, with or without adjectival modification, as in (15) and (14):

- (13)
- a. allocation of resources (iWeb: 212: referenceforbusiness.com)
 - privatization of public housing (iWeb: 441: globalpropertyguide.com)
- b. concerned with the allocation of resources (iWeb: 213: ineteconomics.org)
- the scope of privatization (iWeb: 812: referenceforbusiness.com)
- (14)
- a. budget allocation for defense equipment (iWeb: 81: www. marketwatch.com)
 - b. air traffic control privatization (iWeb: 990: businessstravelnews.org)
- (15)
- a. global tactical asset allocation
 - b. basic education funding allocation

Moreover, nominals frequently occur without an argument structure and fulfill various syntactic functions at clause level: subject (15a), direct object (15b) or prepositional object (15c):

- (15)
- a. Privatization promotes instability in the delivery of these services.
(COCA: 63: NEWS 2001. Denver)
 - b. The World Bank have required privatization of unprofitable government-owned businesses.
(iWeb: 568: referenceforbusiness.com)
 - c. Bank water officials believe in privatization.
(iWeb: 889: corpwatch.org)

However, since the goal of this paper is to examine the structure of nominalizations in professional business English, we will examine only instances when the nominal has an argument structure, i.e., when the nominalization includes an *of*-Object and, possibly a Subject, inherited from the verbal source. With this goal in mind, we selected several nominals and looked for their occurrences in business reports in the COCA corpus, as well as in business-related websites, available in the iWeb corpus.

The criterion for the manual selection of the relevant examples has been the availability of an *of*-Object expressed by a lexical item belonging to the business vocabulary. This search has been greatly aided by the existence of word pages, made available by the two corpora, i.e., pages dedicated to a word that display, among other contextual and collocational features, lists of word clusters, made up of 3 or 4 words, as exemplified below:

- (16)
3 words strings: *allocation of funds/ estates/ millions/ credit/ benefits/ property*, etc.
 consolidation of companies/ ownership/ services/ programs, etc.
 production of goods/ food/ oil/ energy/ electricity, etc.
- (17)
4 words strings: *allocation of their assets/ the credit/ those shares/ private capital*, etc.
 consolidation of the industry/ the banking/ the market/ the corporation, etc.
 production of natural gas/ crude oil/ consumer goods/ farmed salmon, etc.

All N(*of*)O occurrences have been manually counted by using a tight cluster search of three or four words strings in both corpora. An illustration is given below, in table format, for the nominal *allocation*, for which we have chosen the first six clusters with the *of*-Object realized by lexical items commonly found in the business vocabulary:

Table no. 2. The number of occurrences of the nominal 'allocation' in the N(*of*)O structure

COCA corpus		iWeb corpus	
Number of occurrences in the N(<i>of</i>)O structure		Number of occurrences in the N(<i>of</i>)O structure	
295	allocation of resources	3067	allocation of resources
49	allocation of funds	394	allocation of funds
36	allocation of scarce resources	319	allocation of time
34	allocation of capital	276	allocation of funding
34	allocation of time	229	allocation of scarce resources
20	allocation of power	206	allocation of costs

Source: Author's contribution based on data selected from the COCA and the iWeb corpora

As it can be noticed, two N(*of*)O structures rank highest in both corpora: *allocation of resources* and *allocation of funds*. Thus, though the number of occurrences for each cluster varies, depending on the size of the corpora (with the iWeb being significantly larger than COCA), there is a clear prevalence of certain patterns. Besides *resources* and *funds*, the nominal *allocation* frequently takes other nouns in Object position, such as: *time*, *capital*, *costs*, *power*, etc.

The next step in the analysis of each nominal has been to put together all available realizations of the *of*-Object by a lexical item belonging to the vocabulary of business. We have examined all 1000 instances of nominals in context that both corpora have made accessible for each nominal. The collected data is displayed in the following two tables, which indicate the number of occurrences of the selected nominals, as argument-taking nominals in the N(*of*)O and SN(*of*)O configurations in the two corpora:

Table no. 3. The number of occurrences of -tion nominals in business news reports

Action nominal in N(of)O structure	Occurrences of N(of)O structure	Action nominal in SN(of)O structure	Occurrences of SN(of)O structure
allocation of	543	x's allocation of	2
consolidation of	172	x's consolidation of	0
implementation of	1144	x's implementation of	0
liquidation of	55	x's liquidation of	0
privatization of	274	x's privatization of	0
production of	748	x's production of	0
promotion of	44	x's promotion of	0
remuneration of	9	x's remuneration of	0
valuation of	78	x's valuation of	2

Source: Author's contribution based on data selected from the COCA corpus

Table no. 4. The number of occurrences of -tion nominals in business-related web content

Action nominal in N(of)O structure	Occurrences of N(of)O structure	Action nominal in SN(of)O structure	Occurrences of SN(of)O structure
allocation of	6583	x's allocation of	1
consolidation of	491	x's consolidation of	0
implementation of	14087	x's implementation of	0
liquidation of	793	x's liquidation of	0
privatization of	907	x's privatization of	3
production of	9667	x's production of	0
promotion of	489	x's promotion of	0
remuneration of	357	x's remuneration of	0
valuation of	3458	x's valuation of	2

Source: Author's contribution based on data selected from the iWeb corpus

The data in the two tables allow for a tentative ranking within the group of 9 action nominals selected. Thus, the most frequently occurring nominals, *implementation*, *production*, *allocation*, occupy the top three positions, both in the COCA corpus and in the iWeb corpus, while the lowest frequency is encountered with the nominals *liquidation*, *promotion*, *remuneration* in the data from the COCA corpus, and *consolidation*, *promotion*, *remuneration* in the data from iWeb.

Overall, the N(of)O structures are better represented in the iWeb corpus, where their number of occurrences is much higher. Obviously, such differences in the results are due to the difference in size and in the amount of business-related content made available in the two corpora. On the other hand, the SN(of)O structures are non-existent with some nominals or only occasionally encountered with others (*allocation*, *valuation*, *privatization*).

These findings show that writers of business newspaper reports or of business-related web content usually choose action nominalization with the structure N(of)O to achieve conciseness and abstraction in style and avoid the SN(of)O structure to maintain a professional objective tone.

Apart from argument-taking occurrences, -tion nominals can also be employed as argumentless nominals in a variety of syntactic contexts, such as the example below, in which four deverbal nominals are in coordination:

(18)

Companies involved in prospective mergers, consolidations, liquidations, reorganizations and other situations that leave their prices ... (COCA: 76 NEWS: 1996: WashPost)

This example also points to two other issues of interest for the analysis of deverbal nominals, namely that they can be modified by certain types of adjectives (*prospective*) and that nominals in the plural form denote the result rather than the action. Therefore, future research work will also consider adjectival modification in action nominalizations, as well as the distinction between the event and result reading of deverbal nominals used in business English.

7. Conclusions

In this paper, we examined the usage patterns of action nominalizations in business English. Using the data selected from two corpora, COCA and iWeb, we have shown that in business news reports and in business-related web content, the prevalent nominalization pattern is the N(*of*)O. Besides this pattern, *-tion* nominals often occur as Noun+Noun compounds or as single, argumentless nominals. On the other hand, professional language does not put emphasis on the human Agent of an action, and as a result, the subject of the corresponding clause is almost non-existent in the structure of the nominalization.

The findings of this research reveal the structural features of nominalizations in business English and are relevant for professionals, journalists, as well as students and teachers, who aim to attain conciseness and accuracy in business writing.

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Developing Speaking Skills through Debates. Case Study Proposal in Business English

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Abstract

This paper tackles the speaking skill, in general, and its role in language teaching and learning, focusing also on various ways of developing it, in particular by the employment of the debate technique EFL/ ESP classes. The theoretical part of the paper further deals with several definitions of the debate technique, with the classification of debates and with the advantages brought by the implementation of debates in EFL/ ESP classes – in particular as far as the enhancement of the learners' speaking skills is concerned. The practical part of the paper proposes a case study which consists of an experiment that will highlight the benefits of the debate technique when adequately used in the Business English teaching and learning processes.

Key words: speaking skills, debate technique, Business English, ESP teaching, communication

J.E.L. classification: Z12

1. Introduction

Speaking skills play a major role in the ever-expanding contemporary business environment, where efficient communication is paramount on the path towards success; in order to enhance these skills, teachers should employ various student-centered methods and techniques that increase the class dynamics and collaboration. The debate technique, which permeates our daily activities (Fallahi and Haney, 2011), and which was intensively promoted and used by exquisite scholars in ancient Greece – such as Aristotle, Socrates and Plato – (Vo and Morris, 2006) has proven its efficacy along the centuries, in various contexts.

2. Theoretical background

2.1. The speaking skill

Defined as "the act or skill of giving a speech at a public event" and as the action of "using the stated language" (see *Cambridge Dictionary* online), speaking is vital to the communication process. Numerous scholars have endeavored to define speaking in various ways, such as a fertile ability that requires speech in order to transmit meaning (Spratt, 2005); a prolific process that involves ideas, concepts, feelings, and dynamic interactions among speakers and audience (Underwood, 1997); an action requiring at least two participants reacting to what they perceive and hear, with alternating roles of message senders and recipients (Morrow, 1981). In his turn, Scott Thornbury (2005, pp.1-8) describes speaking as an interactive and mainly linear process, that occurs in real time and that, being "part of our everyday life", "is mostly taken for granted". Moreover, in the scholar's perspective, it "requires the ability to co-operate in the management of speaking turns".

Chomsky (1965) saw the speaking skill as "the speaker-hearer's knowledge of his language", such as knowledge of comprehensible sound articulation, appropriate vocabulary, understanding of familiarity with syntax, etc., which are all part of the linguistic competence (for more information on linguistic competence, see Hymes, 1972). De Silva and Burns (1999) envisaged speaking in a

similar way, i.e., as a dynamic process of designing meaning and entailing the generation, reception and refinement of information.

Other scholars, such as Nolasco (1997) profess that the speaking skill does not reside in eloquent speaking, but in conversation, involving thus understanding, attention and feedback carried out in a methodical and even automatic manner. Klippel (1984) emphasizes the above-mentioned ideas by explaining that, when it comes to foreign languages, the teaching process should contribute to the gradual achievement of naturally occurring communication, aimed at exchanging various ideas, feelings and opinions, at cooperating, and sharing knowledge and personal experiences, in order to establish successful social relationships.

Focused on interpersonal/ interactional and transactional objectives, speaking has, in Thornbury's perspective (2005), the function of preserving social relationships and of conveying pieces of information and opinions. Consequently, the same scholar stresses the importance of furnishing learners a wide range of occasions for purposeful interaction-based communicative behavior patterns.

It is noteworthy that, besides speaking, successful communication in foreign language teaching also involves other skills such as listening, meaning negotiation, and knowledge of both verbal and nonverbal cues. This idea is in line with Chaney's perspective (1998, p.13), who envisages speaking as "the process of building and sharing meaning through the use of verbal and non-verbal symbols, in a variety of contexts". These statements strengthen the importance of employing modern student-centered teaching methods, such as communicative language teaching and collaborative learning, which – according to Nunan (1991) – furnish learners the occasion to employ language in real-life contexts, for the performance of authentic activities, in an interactive and entertaining classroom environment. Thus, the aforementioned scholar underlines that learners would acquire and develop the capacity to articulate phonological characteristics of the language effectively; they will better handle stress, rhythm, and intonation patterns and exhibit an adequate fluency level; they will boost their transactional, interpersonal, and mediating context abilities; they will be able to take both short and long speaking turns and improve their knowledge as far as the negotiation of the conversation purposes is concerned; they will enhance their conversational listening skills and employ adequate conversational patterns (see Nunan, 1991).

Seen from an integrated perspective, as one of the four language skills, and tightly connected to writing due to its productive nature, speaking "seems intuitively the most important of all the four language skills because it can distinctly show the accuracy and language errors that a language learner makes" (Khamkhien, 2010, p. 184). Consequently, EFL/ ESP speaking tests can be employed in order to assess the learners' development of their pronunciation and communication abilities.

Harmer (2015) explains that in order to generate speech in English, there are four elements that should be envisaged, as they play an important part: "connected speech" (accounting for the production of distinct English phonemes, and for the employment of fluent "connected speech"); "expressive devices" (allowing additional ways to express feelings, for better conveyance of meaning); "lexis and grammar" (dealing with the learners' acquisition of language functions through the employment of various expressions); "negotiation language" (involving the vocabulary we employ for the clarification of meaning and speech structure). Therefore, during the teaching process, learners should be exposed to various oral activities focused on the improvement of connected speech, on the analysis of various verbal and non-verbal cues that reveal the speakers' feelings and attitudes, on expressions used in various speech acts, in order to greet, agree, disagree, etc. (Harmer 2015).

Furthermore, scholars have pinpointed five significant components that should be envisaged when analyzing the speech process, as they greatly contribute to the production of qualitative speaking: pronunciation, grammar, fluency, vocabulary, and comprehension. Acting from scripts (scenes from plays/ text books; see Harmer, 2015), game-based activities (involving describing, forecasting, simplifying, and demanding for feedback; see McDonough and Shaw, 2003), discussions (prepared talks, presentations of various topics, speaking from notes; see McDonough and Shaw, 2003), questionnaires (if adequately designed, they can stimulate the natural employment of receptive language patterns; see McDonough and Shaw 2003), debates (presentations of argued opposite perspectives), simulations of lifelike meetings/ discussions and

role play (stimulating general oral fluency, training for specific contexts) are recommended activities for the enhancement of speaking skills; all these incorporate the above-mentioned four elements necessary in the production of speech and the five components of the speech process. In addition, appropriately chosen and implemented activities, which take into account the learner's level of understanding, contribute to the creation of a relaxing and entertaining atmosphere.

2.2. Teaching speaking

Since oral communication is seen nowadays as a reference point as far as foreign language teaching and learning are concerned, scholars have endeavored to identify the most appropriate approach for the acquisition of speaking skills. Having in view that the communication process entails "interpersonal responsiveness, rather than mere production of language that is truthful, honest, accurate, stylistically pleasing, etc." (Paulston, 1976, p. 55), in the language teaching process, the focus should fall on communication efficiency, i.e., on language purposes such as the establishment of social relationships, the demand for, and provision of various pieces of information, etc., especially having in view its harmonization benefits (Nadrag, 2019).

The key to efficient communication in a foreign language is represented by balanced activities that first provide learners the materials necessary in order to start generating language (such as teacher talk, listening, reading, the language employed outside formal contexts) (Maruntelu, 2019). Scholars insist that learners should be encouraged to complete practical tasks that require language production based on the acquired grammar and vocabulary items and communication strategies, i.e., giving or asking for information, presentations, etc. It is noteworthy that, as far as these activities are concerned, successful communication is achieved if learners convey their message, regardless of its accuracy (except when accuracy disrupts the intended meaning of the respective message) (see Nadrag, 2020a).

There are many approaches that should be taken into consideration when teaching and/ or developing the speaking skill. Three interesting ones, explained by Martinez-Flor et al. (2006), are the environmentalist approach, the innatist approach and the interactionist approach. According to these scholars, the first one is based on a "stimulus - response - reinforcement pattern", speaking being conceived primarily as an oral experience, where the learning process includes activities of duplicating, mimicking, and memorizing the language structures and items the learners are exposed to (see Martinez-Flor et al. 2006, p. 144). Thus, learning is mainly influenced by the external context. This approach involves the employment of pattern drills, requires learning verb tenses and consists of activities based on sentence structures (Dunlap and Weisman, 2006). The second one, i.e., the innatist approach, is underlain by the idea that human beings have an innate ability to learn languages, due to an internalized frame of rules (Martinez-Flor et al., 2006).

The third approach, i.e., the interactionist one, described by the aforementioned scholars, which is shaped by cognitive psychology and by the functional and pragmatic perspectives upon language, regards the speaking skill as interactive, dynamic, social, and contextualized; in this situation, communication highlights both the speakers' intentions, and the consequences that they trigger. Furthermore, according to this approach, language is learnt so as to perform various functions in a certain cultural and social environment, speaking becoming thus contextualized (i.e., the cultural and the situational contexts determine the features of the employed language) (Martinez-Flor et al., 2006).

In order to teach the speaking skill successfully, scholars pinpoint to five elements that teachers should take into account, i.e., the learners' features (such as age group, learning objectives, proficiency level, personality, etc.), activity topics (chosen in accordance with the learners' features and interests), curriculum (establishing suitable activities in the teaching plan), the source and the target languages, and the tasks (i.e., speaking vehicles that trigger interaction, if adequately selected) (Folse, 2006).

2.3. Debates

Cambridge Dictionary (online) defines the term debate as "(a) serious discussion of a subject in which many people take part" or as "a competition in which teams of people, often students, discuss a subject and the team that is judged to make the best arguments wins". In a similar manner, the *Oxford Learner's Dictionaries* (online) define the concept of debate as "a formal discussion of an issue at a public meeting or in a parliament. In a debate two or more speakers express opposite views and then there is often a vote on the issue" or as "an argument or a discussion expressing different opinions". Therefore, these two dictionary definitions associate the debate with other key terms such as "discussion", "speakers" "subject", "issue" "views" and "arguments", suggesting that debates involve the statement, the explanation/ argumentation and illustration of various perspectives upon a certain topic or issue.

The Online Etymology Dictionary states that the noun "debate" originates from the early 14th century Old French word "debat", which means "a quarrel, dispute, disagreement" and which, in its turn, comes from the French verb "debater". The meaning of this noun evolved and, one century later, it also acquired the "sense of contention by argument (...), a formal dispute, a debating contest, interchange of arguments in a somewhat formal manner" (see *The Online Etymology Dictionary*).

In their turn, scholars defined the word "debate" in instructional terms, focusing on the idea of contradiction of perspectives and arguments (Chang and Cho 2010; Dale and Wolf, 2000) and pinpointing to its advantages in the development of the learners' language skills. For instance, according to Hanes (2007, pp. 8-9), a debate is "the most fun and most intellectually stimulating activity", involving "verbal judo: a martial art for your mind", because of the exposure "to new ideas, (...) the confidence to speak publicly".

Seen as a teaching technique, the debate contributes to the enhancement of the learners' speaking skills in an entertaining and creative manner, as they have to take different sides of a certain topic and support their opinion with strong and convincing arguments (O'Malley and Valdez Pierce, 1996). Thus, the interactivity that characterizes debates triggers precious speaking opportunities, by engaging clashing viewpoints on a certain issue, usually in a formal context, coordinated by a moderator and attended by an audience. Fallahi and Haney (2011) highlight the key role played by debates in our daily lives, in various situations and social environments (such as negotiations, elections, etc.), and explain that there is a wide array of debates that are carried out based on well-established rules and that thus focus on different sets of skills.

Besides the improvement of communication, public speaking and active listening skills, debates also contribute to the development of scrutiny, reasoning, and critical thinking skills, as during the debate process, the acknowledgement of the multiple viewpoints to an argument is raised, which permits the audience to envisage elements they may not have noticed (O'Malley and Valdez Pierce, 1996).

It is noteworthy that a thorough investigation of complex issues cannot be performed as the time span is limited in formal debates. Scholars such as Hanes (2007) profess that almost all topics – from a wide range of fields – can be debated and that "through debating current events, you might start to find your own educated answers to these questions" (Hanes, 2007, p.8).

The organizers' resourcefulness and their ability to accustom during the implementation process to the particularities of each group of participants are vital for a successful debate method. Hanes (2007) implies that, when preparing debates or even during the debate process, people often feel inspired, and soft skills such as empathy, cooperation, teamwork, self-confidence, leadership and emotional intelligence can be boosted. Furthermore, the same scholar highlights that the need to structure one's discourse in a strategic manner and to employ logical and convincing arguments also requires the enhancement of one's coherence, clarity, creativity, spontaneity, and even improvisation skills.

Scholars classified formal debates in terms of their formats as follows: parliamentary debates, Mace debates, policy debating - Cross Examination Debate and Public Forum debates, and Lincoln-Douglas debates.

Parliamentary debates (similar to the debating style employed in the Parliament) require two groups on the government's side and two groups on the opposition's side, that alternate their seven-to-five-minute speeches; it should be noted that the first and last minute are protected, and pieces of information are given between these times, which represents a significant and interactive part of the process, furnishing interaction occasions for the team members (see Bell, 2020).

Ideal especially for beginners, Bell (2020) pinpoints that Mace debates offer debaters the occasion to prepare themselves in advance, as they receive the discussion topic several days before the debate, which increases the speakers' confidence. Two teams (each made up of two members) debate an affirmative motion in seven-minute alternating speeches; after the delivery of the first four speeches, the audience can ask questions, which are answered during the four-minute summary speeches (Bell, 2020).

Policy debating, as explained by Hanes (2007), involves two teams of two speakers (i.e., the affirmative and the negative team) who alternate in order to present their arguments for and/ or against a certain subject matter. The aforementioned scholar explained that three speech types are employed in this debate (that also usually include notes and quotations), i.e., constructive speeches (which are extended and introduce new discussion elements), rebuttal speeches (which are shorter and which filter and clarify previously inserted discussion elements), and cross-examination, "which is a question-and-answer period of a speaker by an opponent speaker" (Hanes, 2007, p. 10-11). The judge presiding the debate establishes whether the subject matter was argued in an adequate or in an inadequate manner. As far as the Public Forum debate is concerned, Hanes (2007) explains that the cross-examination is also known as cross-fire, as both debaters are able to ask and answer questions.

The Lincoln-Douglas debate is defined by scholars as a competitive speaking activity presided by a judge, in which two speakers present their arguments supporting or rejecting a certain resolution (see Halvorson and Koshy, 2013). Speakers usually take turns from one round to another, either in favor of the resolution (the "affirmative") or against it (the "negative") (see Djuranovic, 2003).

3. Research methodology

When confronting opposing perspectives on a certain subject matter, in particular for the enhancement of EFL or ESP speaking skills in authentic contexts, the debate method can be extremely efficient. Krieger (2005, p. 25) asserts that debates engage learners in a wide array of "cognitive and linguistic" activities, and "is also highly effective for developing argumentation skills for persuasive speech and writing". Furthermore, argumentative skills are ensured, and witty, challenging entertainment is furnished to the audience.

As described by *Encyclopaedia Britannica* online, formal debates – chaired by a neutral moderator – usually observe a set of well-established procedures, initiated by the statement of the debate topic as a positive resolution. According to the same aforementioned source, two teams – each made up of two members – have to present their arguments, supporting or rejecting the respective resolution. First, both teams are granted equal time intervals (ten-fifteen minutes) in order to set forth their perspectives; the affirmative party initiates the argument and, as a rule, the negative one initiates the rebuttal, and the order of debaters take turns by team. Then, they receive a shorter time interval in order to reject the opposing side's arguments. During the entire process, although proof is constantly given in order to back up the speakers' arguments, new claims cannot be raised (see *Encyclopaedia Britannica* online). Debates are thus extremely useful, as they can tackle real or simulated subject matters, where clashing perspectives are placed in the limelight and supported by arguments (see Littlewood, 1981, p. 57; Dale and Wolf, 2000)

Hypothesis: Debates can be successfully used in the ESP classroom in order to boost the learners' language abilities, with a special focus on the speaking skills.

Subjects: In order to test this statement, two groups of undergraduate students of a similar language proficiency level are required, i.e., a control and an experiment group, majoring in Business Administration.

Methods: the observation and the experiment.

Experiment design: Before the teaching stage, the students in both groups should sit for an initial test, in order to ascertain their language proficiency level (which should be similar); moreover, the initial test results will be used in order to track the students' progress. Then, for a four-week period, the two student groups will be taught the same language topics/ vocabulary items (for example, "Employment Contracts", "Trade Unions", "Strikes" and "Resolution of Labor Conflicts"); traditional teaching techniques should be employed with the control group, and the debate technique should be used with the experiment group.

In order to implement debates in the ESP classroom, learners should exhibit appropriate language proficiency levels, appropriate common knowledge about the debated subject matter, and distinct viewpoints that they should defend. Therefore, before implementing this technique in the ESP classroom, teachers should have in view that debates involve spoken production materialized in speech delivery, taking up certain positions on a given subject matter, the ability to defend one's viewpoint and to argue it verbally.

A successful implementation of any teaching technique (and of the debate technique in particular) should take into account not only the development of the students' speaking skills, but also their listening (involved often by the spotlight on comprehending the opposing party's speech in order to prepare counter arguments), reading (skimming and/ or scanning various sources so as to design efficient and convincing arguments) and writing (taking notes, organizing speech parts, drafting coherent, consistent and convincing argumentative paragraphs and speeches, etc.) abilities (Nadrag, 2020b; Popescu, 2021). Moreover, other soft skills should be taken into account (such as creativity, teamwork, critical thinking, initiative, empathy, etc.) (Cinganotto, 2019). During the activities, the ESP teacher should constantly furnish feedback on pronunciation, word selection, syntactic structure and pertinency of the information, logic framework and coherence (see Baca, 2019).

Consequently, the debate technique furnishes the occasion to exercise and improve a wide array of skills. At the end of the teaching stage, both groups should sit for a final test in order to check for the students' progress.

4. Expected findings

It is expected that the experiment results validate the hypothesis, highlighting the efficiency of debates in the enhancement of the students' language skills, especially the speaking ones. Being a technique focused on meaning design and generation, and on language practice, it can highly motivate students to acquire language items in authentic contexts, based on communication (Cinganotto, 2019). Moreover, this technique will boost the students' speaking confidence and verbal interaction; it will contribute to the improvement of their pronunciation, word choice in terms of context, understanding, sentence structuring, organization of ideas, language coherence and fluency (Roy and Macchiette, 2005).

Oral communication skills – which play a key role in successful careers (see Combs and Bourne, 1994) – are thus enhanced by debates, as they furnish learners the opportunity to employ EFL/ ESP in a pertinent manner, involving arguing and reasoning in the target language (Alasmari and Salahuddin Ahmed, 2012). If regularly implemented and backed up by constant feedback, this student-centered technique focused upon cooperation can successfully activate learners and furnish them better comprehension of the main speaking items.

5. Conclusions

The speaking skill involves interactive and context-based processes, triggering – among many others – a vast range of linguistic and cultural elements. Therefore, interaction and authentic communication are of uppermost importance in the EFL/ ESP learning process, especially when it comes to the speaking skills. If applied appropriately, the debate technique can contribute to the enhancement of a wide array of both EFL/ ESP skills and soft abilities, as it provides lifelike communication contexts, where students are able to interact in a meaningful way, express and argue their viewpoints on different subject matters.

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The Social Impact of Digital Transformation at the European Level

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Abstract

The profound societal effects resulting from the digital revolution in Europe have completely reshaped the fabric of everyday life. This revolution is characterized by the seamless integration of digital technology into all aspects of society, influencing the way people interact, businesses function, and governments operate. Notably, it has greatly improved connectivity and access to information, fostering both innovation and economic growth. The objective of this paper is to explore the complex connection between the Digital Society and Economy Index (DSEI) and the Social Progress Index (SPI), which together provide a holistic representation of societal progress. The main aim is to establish the correlation between these indices, shedding light on how digitalization impacts different dimensions of social advancement in European countries. Through this examination, the study aims to offer valuable insights into the implications of digital transformation on the well-being of society, economic stability, and overall social development throughout Europe.

Key words: digital transformation, social, Digital Economy and Society Index, Social Progress Index, European Union

J.E.L. classification: O15, O35, Q01

1. Introduction

The all-encompassing influence of technology in the realm of digital innovation has made its mark on various aspects of society, economy, and governance. Leading the charge in this digital revolution are European nations, known for their robust socio-economic frameworks. This study delves into the intricate interplay between digital advancements and social dynamics, with a specific focus on examining the correlation between the Digital Economy and Society Index (DESI) and the Social Progress Index (SPI). The aim of this research paper is to unravel the complexities of this relationship, shedding light on how the ongoing digital transformation is reshaping societal structures and contributing to the advancement of society in Europe.

The way societies function, communicate, and develop is being completely transformed by the multifaceted phenomenon known as digital transformation. In Europe, this transformation extends far beyond just technological advancements; it is a societal shift that impacts every aspect, from policy-making to individual lifestyles. The Digital Economy and Society Index (DESI), a tool used by the EU to assess the digital performance of member nations, plays a crucial role in measuring this transformation. It evaluates various factors such as digital connectivity, online activities, digital skills, integration of digital technology, and digital public services. Similarly, the Social Progress Index (SPI) provides a comprehensive framework for understanding social progress, encompassing basic human needs, wellbeing foundations, and individual opportunities within societies. The intricate relationship between these two indices serves as the foundation for our investigation, as we aim to uncover how advancements in the digital sphere are reflected in social progress.

The central argument of this paper is that the swift process of digitalization witnessed in European nations serves not only as an economic catalyst but also as a crucial element in promoting social welfare and inclusivity. The paper puts forward the hypothesis that there is a noteworthy correlation between a country's level of digital maturity, gauged by its DESI score, and its societal progress, evaluated through the SPI. Through an examination of these indicators, the research aims to provide a nuanced understanding of the impact of digitalization on diverse social aspects such as education, healthcare, environmental sustainability, individual rights, and inclusiveness.

In order to confirm this hypothesis, the research paper will conduct an extensive examination of the most up-to-date data for both indices. This analysis will be supplemented by in-depth case studies and insights from experts in the field. Additionally, the paper will explore the various approaches and policies that European countries have taken in their digital transformation efforts, assessing how these strategies align with or deviate from their objectives for social progress.

Therefore, the convergence of digital transformation and social advancement offers a distinct chance to assess the potential of technology in promoting societal welfare. As Europe forges ahead in the realm of digital innovation, this research seeks to offer valuable perspectives on how these technological advancements contribute to social betterment. By doing so, it aims to inform future policies and initiatives, guiding them towards fostering a more inclusive and progressive society.

2. Literature review

The integration of digital technologies into various facets of European society, known as digital transformation, has significant consequences for social structures and personal welfare. This transformative process not only fuels economic advancement and creativity but also reconfigures social dynamics and the very essence of communities.

The evaluation of Europe's digital competitiveness is made possible by the Digital Economy and Society Index (DESI), which acts as a crucial gauge. It encompasses five key elements: connectivity, human capital, utilization of internet services, integration of digital technology, and digital public services (Budde et al., 2022). Conversely, the Social Progress Index (SPI) provides a comprehensive measurement of societal well-being, going beyond GDP and considering essential human needs, the foundations of well-being, and opportunities (Zhang et al., 2022). The interplay between these indices offers a distinctive perspective to assess the correlation between digital progress and societal advancement.

Europe's socio-economic landscape has been profoundly impacted by the digitization of industries and public services. One notable example is the automotive sector, where the integration of emergent technologies is reshaping digital strategies and greatly impacting employment and skill demands (Chaniias & Hess, 2016). Likewise, the healthcare sector is undergoing a digital transformation that holds the potential for improved service delivery, but also presents challenges in terms of workforce adjustment and managing public health (Velez-Lapão, 2019).

The utilization of digital technologies and the level of preparedness for their adoption show discrepancies across different regions in Europe, which in turn have diverse social implications. Northern European nations display a greater level of readiness in embracing digital advancements, while South-Eastern Europe lags behind at a slower pace. This disparity highlights a digital divide that significantly impacts social equality and inclusiveness, as noted by Huňady et al. (2022).

Digital transformation has a significant influence on local governance, as seen in the case of urban municipalities in Slovenia. The level of digital maturity in these municipalities demonstrates a multifaceted connection between digitalization and the effectiveness of public services. Interestingly, this relationship does not follow a simple pattern based on population size (Debeljak & Dečman, 2022). This underscores the intricate nature of the social impact of digital transformation, which varies depending on regional circumstances and governance frameworks.

The impact of digital transformation on the well-being of individuals and the advancement of society is a complex matter. Although technological advancements provide various advantages, such as enhanced access to information and services, they also present challenges like cybersecurity risks and the potential for greater social disparities. The correlation between technological development and societal welfare requires continuous examination and policy focus to guarantee that the advantages of digital transformation are distributed fairly and in line with broader objectives of social

progress.

3. Research methodology

To comprehensively explore the relationship between the Digital Economy and Society Index (DESI) and the Social Progress Index (SPI), and gain insights into the impact of digital transformation on social well-being, we adopted a methodological approach that incorporates data from both indexes.

Eurostat offers the DESI index, a comprehensive gauge of a nation's digital transformation.

This index takes into account multiple elements, such as internet accessibility, the education and digital proficiency of the populace, the integration of digital technologies, and the provision of online public services. These factors play a crucial role in evaluating the level of digital transformation within a country.

In conducting this study, our focus was on the utilization of the DESI composite index. The analysis of the effect of digital transformation on social well-being involved the examination of two essential elements within the database.

The average score of the European Union (EU) from 2017 to 2022 is captured by the Composite DESI Index. Sourced from the EUROSTAT database, this data offers yearly scores that demonstrate the EU's ongoing digital transformation.

The Social Progress Index (SPI) differs from the DESI in that it specifically examines social and environmental factors. It assesses a society's ability to fulfill the fundamental needs of its people, establish the necessary foundations for individuals and communities to improve and maintain their quality of life, and foster an environment where everyone can maximize their potential. To conduct a thorough analysis, we gathered SPI data for the same time period as the DESI data.

Through the correlation of data obtained from these two indexes, our objective is to uncover patterns and gain valuable insights into the connection between advancements in the digital economy and enhancements in social progress. Our approach entails conducting a comparative analysis of the annual scores derived from both indexes, providing us with the opportunity to delve into the relationship between digital transformation and social well-being within the European Union. Employing this methodology will allow us to ascertain whether there exists a noteworthy correlation between the level of digital transformation, as indicated by the DESI, and the overall social progress and well-being, as measured by the SPI.

4. Results

By initiating the initial phase of our examination, we successfully determined the mean values for the suggested indicators. This pivotal stage has afforded us a more lucid comprehension of the fundamental trends and patterns. The outcomes of this procedure are succinctly displayed in the table presented below, offering a comprehensive summary of the acquired average values (Table 1).

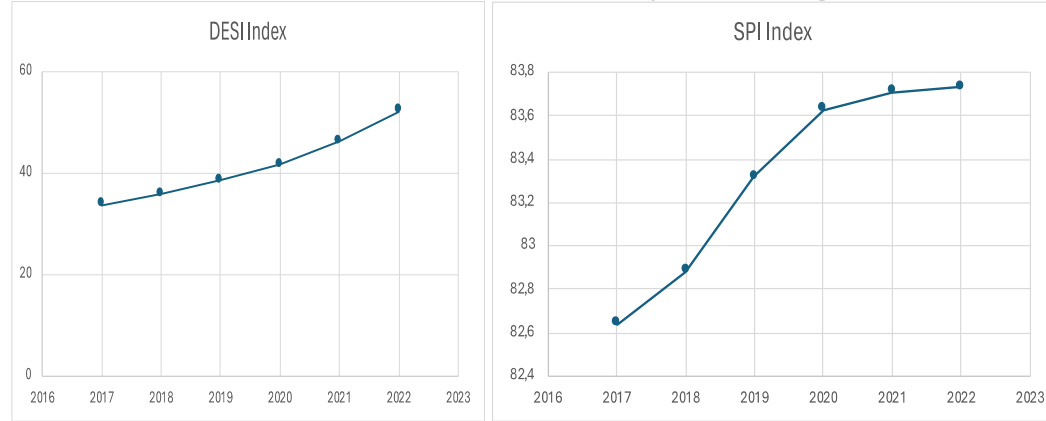
Table no.1. DESI Index and SPI Index average value of European Countries, as %.

Index	Year					
	2017	2018	2019	2020	2021	2022
DESI Index	33,70	35,90	38,60	41,70	46,20	52,30
SPI Index	82,64	82,88	83,32	83,63	83,71	83,73

Source: own processing

Upon analyzing the global social and digital environments, it becomes clear that the countries within the European Union distinguish themselves prominently. These nations exhibit remarkable advancements in social well-being, showcasing their dedication to improving the lives, education, and healthcare of their people.

Figure no. 1. Evolution of DESI Index and SPI Index (% , average value on European Countries)

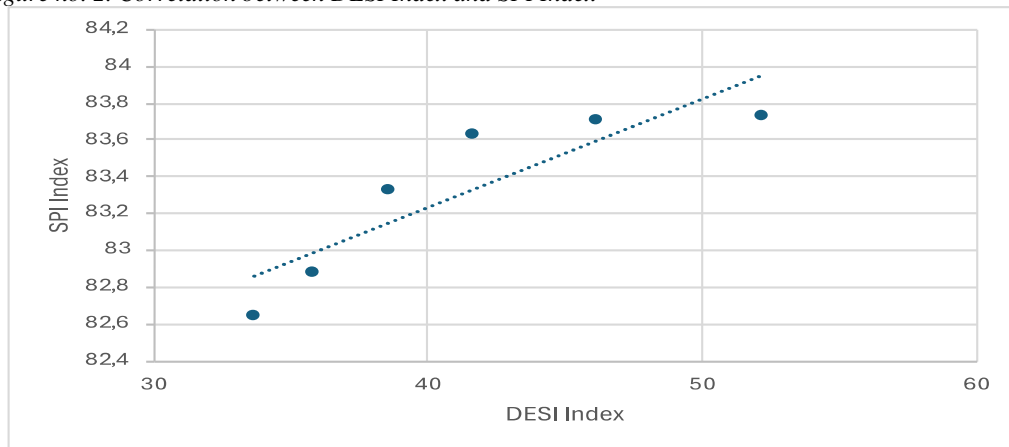


Source: own processing

Furthermore, these countries are actively making substantial progress in the field of digital innovation. This advancement surpasses global benchmarks, underscoring their commitment to digital infrastructure, technology integration, and digital competence. The European Union's comprehensive approach to both social and digital progress establishes its member nations as frontrunners in these critical domains. Therefore, a positive evolution is identified regarding the two analyzed indicators (Figure 1).

In order to quantify the impact of digital transformation on social progress at the EU level, we further used as variables the DESI composite index value and SPI composite index value for the 2017–2022 temporal interval.

Figure no. 2. Correlation between DESI Index and SPI Index



Source: own processing

To summarize, there appears to be a significant correlation between the advancement of digital transformation and social progress, as indicated by Figure 2. It is highly probable that the two are closely intertwined. As evidence of this relationship, the Pearson Correlation Coefficient stands at 0.88.

5. Conclusions and recommendations

To summarize, our examination has uncovered a noteworthy association between the Digital Economy and Society Index (DESI) and the Social Progress Index (SPI). This connection highlights the interconnectedness of digital development and societal advancement. Nevertheless, it is important to recognize the constraints of our study. Specifically, our analysis relied on the average measurements of these indicators, which may not fully encompass the intricate fluctuations and

distinct circumstances of various regions or nations. Consequently, while our discoveries are suggestive of a broad pattern, they may not accurately depict specific instances.

Moving ahead, there are numerous domains that necessitate further exploration. Conducting an intricate examination of every element comprising the SPI has the potential to yield more detailed observations on the interconnectedness between different facets of social progress and the process of digitalization. Moreover, delving into the specific consequences of digitization in sectors like education, healthcare, and governance could shed more light on the ways in which digital transformation impacts social progress. These comprehensive studies would not only enhance our existing knowledge but also provide policymakers with valuable insights to devise more precise and impactful strategies for digital and social advancement.

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Landmarks in A. C. Cuza's Economic Thinking

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Abstract

Alexandru C. Cuza (Iași, November 8, 1857 – Sibiu, November 3, 1947) was a Romanian politician, a university professor and an anti-Semitic scholar. He was the founder of the Romanian national and Christian doctrine. The purpose of this paper is to analyse Cuza's main directions of economic thinking and his contribution to shaping a Romanian national economic doctrine.

Key words: anti-Semitism, nationalism, population, political economy, cuzism

J.E.L. classification: B31

1. Introduction

Known especially for his anti-Semitic ideology and for his political activity, Alexandru Constantin Cuza was born in a family of Moldavian boyars in Iași. His father was ruler Alexandru Ioan Cuza's cousin. He graduated the boarding school whose headmaster was the German pedagogue Anton Frey and then he continued his studies in Dresden and Paris, where he studied law. He had his PhDs in political and administrative sciences, and later in law. He returned to the country, in Iași, and in 1901 he became a professor of political economy at the Faculty of Law and then Dean of the Faculty. He taught this course for more than 20 years, until 1925. After 1944 he moved to Sibiu and lived there until his death, three years later.

Even though A. C. Cuza carried on the ideas of the Romanian nationalistic economists of the 19th century (D. P. Marțian, P. S. Aurelian, B. P. Hașdeu, A. D. Xenopol) who had often had anti-Jews ideas, he is considered to be the greatest representative of the Romanian anti-Semitism. Founder of the of the *National-Christian Defense League* (LANC), Cuza was Corneliu Zelea Codreanu's mentor. Though initially he supported A. C. Cuza, Zeleanu Codrea created his own movement in 1927, known as the *Legion of Archangel Michael* (the *Legionary Movement* or the *Legion*), and later on, in 1930, its paramilitary branch, the Iron Guard.

A. C. Cuza had a political career spanning for more than half a century, plus an intensive involvement in the social life of those times. He was the founder of the *Romanian League against Alcoholism*, the *Romanian University Society* in Iași, and the *Universal Anti-Semitic League*. He was one of the most prominent and active personalities of his time. He had an encyclopaedic mind and remarkable literary talent, and thus had a rich publishing activity which included even poems and epigrams.

As a professor of political economy, he understood well the significant role and the importance of this science. Analysing the agrarian literature in Romania, Gheorghe Ionescu-Sisești considered A. C. Cuza to be "the country's greatest economist" (Ionescu-Sisești, 1913, p. 13).

Among A. C. Cuza's numerous writings, we mention a few: *Generația de la 48 și Era Nouă* (The 1948 Generation and The New Era) (1889); *Meseriașul român* (The Romanian Craftsman) (1890); *Țăranii și clasele dirigente* (The Peasants and the Ruling Classes) (1895); *Monopolul alcoolului* (The Monopoly of Alcohol) (1895); *Lupta împotriva alcoolismului în România* (The Fight Against Alcoholism in Romania) (1897); *Comerț liber sau monopol?* (Free Trade or Monopoly?) (1897); *Despre poporație. Statistica, teoria și politica ei* (On Population. Its Statistics, Theory and Policy) (1897); *Cei doi Spenceri și alte descoperiri ale d-lui N. Basilescu* (The Two Spencers and Other Discoveries of Mr N. Basilescu's) (1900); *Plagiatul populației. O calomnie "more iudaico"* (Plagiarism on Population. A "more iudaico" Slander) (1911); *Naționalitatea în*

artă (Nationality in Art) (1905) *Însemnări de viață și documente omenești* (Notes about Life and Human Documents) (2011).

2. Theoretical background

A. C. Cuza was a controversial political character. He was often ignored or contested from the scientific point of view. The studies on his writings were way too numerous. Among the most relevant ones we can mention the following: Dimitrie Pascu – *A. C. Cuza economist și doctrinar al naționalismului* (A. C. Cuza – Economist and Doctrinarian of Nationalism) (1937); Pamfil Șeicaru *Un junimist antisemit: A. C. Cuza* (An anti-Semitic Representative of Junimea: A. C. Cuza) (1956). Among the more recent papers the most important ones are those written by Gabriel Asandului – *A. C. Cuza. Politică și cultură* (A. C. Cuza. Politics and Culture) (2007) (the same author also wrote a vast and well documented introductory study to the volume titled *A. C. Cuza Alte scrieri* (A. C. Cuza. Other Writings) (2012) and Horia Bozdoghină *Antisemitismul lui A. C. Cuza în politica românească* (A. C. Cuza's Anti-Semitism in the Romanian Politics) (2012). Two meaningful portrayals of Cuza's personality belong to Alexandru Topliceanu (*Portrete – Portraits*), (1935) and Petre I. Gheață (*Oameni și fapte – Men and Deeds*) (1938).

Among the papers that challenge the originality of Cuza's writings and harshly criticize his anti-Semitism, we have to mention *O rușine universitară. Plagiatul domnului A. C. Cuza* (A Disgrace for the University. Mr A. C. Cuza's Plagiarism) (Emanuel Socor, 1923) and the chapter titled *A. C. Cuza, evreii și lupta împotriva lui Satan* (A. C. Cuza, the Jews and the Fight against Satan) from the book titled *Elita culturală și discursul antisemit interbelic* (The Cultural Elite and the Inter-War anti-Semitic Discourse) (Alexandru Florian, Ana Bărbulescu - 2022).

3. Research methodology

Before writing this paper, we have carried out extensive reading of specialized bibliographical resources pertaining to the author in question. We have closely observed how different writers presented and interpreted the essential aspects he dealt with in his writings. Using the method of descriptive research, we have focused our attention on Cuza's main economic ideas. We confronted them with the economic realities that generated them and compared them to other existing theories, thus finding out what makes them different.

4. Findings

4.1. The Epistemological Issue: the Definition and the Object of the Economic Science

A. C. Cuza pointed out the importance of studying political economy based on the principle *Non scholae sed vitae discimus* (We do not learn for school only, but also for life). (Cuza, 1929, p. 690), the final aim being to use the acquired knowledge to solve "the issues of the Romanian people's development" (Cuza, 1930, p. 581). Nevertheless, he was well aware of the fact that it can take centuries to educate a people since education is given within the family and increases with every generation, just like its wealth" (Cuza, 1939, p. 229)

In his 1901 study titled *Obiectul economiei politice* (The Object of Political Economy) (which was actually the introductory part of his political economy course), A. C. Cuza dealt with the definition of political economy and with setting the object of study of this science. Recalling Hugo Eisenhart's opinion that political economy is "an enigmatic and a sinister science", Cuza considered the economic science to be "a complex of doctrines of different economic schools" and not "a system of truths that apply to everybody" (Cuza, 1930, p. 624)

The study is divided into five parts and each starts with a significant quote from a renowned author: Charles Gide, Etienne Bonnot de Condillac, Arthur Schopenhauer, Francis Bacon, and Ioan Strat. Given the lack of a precise definition of political economy – which had been pointed out by prestigious authors such as Carl Menger or Leon Walras, Cuza noticed that there were many approaches to formulating its object of study (at least 14 in his opinion), that he enumerated in the second part of his study: wealth (Jean-Baptiste Say); the laws that govern national development and

the economic life of nations (Wilhem Roscher); national economy as a complex of economic phenomena (Adolph Wagner); the power of the peoples' economy, the directions it follows, the laws of action and the conditions for their success (Hans von Mangoldt); the manifestation of the economic principle within the human society (Albert Eberhard, Fridrich Schaffe); the laws that govern the conditioning of the human population through its sustenance means (Karl Umpfenbach); the general laws that determine the human efforts to produce and use goods (Paul-Leroy Beaulieu); the laws of utility applied to social work (Paul Cauwes); the natural laws that govern the phenomena regarding wealth (Edmond Villey); the religious, moral, political, civic, and commercial laws that favour more labour productivity (Emile de Laveyle); human activity analysed from the perspective of the general wellbeing (Luigi Cossa); the laws that govern the relations of the natural agents used by individuals who are freelancers (Yves Guyot); value (John Ramsay McCulloch); the social relations between individuals which tend to insure the needs and to enhance the skills (Charles Gide).

This complex panorama of different angles to approach the object of study of the economic science shows that Cuza understood the differences regarding the philosophy that is the basis of interpreting the object of study, the differences in opinion regarding the purpose of the economic science.

Further on, in the third part of the study, Cuza established the conditions that a rigorous definition of the economic science had to meet:

- to precisely state the object of study, respectively "the phenomena which are tied together by a common feature";
- to use clear concepts ("known terms" that do not require definitions for themselves);
- to delimitate political economy from other sciences ("drawing boundaries").

In his paper *Despre populație* (On Population), Cuza stated that life was a "process of taking in and putting out matter" (op. cit., p. 602). Organic losses are shaped as needs in the individuals' conscience, which are satisfied through "means of existence". Given the "self-preserving instinct", their acquisition represents the "supreme concern of all human beings and first and foremost determines their entire activity" (op. cit., p. 603). But satisfying needs does not depend solely on each individual's activity and "benevolence", but also on the state of the other "social classes": "the state of the individual is conditioned by the state of the population within which the individual lives" (op. cit., p. 607).

Thus, Cuza concluded and gave his own definition of political economy: "it is the science that determines the laws and factors that rule the human population in relation with its means of existence" (op. cit., p. 608-609). Being limited by its means of existence, the population constantly seeks to perfect its features and its institutions "adopting new theories and fighting the rival populations". (Cuza, 2012, p. 99)

Cuza believed that the year 1803 was a turning point for the debates on the definition of the object of study of political economy. It was the year when the paradigm changed: up till then the emphasis had been on *population* (Giovanni Botero, Antoine de Montcretien, Johann Joachim Becher, Richard Cantillon, Marquise of Mirabeau, Francois Quesnay, Jacques Steuart, Adam Smith). Once Jean-Baptiste Say's *Treaty of Political Economy* was published that year, there was a major change (a catastrophic error in Cuza's view) since the focus shifted on *wealth*. Later on, Say revised his stand, and, in 1828, he defined political economy as "social economy" since "it was the economy of the society. Political societies that are called nations are living entities just like the human body. They live only through the parts they are made of [...]" (Cuza, 1929, p. 671-672).

In Romania, this epistemological error translated into a systematization of political economy (production, distribution, trade, consumption), even though the importance of the population issue had already been emphasised by authors such as Dimitrie Cantemir, Nicolae Șuțu, Ion Ghica, Dionisie Pop Marțian or Ioan Strat.

In the last part of the study, Cuza looked into Romania's economic downfall (in comparison to Belgium or Bavaria) and identified "the degradation of the Romanian people" as its cause: in the countryside the population lived in poor conditions, "governed by an always improvised administration that changed according to ever changing politics, and by ruthless landholders, and by greedy pub owners", eaten by illnesses and epidemics; in towns, trade and industry were dominated by foreigners, while the middle class de-nationalised itself as the economic and political

supremacy was taken over by "non-assimilable foreigners" (Cuza, 1930, p. 623).

Ioan Strat also spoke about the "splendid results" of studying and applying the principles of political economy upon "our culture and our national strengthening". Political economy satisfies personal interests through the general ones, it studies human relations from a social perspective and therefore develops the sense of solidarity, added Cuza. (Cuza, 1939, p. 283)

4.2. The Population Issue

Cuza's theoretical attempt to place the population issue at the core of his economic analysis started from a practical consideration, that is from explaining the decrease in the Romanian population and from establishing some measures to reverse it. Based on the idea that "it is more important to understand than to know" (op. cit., 1939, p. 229), A. C. Cuza carried out vast statistical research and discovered an alarming tendency, especially in Moldavia: the decrease of the Romanian population and the increase of the Jewish population; thus, the author became convinced that the Romanian people was threatened by extinction (Cuza, 2012, p. 25). His analysis based on statistical data is backed by an analysis of the theories on population which Cuza divided into three categories: those of Malthus's predecessors, those of his followers' and those of his opponents'.

In chapter XVII suggestively titled *Critical analysis* of his capital work *On Population*, Cuza wrote that Malthus had made three fundamental errors (op. cit., p. 91):

- He had expressed a content of correct ideas in the wrong form;
- He had enunciated an economic theory which contradicted reality;
- He had come up with some wrong practical conclusions (solutions).

Cuza challenged Malthus's famous statement – population increased in a geometrical progression, while food resources only increased in an arithmetic progression – saying that on the one hand, the new discoveries together with the scientific and technical progress could augment the quantity of the available means of subsistence by intensively exploiting the land, and, on the other hand, that new pieces of land could be used for farming (Cuza, 1929, p. 378).

Cuza rejected Malthus's solution as well (practicing moral restraint, so that families would only have children when they were able to properly take care of them), based on an ethical and social equity argument (it is unfair that moral restraint be only for the working class), as well as on some practical arguments: the variations of the economic activity, which made it impossible to correctly anticipate the standard of living that would allow the number of children in a family to increase; the labourers' migration from one area to another or from one country to another; the generalization of mechanism; the increase of the capital accumulation which compensated the lower number of workers (just as Karl Marx had noticed) (op. cit., p. 382-383).

Basically, Cuza's theory on population is like a theoretical puzzle that logically combines Malthus's theory on population, Darwin's theory of the survival of the fittest ("applied to social groups, not to individuals"), Georg Hansen's theory on the evolution of the population, and Marx's theory of class struggle. In short, the fight for survival among social classes results in the victory of the landowners and of the townspeople (who get rich) and the loss of the rural and working classes (who get poor) (Cuza, 2012, p. 101)

In time, it is only the rural class that maintained its vigour (because it was only the fields that generated an excess of food that made it possible for natality to increase), but a part of it would migrate to town and there they would work for little money in fields of activity that required minimum training. Those who were successful advanced towards the middle class (traders, industrialists) and then, their third generation advanced towards the class of freelancers (who had complete studies), and only a few of them were to join the ruling class.

At the same time, the ruling class "could not support themselves on their own", given the excessive specialization, the unilateral development of the intellectual characteristics and overpopulation, so that the downfall of the noble families was doubled by the rising of the "nouveau rich". (Cuza, 1929, p. 447)

As far as practical solutions were concerned, Cuza was adamant: first of all, any demographic policy was supposed to be aimed at "widening the development limits" of the population and not at increasing it through direct measures. This statement defines the author as a liberal theoretician

since he pleaded for not intervening in the natural course of things: population "cannot be stopped from migrating and settling new territories" (Cuza, 2012, p. 107-108)

In the field of political philosophy, as an active politician for several centuries, Cuza regarded democracy just as a stage (equal fighting conditions for individuals) towards "aristocracy", seen as the most suitable form of governing since "the best would govern" (Cuza, 1939, p. 264)

Secondly, the factors that determine the quality of the means of subsistence available at a certain point are to be identified. Then, the economic policies must be directed to stimulate those that favour the quantity and quality of these means of subsistence and to mitigate and correct the factors that slow down the development of the population. Thus, Cuza identified eight such factors: characteristics of the population; land productivity and the land-owning system; climate; size of the territory; physical and moral health of the population; the way public interests are administered (governing); social organization; relationships among different populations.

Thirdly, any population has to be stimulated to assert its own identity. Nationality in Cuza's view was the "genius of the peoples" (op. cit., p. 257) and religious identity. Also, any nation had to be stimulated to assert its "warrior spirit" when fighting other populations. The real process of becoming a civilized nation for a people involves "inner transformation and not borrowing foreign forms" (op. cit., p. 255). The progress of a people means first of all perfecting its characteristics, and then its institutions.

Fourthly, "each population has to keep its territory for itself, and firmly exclude foreigners, who will not be assimilated". So, Cuza said that the nationalist policy was the only natural policy. Nationality means that the territory is the material basis of its culture, and this can only exclusively belong to one nation since "territory is limited as size, and culture is limited as right and as tendency to breed" (op. cit., p. 260).

Cuza's anti-Semitism has a nationalistic and economic basis: in his opinion the Jews had seized the economic positions, had destroyed the middle class and had corrupted the institutions of the state (the politics, the administration and the justice of the country). The very essence of the Romanian people was therefore threatened. The author considered it was logical that "who rules the economy of the country will also rule its politics", and in Romania of his times the Jews ruled the economy without having political rights, while Romanians decided in politics without dominating the economy. (Cuza, 2012, p. 91) For this very reason (the existence of an illogical state of facts that would generate imminent danger) the Jewish issue was in Cuza's view "just an economic issue" (op. cit., p. XV) which could be solved by applying the *numerus clausus* principle (limited or closed number) – a phrase that refers to the discriminatory limiting of the number of Jewish students / the limiting of the access of a category of people to a position, a rank or a profession, by virtue of a law or of a regulation (***, 2000, p. 1693) - or even by excluding the Jews from the Romanian territory (Cuza considered them to be a "degenerated" race whose activities were destructive for the nations amid which they lived).

For Cuza, the rural class was the basis and the reason to be for the other classes and it gave "a people the right to be" (Cuza, 2012, p. 110). The state is meant to support the rural class to "eliminate" the foreign elements that infiltrate "a people of ploughmen" as intermediaries, "parasites that speculate positive labour, seize the positions of the middle class, get rich and aim to go higher and be part of the ruling class" (op. cit. p. 111).

The doctrinarian connotations of his writing *Despre poporatie* (On Population) make the author consider it not only a study on population, but also an introductory study to the science of economics, which has as its axis the shift from wealth to population as the central point of the economic analysis. (op. cit., p. 32). Moreover, Cuza admitted that his intention was to "help spreading the knowledge of political economy, which were so outdated in our country". (op. cit., p. 33)

The importance of his writing consists in the clarity and quality of his theoretical approach:

- He clarified Malthus's theory;
- He established sound principles of political economy;
- He enunciated a new definition of the economic science which is the ground for the new systematization;
- He was the author of the first original monography of economic theory of the Romanian scientific literature. (op. cit., p. 56).

5. Conclusions

As he stated in the foreword of the second edition of his *Despre populație* (On Population) there were two major interconnected aims he had in his lifelong theoretical research: to enunciate a new law of the population and to find a new definition of political economy.

Population has the constant tendency to go beyond "the ultimate limit of its possible development", always in relation to the quantity of the means of subsistence that it can procure and that it is used to live on.

Political economy is the science of the laws and factors that determine the human population in relation to the means of subsistence and aims at "knowing and wisely ruling the economy of the nations" (Cuza, 1929, p. VIII). Based on this definition, there are three groups of disciplines that make up the system of the economic sciences: general political economy, national political economy, and international political economy, and each group can be theoretically, historically and practically analysed (political economy).

In key with the ideas of the Italian corporatism and those of the German nationalist socialism, Cuza's doctrine is a significant essential economic component for the Romanian economic thinking, both through its theoretical originality and through the clarity of the political economy solutions it offered.

Cuza had the "supreme" merit of having enunciated a "rigorous nationalist doctrine", in Ion Petrovici's view. (Petrovici, 1943, p. 91)

Even though he appreciated the arguments of Cuza's analysis on the negative influence of the Jews on the Romanian economic and social environment of those times, A. D. Xenopol was less straightforward about the solution he proposed for solving this delicate situation: individual naturalization of the Jews that would eventually lead to them being completely assimilated. (Xenopol, 1999, p. 287-288 and p. 303)

Cuza's anti-Semitism had nothing to do with the German racism. (Șeicaru, 1956, p. 17). Being well aware of the fact that he was considered a representative personality among the politicians with strong anti-Semitic ideas, A. C. Cuza ironically and rhetorically asked: "Are there thorough-bred animals and are there thorough-bred people as well?"

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Ion Ionescu de la Brad's Economic and Social Thinking

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Abstract

Ion Ionescu de la Brad (Roman, June 24 / July 6, 1818 – Brad, December 16/28, 1891) was an agronomist, the founder of the Romanian agronomic education, an 1848 revolutionary, the most important Romanian agricultural economist of the 19th century. Our paper aims at emphasizing the national and original character of his economic thinking, as well as the theoretical and ideological basis of the solutions he suggested for solving the agrarian problem.

Key words: agriculture, property, theory of value, labour, economic liberalism

J.E.L. classification: B31

1. Introduction

Ion Ionescu, who later took the name Ion Ionescu de la Brad, went to high school in Iași and then he studied at *Academia Mihăileană*, where he had Ion Ghica as his professor of political economy. He went to France to study agricultural science. When he got back in the country, he began teaching the first courses of agriscience (agricultural science) at *Academia Mihăileană* in Iași in 1842. Alongside Bălcescu he was actively involved in the 1848 Revolution and led the committee of deputies appointed to make the peasants owners of the land, committee which was made up of representatives of the peasants and of the boyars. When the Revolution was repressed, he left the country and lived in Turkey until 1856. Upon returning to Moldavia, he held different public positions, and, in 1859, ruler A. I. Cuza put him in charge of organizing the statistics system of the country. Gheorghe Ionescu-Sisești rightfully called him "Romania's first statistician". (Ionescu-Sisești, 1966, p. 553)

Even though he came to disagree with A. I. Cuza (he even went to prison!), together with Mihail Kogălniceanu, he appointed him general inspector for agriculture, in charge of putting the 1864 agrarian reform into practice. He was displeased with the measures taken by the government and the abuse generated by enforcing them, and he focused his activity especially on practical agriculture. He organized agricultural exhibitions and contests of agricultural vehicles, he established institutions meant to aid the progress of agriculture (nursery gardens in Giurgiu, Brăila, Iași), national breeding centres and animal farms.

In 1869 he settled in Brad, where he opened *Școala particulară de agricultură* (The Private School of Agriculture) on a model farm ("agricultural orphanage" as he called it), which initially enrolled orphan children. They were raised and educated in "families" with rural households, and that makes us consider Ion Ionescu de la Brad a predecessor of social welfare in Romania. (Stahl, 2001, p. 168)

The Romanian agronomist introduced new plants and varieties of plants and cultivated them on a surface of 140 hectares. He made experiments and rehabilitation calculations and drew lessons for the scientific progress of the agribusiness. At the same time, as a deputy, he was concerned with organizing the agricultural credit for peasants by establishing rural banks (credit cooperatives).

In 1871 he was elected as a corresponding member of the *Societatea Academică Română* (Romanian Academic Society which later became *Academia Română* (the Romanian Academy) "for the beautiful writing activity and for his merits in directing the Romanian agriculture" (Malinschi, 1990, p. 67)

He had excellent knowledge of economics (in Paris he had attended courses taught by Jerome-Adolphe Blanqui, Louis Wolowski and Pellegrino Rossi) and was familiar with the European

economic literature, and he tried to apply the economic theories to the Romanian reality in order to base the 1848 revolutionary economic program on them.

His scientific work, which included 42 books and more than 200 articles (Vasiliu, 1967, p. 215), is a significant contribution to the history of economic thought and social and political thinking in Romania: *Excursion Agricole dans la plaine de Dobroudja* (Agricultural Trip to the Plain of Dobruja) (1850); *De la Thessalie Agricole* (On Agricultural Thessalie) (1851); *Calendar pentru bunul cultivator* (Calendar for the Good Cultivator) (1861); *Agricultura română din județul Dorohoi* (The Romanian Agriculture of Dorohoi County) (1866); *Agricultura română din județul Mehedinți* (The Romanian Agriculture of Mehedinți County) (1868); *Agricultura română din județul Putna* (The Romanian Agriculture of Putna County) (1869); *Creditul ruralu* (Rural Credit) (1876); *Creditul* (Credit) (1880); *Agricultura română de la Bradu* (The Romanian Agriculture of Bradu) (1886).

2. Theoretical background

Ion Ionescu de la Brad's tumultuous life and extensive work have interested many authors (economists, agronomists, historians, sociologists, ethnographers, statisticians, etc.) who wrote many papers on them. The most representative biography is the one written by Gh. Bogdan-Duică, *Viața și opera întâiului țăranist român Ion Ionescu de la Brad* (1818-1891) (The Life and Work of the First Romanian Peasantist Ion Ionescu de la Brad) (1818-1891) (1922), but the one written by Amilcar Vasiliu (*Ion Ionescu de la Brad*, 1967) is also remarkable.

Among the most notable studies, we mention those written by Gh. Ionescu-Sisești (*Viața și opera lui Ion Ionescu de la Brad* (The Life and Work of Ion Ionescu de la Brad) (1942) and *Agronomul Ion Ionescu de la Brad* (Ion Ionescu de la Brad, the agronomist) (1955), V. Slăvescu (*Ion Ionescu de la Brad. Profesor de economie politică* (Ion Ionescu de la Brad. Professor of Political Economy) (1859) (Slăvescu also wrote a remarkable foreword for the book he published under the title *Correspondența între Ion Ionescu de la Brad și Ion Ghica* (Correspondence Between Ion Ionescu de la Brad and Ion Ghica (1846-1874), G. Mladenatz (*Ion Ionescu de la Brad și cooperarea* (Ion Ionescu de la Brad and Cooperation) (1941), I. Răducanu (*Ion Ionescu de la Brad – economistul* (Ion Ionescu de la Brad – The Economist) (1941) and Gh. Zane. Academy member V. Malinschi dedicated a special chapter to Ionescu de la Brad in his volume *Economiștii la Academia Română. Evocări și restituiri*, vol. I (The Economists at the Romanian Academy. Evocations and Restitutions, Volume I) (1990)

To honour the memory of the great economist and agronomist, two ample volumes of studies were published. The first one, *Ion Ionescu de la Brad. Aniversarea a 150 de ani de la naștere* (Ion Ionescu de la Brad. The 150th Anniversary of His Birth) (1968), includes 32 studies, and the second, *In memoriam Ion Ionescu de la Brad* (1818-1891) (1971) includes 21 studies. Some of their authors are brilliant interpreters of the history of economic thought, such as V. Nechita, M. Todosia or V. Malinschi. Among the most prominent studies are those written by Simion I. Pop *Concepția social-economică și politică a lui Ion Ionescu de la Brad* (Ion Ionescu de la Brad's Social, Economic and Political Views), in the volume titled *Din gândirea economică progresistă românească* (From the Romanian Progressist Economic Thought), published in 1968 and coordinated by N. Ivanciu) and by Academy member Iulian Văcărel *Ion Ionescu de la Brad – Viața și opera* (Ion Ionescu de la Brad – His Life and Work), in the volume titled *Studii de istoria gândirii și practicii economico-financiare* (Studies of the History of Economic and Financial Thought and Practice), published under the aegis of the Romanian Academy in 2008.

3. Research methodology

The research methodology consisted of extensive research of the specialized bibliography. The starting point were the studies written by Ion Ionescu de la Brad from which we have extracted the essential aspects of his economic ideology. This paper is a descriptive study of the solutions proposed by Ion Ionescu de la Brad for the development of the country. Our investigation looked into primary and secondary sources and used analysis, synthesis and the comparative method.

4. Findings

Ion Ionescu de la Brad tackled numerous theoretical economic issues that also had practical meaning: the theory of value, the issue of distribution, the problem of the land property and of the agrarian reform, the issue of economic development.

In his view, the greatest and the most important source of prosperity and of wellbeing is labour, physical and intellectual: "Through labour man has always earned his wealth" (** 1960, p. 151)

As a theoretical economist, he was the first to include in his writings the objective theory of value according to which the originary price of things is in human labour (only labour creates value and makes property legitim). He used this theory to support the right of the peasantry to own land (doubled by the right to receive indemnification for those whose land was taken away). From this perspective, as a fighter for the rights of the peasants, Ion Ionescu de la Brad was a "radical liberal", unlike Ion Ghica who was a "moderate liberal", who fought for creating the necessary conditions for the development of the bourgeoisie. (Zane, 1980, p. 111-112). The issue of indemnification, the key point of the agrarian reform, was tricky and delicate at the same time: indemnification had to be given either for the land given to feudal peasants who had to do corvee on the landlord's estate, or for the loss of certain income for the landlords (or for both reasons). Ion Ionescu de la Brad firmly rejected replacing the corvee (in Romanian claca / boieresc) with free bargaining: "No matter how compulsory and unfair a law might be, it is still better than anarchy, confusion and unrestricted and absolutely free use of bargaining". (** 1960, p. 162)

Implementing social justice essentially meant buying back corvee and not replacing it with a bargain between the landlord and the peasant since it meant starting from an unjust inequity between the two social classes. Ion Ionescu de la Brad analysed the current situation in Moldavia's agriculture and noticed the shortcomings of the agrarian reform, which exposed the peasants without means to poverty by making them pay extremely high "bargained" interests. "Escaping the slavery of the land they ended up slaves to money" – "the villagers escaped the devil only to come across his father", as he put it. (op. cit., p. 187) In the spirit of social equity, given his theoretical training and his liberal economic ideology, he came up with a solution: "Just as the peasant had become owners against slavery through land, an institution of rural credit had to be created against slavery through money!" (op. cit., p. 190)

Ion Ionescu de la Brad emphasised the indissoluble connection between the economic, the social and the national issues. He proved beyond doubt, with unbeatable arguments, that the economic development of the country can only take place through the intensive and comprehensive progress of agriculture, as the peasants became emancipated by becoming owners of the land (indemnifying the boyars by all means!) and as the non-agricultural branches developed, especially industry (the word that Ion Ionescu de la Brad used for industry was manufacture).

Ion Ionescu de la Brad presented his view on the solution for the agrarian problem in his study *Sistemul de despăgubire a împrăștiatarii țăranilor ieșit în 1848* (The System of Indemnification for the Peasants Becoming Owners of the Land Issued in 1848) (1859). The exceptional importance of the agrarian program of the revolution results from its requests. In a synthetical manner we mention the most important ones: (op.cit., p. 155-159):

- Freedom of labour: the feudal peasant was to emancipate themselves and to have the right to work; "ownership of the peasant's labour is just as sacred as land ownership is", Ion Ionescu de la Brad wrote (Cornea, Zamfir, 1968, p. 143);
- Guaranteeing ownership of the land – the motto "respect for the property, respect for the family" suggestively encompasses the economic and social basis of the revolution (op. cit., p. 141);
- Abolishing the "imposed connection between labour and land", between peasants and land owners and enforcing "the principle of bargaining";
- Making the peasant the owner of a minimum piece of land that would ensure their subsistence;
- Indemnifying the owners who would lose land for missing out on the corvee (the labour the peasant had to do for the landlord's benefit);

- Maintaining the "large estates", making the peasants work other lands in order to get more than their subsistence ("the large English estate for the boyars, the small French or Flemish estate for the peasants");
- Limited number of inhabitants to settle on each estate (in accordance with its surface), and only two thirds of the estate to be given to the peasants;
- Settling the uninhabited estates in the plain area;
- Setting the price of the land by experts in accordance with its quality and establishing a common property;
- Setting up a ministry of agriculture to represent the interests of the boyar landlords and of the peasants that was to organize the agricultural activity (agricultural societies, inspectors, agricultural engineers, model farms, primary education);
- Moving from an agricultural activity based on regulations to an agricultural activity based on constitutional provisions.

5. Conclusions

Given his constant preoccupation for comprehending the economic and social reality of his times, Ion Ionescu de la Brad's writings are a valuable source of data for economists, historians, and sociologists, some of them considering him the "founder of the Romanian monographic research" (Constantinescu, Bădina, Gall, 1974, p. 33).

The central issue of his entire scientific work, as well as his practical activity, was his preoccupation for the emancipation of the peasants, and the economic solution that he put forward was the creation of the small peasant property and the organization of a scientific agriculture. Ion Ionescu de la Brad has a prominent place in the Romanian economic thought, especially for his contribution to solving the agrarian problem and for promoting cooperatist ideas. (** 1943, p. 4)

As a consequence, most of the references to his economic and political views were made by strictly placing them within the "agrarian" current of economic thought promoted by the representatives of the landlords and commercial bourgeoisie: Alexandru Moruzzi, Petre Carp, Ion Brătianu, Lascăr Catargiu and many others.

By his education and his views, alongside Nicolae Șuțu, Ion Ghica, Alexandru D. Moruzzi and Ioan Strat, Ion Ionescu de la Brad was a representative of the French and English economic liberalism (the classical economic liberalism). He did not borrow the entire theoretical liberal corpus and did not generalize it. He had a rather nuanced position regarding the opportunity of a free trade policy for Romania; there are certain views (unjustified in our opinion) according to which he did not notice the necessity for Romania to develop its industry (Gh. Zane) (** 1960, p. 150)

Even though he formally is not part of the "industrialist" current of Romanian economic thought (like Dionisie Pop Marțian, A. D. Xenopol, Bogdan Petriceicu Hașdeu, Gheorghe Barițiu), Ion Ionescu de la Brad surely understood the essential role of technical progress in the economic development in general and in the development of agriculture in special. In his opinion, the general use of perfected tools in agriculture is a necessity and he precisely identified its effect on labour productivity: "a single man could weed out in one day as much as twenty" (** 1954 p. 276)

Ion Ionescu de la Brad adopted fundamental values of the classical economic liberalism (the freedom of the individual, the respect for property) of individualistic orientation, but in his way of thinking there was also another nuanced difference in relation to it: he believed that public, national interest had to be above the individual interest. For example, when expressing some pertinent observations regarding the situation of the flax manufacturing in Romania, he knew that our country, given its geographical position, met the necessary conditions "to produce more, better and cheaper". The interest of the large European countries for the industry associated with this plant made Romania the meeting point of the German monopoly and the British interests. Under these circumstances, Ion Ionescu de la Brad was a visionary patriot when he said that the Romanian cultivators' individual interests had to be in accordance with the public and national interests of the country. (Cornea, Zamfir, 1968, p. 137-138)

Ion Ionescu de la Brad's love for the peasants and for agriculture made him solemnly ask: "I ask you to free the peasants from the slavery of money and arrogance, just as Cuza Vodă freed them from the slavery of land [...]". (***) 1960, p. 193) But things were such that Ion Ionescu de la Brad did not see his dream come true...

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Energy Efficiency Financing, an Opportunity to Reduce Energy Poverty in the South-East Region of Romania

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Abstract

Increasingly pressing aspects of the energy transition underline the recurring question about a measure of equity in this process, referring to individuals and communities. The European countries' strategies to address energy poverty include energy efficiency policies, which, however, require significant funding support. We propose, therefore, to carry out a study on how the European funding from the 2014-2020 programming period for energy efficiency was accessed in the South-Eastern region of Romania. The research methods used are case study and comparative analysis. We used the open data published by the management authorities for the operational programs in Romania and those of the European Commission. The results reveal the imbalance between the urban and the rural environment in terms of accessing non-reimbursable financing for energy efficiency. The conclusions of this study could be used in order to support local authorities to enhance their capacity to access financing in the period 2021-2027 as well.

Key words: energy efficiency, energy poverty, energy transition, cohesion policy, sustainable development

J.E.L. classification: A14, D63, D78, F36, F63, F68, G28, I38, P18, R11

1. Introduction

The energy transition is a central topic of discussion in the context of climate changes accentuated from year to year by extreme natural phenomena. To all these concerns, the important economic challenges brought by the conflict in Ukraine are added. It has emphasized the EU's policies to reduce dependence on a main supplier and to increase investments for alternative solutions in the provision of energy. Beyond strategies and plans, the experiences of implementing energy policies in the last decades in Europe highlighted important costs and differentiated capacities of implementation for the Member States and worldwide.

The costs of switching to low-carbon energy determine the existence of a high segment of the population affected by energy poverty, especially in rural areas. In order to support its standard of living, European strategies speak of policy mixes, which combine social and economic measures, including those related to energy efficiency of public buildings and private homes.

The latest statistics show, in 2022, a steep increase in the percentage of citizens throughout the EU who could not heat their homes at a reasonable level, a ratio of 9,3%, i.e. more than 40 million Europeans (Commission Recommendation (EU) 2023/2407). In Romania, the percentage exceeded 21%, and about 75% of households affected by energy poverty are in rural areas (ORSE, 2023). The financial measures in the European area consisted of granting state aid to pay part of the energy bill or capping prices. But these have short-term effects and do not solve the situation sustainably. That is why one of the big problems of reducing energy poverty is the wrong orientation of the measures (Commission Recommendation (EU) 2023/2407; ORSE, 2023).

In this article, we have carried out a case study on the South-East region of Romania regarding the use of non-reimbursable funds dedicated to energy efficiency in the 2014-2020 programming period, that will end on December 31, 2023. Our working hypothesis is that there is a significant difference between the capabilities of attracting these financings in rural areas compared to urban areas of the South-East region, similar to the situation throughout Romania. Our study aims to emphasize the idea that mixed government policies should more closely monitor the needs of local authorities in rural areas, which require more social and economic support to tackle energy poverty through energy efficiency measures.

2. Literature review

Scholars' opinions converge on the fact that actions for energy efficiency are part of the category of structural measures, which address energy poverty in the long term from the perspective of its causes (Boemi, S.-N. et al, 2019, pp. 242; Gouveia, J.P. et al, 2019, pp. 187; Atanasiu, B. Et al, 2014, p. 58), which, in the following years, will positively impact the reduction of member states' dependence on energy imports (Hursthouse, F. et al, 2022).

Some authors argue that energy vulnerability is associated less with low income and more with the quality of construction and the low level of financial education of individuals (Pereira, D. S. et al, 2023, p. 173), and others consider that policies are very important of awareness towards a behavioral change of consumers (Streimikiene, D. et al, 2020, p. 3389; Conforto, G. et al, 2022). In fact, we are talking about the need for a mix of social and economic policies (EPAH, 2023; Bessa, S. et al., 2022; Bouzarovski, S. et al, 2016, p. 310; Thomson, H. et al, 2017, p. 879), so as to reduce the discrepancy between more developed and vulnerable areas in terms of the ability to implement financing opportunities (Henriques, C. et al, 2022, p. 5317; Economidou, M. Et al, 2020, p. 225).

In Romania, the percentage of thermal rehabilitation of buildings is still very low, being 3% for residential spaces in rural areas (Murafa, C. 2023) and 5% of apartments in blocks of flats (The Government of Romania, 2022). In view of fulfilling the obligation of Member States to review their national energy and climate plans by June 2024 based on European guidelines (Directive (UE) 2023/1791; European Council, Council of the European Union, 2023, The European Commission, 2022), Romania has the chance to achieve energy savings in the residential and public sector with the opportunity of financing within 2021-2027.

3. Research methodology

For this paper, we used the case study and the comparative analysis. The data relating specifically to the counties in the South-East development region of Romania are those communicated by the government through the *MySMIS 2014* reports (MIPE, 2023). In this sense, the "*Open data - list of operations*" platform was accessed, respectively the database with the projects contracted on Operational Programs for 2014-2020 programming period. First, the Thematic Objective "*Supporting the transition to a low-carbon economy in all sectors*" was selected in the database. Second, filters were successively applied on the following Theme Details (TD) criteria: 013 "*Energy efficiency renovation of public infrastructure*", 014 "*Energy efficiency renovation of housing stock*" and 068 "*Energy efficiency & projects in SMEs*". Further, within each TD, localities from the 6 counties that are part of the South-East development region of Romania were selected. Then, the data related to the localities in the *urban* environment and those in the *rural* environment were differentiated and the sum of the number of implemented projects was calculated. As for the financial aspects of the projects, the *Total Eligible Expenditures* and *EU Contribution* columns were taken into account from the database, the amounts being calculated in RON currency.

Also, the information available on the Cohesion Policy implementation progress reporting platform (European Commission, 2023a) was accessed for the data related to the member states of the European Union, the 2014-2020 programming period being selected. The databases were successively filtered by TD 013, 014 and 068, and then the information reported for each country was analyzed.

4. Findings

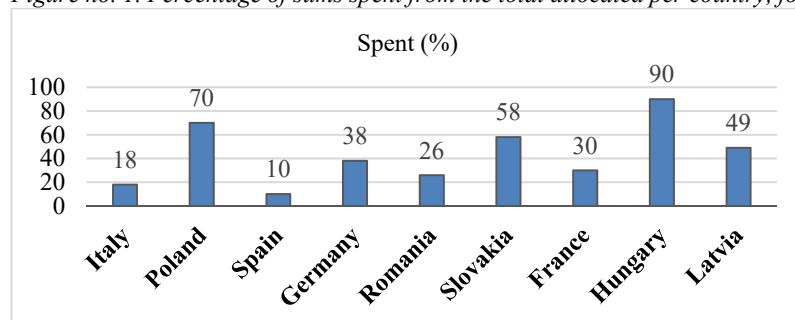
4.1. Financial allocations for energy efficiency within the Cohesion Policy in 2014-2020/2023

Concerns for the energy security include the affordability of energy costs, whether we are talking about the budgets of organizations, but especially whether we are referring to citizens' budgets.

For an overview of the EU's support measures for the energy efficiency of public and residential buildings, we analyzed how the amounts are allocated, as well as the degree of their use by the EU Member States, by comparison with Romania. Through the Cohesion Policy, the European Union has planned the amounts dedicated to energy efficiency to the greatest extent through the European Regional Development Fund (ERDF) and the Cohesion Fund (CF). The ERDF was implemented in Romania through the Regional Operational Program (POR/ Regio), and the CF through the Large Infrastructure Operational Program (POIM). Funds for energy efficiency were mainly allocated to Theme Details 013, 014 and 068, their purpose being the operationalization of themes such as "environment protection and resources efficiency", "low-carbon economy", "social inclusion", "efficient public administration", "energy infrastructure".

Regarding the EU allocations for the energy efficiency of the public infrastructure (TD 013), 736 mil. Euros were planned for Romania, of which approx. 26% was spent. In terms of allocation level, our country ranked 5th among the Member States, after Italy, Poland, Spain and Germany and being followed by Slovakia, France, Hungary, Latvia.

Figure no. 1. Percentage of sums spent from the total allocated per country, for TD 013 (2014-2020/2023)

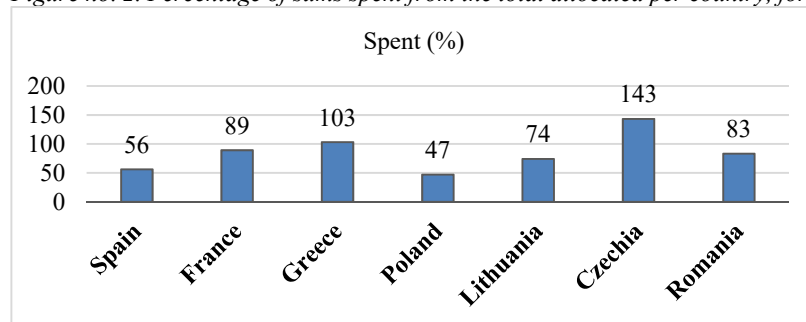


Source: European Commission, 2023, 2014-2020 Cohesion Policy Overview

We can see in the figure no. 1 that, among these Member States that had the highest allocations on TD 013, Hungary (90%) and Poland (70%) lead by far in the top of the utilization rate of the planned amounts. Romania used about a third of the amounts, and Italy and Spain are at the bottom of the list.

As for the EU allocations for the energy efficiency renovation of housing stock (TD 014), 306 mil. Euros were planned for Romania, of which approx. 83% was spent. In terms of allocation level, our country ranked 7th among the Member States, after Spain, France, Greece, Poland, Lithuania and Czechia and being followed by Slovakia, Hungary and Latvia.

Figure no. 2. Percentage of sums spent from the total allocated per country, for TD 014 (2014-2020/2023)



Source: European Commission, 2023, 2014-2020 Cohesion Policy Overview

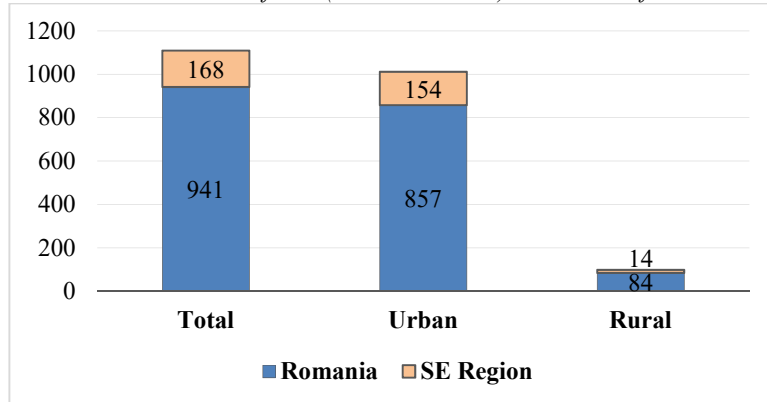
Figure no. 2 shows a more interesting situation regarding the spending rate of the money allocated to the Member States on TD 014. The Czech Republic and France have exceeded the amounts initially allocated, the percentage of spending of the amounts being over 100%. The Czech Republic used almost 50% more than the amounts planned by the EU for this country. Romania and France exceeded the percentage of 80%, the lowest rates being, this time, in Spain and Poland (around 50%).

Until the completion of this analysis, for TD 068 we have not identified any information related to Romania on the EU Cohesion Policy implementation stage reporting platform.

4.2. Aspects of European financing for energy efficiency in SE region of Romania

From the statistical data available until the completion of this study on non-reimbursable structural funds, it emerged that, compared to the total of projects implemented in Romania for energy efficiency, the percentage of projects implemented in the South-East region represents 17.85%. As for projects for urban areas, they add up to 17.97% of the total number per country, and projects for rural areas represent 16.67% (figure no. 3).

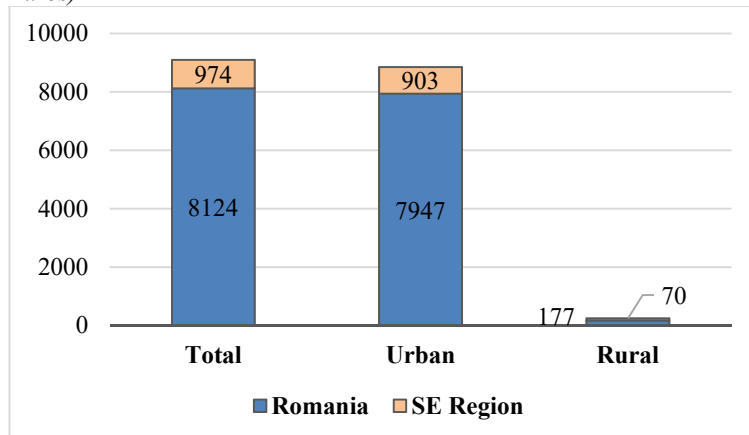
Figure no. 3. Comparative situation between the number of projects for energy efficiency implemented from non-reimbursable structural funds (2014-2020/2023) at the level of Romania and in the South-East region



Source: MIPE, 2023, MySMIS 2014 Open Data

Regarding the values of these projects mentioned above, the ratio is significantly different, so the total value of energy efficiency projects in the South-East region represents 12%. At the urban level, the ratio is 11.37%, and for rural areas the rate is 39.71% (figure no. 4).

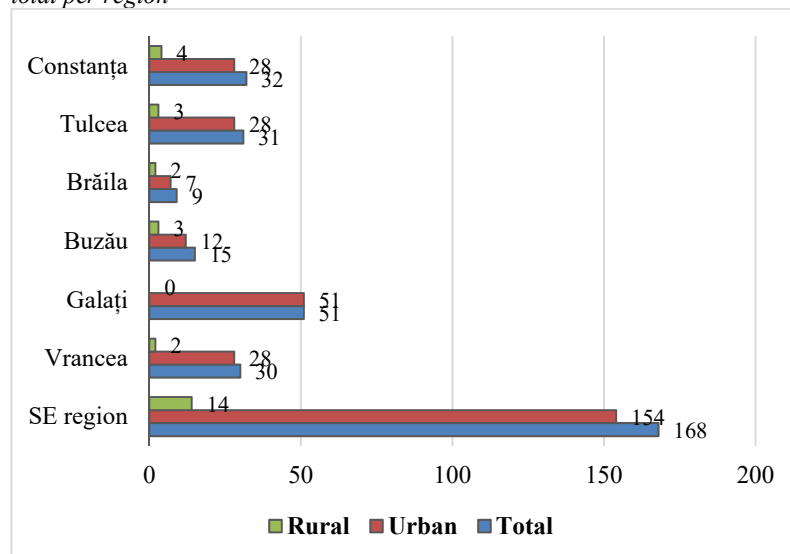
Figure no. 4. Comparative situation of projects' value for energy efficiency implemented from non-reimbursable structural funds (2014-2020/2023) at the level of Romania and in the South-East region (mil. Euros)



Source: MIPE, 2023, MySMIS 2014 Open Data

We observe that, on the SE region as a whole, the overwhelming majority of energy efficiency projects carried out with non-reimbursable structural funds addressed urban areas, only 8.3% of which were implemented in rural areas. Most projects were carried out in Galați county, all in urban areas and 0 in rural areas, followed by Constanța and Tulcea counties. Brăila county is in 6th place. Constanța County also has the most projects (4) for rural areas, in the amount of 11.1 million Euros (figure no. 5).

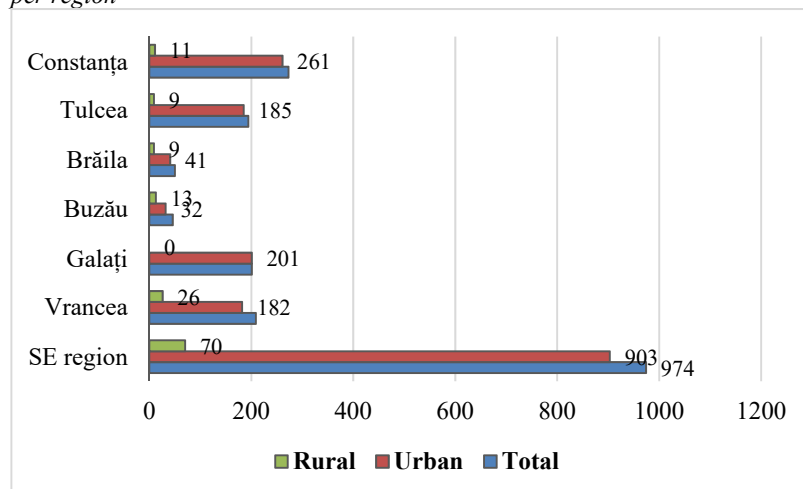
Figure no. 5. Comparative situation between the number of projects for energy efficiency financed from non-reimbursable structural funds (2014-2020/2023) carried out in each county of the SE region and the total per region



Source: MIPE, 2023, MySMIS 2014 Open Data

If we refer to the value of energy efficiency projects from non-reimbursable structural funds in the SE region, the largest amounts go to urban areas, and those for rural areas amount to a percentage of 7.2%. Constanța county is in first place in terms of the total value of the projects, followed by Tulcea and Brăila counties. The county of Buzău is in the 6th place. The largest amounts in rural areas for energy efficiency are in Vrancea county (2 projects worth 26.5 million Euros) (figure no. 6).

Figure no. 6. Comparative situation between the value of projects for energy efficiency financed from non-reimbursable structural funds (2014-2020/2023) carried out in each county of the SE region and the total per region



Source: MIPE, 2023, MySMIS 2014 Open Data

In support of what has been analyzed, we have extracted below the detailed data regarding the situation of projects financed from non-reimbursable structural funds during the 2014-2020/2023 programming period for the 6 counties in the SE development region of Romania. Values for Theme Detail 013, 014, 068 differentiated by urban and rural areas are included. We have also included the amount of EU co-financing from the total value of the implemented projects (Table no. 1-3).

Table no. 1. The number of projects for energy efficiency and their value, financed in the 2014-2020/2023 programming period from non-reimbursable structural funds in Vrancea and Galați counties

VRANCEA COUNTY				GALAȚI COUNTY			
Theme detail	Proje cts (no.)	Total eligible expenses (RON)	EU cofinancing (RON)		Proje cts (no.)	Total eligible expenses (RON)	EU cofinancing (RON)
013	26	183.292.929,66	155.798.990,39		37	162.474.109,99	138.102.993,63
Urban	24	156.761.796,45	133.247.527,15		37	162.474.109,99	138.102.993,63
Rural	2	26.531.133,21	22.551.463,24		0	0,00	0,00
014	4	25.717.722,07	14.666.747,83		13	37.568.514,07	19.159.942,23
Urban	4	25.717.722,07	14.666.747,83		13	37.568.514,07	19.159.942,23
Rural	0	0,00	0,00		0	0,00	0,00
068	0	0	0		1	973.140,00	827.169,00
Urban	0	0	0		1	973.140,00	827.169,00
Rural	0	0	0		0	0,00	0,00
TOTAL	30	209.010.651,73	170.465.738,22		51	201.015.764,06	158.090.104,86
Urban	28	182.479.518,52	147.914.274,98		51	201.015.764,06	158.090.104,86
Rural	2	26.531.133,21	22.551.463,24		0	0,00	0,00

Source: MIPE, 2023, MySMIS 2014 Open Data

Table no. 2. The number of projects for energy efficiency and their value, financed in the 2014-2020/2023 programming period from non-reimbursable structural funds in Buzău and Brăila counties

BUZĂU COUNTY				BRĂILA COUNTY			
Theme detail	Proje cts (no.)	Total eligible expenses (RON)	EU cofinancing (RON)		Proje cts (no.)	Total eligible expenses (RON)	EU cofinancing (RON)
013	10	30.408.940,69	25.847.600,65		8	49.612.393,38	42.170.534,44
Urban	7	16.854.711,18	14.326.505,56		6	40.042.571,63	34.036.185,94
Rural	3	13.554.229,51	11.521.095,09		2	9.569.821,75	8.134.348,50
014	4	12.590.396,74	6.421.102,36		0	0	0
Urban	4	12.590.396,74	6.421.102,36		0	0	0
Rural	0	0,00	0,00		0	0	0
068	1	3.196.764,90	1.766.212,61		1	783.479,96	665.957,97
Urban	1	3.196.764,90	1.766.212,61		1	783.479,96	665.957,97
Rural	0	0,00	0,00		0	0,00	0,00
TOTAL	15	46.196.102,33	34.034.915,62		9	50.395.873,34	42.836.492,41
Urban	12	32.641.872,82	22.513.820,53		7	40.826.051,59	34.702.143,91
Rural	3	13.554.229,51	11.521.095,09		2	9.569.821,75	8.134.348,50

Source: MIPE, 2023, MySMIS 2014 Open Data

Table no. 3. The number of projects for energy efficiency and their value, financed in the 2014-2020/2023 programming period from non-reimbursable structural funds in Tulcea and Constanța counties

TULCEA COUNTY				CONSTANȚA COUNTY			
Theme detail	Proje cts (no.)	Total eligible expenses (RON)	EU cofinancing (RON)		Proje cts (no.)	Total eligible expenses (RON)	EU cofinancing (RON)
013	20	150.904.747,40	128.269.035,40		27	187.383.440,70	159.275.924,70
Urban	18	145.843.951,80	123.967.359,10		23	176.234.369,21	149.799.213,90
Rural	2	5.060.795,58	4.301.676,24		4	11.149.071,49	9.476.710,80
014	7	32.864.564,62	16.760.927,97		2	78.775.156,93	66.484.713,56
Urban	7	32.864.564,62	16.760.927,97		2	78.775.156,93	66.484.713,56
Rural	0	0,00	0,00		0	0,00	0,00
068	4	10.658.902,90	5.195.537,11		3	6.651.984,25	352.945,08
Urban	3	6.235.539,26	3.127.614,61		3	6.651.984,25	352.945,08
Rural	1	4.423.363,64	2.067.922,50		0	0,00	0,00
TOTAL	31	194.428.214,92	150.225.500,48		32	272.810.581,88	226.113.583,34
Urban	28	184.944.055,68	143.855.901,68		28	261.661.510,39	216.636.872,54
Rural	3	9.484.159,22	6.369.598,74		4	11.149.071,49	9.476.710,80

Source: MIPE, 2023, MySMIS 2014 Open Data

The results confirm the working hypothesis according to which the differences between rural and urban areas are significant in the South-East development region of Romania when we talk about the capabilities of attracting non-reimbursable external financing dedicated to energy efficiency. Moreover, even in urban areas, the projects are mainly carried out by municipalities or large cities. Therefore, in the period 2014-2020/2023, energy efficiency measures could be financially supported with greater difficulty in areas where the need to reduce energy poverty is, in fact, important.

By comparison with the total number of projects in Romania dedicated to energy efficiency and financed from structural funds, in the South-East was implemented a percentage of approx. 18%, and in value they represent approx. 12%. Almost a quarter of the total in Romania of projects for the energy efficiency of public buildings (TD 013) were implemented in the South-East region. The differences between urban and rural are, however, obvious, the situation in the South-East region being similar to the trend throughout the country. Thus, in the SE region, the ratio between the projects implemented in rural areas and those in urban areas is 9%, and in value 8%, at national level these percentages are 10% and 2%.

It is worth pointing out that, for the period 2014-2020/2023, a positive fact is that the projects for energy efficiency in rural areas implemented in the SE region amount 39,7% of the total value of similar projects carried out in Romania. Financing from non-reimbursable external funds supported the energy efficiency of public buildings (of institutions, schools, kindergartens) (TD 013) in rural areas and did not cover residential buildings (houses) (TD 014).

Analyzing the situation of spending the amounts allocated for energy efficiency projects at the European level, we notice that Romania is on a similar trend to that of the Member States, the stage of capitalization of investments being better for projects dedicated to the energy efficiency of residential buildings (TD 014).

5. Conclusions

Our analysis presented a case study on the south-east development region of Romania and referred to the 2014-2020 programming period, which will be completed in December 2023. The financial allocations analyzed are those from non-reimbursable structural funds, for the implementation of the Policy of EU Cohesion, respectively through the European Regional Development Fund (Regional Operational Program - POR/ Regio) and the Cohesion Fund (Large Infrastructure Operational Program - POIM). The data from other financing programs, such as the national program "Casa

verde" ("The Green House"), were not included in our paper. The analyzed data are the officially communicated by the Romanian Government and the European Commission, a fact that attests to the credibility and validity of the information.

This analysis can be extended to the level of all the development regions of Romania, to provide support for a socially equitable implementation of European funding from 2021-2027, which could significantly contribute to the reduction of energy poverty through energy efficiency measures of buildings and homes.

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The Use of EI (Emotional Intelligence) in Crisis Management : The Relevance of Keynes' Thinking for the Post-Capitalist Society

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Abstract

In recent years, international organizations and the world's population have experienced a series of turbulent events which, because of the extent to which they have affected the planet, have been called crises. The way in which these crises have been dealt with has often been criticised, as the different interests of politicians have hampered efforts to find solutions that are beneficial to all concerned. This material proposes to address crisis situations by appealing to emotional intelligence, specifically to those elements that have the potential to transform a politician into a leader. To this end, we draw attention to a series of research studies that make the correlation between emotional intelligence and leadership. We also refer to a tense event in world history (the Treaty of Versailles), in which John Maynard Keynes demonstrated that the lack of this ability (emotional intelligence) in state leaders led to the deepening of the world crisis, both politically, economically and socially.

Key words: crisis situations, emotional intelligence, cooperation, conflict, leadership, emotional intelligence

J.E.L. classification: O01

1. Introduction

Although there are materials that make a correlation between crisis situations and the role of emotional intelligence in managing them, these are mainly in the organisational and entrepreneurial area. The disadvantage of these approaches is that they are limited in revealing the role of emotional intelligence at the level of leaders of companies, who are mostly privately owned and genuinely interested in using all the means necessary to ensure the success of the company. Studies focused on emotional intelligence research have paid limited attention to global leaders and the importance of managing emotions in the public space. Because of this, there is a need to hold global decision makers accountable for the importance of managing emotions effectively. This paper proposes to extend this approach to the macroeconomic level, by popularising the concept of emotional intelligence among the major decision-makers responsible for the state of the global economy.

2. Literature review

The concept of emotional intelligence became popular in the 1990s thanks to psychologists Peter Salovey and John Mayer (Salovey et al, 1990, p185). They developed the subject from Gardner's idea of multiple intelligences, specifically interpersonal and intrapersonal intelligence. The concept was taken up and popularised by Daniel Goleman, who had the merit of drawing the subject of 'emotions' and how to manage them intelligently from the area of psychology, and making this information accessible to those without a background in the field. In this way, personal knowledge has left the exclusive domain of psychology, and has been received with interest by a growing number of people.

The idea of bringing the two terms together and creating a new field of study has received attention over time, leading to the development and enrichment of this concept with new elements. The latest perspective proposes a mix of self-awareness/self-knowledge, emotional self-regulation, motivation, empathy and social skills. A short definition of the concept would summarise a person's

ability to identify and understand their own emotions, as well as to recognise them in others and manage them effectively. Also not to be neglected are the skills of empathy, cooperation, collaboration and management of personal and group emotions, so that the solution in any situation is a win-win situation for all concerned. Although the subject has received attention and different approaches, specialists have agreed that, unlike cognitive intelligence which is an element that does not enjoy growth, and does not increase as a result of intentional action, emotional intelligence is a skill that can be acquired and developed throughout life (Goleman, 1995, p.150).

3. Research methodology

The present research started from the idea of popularising the concept of emotional intelligence among leaders responsible for managing crisis situations worldwide and presenting the benefits of understanding and developing it. Researchers who have explored this concept have concluded that it is an essential social skill and indispensable for effective communication, which underpins the building of any relationship.

We set out to reveal the applicability of this concept and to highlight how understanding and integrating its defining elements leads to effective crisis resolution. Specifically, we focused on raising awareness of the importance of cooperation and collaboration among those charged with dealing with global economic stagnation and turmoil. To this end, we provide recommendations based on research in the field of emotional intelligence. Our approach has involved a review and synthesis of the literature that has addressed this topic and studies that have revealed the role of EI in crisis management. The research covered topics such as global crises, how they affect people emotionally, and recommendations for leaders responsible for managing them in order to deal with them effectively.

4. Findings

History does not specifically mention a particular moment when the term "global economic crisis" emerged, but expressions such as "Great Depression" or "global economic crisis" have been used to describe economic phenomena that have profoundly shaken economies around the world. These events, which had a negative impact on the globe, led to the emergence of new terms in economic theory to reflect the downturn as accurately as possible. The conflation of the two terms 'crisis' and 'global' started from a position of helplessness that mirrored the instability and tension of a particular period of time, and the degree to which it affected people. Crises are events that destabilise and interrupt the natural flow of life and result in economic and social losses. Because of this, the current economic crisis as a result of the COVID 19 pandemic has been considered the most stressful event (Xu, Qingqing, 2023, p.1).

The intention to look at global economic crises through the lens of emotional intelligence is underpinned by a solution-oriented approach to these difficult times. Global turbulent times make it imperative that global decision-makers come together. In order to make decisions for improvement and find optimal solutions, leaders of organisations set up for this purpose have to hold discussions where usually each participant already has an agenda, an interest, and a direction they want to pursue. Without diminishing the importance of the ideas with which those concerned attend these meetings, this material proposes to focus on how these ideas are delivered and received by the other participants. More concretely, it will look at the global economic crises as a stage in which the actors involved can juggle with the pre-determined script to give the play they are playing a favourable outcome for all participants. It thus draws attention to the importance of collaboration in situations that impact the global economy and proposes recommendations for the effective management of conflicts arising from the differing interests of those involved (Fiedler, Mitchell, 1971, p.4).

4.1. Crisis management: from organisational to national

The emergence of a crisis situation at organisational level requires the leader's full attention to mitigating the negative impact on the business and minimising undesirable consequences. The leadership response differs according to the nature of the situation, but most of the research on the

subject encourages a rapid response based on courage, determination and planning (Goleman, 2005, p.104, p.117, p.130). At the same time, studies on leadership have concluded that assuming the leadership position translates into concrete actions to redress the situation but also requires a softer side, which involves openness to cooperation, empathy, team management and effective communication. The existence of these skills at the top level of the organisation chart can be put into a simple formulation, that a leader has emotional intelligence.

In this regard, we draw attention to several studies that reveal the correlation between emotional intelligence and effective crisis management, both at the level of leadership and team management. A recent study (Kuday, Erdoğan, 2023, p.3) conducted on 565 nurses revealed that increased emotional intelligence in this category of staff makes the response in crisis situations positively correlated. The professional standard cannot be achieved with theoretical knowledge alone, it requires a plus held on a personal level, which counts in empathy resources, communication and effective stress management. Another study (Charernnit, 2022, p.2477) which looked at the link between flight attendants' emotional intelligence and a crisis situation (risk of losing their job due to restructuring due to the COVID 19 health crisis), found that social skills include the power to influence and lead others through effective communication and to encourage them in times of change. In addition, openness to communication and cooperation maintain what is beneficial in a relationship and increase the power of the group to achieve its goals. The correlation between emotional regulation and transformational leadership was also the subject of a survey of 382 project managers. The authors (Fareed et al, 2023, p.3) based their study on the analysis of twenty years of field research, which looked at the link between emotional intelligence (E.Q.) intellectual intelligence (I.Q.) and the performance of these managers. The study looked at the factors that lead to the success or failure of projects, and concluded that it depends largely on the leader (80%). Professional competence, as with nurses, was secondary, important were character traits and personality, which can lead to team cohesion and performance.

We also bring attention to a quantitative study conducted on a sample of 354 SMEs operating in Lahore, Pakistan, which sought a better understanding of emotions in entrepreneurship against the backdrop of the crisis caused by the COVID 19 pandemic. SME owners played an active role in creating a harmonious space and connecting people towards a common goal of getting through the crisis. A good number of them were aware that there is a link between effective management of staff emotions and their job performance (Khana et al, 2022, p.119). From their position as company leaders, they were directly interested in maintaining and recovering their own companies, and showed empathy, cooperation, resilience and were genuinely motivated to find a way in which they and their companies can survive this crisis. The same approach was taken by other companies in other parts of the world, the central theme was the responsibility that these entrepreneurs took in managing their own emotions (anxiety, uncertainty, tension, etc.) and those they lead. This study reveals at the micro, organisational level that if the leader is motivated to find solutions to overcome a crisis situation, this is possible. Such a perspective, focused on finding solutions that benefit the collective, is a model for global leaders to follow.

The public's interpretation of the leadership response to the COVID 19 health crisis management was the subject of a 2020-2022 survey, which found that the predominant emotion was anger, with respondents dissatisfied with the actions political leaders have taken on the issue. The study tracked a range of emotions such as anger, disgust, fear, joy, sadness and surprise, which resulted from the analysis of social media comments, and the highest percentage (26.6%), was anger. Watching the news that showed how those responsible handled the situation globally, created negative feelings in most of the planet's population. According to the researchers, negative emotions outweighed positive ones, and feedback from this research reveals the impact that leadership-level response has in crisis situations. Another conclusion that came out of the research was that fewer people still watch the news, in a desire to avoid the negative emotions they feel when they come into contact with unpleasant information. (Oliviera et al, 2023, p.5).

The psychologist Robert Plutchik made in 2014 (p.348) a correspondence between different emotions, the stimulus that triggers them, how the brain interprets this emotion, the behavior triggered by this stimulus and its effect . A cognitive equivalent of the emotion of anger is that, at the level of the brain, this emotion corresponds to an enemy, and the behaviour is one of attack in order to eliminate the obstacle. For this reason it is necessary for leaders who make decisions with global

impact to become aware that their actions impact the world's population at an emotional level as well, and that emotions have the capacity to give rise to actions equivalent to the polarity they carry. In this sense a correspondence can be made between the third and fourth emotional abilities identified by Mayer and Salovey, those that involve reasoning connected to emotions, as the actions leaders will take will determine the quality of the emotional relationship with the population (Mayer et al, 2000, p.166).

4.2. Keynes in economic thinking

Among the specialists who turned their attention to economic analysis, Keynes stands out because his method of investigation made a link between economic theory and practice. It should be noted, however, that despite the pragmatic nature of the economic field, Keynes preferred a philosophical approach, in which he also manifested his artistic interests (Fontana, 2001, p. 712). In his work "The Economic Consequence of the Peace" one can easily observe a literary style and an inclination towards the psychological analysis of political figures. Thus, speaking of the British Prime Minister he used words such as character, subconscious impulse, perception, telepathic instinct and described him as a man who has "seven senses not available to ordinary men". (Keynes, 1919, p.17) Without using the word "emotion", Keynes captured in the politicians he followed during the Treaty of Versailles a number of elements that are now part of the palette of skills that define the concept of emotional intelligence (understanding, empathy, cooperation, long-term perspectives). Also viewed from the perspective of EI (the existence of virtues and values), he criticised the way the US President chose not to engage in negotiations as he had promised Germany (Germany had laid down arms on assurances, p.45), and considered that he had abandoned his principles (p.18).

Although the subject matter concerns an extremely sad event in world history, and Germany was primarily responsible for this war, Keynes condemned the way in which political considerations and personal and group interests (p.25) of the Allies took precedence in this treaty. He judged that their "selfish economic understandings" took precedence and deprived them of the ability to assess the long-term economic consequences, condemning their lack of virtue and pointing out that a statesman cannot be vindictive, selfish and cunning. The German press was outraged by the provisions of the treaty and claimed that it was a violation of international moral principles (p.26) because it deprived German citizens of personal property and eliminated their means of livelihood. From his position as an observer, Keynes had the courage to state that the provisions of the treaty were aimed at destroying Germany's economy (it had earned its position as the leading industrial nation in Europe before the war, p.31) and warned that as the economies of the countries were interconnected, this treaty would lead Europe to economic disaster. Broadly speaking, as a result of the conditions imposed, Germany was forced to relinquish all its rights, titles and privileges over the territories that belonged to it, the railways and the entire naval fleet, and not to demand customs duties for exports from the Allied countries (p.38). All this at a time, when they had already benefited from Germany's liquidity and made its payments for imports impossible for the future (p.39). In addition, Allied demands on Germany's river system (they removed it from her control by handing over administration of the Elbe, Oder, Danube and Rhine) prompted Keynes to revolt and claim that this was an unprecedented mode of intervention in a country's internal affairs. As a result of these conditions imposed by the Allies, Germany's rate of production fell by 60% compared to 1913, leading to a depletion of reserves as winter approached and they were badly needed (p.45).

Another issue Keynes raised was the moral quality and honour of those conducting the negotiations. He observed that they lacked the virtues of statesmanship and the principles and values that would make honest government intervention possible, and therefore he described the provisions of the treaty as scandalous (p.68). One can see how the lack of human attributes, now called emotional intelligence, led to the transformation of an evil - which was World War I - into an even greater evil, World War II. Keynes penalised the policy-makers of 1918 for their lack of "political wisdom" and "imbecile greed" (p.60) and predicted an optimistic financial outlook for Europe if they had not been so vindictive and controversial amongst themselves. The decisions of the commission set up by the Allies depersonalised Germany and its citizens, and turned it into a mere commercial concern (p.86), thereby signing the death warrant of the German people (p.102). As a result, Europe would have to suffer again to give birth to a new industrial age (p.112).

Although most economic currents have prioritised the importance of laws, history has shown that this is not enough. This is why it is necessary for leaders to put on a human garb, to connect values and virtues and to be able to anticipate the long-term consequences of their actions. Where there is room for personal and group interests, where ego sets steep and non-negotiable directions, there is no room for long-term collective good.

4.3. Historical perspective on economic and social crises

Table no. 1 Succession of economic/social crises in the West/East

Nr. Cr.	Name /year	Period/way of manifestation	Country/global implications	Redefining values
1.	Spanish Flu 1920	1918-1920 Because it affected a large part of the world's population, it was considered one of the most severe influenza pandemics. (Black Death) It broke out during World War I, spread rapidly and affected mainly young people. (15-34 years; 50 million deaths out of 100 mil/500 mil infected)	Because it has particularly affected young adults, it has had a profound impact on the demographic composition of many communities, with long-term consequences for population structure. It has had a major economic impact through deaths and increased health care expenditure. In terms of shock: people were frightened by the rapid spread and threat of death. This led to increased general distrust (increased poverty, decreased social contacts) Governments imposed quarantine, isolation and wearing of masks.	It has increased the sense of solidarity, and has guided governments to give importance to medical research on influenza viruses.
2.	The Great Depression 1929	1929-1939 It was considered one of the most severe periods of economic recession. In October 1929 ('Black Thursday', following the collapse of the New York Stock Exchange, what was called the Great Crash began. Production fell (there was overproduction, stocks increased), factories closed, workers were laid off, leading to rising unemployment. The population became poorer, social discontent grew. International trade fell (non-tariff barriers such as quality standards, customs red tape, limits on the quantity of goods bought; the US reduced its international lending, countries reduced their imports), the agricultural sector was affected.	It affected economies, societies and politics all over the world because all countries had joined gold, which interconnected economies. Many countries went into recession and unemployment became a worldwide problem. This was a high point in many countries, as governments chose to review their economic and social policies through major reforms.	Reconsider the role of the state in the economy to provide greater social protection by introducing social assistance programmes. Introducing financial reforms to prevent bank abuse and creating the United Nations (UN), International Monetary Fund (IMF) and World Bank.
3	The 1970's raw materials	1973-1974 and 1979- the 2nd oil shock. The sharp rise in the price of oil resulted in higher transport prices, leading to inflation. Tensions soc. and	The economies of oil-dependent countries have been hit hard, so they have turned their attention to finding other sources of energy and rationing fuels.	Measures to improve energy efficiency and awareness that natural resources are

	ials crisis	pol. generated by governments that did not effectively manage the crisis		limited and must be protected.
4	Endin g the Cold War 1990	1989-1990 End of US-USSR political rivalry (Malta Agreement) 1989- fall of the Berlin Wall 1990- pressure from Russian Federation countries for independence-1991 disintegration of USSR	The dissolution of the USSR led to the formation of independent states. Germany was reunified.The UN emphasised cooperation and peaceful conflict resolution.The US became an economic and political power.	The focus has been on promoting human rights, resolving conflicts peacefully and spreading democracy.
5	1997 Asian crisis	1997-currency suffered a sharp devaluation, which chained Asian equities and the collapse of financial markets	Economies in the region (Thailand, Indonesia, N. Korea) have been severely hit by recession and unemployment.	Countries that have been hit by the crisis have adopted prudent monetary policies (less credit, lower public debt)
6	2008 Finan cial Crisis	2008-2010 Originated in the US housing market due to mortgage lending, which led to the collapse of financial institutions due to lack of liquidity.	Global recession, falling output and trade followed by unemployment. Governments created financial packages to bail out banks. The crisis has increased social and economic inequality.	Financial institutions have been criticised for practices that triggered the crisis, as a result of which there has been increased demand for transparency and ethics in this area. Creating rules and regulations to avoid risks. The population has cut back on bank lending.
7	US- China trade war 2018	2018 It was due to the reciprocal imposition of additional tariffs between the US and China as a result of China's accusation of cyber espionage.	Many countries have been affected in the supply chain and trade tensions have created global uncertainty.	A good number of governments have sought new business partners and reduced their dependence on China-based supply chains. Increased interest in protecting intellectual property rights (US - innovation protection)
8	Covid crisis 2019	SARS-COV 2, is a highly contagious virus with a very rapid spread. Hospitals and health institutions have been so severely impacted by this pandemic that the effects have been considered catastrophic.Protective equipment, hygiene devices have been insufficient and exposure to these shortcomings have forced health organisations around the world to create new plans to deal with the pandemic. Businesses were closed or operating at partial capacity.	Social distancing (working at home, travel restrictions) and the wearing of the mask imposed by governments has deprived people of the need for much-needed connection and affection, leading to a general state of anxiety, uncertainty and fear. Education took place online (schools were closed) Many of the pupils/students who studied online expressed concern that in the long term they might be at a disadvantage when entering the labour market compared to those who studied online. Governments have provided	Much of the population has turned to spiritual practices, with people choosing to put their hope in God to see them through this pandemic. Health organisations around the world have been forced to create new plans to deal with the pandemic. Thanks to online learning and home-based work, the adoption of

			information and promoted safety behaviours (hand washing, gels, vaccines), offered support for firms (technical unemployment).	technology in education and the workplace has accelerated. Hygiene rules imposed by the pandemic have been preserved and assimilated by the population.
9	Ukraine war 2021	The conflict in Ukraine began in March 2021 with Russia's annexation of Crimea. In its defence, Russia has claimed that this disagreement is about national defence (ethnic, nationalist conflict).	Human and material losses were recorded at country level, millions of people had to leave the two countries. The international community reacted to Russia's action and applied financial sanctions consisting of the confiscation of assets and property of Putin's oligarch friends and restrictions applied to Russia's central bank. The aim was to cripple Russia's economy in the hope of stopping the invasion of Ukraine. However, the effect of these measures was not limited to the territory of Russia, but also extended to the economies of other countries: inflation, rising oil and food prices, higher bills, lower investment. The two countries directly involved in the war are major players in the export of commodities on the global market (oil, natural gas, wheat, neon) and the way in which the economies of the countries are interconnected has led to the damage to economies around the world.	The conflict strengthened and intensified the sense of national identity in Ukraine (patriotism and national values) International communities provided support and aid for refugees.
10	The Middle East conflict 2023	The most recent event that has upset the planet's already shaky balance is the conflict in the Middle East between Palestine and Israel. It started again in early October this year, but dates back to the end of the Second World War, when the state of Israel, with a Jewish population, was created in Palestine, which had a majority Arab population.	The Western world and the UN are working together to find a long-term solution to this problem. Their involvement has not just been at the declaratory level, they have offered humanitarian aid and tried to facilitate dialogue between the parties. Some governments have chosen to side with one or other of the two countries, but they have also imposed sanctions. Support for Israel: US, Canada, Austria, UK. Support for Palestine : Iran, Turkey	As in every armed conflict, political values and the importance of cooperation and collaboration for a peaceful resolution are reassessed. Attention has been focused on those political leaders who value diplomacy and reconciliation.

Source: prepared by the author

4.4. Is emotional intelligence a tool for crisis management?

The disruption of global equilibrium by situations that impact the entire planet economically requires leaders to be open to cooperation and collaboration. Willingness to listen to multiple opinions, creating a habit of questioning one's own point of view and adding to or changing it when presented with information that contradicts one's own beliefs, is a skill that needs to be practised. History has demonstrated a path that has not been conducive to life, where those in positions of power have not found - or have been unwilling to find - the internal emotional resources to find and implement solutions. Here we have in mind emotions (Plutchik, 1980, p.349) such as interest in a collective good, acceptance of different points of view, anticipation of the consequences of economic decisions with global impact, and the joy of being part of the solution to a problem. Optimism and serenity due to the certainty that meetings with others responsible for managing a situation will lead to solutions that benefit everyone.

The recommendations that come from the perspective of emotional intelligence propose an approach in which people involved in resolving a situation have the ability to re-evaluate their decisions from the position of people who have managed to put aside the ego (Yeung , 2012, p.130). Reconsidering the position is based on the ability to empathize, to see a situation from the other person's perspective, without feeling attacked by an opinion that differs from one's own. A person's ability to choose a response that leaves room for other perspectives leads to an environment in which cooperation has room to exist. Promoting a behaviour where those involved in a decision are set on finding a solution that benefits all involved is a desideratum for all meetings globally. Leaders of this kind are promoters of a friendly climate, as a result they have the ability to identify and create opportunities for collaboration (Serrat, 2017, pp 329-339) and to manage well situations with conflict potential.

5. Conclusions

Although at first glance the field of economics does not seem to be related to emotions, since economics is based on the real world and emotions are related to human decisions from the perspective of cognitive psychology, the connection made between these two disciplines was awarded the Nobel Prize in Economics in 2002. Daniel Kahneman, psychologist and economist, has shown in his paper *Foundations of Behavioral and Experimental Economics*, that all decisions that people make, are made as a result of a combination of emotions and reason (Kahneman, 2002, p.12, 2003 p.1451), more specifically by the conscious mind (prefrontal brain) and the subconscious mind (limbic brain).

Research that has addressed the relationship between emotional intelligence and global crises has focused on those human qualities that support the cognitive in its decision-making process. Crisis situations put pressure on leaders and it is necessary for them to maintain clarity of thought and the ability to adapt to changing situations. Also, flexibility, keeping open channels of communication and a willingness to cooperate are actions that rely on an intelligent way of managing emotions (anxiety, stress, anger, etc..). It is necessary not to forget how history has shown that the lack of these skills in leaders of other times (Keynes, 1919 p.50), led to a disastrous course globally, both economically and socially. In these times, where access to knowledge is a click away, the lack of desire to learn how to be a good leader indicates an inadequate level of preparation for a leadership position.

We believe that addressing economic crisis situations from the perspective of emotional intelligence is a promising topic that has not been sufficiently addressed, and there is space for more diversified and in-depth research.

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The Impact of the Russian-Ukrainian Conflict on Romania's Economy

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Abstract

Lives lost, pain, families torn apart, people fleeing war, cities destroyed - all are part of the war triggered by Russia's invasion of Ukraine, an unprecedented humanitarian crisis. The ongoing conflict on Romania's border has profound economic consequences not only for the belligerent countries, but for the whole of Europe and the world's economies have not been spared from imported inflation and disruptions in world trade.

In our research, we aimed to highlight the impact of this conflict on our country, causing an increase in inflation, fiscal pressure, budget deficits, public debt and it accentuated climate problems. In the current conjuncture, various adverse shocks can propagate through several channels, therefore in our research we will briefly present the most important of them. Russia's invasion of Ukraine and associated sanctions represent a broad global shock with divergent effects on economic activity (decline) and the inflation rate (increase).

Key words: national security, international economics, inflation, financial crises, war

J.E.L. classification: D74, D84, E01, E31, E43, F51

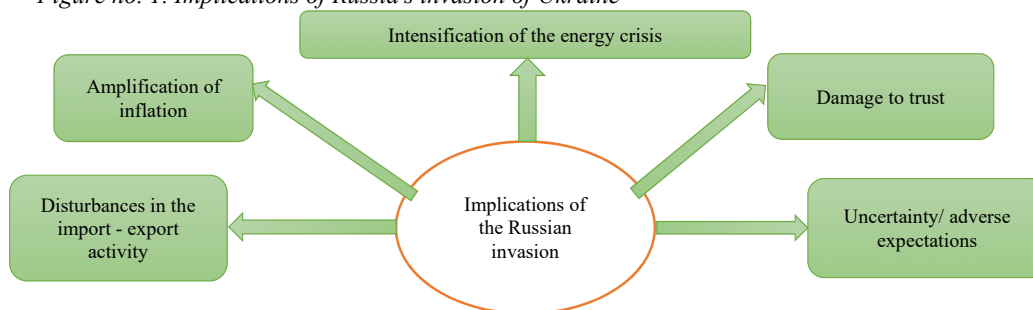
1. Introduction

In addition to the high number of human casualties, the displacement of millions of Ukrainian citizens, the conflict between Russia and Ukraine has triggered tensions in financial markets, sharply increased uncertainty about the recovery of the global economy and imposed sanctions on a European state not seen since World War II so far.

Almost 2 years after the beginning of the war, we are trying to draw in numbers how the economies of Ukraine and Russia resisted during the months of conflict, but also Romania's position, during the months marked by disruptions in import, export, supply activity, by the cutting of strong connections from the energy field and the triggering of a potential crisis (Figure no. 1).

Even if Romania depends to a large extent on Russian imports, it is still one of the European countries with the lowest degree of dependence (European Central Bank, 2022), which can limit the severity of the effects produced by the sanctions of the invading country.

Figure no. 1. Implications of Russia's invasion of Ukraine



Source: processing after BNR evaluations (National Bank of Romania, 2021)

2. Theoretical background

The well-known theorist of international relations, Kenneth Waltz, warned, in a study published in 1993, in "International Security" magazine, that "often the economic competition is sharper than the military one and if nuclear weapons limit the great powers in using force we can expect the economic and technological competition between them to become more intense" (Waltz, 1993, p. 78).

According to "Filled Manual 100-5" (War Department of USA, 1941, pp. 97), three stages can be distinguished in the dynamics of international relations: peace, conflict and war, and different strategies (table no. 1) are applied depending on them:

Table no. 1. Possible strategies that can be applied according to the stages

Stage	Purpose	Type of operations	Examples
War	Fight and win	War	Generalized scale battles: - offensive - defensive
Conflict	Anticipating war Conflict elimination	Operations other than war	<ul style="list-style-type: none"> • Attacks and raids • Supporting insurgencies • Anti-terrorism • Peace keeping
Peace	Peace promotion	Operations other than war	<ul style="list-style-type: none"> • Anti-drug • Civil support • Assistance outside borders • Strengthening peace

Source: own processing after (Hervé, 2008)

Given the speech of Russian President Vladimir Putin, who announced the invasion of Ukraine on the morning of 14th February, the action was framed as a special military action – a pre-emptive raid to support the insurgents in the Kharkiv, Donetsk and Luhansk areas. It can be seen that the support received by the Ukrainian state and the resistance faced by the Russian troops turned the intended raid into a full-blown war, with Ukraine becoming a geopolitical region of maximum interest. Thus applying operational geostrategic theories and resorting to a wide range of methods and means adapted to the complexity of the situation (of the specifics and particularities of the geopolitical field) respectively: military strategies in hot areas and strategies of deterrence with operations, other than war, on the periphery these areas.

At a strategic level, the conflict turned Romania into an important pawn from the perspective of the Allied Countries (NATO), being able to ensure suitable terrain for the deployment of deterrence forces, but also the existence of geographical protection elements (mountains, rivers, etc.). Moreover, Romania can ensure both direct access to the Black Sea and indirect access through the navigable channels of the Danube, which can be used by all types of forces (air, naval and land). Thus, the United States of America sent as a deterrent force the 101st Airborne Division, an elite unit recognized for its successful actions in World War II, especially for ensuring the Normandy Landings.

In response, Russia has stepped up its nuclear rhetoric, putting pressure on both public opinion and key political actors to deter potential involvement in the conflict as well as to achieve military objectives.

In this context, in order not to lose its place on the international geopolitical stage, Russia reactivated many of the frozen conflicts (Nagorno-Karabakh, the Israeli-Palestinian conflict, the Kosovo conflict, Iran's nuclear program, etc.) and sought support from its Asian neighbor China.

On an economic level, the geopolitical scene is in total war. For example, the Chinese giant Lenovo tried to buy the PC Division from IBM, and another company from China wanted to buy the UNOCAL Oil Corporation, which caused lively protests in the American Congress. Chinese companies are very active in the field of energy resources, being present in the oil competition in the

Caspian and Caucasian areas, but also in the textile industry, putting in "danger" the businesses of some giants from the EU, the USA and other large producers in the field.

In the contemporary geopolitical rivalries (Hervé Coutau-Bégarie, 2008), states continue to use the access/restriction to resources and the control of the commercial, financial and energy routes as tools for fighting and carrying out the new type of conflict that has appeared in human society since the end of the last century. This type of conflict could be seen during the Cold War but was felt again in the recent Russian-Ukrainian war, the European Union other allied states (USA, Japan, Canada, Norway, Switzerland, Australia, etc.) adopted international sanctions, Russia looking for alternative resource outlets in Asian and African markets.

3. Research methodology

During the study, rational research methods (rationalism) were approached, aiming for the research to be approached predominantly in a rational style (positivist approach), but this will be corroborated and affected by some constructivist approaches in order to imbue the scientific approach with the note of adaptability required both for the specifics of the organization and the socio-political context existing in the economy.

To achieve the proposed objectives, we will use research strategies from the interpretive sphere as follows:

- phenomenological (both structured – objective, understanding (subjectivist interpretation) and unstructured – empathetic, introspective)
- interpretive practice (participatory observation)
- symbolic interactionism (which consider actions - man acts towards himself and towards others only on the basis of the meanings he constructs situationally, interactions - in human behavior there is a visible (interactional) and an invisible (symbolic) manifested form, the situations social, meanings and symbols - Social objects or events do not have intrinsic meanings because they lack self-awareness, as a result they are invested by people, i.e. they give them particular symbolic characteristics, rules, norms, social roles, role takeovers or adoptions - the analysis will not only be external, objective, based on the substitution of the real perspective of the social actor with the theoretical one of the researcher, but the analysis of the interactional situation in order to understand and introspectively interpret behaviors and behaviors)
- ethnographic (ethnomethodology) – understanding and interpreting common meanings shared by group members.

Qualitative analysis techniques (analysis of documents, normative framework and regulations) combined with induction, abduction and deduction were used as data collection and analysis methods.

4. Findings

The effects of the war in Ukraine on the Romanian economy

In the current environment, adverse shocks can propagate through several channels, as follows:

A. The commercial channel is one of the main channels for the propagation of a possible crisis. An open conflict between Russia and Ukraine affects the demand for goods and services both between the two states and on European countries (Orhan, 2022).

According to the data sent by the National Institute of Statistics, Romania exported to Russia products of 402 million euros and imported 3.88 billion euros in 2022. Compared to 2021, the import increased by almost 25%, while the export decreased halved, causing the trade deficit to deepen. The values strictly reflect Romania's direct exposure to Russia, without taking into account possible indirect exposures through trade with a number of intermediaries.

In the case of Romania, according to Eurostat data, about 45% of natural gas imports come directly from Russia, while the rest of the imports take place through intermediaries such as Bulgaria or Hungary, the main exposure being, in fact, also in the relationship with Russia . However, Romania remains among the few European countries with the least dependence on Russian natural gas imports.

Also, according to the bans imposed on European countries (including Romania), they undertake not to export luxury products to Russia and also to stop importing from Russia steel and steel products, iron, wood, cement, paper and plastic, fruits seafood, alcoholic beverages or tobacco, gold and jewelry.

B. The financial channel (United Nations, 2022) targeted several important bans, such as: restricting Russia's access to EU capital and financial markets, ban on transactions with the Central Bank of Russia, ban on providing Russia with euro banknotes or wallets cryptographic.

Banking exposures to Russia are limited. Banks in Romania do not have direct capital participations with Russian origins, but with all that, increased monitoring of cyber security is necessary.

C. The migration channel (MUFG, 2022, pp. 48). With the launch of the Russian military aggression on February 24, 2022, millions of Ukrainian citizens fled the path of war, seeking shelter and protection in European Union countries, but also in the Republic of Moldova.

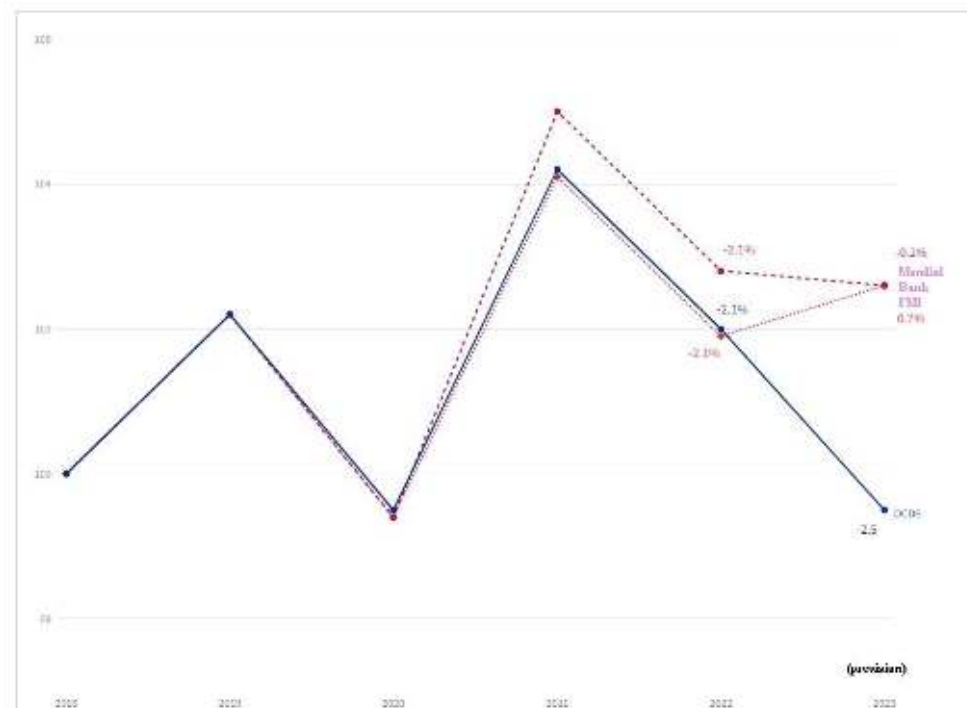
Since the beginning of the geopolitical crisis, most of the Ukrainian refugees have only transited the territory of Romania. It is expected that a small part of them will settle here and actively contribute to the labor market, given the particular structure of the migratory flow made up mainly of women and children.

D. The channel of trust (MUFG, 2022, pp. 52). In addition to the previously mentioned factors, there is also the erosion of investor confidence caused by the increase in uncertainty that characterizes the macroeconomic context. Moreover, the amplification of the feeling of uncertainty takes place especially in the geographical proximity of the armed conflict zone.

Since Russia's unprovoked and unjustified invasion of Ukraine in early 2022, the European Council has adopted 10 sanctions packages against Russia and Belarus. They aim to weaken Russia's ability to finance the war and specifically target the political, military and economic elite responsible for the invasion.

According to the World Bank and the Organization for Economic Co-operation and Development (OECD), 2022 was an unfavorable year for the Russian economy. Its economy could continue its decline in 2023, as Russia's GDP is expected to fall by 2.5% in the most pessimistic scenario (OECD) or by 0.2%, according to the World Bank (Figure no. 2).

Figure no. 2. Russia's GDP: evolution in the period 2018 - 2023



Source: own processing after World Bank (2022) and OECD (2022)

The labor shortage is the result of the war in Ukraine, mobilization and emigration - factors that amplify the effect of Russia's pre-existing demographic problems. At the same time, the number of jobs is continuously increasing due to an economy artificially stimulated by military spending. The labor shortage is fueling two of Russia's most pressing economic problems: rising inflation and the falling ruble.

5. Conclusions

In the case of Romania, the direct effects are anticipated to be lower as a result of the lower energy exposure compared to those of the main commercial partners, but the effects transmitted through indirect channels, especially through the confidence of economic agents, are predicted to be more substantial from the cause of the internal vulnerabilities associated with the twin deficits (budget deficit, current account deficit) that have accumulated in recent years in the Romanian economy.

Regardless of the finality of the war fought between the two neighboring countries Russia and Ukraine, the context led the European Union to reconsider new geopolitical strategies, to instill in the partner countries a series of principles that would determine their resistance to the pressures coming from Moscow, but also to any other aggressive power. It instilled the feeling of belonging to a cohesive and unitary union, respecting the principle of sovereignty and territorial integrity.

In conclusion, from an economic point of view, Romania will experience higher prices for energy, natural gas, but also for other raw materials that were once imported from Russia (wood, paper, steel, coal, crude oil, etc.), a shortage for certain raw materials that will cause delays in some investments and projects, a more expensive access to resources, the allocation of an additional share of the GDP for defense, but also an increase in inflation. However, depending on the pragmatic and constructive approach, Romania may also know certain opportunities in the next period, especially in the energy, naval, infrastructure, food, agricultural, defense, and development investment sectors.

So, through the failure of diplomatic and political methods a new Cold War has opened which will eventually generate a new arms race.

It remains to be studied whether the inflammation of the geopolitical scene was a result of the degradation of diplomatic relations or the crisis generated by the Covid pandemic, as a result of which all the economies of the world suffered (inflation in the USA reached historic levels, the lack of activity of a good part of the defense economy, a viable and quick option to relaunch the economy by increasing budget spending but also by investing in defense, the slowdown in China's economic growth, blockages in supply chains, etc.).

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Analysis of the Employed Population Evolution and of the Gross Domestic Product in Services, in the Western Region of Romania

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Abstract

The research has as objective to analyse the evolution of the employed population and the gross domestic product in services, in the Western Region of Romania, from 2016-2020, respectively to highlight the importance of the employed population's contribution to the creation of the gross domestic product.

Based on the statistical data series, the absolute, relative and average indicators were calculated, with the aim of identifying for each type of service the increase, the dynamics index and the rate of growth of the employed population and the gross domestic product, both in absolute values and in values mediums.

The employed population and the gross domestic product registered positive values for most services, and negative values only for the population employed in Financial Intermediation and Insurance services, Other service activities, Education, Public Administration and Defence; social insurance from the public system, as well as to the gross domestic product for Real Estate Transaction services and Financial Intermediation and Insurance services.

Key words: employed population, gross domestic product, services, increase, index, rhythm, calculation algorithm

J.E.L. classification: L8, R11

1. Introduction

In order to identify the contribution of the population employed in services, in the Western Region of Romania, to the growth of the gross domestic product, in the period 2016-2020, a statistical series on the evolution over time of the population employed in services and the gross domestic product at the level of the Western Region was built, on the basis of which the absolute, relative and average indicators were calculated, for the population employed in services at the level of the Western Region, for the analysed period, in order to be able to draw concrete conclusions.

The development of the national economy is based on the regional development of a country, which is exactly why Braşoveanu stated that the world has witnessed unparalleled regional development over the past few decades, driven by factors such as rapid urbanization, industrialization, and globalization" (Braşoveanu, 2023, p. 42).

The contribution of a population to the creation of the gross domestic product is very important at the national level, supporting the economic development of the country.

2. Theoretical background

Specialty literature underlines the fact that the gross domestic product is a macro-economic aggregate indicator of the national accounts, being considered the main indicator by which the development and growth of the national economy is measured. This indicator represents the final value of all goods and services produced in the national economy over a period of one year. But these goods and services are produced by development regions of the national economy and by sectors of activity.

The last year that was analysed is the first year of the pandemic period - 2020, which is precisely why it is considered that "stimulating economic growth in times of crisis goes hand in hand with increasing social needs. The process of economy capitalizing is necessary in conjunction with the development of services (social and employment services), otherwise income inequality may affect social security" (Belciug, 2022, p 471).

Being an important indicator for the development of the national economy, "the employed population includes all individuals - both employees and self-employed - who exercise a productive activity within the production limits of the European System of Accounts" (Anghelache, 2012, p. 21).

In the services domain one could observe interdependencies between the actual production process of the services, according to the consumers' needs. Consumer demand for services is based on "the needs imposed by the individuals' lives and by the society" (Silași, 2007, p. 14), these being satisfied according to existing resources.

Taking into account the fact that in recent years the demand for most types of services is increasing, this has led to the development of the tertiary sector size.

The most important indicators used in determining the dimensions of the tertiary sector are:

- ✓ "the share of the employed population in the service sector, depending on the total employed population, an indicator that is important for the human resource used in the production of services;
- ✓ the contribution of services to the creation of GDP, in the sense that the average growth rate of GDP created in services is higher than that of total GDP;
- ✓ the number of economic and social agents active in the national economy, respectively the number of active enterprises by sector and branch;
- ✓ the size and structure of tangible assets, an indicator that shows the size of the material resources used in the service sector and their ratio with the other sectors;
- ✓ the size of investments and their structure, an indicator used to identify the efforts made for the creation of new fixed assets or for the development, modernization and reconstruction of the existing ones in the service sector, compared to the other sectors."(Ioncică, 2000, p.44-56).

Thus, services contribute to the economic-social development and the increase in the quality of life, which generates the growth of the national economy.

3. Research methodology

In order to analyse the evolution of the employed population and the gross domestic product in services, in the Western Region of Romania, in the period 2016-2020, the series including statistical data was taken from the National Institute of Statistics (<https://insse.ro/cms/ro/tags/repere-economice-si-sociale-regionale>).

In order to be able to realized =the analysis of the evolution of the employed population and the gross domestic product in the Western Region of Romania, in the period 2016-2020, = a quantitative research method was used, namely the study of the series of statistical data chronologically, for which the absolute, relative and average indicators of the series were used as a method of analysis (Ciurea, 2006), (Gherghina, 2010) *to highlight the trend of the employed population and the gross domestic product, in services, in the Western Region of Romania, in the period 2016-2020.*

For the absolute indicators, the series of statistical data (y_i) is used, according to which the absolute changes were calculated, respectively: the increase with fixed base score $\Delta_{i/1} = y_i - y_1$ (1) and a chain linking score $\Delta_{i/i-1} = y_i - y_{i-1}$ (2). For relative indicators, the fixed base dynamics index was calculated $I_{i/1} = \frac{y_i}{y_1}$ (3) and the chain linking dynamics index $I_{i/i-1} = \frac{y_i}{y_{i-1}}$ (4), as well as the fixed base growth rate $R_{i/1} = I_{i/1} - 1$ (5) and the chain linking growth rate $R_{i/i-1} = I_{i/i-1} - 1$ (6). Average indicators were calculated from absolute values, respectively the average of the series

$\bar{y} = \frac{\sum_{i=1}^n y_i}{n}$ (7), average growth $\bar{\Delta} = \frac{y_n - y_1}{n-1}$ (8) and from relative values, respectively the average evolution index $\bar{I} = \sqrt[n-1]{\frac{y_n}{y_1}}$ (9), the average rate of evolution $\bar{R} = \bar{I} - 1$ (10).

4. Findings

The results of the research on the analysis of the employed population evolution and the gross domestic product in services, in the Western Region of Romania, in the period 2016-2020 are presented below:

4.1. Analysis of the evolution of the population employed in services, in the Western Region of Romania, in the period 2016-2020

Based on the statistical data series of the employed population at the level of the Western Region of Romania, presented in the table below as absolute level indicators, the indicators of absolute changes, relative indicators and average indicators were calculated

Table no. 1 The centralizer of the calculation algorithm of the population employed in services, in the Western Region of Romania, in the period 2016-2020

Years	ABSOLUTE INDICATORS (thousands of people)			RELATIVE INDICATORS (%)				AVERAGE INDICATORS				
	LEVEL	ABSOLUTE MODIFICATIONS		DYNAMICS INDEX		GROWTH RATE		CALCULATED FROM ABSOLUTE VALUES		CALCULATE FROM RELATIVE VALUES		
		Data series	fixed base score	chain linking score	fixed base index	chain linking index	fixed base rate	chain linking rate	Series average	Score average	Index average	Growth average rate
		y _i	Δ _{i/1}	Δ _{i/-1}	I _{i/1}	I _{i/-1}	R _{i/1}	R _{i/-1}	\bar{y}	$\bar{\Delta}$	\bar{I}	\bar{R}
1. Wholesale and retail trade; motor vehicle and motorcycle repair												
2016	123.4	0	-	1	-	0	-	124.38	0.80	1.0070	0.0070	
2017	122.5	-0.90	-0.90	0.9927	0.9927	-0.0073	-0.0073					
2018	122.5	-0.90	0.00	0.9927	1.0000	-0.0073	0.0000					
2019	126.9	3.50	4.40	1.0284	1.0359	0.0284	0.0359					
2020	126.6	3.20	-0.30	1.0259	0.9976	0.0259	-0.0024					
2. Transport and storage												
2016	45.3	0	-	1	-	0	-	48.14	1.28	1.0270	0.0270	
2017	47.4	2.10	2.10	1.0464	1.0464	0.0464	0.0464					
2018	48.8	3.50	1.40	1.0773	1.0295	0.0773	0.0295					
2019	48.8	3.50	0.00	1.0773	1.0000	0.0773	0.0000					
2020	50.4	5.10	1.60	1.1126	1.0328	0.1126	0.0328					
3. Hotels and restaurants												
2016	17.6	0	-	1	-	0	-	18.84	0.35	1.0193	0.0193	
2017	18.6	1.00	1.00	1.0568	1.0568	0.0568	0.0568					
2018	19.2	1.60	0.60	1.0909	1.0323	0.0909	0.0323					
2019	19.8	2.20	0.60	1.1250	1.0313	0.1250	0.0313					
2020	19.0	1.40	-0.80	1.0795	0.9596	0.0795	-0.0404					
4. Information and Communications												
2016	17.2	0	-	1	-	0	-	19.56	1.15	1.0610	0.0610	
2017	18.9	1.70	1.70	1.0988	1.0988	0.0988	0.0988					
2018	19.8	2.60	0.90	1.1512	1.0476	0.1512	0.0476					

Years	ABSOLUTE INDICATORS (thousands of people)			RELATIVE INDICATORS (%)				AVERAGE INDICATORS				
	LEVEL	ABSOLUTE MODIFICATIONS		DYNAMICS INDEX		GROWTH RATE		CALCULATED FROM ABSOLUTE VALUES		CALCULATE FROM RELATIVE VALUES		
		Data series	fixed base score	chain linking score	fixed base index	chain linking index	fixed base rate	chain linking rate	Series average	Score average	Index average	Growth average rate
		y _i	Δ _{i/1}	Δ _{i/-1}	I _{i/1}	I _{i/-1}	R _{i/1}	R _{i/-1}	\bar{y}	$\bar{\Delta}$	\bar{I}	\bar{R}
2019	20.1	2.90	0.30	1.1686	1.0152	0.1686	0.0152					
2020	21.8	4.60	1.70	1.2674	1.0846	0.2674	0.0846					
5. Financial intermediation and insurance												
2016	9.2	0	-	1	-	0	-	6.98	-0.73	0.9097	-0.0903	
2017	6.7	-2.50	-2.50	0.7283	0.7283	-0.2717	-0.2717					
2018	6.2	-3.00	-0.50	0.6739	0.9254	-0.3261	-0.0746					
2019	6.5	-2.70	0.30	0.7065	1.0484	-0.2935	0.0484					
2020	6.3	-2.90	-0.20	0.6848	0.9692	-0.3152	-0.0308					
6. Real estate transactions												
2016	3.3	0	-	1	-	0	-	3.02	-0.02	0.9923	-0.0077	
2017	2.8	-0.50	-0.50	0.8485	0.8485	-0.1515	-0.1515					
2018	2.9	-0.40	0.10	0.8788	1.0357	-0.1212	0.0357					
2019	2.9	-0.40	0.00	0.8788	1.0000	-0.1212	0.0000					
2020	3.2	-0.10	0.30	0.9697	1.1034	-0.0303	0.1034					
7. Professional, scientific and technical activities												
2016	13.7	0	-	1	-	0	-	14.62	0.43	1.0297	0.0297	
2017	13.9	0.20	0.20	1.0146	1.0146	0.0146	0.0146					
2018	14.7	1.00	0.80	1.0730	1.0576	0.0730	0.0576					
2019	15.4	1.70	0.70	1.1241	1.0476	0.1241	0.0476					
2020	15.4	1.70	0.00	1.1241	1.0000	0.1241	0.0000					
8. Administrative service and support service activities												
2016	25.7	0	-	1	-	0	-	25.94	0.03	1.0010	0.0010	
2017	25.7	0.00	0.00	1.0000	1.0000	0.0000	0.0000					
2018	26.2	0.50	0.50	1.0195	1.0195	0.0195	0.0195					
2019	26.3	0.60	0.10	1.0233	1.0038	0.0233	0.0038					
2020	25.8	0.10	-0.50	1.0039	0.9810	0.0039	-0.0190					
9. Public administration and national defence; social insurance from the public system												
2016	17.7	0	-	1	-	0	-	17.80	-0.05	0.9972	-0.0028	
2017	17.9	0.20	0.20	1.0113	1.0113	0.0113	0.0113					
2018	17.8	0.10	-0.10	1.0056	0.9944	0.0056	-0.0056					
2019	18.1	0.40	0.30	1.0226	1.0169	0.0226	0.0169					
2020	17.5	-0.20	-0.60	0.9887	0.9669	-0.0113	-0.0331					
10. Education												
2016	36.2	0	-	1	-	0	-	35.76	-0.33	0.9909	-0.0091	
2017	36.5	0.30	0.30	1.0083	1.0083	0.0083	0.0083					
2018	36.1	-0.10	-0.40	0.9972	0.9890	-0.0028	-0.0110					
2019	35.1	-1.10	-1.00	0.9696	0.9723	-0.0304	-0.0277					
2020	34.9	-1.30	-0.20	0.9641	0.9943	-0.0359	-0.0057					
11. Health and social care												
2016	39.6	0	-	1	-	0	-	42.38	1.63	1.0387	0.0387	
2017	40.9	1.30	1.30	1.0328	1.0328	0.0328	0.0328					
2018	42.0	2.40	1.10	1.0606	1.0269	0.0606	0.0269					

Years	ABSOLUTE INDICATORS (thousands of people)			RELATIVE INDICATORS (%)				AVERAGE INDICATORS			
	LEVEL	ABSOLUTE MODIFICATIONS		DYNAMICS INDEX		GROWTH RATE		CALCULATED FROM ABSOLUTE VALUES		CALCULATE FROM RELATIVE VALUES	
	Data series	fixed base score	chain linking score	fixed base index	chain linking index	fixed base rate	chain linking rate	Series average	Score average	Index average	Growth average rate
	y_i	$\Delta_{i/1}$	$\Delta_{i/-1}$	$I_{i/1}$	$I_{i/i-1}$	$R_{i/1}$	$R_{i/i-1}$	\bar{y}	$\bar{\Delta}$	\bar{I}	\bar{R}
2019	43.3	3.70	1.30	1.0934	1.0310	0.0934	0.0310				

Years	ABSOLUTE INDICATORS (thousands of people)			RELATIVE INDICATORS (%)				AVERAGE INDICATORS				
	LEVEL	ABSOLUTE MODIFICATIONS		DYNAMICS INDEX		GROWTH RATE		CALCULATED FROM ABSOLUTE VALUES		CALCULATE FROM RELATIVE VALUES		
		Data series	fixed base score	chain linking score	fixed base index	chain linking index	fixed base rate	chain linking rate	Series average	Score average	Index average	Growth average rate
		y _i	Δ _{i/1}	Δ _{i/-1}	I _{i/1}	I _{i/-1}	R _{i/1}	R _{i/-1}	\bar{y}	$\bar{\Delta}$	\bar{I}	\bar{R}
2020	46.1	6.50	2.80	1.1641	1.0647	0.1641	0.0647					
12. Performing, cultural and recreational activities												
2016	5.5	0	-	1.0000	-	0.0000	-	5.72	0.05	1.0090	0.0090	
2017	5.4	-0.10	-0.10	0.9818	0.9818	-0.0182	-0.0182					
2018	6.0	0.50	0.60	1.0909	1.1111	0.0909	0.1111					
2019	6.0	0.50	0.00	1.0909	1.0000	0.0909	0.0000					
2020	5.7	0.20	-0.30	1.0364	0.9500	0.0364	-0.0500					
13. Other service activities												
2016	19.0	0	-	1	-	0	-	16.88	-0.83	0.9534	-0.0466	
2017	17.2	-1.80	-1.80	0.9053	0.9053	-0.0947	-0.0947					
2018	16.8	-2.20	-0.40	0.8842	0.9767	-0.1158	-0.0233					
2019	15.7	-3.30	-1.10	0.8263	0.9345	-0.1737	-0.0655					
2020	15.7	-3.30	0.00	0.8263	1.0000	-0.1737	0.0000					
14. Construction												
2016	50.0	0	-	1.0000	-	0.0000	-	51.40	0.78	1.0152	0.0152	
2017	51.0	1.00	1.00	1.0200	1.0200	0.0200	0.0200					
2018	50.7	0.70	-0.30	1.0140	0.9941	0.0140	-0.0059					
2019	52.2	2.20	1.50	1.0440	1.0296	0.0440	0.0296					
2020	53.1	3.10	0.90	1.0620	1.0172	0.0620	0.0172					

Source: made by the author based on the statistical data series available on
<https://insse.ro/cms/ro/tags/repere-economice-si-sociale-regionale>

The evolution or dynamics of the employed population by type of services, at the level of the Western Region of Romania, depending on the dynamics index and the growth rate, recorded a positive trend for several types of services during the entire period analysed 2016-2020, the first place being the population employed in Information and communication services, this type of service registering a continuous evolution from 17.2 thousand people in 2016 to 21.8 thousand people in 2020, the average of the series being 19.56 thousand people, the average score of 1.15 thousand people, average dynamics index of 1.0610 and a growth rate of 0.0610.

The second place among the types of services analysed is taken by Health and social assistance services, with a continuous evolution of the employed population, from 39.6 thousand people in 2016 to 46.1 thousand people in 2020, the series average being 42.38 thousand people, the average growth of 1.63 thousand people, the average dynamics index of 1.0387 and an average growth rate of 0.0387.

The third place among the types of services analysed is held by the services of Professional, scientific and technical activities, with a continuous evolution of the employed population, from 13.7 thousand people in 2016 to 15.4 thousand people in 2020, the series average being 14.62 thousand people, the growth average of 0.43 thousand people, the average dynamics index of 1.0297 and an average growth rate of 0.0297.

The fourth place is occupied by Transport and storage services with a continuous evolution of the employed population, from 45.3 thousand people in 2016 to 50.4 thousand people in 2020, the average of the series being 48.14 thousand people, the average score of 1.28 thousand people, the index dynamic average of 1.0270 and an average growth rate of 0.0270.

The fifth place is occupied by hotels and restaurants services with a dynamic evolution, from 17.6 thousand people in 2016 to 19.0 thousand people in 2020, the average of the series being 18.84 thousand people, the average score of 0.35 thousand people, the average index of dynamics of 1.0193 and an average growth rate of 0.0193.

Buildings, as services domain, with an occupied population dynamics, from 50 thousand people in 2016 to 53.1 thousand people in 2020, are positioned on the sixth place, the average of the series being 51.40 thousand people, the average increase score of 0.78 thousand people, the average dynamics index of 1.0152 and an average growth rate of 0.0152.

The seventh place is occupied by the services of Performing, cultural and recreational activities with a busy population dynamic, from 5.5 thousand people in 2016 to 5.7 thousand people in 2020, the series average being 5.72 thousand people, the average increase score of 0.05 thousand persons, the average dynamics index of 1.0090 and an average growth rate of 0.0090.

Although the population employed in wholesale and retail services registers the highest value; the repair of motor vehicles and motorcycles is positioned on the eighth place, registering a continuous evolution over the entire analysed period from 123.4 thousand people in 2016 to 126.9 thousand people in 2020, the series average being 124.44 thousand people, the average increase score of 0.88 thousand people, the index dynamics average of 1.0070 and an average growth rate of 0.0070.

Administrative service activities and support service activities occupy the ninth position, registering a dynamics from 25.7 thousand people in 2016 to 25.8 thousand people in 2020, the of series average being 25.94 thousand people, the average increase score of 0.03 thousand people, the dynamics index average of 1.0010 and an average growth rate of 0.0010.

Although the average of the series of statistical data is positive for all services, there is an average increase score and an average negative growth rate for the following types of services: Financial intermediation and insurance (average increase score of -0.73 thousand people and average growth rate of -0.0903), Other service activities (average increase score of -0.83 thousand people and average growth rate of -0.0466), Education (average increase score of -0.33 thousand people and average growth rate of -0.0091), Real estate transactions (average increase score of -0.02 thousand people and average growth rate of -0.0077), Public Administration and Defence; social insurance from the public system (the average increase score of -0.05 thousand people and the average growth rate of -0.0028).

4.2. Analysis of the evolution of the gross domestic product in services, in the Western Region of Romania, in the period 2016-2020

The values of the gross domestic product in current prices (<https://insse.ro/cms/ro/tags/repere-economice-si-sociale-regionale>), were calculated according to constant prices using the annual indices of consumer prices in services, with the reference period being 2016 (100%), compared to the 2017 (99.23%), 2018 (101.74%), 2019 (105.68%), 2020 (108.95%) (<http://statistici.insse.ro/shop/?page=ipcal&lang=ro>), the values being listed to the absolute level indicators, in the table below.

The indicators of absolute changes, relative indicators and average indicators based on the statistical data series of the gross domestic product in constant prices at the level of the Western Region of Romania are presented in the table below as absolute indicators level.

Table no. 2 The centralizer of the calculation algorithm of the gross domestic product in services, in the Western Region of Romania, during the period 2016-2020

Western Region of Romania, during the period 2010-2020												
Years	ABSOLUTE INDICATORS (constant prices million lei)			RELATIVE INDICATORS (%)				AVERAGE INDICATORS				
	LEVEL	ABSOLUTE MODIFICATIONS		DYNAMICS INDEX		GROWTH RATE		CALCULATE D FROM ABSOLUTE VALUES		CALCULATE FROM RELATIVE VALUES		
		Data series	fixed base score	chain linking score	fixed base index	chain linking index	fixed base rate		Data series	fixed base score	chain linking score	fixed base index
		y_i	$\Delta_{i/1}$	$\Delta_{i/-1}$	$I_{i/1}$	$I_{i/i-1}$	$R_{i/1}$	$R_{i/i-1}$	\bar{y}	$\bar{\Delta}$	\bar{I}	\bar{R}
1. Wholesale and retail trade; motor vehicle and motorcycle repair; transport and storage; hotels and restaurants												
2016	13164.10	0	-	1	-	0	-	16185.42	1121.89	1.0761	0.0761	
2017	15561.12	2397.02	2397.02	1.1821	1.1821	0.1821	0.1821					
2018	16759.68	3595.58	1198.56	1.2731	1.0770	0.2731	0.0770					
2. Information and communications												
2016	3086.20	0	-	1	-	0	-	4308.11	570.17	1.1483	0.1483	
2017	4020.66	934.46	934.46	1.3028	1.3028	0.3028	0.3028					
2018	4130.63	1044.43	109.97	1.3384	1.0274	0.3384	0.0274					
2019	4936.22	1850.02	805.60	1.5994	1.1950	0.5994	0.1950					
2020	5366.87	2280.67	430.64	1.7390	1.0872	0.7390	0.0872					
3. Financial intermediation and insurance												
2016	1484.50	0	-	1	-	0	-	1172.18	-70.37	0.9488	-0.0512	
2017	1161.85	-322.65	-322.65	0.7827	0.7827	-0.2173	-0.2173					
2018	1017.10	-467.40	-144.74	0.6851	0.8754	-0.3149	-0.1246					
2019	994.42	-490.08	-22.69	0.6699	0.9777	-0.3301	-0.0223					
2020	1203.03	-281.47	208.61	0.8104	1.2098	-0.1896	0.2098					
4. Real estate transactions												
2016	7402.00	0	-	1	-	0	-	7180.16	-103.37	0.9857	-0.0143	
2017	6713.80	-688.20	-688.20	0.9070	0.9070	-0.0930	-0.0930					
2018	6845.00	-557.00	131.20	0.9247	1.0195	-0.0753	0.0195					
2019	7951.46	549.46	1106.46	1.0742	1.1616	0.0742	0.1616					
2020	6988.53	-413.47	-962.93	0.9441	0.8789	-0.0559	-0.1211					
5. Professional, scientific and technical activities; administrative service activities and support service activities												
2016	2945.40	0	-	1	-	0	-	3988.55	338.75	1.0992	0.0992	
2017	3990.43	1045.03	1045.03	1.3548	1.3548	0.3548	0.3548					
2018	3990.47	1045.07	0.04	1.3548	1.0000	0.3548	0.0000					
2019	4716.03	1770.63	725.56	1.6012	1.1818	0.6012	0.1818					
2020	4300.41	1355.01	-415.62	1.4600	0.9119	0.4600	-0.0881					
6. Public administration and defence; social insurance from the public system; education; health and social assistance												
2016	7490.70	0	-	1	-	0	-	10687.1	1342.1	1.1444	0.1444	

Years	ABSOLUTE INDICATORS (constant prices million lei)			RELATIVE INDICATORS (%)				AVERAGE INDICATORS				
	LEVEL	ABSOLUTE MODIFICATIONS		DYNAMICS INDEX		GROWTH RATE		CALCULATE D FROM ABSOLUTE VALUES		CALCULATE FROM RELATIVE VALUES		
		Data series	fixed base score	chain linking score	fixed base index	chain linking index	fixed base rate		Data series	fixed base score	chain linking score	fixed base index
		y_i	$\Delta_{i/1}$	$\Delta_{i/-1}$	$I_{i/1}$	$I_{i/i-1}$	$R_{i/1}$	$R_{i/i-1}$	\bar{y}	$\bar{\Delta}$	\bar{I}	\bar{R}
2017	9425.07	1934.37	1934.37	1.2582	1.2582	0.2582	0.2582					
2018	11116.18	3625.48	1691.11	1.4840	1.1794	0.4840	0.1794					
2019	12545.04	5054.34	1428.86	1.6747	1.1285	0.6747	0.1285					
2020	12858.93	5368.23	313.88	1.7167	1.0250	0.7167	0.0250					
7. Performing, cultural and recreational activities; household product repairs and other services												
2016	1930.00	0	-	1	-	0	-	2417.36	90.49	1.0439	0.0439	
2017	2415.80	485.80	485.80	1.2517	1.2517	0.2517	0.2517					
2018	2673.19	743.19	257.38	1.3851	1.1065	0.3851	0.1065					
2019	2775.83	845.83	102.65	1.4383	1.0384	0.4383	0.0384					
2020	2291.97	361.97	-483.86	1.1875	0.8257	0.1875	-0.1743					
8. Constructions												
2016	3096.70	0	-	1	-	0	-	3568.88	290.74	1.10830	0.0830	
2017	3109.14	12.44	12.44	1.0040	1.0040	0.0040	0.0040					
2018	3326.03	229.33	216.89	1.0741	1.0698	0.0741	0.0698					

Years	ABSOLUTE INDICATORS (constant prices million lei)			RELATIVE INDICATORS (%)				AVERAGE INDICATORS				
	LEVEL	ABSOLUTE MODIFICATIONS		DYNAMICS INDEX		GROWTH RATE		CALCULATE D FROM ABSOLUTE VALUES		CALCULATE FROM RELATIVE VALUES		
		Data series	fixed base score	chain linking score	fixed base index	chain linking index	fixed base rate		Data series	fixed base score	chain linking score	fixed base index
		y _i	Δ _{i/1}	Δ _{i/-1}	I _{i/1}	I _{i/ i-1}	R _{i/1}	R _{i/ i-1}	\bar{y}	$\bar{\Delta}$	\bar{I}	\bar{R}
2019	4052.90	956.20	726.87	1.3088	1.2185	0.3088	0.2185					
2020	4259.66	1162.96	206.76	1.3755	1.0510	0.3755	0.0510					

Source: made by the author based on the statistical data series and consumer price indices in services, available on

<https://insse.ro/cms/ro/tags/repere-economice-si-sociale-regionale>;

<http://statistici.insse.ro/shop/?page=ipcal&lang=ro>

At the level of the Western Region of Romania, for the period 2016-2020, the evolution or dynamics of the gross domestic product in constant or comparable prices, by types of services, for the entire analysed period, depending on the dynamics index and the growth rate, had a trend positive in several types of services, with Information and communication services on the first place with a continuous evolution from 3086.2 million lei in 2016 to 5866.87 million lei in 2020, with the series average of 4308.11 million lei, the average increase score of 570.17 million lei, the average dynamics index of 1.1483 and an average growth rate of 0.1483.

On the second place one could observe the public administration and defence services; social insurance from the public system; education; health and social assistance with a continuous evolution, from 7490.7 million lei in 2016 to 12858.93 million lei in 2020, the series average of 10687.18 million lei, the average increase score of 1342.06 million lei, the average dynamics index of 1.1446 and an average growth rate of 0.1446.

The third place when analysing its evolution is occupied by the services of professional, scientific and technical activities; administrative services activities and support services activities, with an evolution, from 2945.4 million lei in 2016 to 4300.41 million lei in 2020, the series average of 3988.55 million lei, the average increase score of 338.75 million lei, the average dynamics index of 1.0992 and an average growth rate of 0.0992.

On the fourth place the Construction services are situated with an evolution over the entire analysed period, from 3096.7 million lei in 2016 to 4259.66 million lei in 2020, the series average of 3568.88 million lei, the average increase score of 290.74 million lei, the average dynamics index of 1.0830 and an average growth rate of 0.0830.

Although the wholesale and retail trade services register the highest absolute level values; motor vehicle and motorcycle repair; transport and storage; hotels and restaurants, register a continuous evolution, from 13164.1 million lei in 2016 to 17651.68 million lei in 2020, the series average of 16185.42 million lei, the average increase score of 1121.89 million lei, the average dynamics index of 1.00761 and an average growth rate of 0.0761, which is why they are positioned on the fifth place.

Performing, cultural and recreational activities; repairs of household products and other services are positioned in sixth place, experiencing a dynamic throughout the analysed period, starting from 1930.0 million lei in 2016, reaching 2291.97 million lei in 2020, having a series average of 2417.36 million lei, the average increase score of 90.49 million lei, the average dynamics index of 1.0439 and an average growth rate of 0.0439.

A negative trend was recorded in Real Estate Transactions services, which had a dynamic from 7402.0 million lei in 2016 to 6988.53 million lei in 2020, the series average of 7180.16 million lei, the average increase score being negative -103.37 million lei, the average dynamics index of 0.9857 and an average growth rate of -0.0143, which is why these services are positioned on the seventh place.

A negative record was also identified in Financial Intermediation and Insurance services, from 1484.50 million lei in 2016 to 1203.03 million lei in 2020, the series average being negative: -70.37 million lei, the average dynamics index of 0.9488 and an average growth rate of -0.0512, which is why these services are positioned on the eighth place.

5. Conclusions

Based on the analysis, over the entire analysed period, 2016-2020, part of the population employed (thousands of people) in services registered a continuous evolution in the services of: Wholesale and retail trade; motor vehicle and motorcycle repair; Transport and storage; Information and communications; Professional, scientific and technical activities; Health and social care.

Regarding the other types of services, a dynamic is observed in: Hotels and restaurants, Financial intermediation and insurance; Real estate transactions; Administrative service activities and support service activities; Public administration and defence; social insurance from the public system; Education; Cultural and recreational performance activities; Other service activities, as well as Construction.

According to the average value of the series of statistical data, the first six places at the level of the Western Region in 2020 are occupied by Wholesale and retail trade; motor vehicle and motorcycle repair (124.44 thousand people), followed by Construction (51.40 thousand people), Transport and storage (48.14 thousand people), Health and social assistance (42.38 thousand people), Education (35.76 thousand people), as well as Service Activities administrative and support services activities (25.94 thousand people).

Regarding the value of GDP in millions of lei at constant prices, for the entire analysed period 2016-2020, it records a continuous evolution for Wholesale and Retail Trade services; motor vehicle and motorcycle repair, transport and storage, hotels and restaurants; followed by Public Administration and Defence; social insurance from the public system; education; health and social assistance; Information and communications; Professional, scientific and technical activities; administrative service activities and support service activities; Constructions.

Regarding the gross domestic product in constant prices, for the other types of services, a dynamic is observed in: Real estate transactions; Performing, cultural and recreational activities; repairs of household products and other services, the last place being occupied by Financial Intermediation and Insurance.

At the level of the Western Region, in 2020 the highest value of the gross domestic product, in current prices, for the first six places is recorded in wholesale and retail trade services; motor vehicle and motorcycle repair; transport and storage; hotels and restaurants (17,651.68 million lei), followed by Public Administration and Defence; social insurance from the public system; education; health and social assistance (12858.93 million lei), respectively Real estate transactions (6988.53 million lei), Information and communications (5366.87 million lei), Professional, scientific and technical activities; administrative services activities and support services activities (3988.55 million lei), Construction (4640.9 million lei). The last two places are occupied by performance, cultural and recreational activities services; repairs of household products and other services (2417.36 million lei), Financial intermediation and insurance (1172.18 million lei).

One can appreciate that the contribution of the population employed in services to the growth of the gross domestic product in the Western Region of Romania was significant throughout the analysed period.

The results of this study will form the basis of future more in-depth research or comparisons with other research realized in the field of study.

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Reaching Destinations Through Virtual Tourism – The Case of Romania

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Abstract

Tourism worldwide has been severely impacted by the Covid-19 pandemic, reason for which the Industry took a turn towards the new available technologies as for responding to the new requirements. Population volition and availability towards using virtual tourism during and after the pandemic in Romania has become a genuine research subject which timely enhanced by leadership and management teams altogether, could result into a healthy and sustainable tourism industry recovery, within the post-pandemic era. According to socio-demographic factors, virtual tourism proved to be an entertainment activity for people which cannot be actually immersed within the actual destination attractions A mixed-method approach will be used, results emphasizing the role of planned behavior within the people's destination choices. The research includes a PLS_SEM analysis which suggests the people willingness for virtual destination visits stuck, thus resulting that virtual tourism is an efficient manner as for promoting sustainable tourism actions.

Key words: virtual tourism, strategic management, Covid-19 pandemic

J.E.L. classification: J23, L83

1. Introduction

The unprecedented impact of the COVID-19 pandemic has reached the tourism industry on its one of the most prolific historical ascendent trendlines; the consequences deeply marked individuals, associations, institutions and organizations worldwide (Grossling et.al., 2021). According to the World Tourism Organization (UNWTO), there were reported several million in export revenues, along with social and private economic consequences (UNWTO 2021). The tourism sector has been subject to millions of job losses and livelihoods, thus becoming a driver for one of the most important economic crises of the century that could only be solved with the help of international and national bodies collaboration and cooperation.

The COVID-19 outbreaks were mainly due to non-isolation and unsupervised travelling, therefore the quarantine measures of social distancing and isolation, travel restriction, events cancellation and organizational closure were proved to be a viable solution for preventing the virus transmission (Cowling et.al., 2020; Lai et.al., 2020; Fong et.al., 2020). Despite the popularity of the measures across nations, the reduction of unnecessary trips and extensive stay-at-home periods led to decreases of national economic indices, employment loss and tourism industry decline (Sigala, 2020; Lau et.al., 2020).

Virtual tourism is widely presented by literature as one of the most viable solutions for the tourism industry recovery, since virtual travelling can be accessed by any stay-at-home individual which has access to technology and gadgets. The emerging tech industry provides for the use of virtual worlds (with applicability within the tourism industry altogether) the virtual reality (VR) and augmented reality (AR) applications which have the potential to empower not only the national but the global tourism industry at once.

Recent literature debates in regard with tourism virtual rejuvenation has not had the chance to align in research and opinions in regard to a singular and generally accepted view of virtual tourism

tools and functioning; for this reason, there are numerous references to virtual tourism but retrieved under names as cloud tourism, live broadcasting or live streaming. According to Burdea et.al. (2003), the augmented reality can be performed by enhancing the visitor's senses at the touristic site, by presenting computer-generated images that would further immerse the tourist's imagination in regard to the historical/present/future potential of the touristic site. Due to its interactions to the real environment, the augmented reality will not be considered for the development of the current study. On another hand, virtual reality (VR) generates 3D environmental captions that result into reality simulation, thus involving one or all of the visitor senses (Yung et.al., 2019); the new virtual environment (VE) created can derive from synthetic or real images (Beck et.al., 2019).

The sense of the verisimilitude provided by the VR techniques led towards a rise in it's popularity, since out/inside 360 degrees panoramic views that allow individual change and movement in any of the directions are at source of the general public affinity (Slater et.al., 2016; LaValle, 2016). The VR experience can be enjoyed while staying at home with the help of dedicated apps and any device such as computers and/or any smart devices. Pandemic was the cradle of important popularity gains for numerous socialization apps (Facebook, Twitter, Instagram, Tiktok, Wechat etc.) which allow live broadcasting and live streaming from basically any place and at any time; for this reason, virtual tourism through live broadcasting gained rapidly in importance, thus becoming a social trend (phenomenon) across the world. From its benefits gained not only (potential) tourists, but also travel and tourism agencies and touristic sites that were (in)direct involved. The live streaming is considered by the current research as a tool for virtual tourism.

The current research investigates the factors that are at source of individuals behaviors in regard to virtual tourism and their acquiescence in regard to the novelty of the virtual tourism tools and instruments. The aim of the study is to investigate within a post pandemic era the influence of virtual tourism on the entire sector. As of this writing, numerous economies are still under the process of economic recovery from the COVID-19 pandemic. We hypothesize that the uniqueness of the virtual tourism instruments can be positively quantified for the recovery of the touristic industry. To best of our knowledge, the current research is one of the few that relates to the study of the virtual tourism tools and effects within a post-pandemic era in Romania. The topic will be explored from the view of the theory of planned behavior, a popular approach across numerous scientific fields (Fishbein, 2010). By using a mixed method approach, the topic will be analyzed based on a number of 169 survey responses that will be further quantified.

2. Literature review

2.1. The theory of planned behavior

As one of the most important theories of social-psychological behavior, the theory of planned behavior (TPB) was developed in regard to one's intention of performing and adopting a given social conduct; the theory includes a number of three factors among which one could count the attitude in regard to the required and/or expected behavior, subjective norms and the control perceived in regard to the expected behavior (Fishbein et.al., 2010). Numerous research fields such as physics, mathematics, archeology, agriculture, medicine, technology or management have been developing research by considering the aforementioned theory (Guo et.al., 2021; Liobikiene et.al., 2016; de Leeuw et.al., 2015). According to Ulker et.al., 2020), the tourism and accommodation industry has enhanced the use of the theory of planned behavior in order to explain intentions for supporting touristic activities or revisits (Erul et.al., 2020; Ulker et.al., 2020). The TPB can be also used for touristic behavioral predictions in regard to a given touristic site and/or activity (Han et.al., 2017). The technology impact on tourism industry has gained scholars focus, mainly due to travel facilitating applications as online booking, user-generated content (UGC) or social media (Ukpabi et.al., 2018; Amaro et.al., 2019; Confente et.al., 2018). The current research hypothesis is that virtual tourism, similar to on site tourism, can be partially assigned to the TPB theory within the post pandemic era.

2.2. The application of virtual tourism

Apart from a large areal of domains and industries (management, marketing, education etc.), the tourism industry potential could be visibly raised from the odds of mass adopting the use of VR (Guttentag, 2010); one of the mass scale VR uses could refer to marketing and promotion of touristic destinations, with no physical requirement on site from any of the visitors. Virtual reality provides the user with a deeper assessment of the gains and losses from destination choice, thus weighting on its decision process. Therefore, if considering the behavioral intentions, one could argue the importance of VR within the touristic destination decision making (Marasco et.al., 2018; Rahimizhian et.al., 2020). Moreover, qualitative VR promotion services could enhance the likelihood of touristic site future and/or re-visitation (Gibson et.al., 2018). Such a decision involves deeply the touristic site management intentions and strategies which could adopt up to a certain quality degree the use of virtual reality. Data shows that for the latter years, VR proved increased efficiency compared to traditional marketing tools such as brochures or pamphlets (Yeh et.al., 2017). Moreover, virtual reality could be provided by touristic sites as a stand-alone touristic products such as thematic parks and/ or festivals. Nonetheless, especially for certain age categories (and not only), virtual reality could be an educational but also an entertainment activity used for relieving quotidian stress.

As an educational tool for the tourism industry, VR could be an useful tool for museums, art galleries or rear exhibits which could provide a veritable experience for enthusiasts which for various reasons could not travel on site in time (Carrozzino et.al., 2010; Roussou, 2004). There is an increasing art industry trend to launch virtual tours for visitors (Louvre Museum, 2020).

In accordance to the ease of reach of a touristic attraction, virtual accessibility can be used as an interchangeable access form, especially for dangerous, expensive or out of reach destination sites (Guttentag, 2010; Gutu et.al., 2023). Moreover, the benefits of virtual reality could stimulate the well-being of certain social categories with travel impediments (medical, social, economic), but not least, could provide better preservation odds for endangered sites (Siriaraaya et.al., 2014; Tecau et.al., 2019). The immersive experience provided by the virtual reality technology is a viable touristic access alternative which could curtail visitations and save the global heritage (Beraldin et.al., 2005).

3. Research methodology

By taking advantage of the qualitative-quantitative complementarity, the current research could provide with a more comprehensive picture in regard to the benefits and use of virtual tourism (Denscombe, 2008; Fleckenstein et.al., 2020). The urgency of understanding the advantages and disadvantages of virtual tourism prioritized the data gathering methodology which included the launch of an online Google Forms survey which was distributed via various social platforms. The answers were required to be anonymous, and subjects agreed to voluntarily and pro bono to fill in the answers. The language used was Romanian; the survey was administered for a 2 weeks period, 20.04-04.05.2023 and 186 viable answers were collected. The current research is based on prior results practice and pragmatism; the authors used a non-probability sampling method that resides on accounting for a voluntary response. General Data Protection Regulation (GDPR) was respected, since the volunteers were guaranteed that no personal data would be requested and/or retained through the Form; a strict confidentiality was respected, while all data would be used solely for academic research.

The design of the questionnaire was intended to provide researchers and readers with a wider grasp on the virtual tourism realities, tools and methods, in dependance to a number of variables that would be further explained.

The questionnaire consisted of a number of fifteen items including demographical status. Virtual tourism items were assessed by using a 7-point Likert scale ranging from 1-7 (totally agree to disagree). The internal consistency of the scale for all the items was >0.80 .

As for assessing the data, SmartPLS (v. 4.0.0) was used; the resulted models (as outer and inner) rely on the observable variables which are yielded to the latent variables.

4. Findings

The aim of the current research was to explore the use of technological tools within the (related) touristic activities in Romania, within the post pandemic era. The demographic characteristics of the current survey show that 72.8% of the respondents are women, and the wide majority of the respondents subscribe to the 18-30 age interval, as compared to 51-60 and over 60 years old which represent 4.4% of the total number. Respondents were asked to provide information in regard to the last degree or equivalent which they graduate, results showing an average of Highschool or equivalent diploma holders (69.8%) as compared to Doctoral and/or Postdoctoral degree holders which totalize 2.4%. as for the monthly income, the large majority has under 2000 Ron/month (an approximate equivalent of 500 EUR), while 26.6% of the respondents could gain up to 4000 Ron.

Table 1. Respondents demographic profile

Demographic data	Response category	Percentage
Gender	Masculine	27.2%
	Feminine	72.8%
Age	Under 18	4.7%
	18-30	79.9%
	31-40	5.3%
	41-50	5.9%
	51-60	2.4%
	Over 60	1.8%
Education	High school and equivalent	69.8%
	Bachelor degree and equivalent	23.7%
	Master's degree	4.1%
	Doctoral degree	1.8%
	Postdoctoral degree	0.6%
Monthly income (RON)	Under 2000	60.9%
	2000-4000	26.6%
	4001-10000	11.2%
	Over 10000	1.2%

Source: own developments

As further results will show, Romanian population is not very familiar with the virtual tourism tools and uses, most of them having previous information in regard to virtual streaming and 3D glasses.

Table no. 2. Respondents' attitudes towards the use of virtual tourism

	Frequency of scale						
	Strongly disagree (%)	Disagree (%)	Slightly disagree (%)	Neutral (%)	Slightly agree (%)	Agree (%)	Strongly agree (%)
Travel desire	13.6	8.3	9.5	17.2	25.4	11.8	14.2
Browsing travel destination (frequency)	10.1	11.8	18.9	20.7	22.5	7.7	8.3
Willingness to use virtual tourism	10.1	25.4	16.6	20.7	18.3	7.1	1.8
Virtual tourism attitudes (alternative and entertainment)	16.6	12.4	17.2	20.1	16.6	11.8	5.3
	14.2	11.2	17.8	20.7	21.9	9.5	4.7
Social norm	24.9	15.4	14.8	17.2	12.4	13	2.4
Perceived behavior to control virtual tourism access	8.9	5.9	13.6	24.3	18.3	19.5	9.5

Source: own developments

In regard to willingness to travel of the respondents and visit touristic sites, data shows that within the post pandemic era, 26.2 very aspire or aspire to travel, while 21.9% do not aspire (at all) to travel. When about the frequency of browsing pictures/video/online descriptions of touristic attraction, 39.5 indicated that sometimes, often and very often perform such activities. The willingness to use virtual tourism by using the advantage of technological advancement and its ease of reach, respondents' responses tend to strongly disagree, disagree and slightly disagree (52.2%).

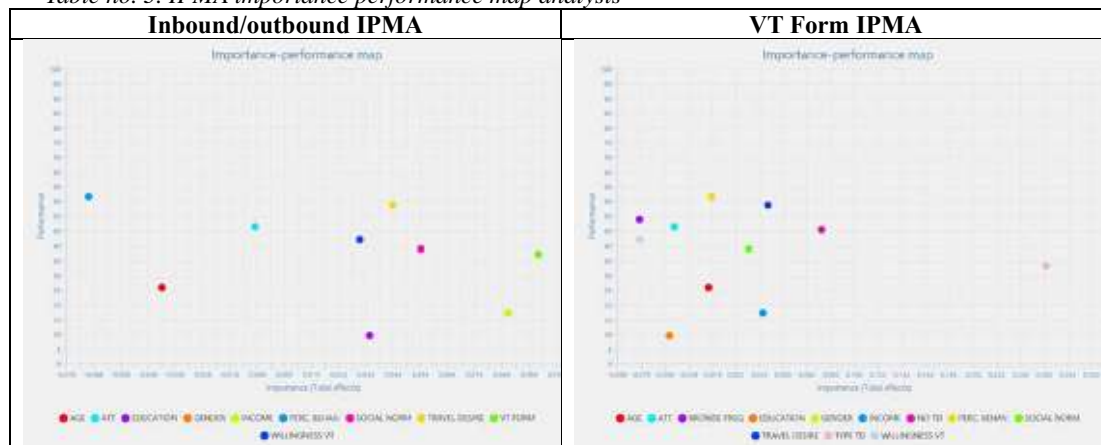
The survey data also analyzed the respondents' attitudes towards virtual tourism, by using two methods; at first, virtual tourism was considered to be an alternative to on site (traditional) touristic activities. Data shows that the percentage of the respondents that slightly-strongly disagree overpasses the slightly-strongly agree data (46.2% : 33.7%). The second method for measuring the attitudes toward the use of virtual tourism presented its activities under the form of entertainment; results show that respondents 43.2% of the respondents are on the negative side of the scale, while only 36.1% were positive with such a view. Moreover, respondents do not consider virtual touristic activities as a social norm which they could embrace further.

When about the perceived behavioral control as for accessing virtual touristic activities, 47.3% of the respondents adopted less conservative attitudes towards the online tourism. As for the attitudes towards technological touristic tools, results show that virtual activities as live broadcast and 360 degrees tours are equally popular among the respondents, while VR glasses are treated with a more conservative view. Despite the fact that technology allows users to access online even the most restricted touristic sites, the on site travelling experience comes with an array of advantages that are not easy to be replaced, such as shopping, the social function of interaction and multicultural engagements, food or entertainment. Moreover, the use of VR glasses could also create medical temporary issues for some of the users, a possible reason for their lack of popularity.

In regard to the types of touristic destination preferences, data shows natural landscapes and parks and gardens to occupy the top positions, followed by museums and historical sites. As for the number of touristic destinations reached by a traveler, data shows that 31.4% visit at least three destinations, while only 27.2% only travel for a single destination.

Given the novelty of the study, an importance performance map analysis was performed (Hair, et.al., 2018; Rigdon, et.al., 2011) for two of the variables, inbound/outbound tourism and the virtual tourism form.

Table no. 3. IPMA importance performance map analysis



Source: own developments

The analysis shows that for the decision of traveling in Romania or over the borders, the tourists mainly take into consideration variables as the form of virtual tourism and the income as being important, while the travel desire scores the highest on the performance axis. As for the virtual tourism form, the single most important factor on both axes is the type of touristic decision, followed by far by the number of touristic destinations.

Table no. 4. Model Path Coefficients

Path Coefficients	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
AGE -> ATT	0.131	0.131	0.052	2.544	0.011
AGE -> BROWSE FREQ	0.141	0.137	0.065	2.174	0.03
AGE -> INCOME	0.32	0.323	0.068	4.696	0
AGE -> TRAVEL DESIRE	0.124	0.121	0.061	2.035	0.042
AGE -> WILLINGNESS VT	0.202	0.2	0.065	3.109	0.002
ATT -> GOOD ATT	0.893	0.892	0.02	44.17	0
ATT -> NEW ATT	0.896	0.896	0.019	46.772	0
BROWSE FREQ -> NO TD	0.155	0.154	0.076	2.047	0.041
EDUCATION -> INCOME	0.217	0.22	0.074	2.934	0.003
IN/OUTBOUND -> VT FORM	0.377	0.378	0.145	2.593	0.01
INCOME -> IN/OUTBOUND	0.079	0.08	0.036	2.17	0.03
PERC. BEHAV. -> ATT	0.371	0.373	0.073	5.053	0
WILLINGNESS VT -> PERC. BEHAV.	0.289	0.289	0.07	4.148	0

Source: own developments

The path coefficients used for the inner model are used as for describing the constructs connections; according to the P values, from the demographical factors age appears to have the most significant impact on a number of virtual tourism related dimensions, such as browsing frequency, attitudes of willingness to use virtual tourism as a leisure activity. It is important to mention that the decision of traveling inside and/or outside of Romania borders is significantly linked to the virtual tourism form ($p=0.01$).

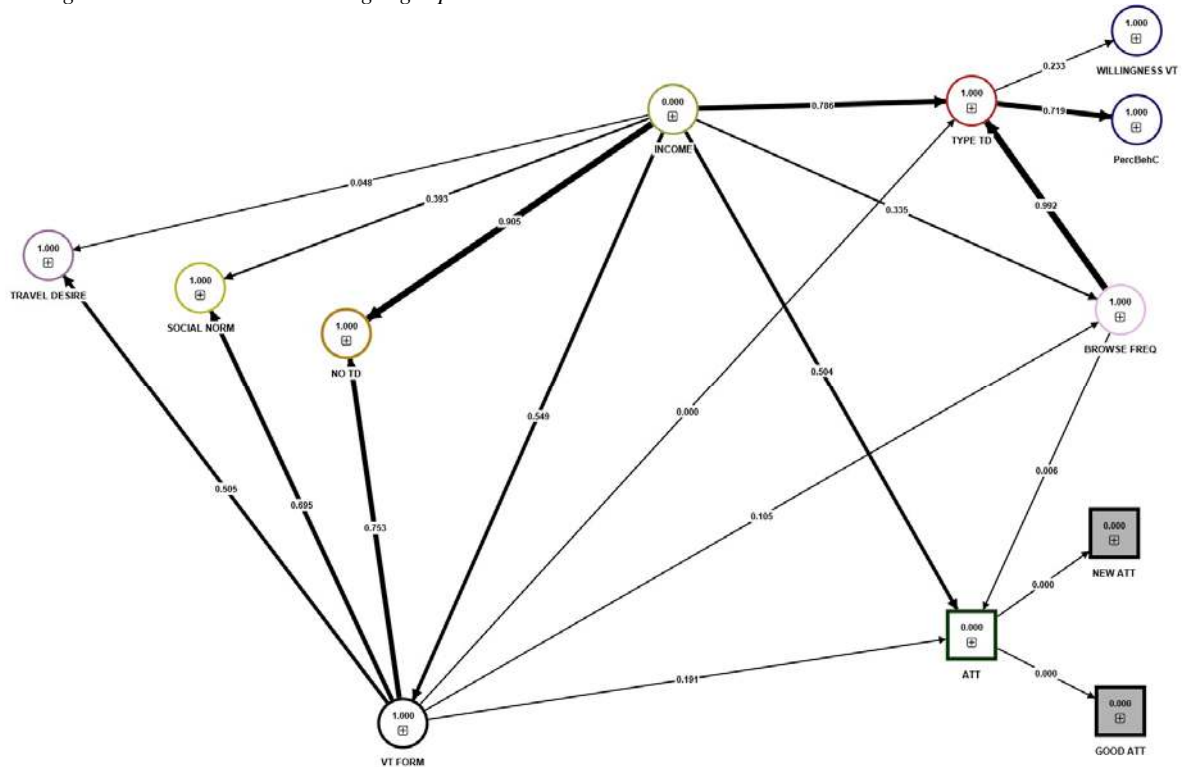
Table no. 5. Total indirect effects

Total indirect effects	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
AGE -> GOOD ATT	0.137	0.137	0.05	2.738	0.006
AGE -> IN/OUTBOUND	0.025	0.025	0.013	2	0.046
AGE -> NEW ATT	0.137	0.137	0.051	2.707	0.007
AGE -> PERC. BEHAV.	0.059	0.058	0.024	2.447	0.014
PERC. BEHAV. -> GOOD ATT	0.332	0.333	0.066	4.991	0
PERC. BEHAV. -> NEW ATT	0.333	0.334	0.067	4.996	0
WILLINGNESS VT -> ATT	0.107	0.111	0.042	2.541	0.011
WILLINGNESS VT -> GOOD ATT	0.096	0.099	0.038	2.535	0.011
WILLINGNESS VT -> NEW ATT	0.096	0.099	0.038	2.528	0.011

Source: own developments

As for the total indirect effects (an analysis that can only be performed for models with reflective factors), according to Gaskin et.al. (2023), for the significant p values (<0.05) the hypothesis is supported, meaning that an indirect effect is to be observed. The most important indirect effects are for Willingness VT-> Perceived Behavior and Perceived Behavior -> Attitude.

Figure no. 1. Virtual tourism highlight paths



Source: own developments

By performing a Bootstrapp analysis, results prove that there is a positive connection between the form of virtual tourism (as video stream, 360 degreeed virtual tours, VR glasses) and the travel desire ($p=0.505$), social norm ($p=0.695$) and the number of travel destinations ($p=0.753$). Income has an increased importance for a number of variables such as the number of travel destinations ($p=0.905$), along with the type of touristic destination ($p=0.786$), and almost equally ($p=0.5$) important for the virtual tourism forms and attitudes towards virtual tourism. Moreover, results show that the browsing frequency has a significant effect on the type of touristic destination ($p=0.992$), while the type of touristic destination has a significant effect on perceived behavior ($p=0.719$).

5. Discussion and final remarks

The aim of the current study was enabled within a threefold objective, namely to study the influence and constrains of the virtual tourism through the three TPB theory factors: the attitude in regard to the virtual tourism components, the description of social norm and the perceived control towards the virtual tourism activities (Ajzen, 1991). Moreover, tourists which are technology aware, use video streaming from touristic destinations and frequently browse information in regard to touristic sites are more likely to become users of virtual tourism. The one major constraint for the future possible users of the virtual touristic tools is the lack of familiarity in regard to technological advances along with the lack of general knowledge of its touristic potential.

As data reveals, after natural landscapes and parks and gardens, the museums are among the most popular touristic destinations, meaning that virtual tourism tools could be of extensive use for the managerial strategies of these sites. The alleged virtual suitability regards rare/temporary and/or permanent exhibits which with the help of 3D technology and virtual tours, could display highly qualitative results for users, with detailed interpretation and without any potential damage for the art item. Compared to natural landscapes wich are recommendable to be visited on site, the cultural landscape could be much better understood via virtual tourism.

Moreover, virtual tourism could be used for educational purposes, by enhancing learning in regard to museums, art galleries or any heritage sites (Carrozino et.al., 2010; tom Dieck et.al., 2016); in the light of the previous pandemic situation, one must observe the health safety and welfare provided by educational virtual enhancements, compared to on site alternative.

During and after the COVID-19 pandemic, virtual tourism tools express the potential for rescuing and supporting the recovery of the national and/or global tourism industry. According to previous research, virtual reality has the potential of being an effective management and marketing tool, influencing individuals in regard to the destinations and desirability to visit the chosen location. For this reason, agencies, organizations and various national and international bodies encountered a stringent need to promote the possibility of online tourism, research showing that it has greater effects compared to brochures and pamphlets, thus increasing the individual desirability of visiting one site once visited via virtual touristic tools (Yeh et.al., 2017).

Another benefit following the increased usage of virtual touristic instruments could result into improved conditions for climate change, by reducing greenhouse gas emissions from transport, shopping and food provided for tourists (Lenzen et.al., 2018). In this light, one might assume that COVID-19 was a positive environmentally situation, since the reduced travelling due to destination closure led to event cancellations and therefore less greenhouse gas emissions. For this reason, virtual tourism is considered to a friendly alternative for the environment, therefore virtual touristic tools are sustainable tools.

As previous research suggests (Guttentag, 2010; Siriaraya et.al., 2014), the general public could benefit from the enlarged accessibility of touristic destinations, especially for sensible categories of public with certain concerns (based on gender, age, education, economic welfare of medical approaches). Also, distance, accessibility and other barriers that could generally contribute to negative touristic turnovers could be overcome while using the option of virtual tourism.

The individual willingness to use virtual tourism tools after the pandemic is an area to be studied and enhanced by tourism industry sites providers, since tourism industry shows a promising future due to extensive technological advancements and ease of access and travel being reached by increasing touristic flocks. Virtual tourism could be used for informing oneself prior to traveling, reaching tips in regard to cultural, natural, economic, time or accessibility possible constraints. The try-before-you-buy service provided by virtual tourism should be enhanced by tourism providers, despite the services or products they provide. Nonetheless, for the years to come, there is room for virtual tourism to expand and provide larger service array by using tools to be invented.

Final remarks surprise the Romania society as a potential market for tourism providers, data showing that major investments are necessary for generally familiarizing the society with the tools and benefits of virtual tourism, prior to expecting larger user amounts. As for the post-pandemic management implications on the country-level which is still on its course to recovery after the sanitary crisis, virtual tourism could be used as an effective tool, along with strategic enhancements in regard to prevention of future possible pandemic situations. It is important to advocate outdoor scenic tourism destinations managers to adopt and implement virtual tourism strategies as for better presenting their products and services. Moreover, innovative solutions for incorporating within the virtual touristic tools the selling of traditional touristic items such as souvenirs or local items which would ultimately result into an profit increase, need to be adopted. Moreover, virtual tourism is an effective marketing tool that could help even the small touristic players to sell their products and services, thus influencing tourists destination choices. Aside from having a promising future, the current study could promote diversity, social inclusion and sustainability, by enhancing the touristic sites' virtual accessibility and encouraging the greenhouse gas emissions.

6. Limitations and further developments

Despite of the promising future of the virtual tourism promised and encouraged by the developments favored by the COVID-19 Pandemic and further events, when virtual tourism took wings and gained in popularity, once with lifting travel restrictions, people still show a diversity of interest levels towards different aspects of virtual tourism. One of the motivations behind such developments resides within informative purposes as preliminary premises for choosing a given touristic destination. such results are more that sufficient for encouraging touristic destinations

managers to seriously grant attention to various forms of touristic virtual developments and invest accordingly. Such developments could also benefit for various social categories that rely on health, financial, accessibility or time constraints. By aligning the present results with previous studies (Ford, 2001; Siriaraya et.al., 2014) virtual accessibility of the tourism destinations are generally limited by the lack of previous infrastructure, tech insufficient developments and lack of popularity; despite the peculiarity explained by an instant of an instant development during the pandemic. Costs appear to be perceived as a low point for both touristic managers and travelers, since access to the latest developments are not highly accessible, programs to facilitate such processes being a needed further investment. Touristic activities have the potential to reduce greenhouse gas emissions, an aspect that needs to be further considered for legislative bodies that have the power to implement general broad initiatives.

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The Connection between Business Ethics and the Organizational Culture

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Abstract

The article examines the connection between corporate culture and business ethics. Ethical considerations have grown in importance in today's corporate environment, impacting not only internal decision-making processes but also the culture of the entire corporation. This study delves into the dynamics that underlie the interplay between business ethics and organizational culture, examining how ethical principles are embedded in the values, norms, and behaviors that define an organization's identity. By synthesizing existing literature and drawing on empirical examples, the paper aims to elucidate the impact of ethical practices on the development and sustenance of a positive organizational culture and investigates the reciprocal influence, exploring how the prevailing culture within an organization can either foster or hinder the adoption and adherence to ethical principles. The results of this study should deepen our understanding of the close connection between organizational culture and business ethics, having important implications for scholars and policymakers who work to foster ethical workplace environments.

Key words: business ethics, organizational culture, connected, norms, values

J.E.L classification: A13

1. Introduction

In the dynamic landscape of contemporary business, the symbiotic relationship between business ethics and organizational culture has emerged as a focal point of inquiry and strategic consideration. As organizations navigate an increasingly interconnected and complex global environment, the imperative to uphold ethical standards is not only a moral obligation but a crucial factor in shaping the very fabric of their internal structures and external interactions. This paper seeks to explore and elucidate the intricate interplay between business ethics and organizational culture, recognizing them as integral components that coalesce to define the ethos of a company.

Business ethics, encompassing principles of integrity, responsibility, and fairness, serves as the compass guiding the decision-making processes within an organization. Concurrently, organizational culture, comprising shared values, beliefs, and practices, shapes the collective identity and behavioral norms of its members. The intersection of these two constructs yields a dynamic interrelationship where ethical considerations become woven into the cultural tapestry of the organization, influencing its character and shaping the perceptions of internal and external stakeholders.

Understanding this connection is pivotal for leaders and decision-makers grappling with the challenge of fostering environments that not only adhere to ethical standards but also cultivate a culture that aligns with these principles. This research endeavors to shed light on the mechanisms through which ethical values are embedded within an organizational culture and, conversely, how the prevailing culture can impact the adoption and manifestation of ethical conduct. Through an exploration of pertinent literature, theoretical frameworks, and real-world examples, this paper aims to contribute to the evolving discourse on business ethics and organizational culture, providing valuable insights for practitioners, policymakers, and scholars alike. As organizations strive to navigate the complex terrain of ethics in business, an enhanced understanding of this nexus offers a roadmap for cultivating environments where ethical considerations are not only acknowledged but ingrained in the very essence of organizational identity.

2. Literature review

The nexus between business ethics and organizational culture has garnered significant scholarly attention, reflecting the growing recognition that ethical considerations are deeply interwoven with the fabric of corporate environments. The present literature review provides an overview of key perspectives that elucidate the intricate relationship between business ethics and organizational culture.

The interplay between business ethics and organizational culture represents a rich and evolving field of study that delves into the complex dynamics shaping the ethical dimensions of corporate conduct. Scholars and researchers have explored various facets of this relationship, providing insights into how ethical principles become ingrained in organizational culture and reciprocally influence the ethical decision-making processes within companies.

Ethics as a Cultural Foundation. Schein's seminal work (1985) laid the groundwork for understanding organizational culture. Schein argued that organizational culture is not merely a set of values and behaviors but a deeply embedded system that influences the way individuals perceive and respond to ethical challenges within a corporate context. Building on this, Treviño and Nelson (2016) argue that a strong ethical culture acts as a powerful driver for responsible behavior, influencing the choices made by employees and leaders alike.

Leadership Influence on Ethical Culture. The role of leadership in fostering an ethical organizational culture has been a focal point in the literature. Treviño et al. (2003) highlight the crucial influence of leaders in setting the ethical tone of an organization, suggesting that ethical leadership is instrumental in creating a culture where ethical behavior is both expected and rewarded. Also, Treviño and Nelson (2007) highlighted the pivotal role of leadership in shaping ethical organizational cultures. Their research emphasizes that ethical leadership practices contribute significantly to the establishment of a culture where ethical behavior is not only encouraged but becomes a norm.

Ethical Climate and Employee Behavior. The concept of ethical climate, introduced by Victor and Cullen (1988), emphasizes the importance of shared perceptions of what is ethically appropriate within an organization. This framework suggests that the ethical climate significantly influences employee behavior, shaping the overall ethical culture.

Cultural Dimensions and Ethical Decision-Making. Researchers such as Hofstede (2001) have explored the impact of cultural dimensions on ethical decision-making. This perspective emphasizes that national and organizational cultural values play a substantial role in shaping individual and collective responses to ethical challenges.

The Role of Corporate Social Responsibility (CSR). The literature on Corporate Social Responsibility (CSR) highlights how organizations can embed ethical considerations into their cultures through socially responsible practices. Carroll's CSR pyramid (1979) and subsequent refinements provide a framework for understanding how ethical responsibilities can be integrated into organizational culture.

Embedding Ethics in Organizational DNA. The work of Den Hartog and De Hoogh (2009) explores how organizations can embed ethical values in their DNA, making them integral to the identity and operations of the company. This perspective underscores the importance of aligning ethical principles with the broader cultural context to create lasting ethical norms.

Ethical Decision-Making in Organizational Contexts. The literature on ethical decision-making processes within organizations offers valuable insights into the factors that influence individual and collective choices. Rest's (1986) Four-Component Model provides a framework for understanding the cognitive and behavioral aspects of ethical decision-making within the organizational context.

Synthesizing these perspectives provides a comprehensive understanding of the interconnection between business ethics and organizational culture. This paper aims to contribute to this discourse by examining how ethical considerations permeate organizational cultures and how, in turn, the prevailing culture influences ethical decision-making processes within business entities. As organizations strive to navigate an increasingly complex ethical landscape, these insights offer valuable implications for cultivating and sustaining ethical cultures.

3. Research methodology

The relationship between business ethics and organizational culture is intricate and symbiotic, each influencing and shaping the other in a dynamic interplay. There are several key aspects that illuminate this relationship. *Shared Values and Beliefs.* At the heart of the relationship lies the alignment of ethical principles with the shared values and beliefs that form the foundation of an organizational culture. When the ethical principles of an organization resonate with its cultural values, a harmonious environment is cultivated, promoting a sense of shared purpose and moral responsibility among members.

Cultural Norms Impacting Ethical Behavior. Organizational culture establishes the norms and expectations that guide behavior within the workplace. Ethical norms, embedded within the cultural framework, influence how employees perceive, interpret, and respond to ethical challenges. A culture that prioritizes integrity and responsibility encourages ethical behavior, fostering an environment where employees feel compelled to make principled choices. *Leadership as Cultural Architects.* Leadership plays a pivotal role in shaping both organizational culture and ethical standards. Ethical leaders, by embodying and promoting ethical values, contribute to the establishment of an ethical organizational culture. Conversely, a culture that values and demands ethical behavior reinforces the importance of ethical leadership.

Ethical Decision-Making Processes. Organizational culture significantly influences the ethical decision-making processes of individuals within the company. A culture that encourages open communication, transparency, and a commitment to ethical conduct provides a supportive context for employees to navigate ethical dilemmas and make morally sound decisions. *Impact on Reputation and Stakeholder Relationships.* The ethical underpinnings of an organizational culture have a direct impact on its reputation and relationships with stakeholders. A culture that values ethical considerations enhances the organization's credibility and trustworthiness in the eyes of customers, investors, employees, and the broader community. Conversely, ethical lapses within the organizational culture can result in reputational damage.

Adaptability and Resilience. The adaptability and resilience of an organizational culture are influenced by its ethical foundation. An ethical culture tends to be more adaptive and resilient in the face of challenges, as it is rooted in enduring principles that guide decision-making even in turbulent times. This adaptability is crucial in navigating the complexities of the business environment. *Continuous Improvement and Learning.* Ethical organizational cultures often foster a commitment to continuous improvement and learning. Embracing ethical principles encourages a culture of reflection, where organizations assess and refine their practices in response to evolving ethical standards and societal expectations.

Understanding and actively managing the relationship between business ethics and organizational culture is essential for cultivating an environment that not only complies with ethical standards but also integrates them into the core identity of the organization. As organizations strive for sustainable success, recognizing and nurturing this relationship becomes a strategic imperative in fostering responsible and ethical corporate behavior.

Managing organizational culture is a complex and ongoing process that involves leadership, communication, and intentional efforts to shape and reinforce the values, behaviors, and beliefs within a company. There are some key strategies and practices for effectively managing organizational culture that involved managers could use in order to constantly grow their company's organizational culture.

Table no.1 Key strategies and practices for an effective organizational culture

The key strategy and practice	Additional clarifications
<i>I. Leadership Alignment</i>	
Visible Leadership Commitment	Leaders must visibly embody and champion the desired culture. Their actions, decisions, and communication should align with the cultural values they seek to instill.
Communication of Core Values	Clearly articulate and communicate the core values that underpin the desired culture. Regularly reinforce these values through various channels, such as town hall meetings, internal communications, and leadership messages.
<i>II. Employee Involvement</i>	
Inclusive Decision-Making	Involve employees in decision-making processes that impact the organizational culture. Solicit their input on values, behaviors, and initiatives to create a sense of ownership and inclusion.
Employee Recognition	Recognize and reward employees who exemplify the desired cultural values. This reinforces positive behaviors and creates role models for others to follow.
<i>III. Cultural Assessments</i>	
Regular Surveys and Assessments	Conduct regular surveys and assessments to gauge employee perceptions of the organizational culture. Use the feedback to identify areas of strength and improvement, allowing for informed decision-making.
<i>IV. Onboarding and Training</i>	
Cultural Integration in Onboarding	Incorporate cultural orientation into the onboarding process for new employees. Clearly communicate the company's values, norms, and expectations from the beginning of their tenure.
Continuous Training	Provide ongoing training and development opportunities that reinforce cultural expectations. This can include workshops, seminars, or e-learning modules focused on cultural elements.
<i>V. Performance Management</i>	
Alignment with Performance Metrics	Align performance metrics and evaluations with cultural expectations. Ensure that employees are assessed not only on job-specific tasks but also on their contribution to and embodiment of the organizational culture.
Feedback and Development	Provide constructive feedback on cultural alignment and offer resources for professional development that supports the desired culture.
<i>VI. Communication Channels</i>	
Open Communication Channels	Establish open channels for two-way communication. Encourage employees to share feedback, ideas, and concerns regarding the organizational culture.
Storytelling	Use storytelling as a powerful tool to illustrate and reinforce cultural values. Share success stories, anecdotes, and examples that embody the desired culture.
<i>VII. Adaptability and Evolution</i>	
Cultural Flexibility	Recognize the need for cultural adaptability as the organization evolves. Be open to refining cultural elements to align with changes in the external environment or business strategy.

Learning from Mistakes	Acknowledge and learn from cultural missteps or challenges. Use these experiences as opportunities for growth and improvement.
<i>VIII. Symbolism and Rituals</i>	
Cultural Symbols	Incorporate symbols, rituals, and traditions that represent and reinforce the organizational culture. This could include logos, slogans, or regular events that celebrate cultural values.
<i>IX. Monitoring and adjusting</i>	
Regular Assessments	Continuously monitor the organizational culture through feedback mechanisms, surveys, and informal channels. Be proactive in addressing any cultural misalignments promptly.
Adjustment Strategies	Implement targeted strategies to address specific cultural challenges or opportunities identified through assessments.
<i>X. Crisis Management</i>	
Cultural Response to Crisis	In times of crisis, leverage the organizational culture as a source of resilience and adaptability. Clearly communicate how the cultural values guide the company's response to challenges.

Source: done by the author

As seen above in Table no.1, there are several guidelines in the form of key aspects, that all managers which are orientated towards a successful and highly profitable management and to positively impact the organizational culture and public image must possess or use in their strategy.

Effective management of organizational culture requires a holistic and strategic approach. It is an ongoing journey that involves the active participation of leaders, employees, and other stakeholders. By integrating cultural considerations into various aspects of organizational life, companies can cultivate a strong and resilient culture that aligns with their mission and objectives.

Identifying companies with strong organizational cultures involves recognizing those with distinctive values, beliefs, and practices that are deeply ingrained and widely shared among employees. Several companies are renowned for their strong organizational cultures, and they often attribute their success, innovation, and employee satisfaction to the cultivation of these cultures.

Table no.2 Companies with strong organizational culture

Company	Basis of organizational culture
Google (Alphabet Inc.)	Google is known for its innovative and collaborative culture. The company places a strong emphasis on creativity, risk-taking, and a flat organizational structure. Google's culture encourages employees to pursue ambitious projects and allocates time for personal projects through initiatives like "20% time."
Zappos	Zappos, an online shoe and clothing retailer, has a culture centered around delivering exceptional customer service. The company emphasizes core values such as "Deliver WOW Through Service" and "Create Fun and A Little Weirdness." Zappos has a unique onboarding process that immerses new employees in the company culture from day one.
Southwest Airlines	Southwest Airlines is renowned for its people-centric culture. The airline emphasizes values such as a "Warrior Spirit," a "Servant's Heart," and a "Fun-LUVing Attitude." The company's commitment to employees and a positive work environment is considered a key factor in its success.
Apple Inc.	Apple's organizational culture is characterized by a focus on design, innovation, and simplicity. The company encourages a culture of excellence and attention to detail. Steve Jobs, Apple's co-founder, played a significant role in shaping the culture with his visionary leadership and commitment to creating groundbreaking products.
Netflix	Netflix has a culture that prioritizes freedom and responsibility. The company values employee autonomy and innovation. Netflix's culture is characterized by

	a focus on high-performance, candid communication, and a lack of traditional hierarchy.
Toyota	Toyota is known for its strong culture of continuous improvement and efficiency, often associated with the Toyota Production System. The company emphasizes principles such as "Kaizen" (continuous improvement) and "Genchi Genbutsu" (go and see for yourself), fostering a culture of problem-solving and quality focus.
IBM	IBM has a culture rooted in innovation, diversity, and a commitment to societal impact. The company places a strong emphasis on values such as "Dedication to Every Client's Success" and "Innovation that Matters." IBM's culture encourages employees to contribute to meaningful projects and pursue continuous learning.

Source: done by the author

In Table no.2 there are a series of multinational companies which have created a strong ethics code; thus, they are cited worldwide on the matter and can effectively impact also other companies on their organizational culture.

It's important to note that organizational cultures are dynamic and can evolve over time. Additionally, perceptions of organizational culture can vary among employees and stakeholders. These examples highlight companies that have been recognized for their distinctive cultures, but the success of an organizational culture is ultimately measured by its ability to align with the company's goals, engage employees, and adapt to changing environments.

Determining the "top" companies with strong organizational cultures can be subjective and may vary based on different criteria. However, several companies are often recognized for their distinctive and positive organizational cultures.

Table no.3 "Top" 10 companies which have a strong organizational culture

Company	Cultural Emphasis	Noteworthy Practices
Google (Alphabet Inc.)	Innovation, Collaboration, and Employee Empowerment.	"20% time" for personal projects, a flat organizational structure, and a focus on a diverse and inclusive workplace.
Zappos	Exceptional Customer Service, Fun, and a Little Weirdness.	Unique onboarding processes emphasizing cultural immersion, a commitment to core values, and a flat organizational structure.
Southwest Airlines	Employee-Centric, Fun, and "Warrior Spirit."	Extensive employee training, a unique company culture committee, and a commitment to servant leadership.
Netflix	Freedom and Responsibility, Innovation.	A culture of transparency, minimal hierarchy, and emphasis on employee autonomy.
Salesforce	Trust, Customer Success, Equality, and Innovation.	Emphasis on diversity and inclusion, a commitment to philanthropy, and a strong focus on employee well-being.
HubSpot	Transparency, Autonomy, and Continuous Learning.	Open and transparent communication, a commitment to employee growth, and a culture of flexibility.
Cisco Systems	Innovation, Inclusion, and Empowerment.	Inclusive leadership initiatives, a commitment to corporate social responsibility, and a strong emphasis on employee development.
Microsoft	Inclusion, Innovation, and Corporate Social Responsibility.	Emphasis on diversity and inclusion, a commitment to sustainability, and a growth mindset culture.
Procter & Gamble (P&G)	Innovation, Inclusion, and Purpose.	Strong focus on diversity and inclusion, a commitment to sustainability, and a purpose-driven culture.
IBM	Innovation, Inclusion, and Societal Impact.	Emphasis on diversity and inclusion, a commitment to ethical business practices, and a focus on employee well-being.

Source: done by the author

These companies are often highlighted for their efforts in fostering positive organizational cultures that contribute to employee satisfaction, innovation, and overall business success. It's important to note that organizational cultures are dynamic and can evolve over time, and perceptions of culture may vary among employees and stakeholders. What we can also observe in Table no. 3 is that some of the companies are also mentioned in Table no.2. This could only mean that even though the top 10 companies could be done from a subjective point of view, it is still somewhat critical and done so that the academic community would benefit from all the information available.

4. Findings

The study finds a mutual reinforcement between business ethics and organizational culture, with ethical principles becoming deeply embedded within the cultural fabric of successful organizations. Treviño et al. (2003) posit that ethical leadership practices contribute significantly to the establishment of a culture where ethical behavior is expected and rewarded.

The paper reveals a deep-seated interdependence between business ethics and organizational culture, where ethical values are intricately woven into the cultural fabric of successful organizations. Schein (1985) argues that organizational culture is a set of shared assumptions that dictate behavior, with ethical considerations playing a crucial role in shaping these beliefs.

The influence of leadership on the ethical climate of an organization is evident. Ethical leaders play a pivotal role in shaping and promoting a culture of integrity and responsibility. Brown and Treviño (2006) note the importance of leaders as moral agents in influencing the ethical decision-making processes within organizations.

Organizations with a strong ethical culture exhibit a high degree of alignment between stated values and actual behaviors, fostering a sense of trust among employees and stakeholders, which Den Hartog and De Hoogh (2009) emphasize the importance of values congruence in building an ethical organizational culture. Victor and Cullen's (1988) research on ethical climates highlights the impact of organizational culture on employee perceptions, which basically means that employees within organizations with a strong ethical culture tend to perceive a greater sense of fairness, commitment to social responsibility, and a positive work environment.

Organizations with an ethical culture demonstrate greater adaptability and resilience in the face of challenges, leveraging shared values to navigate uncertainties. Treviño and Brown (2004) argue that ethical organizational cultures contribute to a higher level of organizational resilience.

Companies with a strong ethical culture often enjoy higher levels of trust and loyalty from customers and stakeholders, contributing to long-term success, for which Aaker et al. (2009) discuss the impact of ethical behavior on brand trust and reputation, which extends to overall stakeholder trust.

Ethical organizational cultures are characterized by a commitment to continuous improvement, fostering a culture of learning and adaptability. Rest's (1986) Four-Component Model suggests that ethical decision-making involves a continual process of moral development and learning. Leadership emerges as a pivotal factor in shaping the ethical climate of an organization. Effective ethical leadership fosters a culture where ethical behavior is not just encouraged but becomes a norm.

Organizations with a strong ethical culture showcase a high degree of alignment between stated values and actual behaviors, creating a cohesive and trustworthy environment. Employees within organizations fostering a strong ethical culture perceive a more positive work environment, higher levels of job satisfaction, and a greater commitment to the organization's mission and values.

Organizations with an ethical culture demonstrate heightened adaptability and resilience, utilizing shared values as a guiding force during times of change or uncertainty. Companies with a strong ethical culture are more likely to gain the trust and confidence of external stakeholders, including customers, investors, and the broader community.

What could be the baseline of the present study is that ethical organizational cultures are characterized by a commitment to continuous improvement, creating a culture of learning and adaptability. Only companies which have a very developed ability to improve and constantly adapt to change can be between those most ethical companies and which could have a very strong organizational culture.

5. Conclusions

In conclusion, this study has delved into the intricate web of connections between business ethics and the culture of organizations, uncovering a tapestry of interdependence and mutual influence. The findings offer valuable insights into the profound impact that ethical considerations wield on the cultural dynamics within successful organizations. As we reflect on the culmination of this exploration, several key conclusions emerged. *Mutual Reinforcement.* The study substantiates the notion that business ethics and organizational culture are not disparate entities; instead, they engage in a continuous and reciprocal relationship. Ethical principles become ingrained in the cultural DNA of thriving organizations, shaping behaviors, decisions, and the overall ethos.

Leadership as a Cornerstone. Leadership emerges as a cornerstone in this connection. Ethical leaders, through their actions and guidance, serve as architects of a culture where ethical values are not merely espoused but actively practiced. The influence of leadership extends beyond rhetoric, permeating the organization at all levels.

Alignment and Cohesiveness. Organizations with a strong ethical culture exhibit a remarkable alignment between stated values and actual behaviors. This alignment fosters a cohesive and transparent environment, engendering trust among employees and stakeholders alike. *Employee Perceptions and Commitment.* The study underscores the profound impact of ethical culture on employee perceptions and commitment. Employees within organizations fostering ethical cultures experience a positive work environment, leading to heightened job satisfaction and a deep-seated commitment to the organization's mission.

Adaptability and Resilience. Ethical organizational cultures are not only characterized by their moral compass but also by their adaptability and resilience. Shared ethical values serve as guiding beacons during turbulent times, allowing organizations to navigate challenges with integrity. *External Validation.* The findings affirm that the positive connection between business ethics and organizational culture extends beyond the organizational boundaries. External stakeholders, including customers and investors, place trust in organizations with strong ethical cultures, recognizing them as reliable and responsible partners.

Continuous Improvement and Learning. Ethical organizational cultures are dynamic, fostering a commitment to continuous improvement and learning. This commitment positions organizations to adapt to changing ethical standards and societal expectations, ensuring their relevance and sustainability.

In essence, the interplay between business ethics and organizational culture is not a static phenomenon but a dynamic and evolving relationship. As organizations navigate an ever-changing landscape, understanding and nurturing this connection becomes imperative. The insights gleaned from this study serve as a foundation for practitioners, scholars, and organizational leaders to cultivate environments where ethical considerations are not just integrated but celebrated, contributing to the enduring success and positive impact of organizations in the global landscape.

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Uncovering the Attractiveness of the Romanian Market: A Data-Driven Approach

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Abstract

The purpose of this study is to examine the elements that strengthened market attractiveness in Romania, between 2000 and 2022. To fulfil this, we considered a selection of variables upon which we carried out a Principal Component Analysis that allowed to underline the factors associated with Romanian market attractiveness.

After exploring the correlation between Foreign Direct Investment, Gross Domestic Product, Labor Force Participation Rate, Logistics Performance Index and Political Stability, the PCA unveiled five components, with the first two accounting for 83.01% of the total variance in the data. Formulated on the initial variables' loadings on these components, FDI, GDP, LFPR, LPI, and POLSTABILITY appear to be significant factors that promoted market attractiveness in Romania.

Still, a more in-depth analysis and interpretation of the data is required to fully comprehend the factors that make attractive the Romanian market.

Key words: principal components, economic growth, investment, employment, market structure

J.E.L. classification: C38, O47, E22, E24, L11

1. Introduction

Over the past few years, the Romanian market has been transformed a lot due to economic reforms and becoming a member of the European Union (EU). All these were seen as real opportunities for both local and international investors.

A recent report from 2022 by the Bureau of Economic and Business Affairs from U.S. Department of State reveals that Romania is among the most rapidly developing markets in the EU, and still having a growing consumer market. The report also highlights the positive impact of Romania's EU membership, strategic location and well-educated workforce on trade and investment, pointing at the same time some issues as legislative instability, corruption, or low institutional quality.

A crucial component of the Romanian market, the retail sector, has seen a significant development in recent years. It contributed for 21.3% of the country's GDP (first half 2023 vs. first half 2022) and has been growing steadily over the past decade, as seen in a statement of the Romanian National Institute of Statistics. Increasing incomes, urbanization, and the evolution of consumer tastes and preferences were drivers for this expansion.

Another noteworthy player in the Romanian market is the thriving IT industry. According to the same statement, the IT sector is among the fastest-growing sectors in the country, with a 7.5% contribution to the country's GDP. With its proficient labor force, advantageous business climate, and competitive costs, Romania has successfully lured considerable foreign investment into its thriving IT field.

Meanwhile, the country's automotive market remains significant, boasting major industry players like Dacia and Ford, both operating large manufacturing plants within its borders. The industry's significant impact can be seen in the percentage of 10% of the country's GDP, making it a driving force for its economic growth in recent years, as seen in 2019 Annual Report of the National Bank of Romania.

Undoubtedly, Romania's bustling market presents promising prospects for local and international investors, particularly in the retail, IT, and automotive domains. The nation's conducive business climate, expansive pool of consumers, and advantageous geographical position make it a highly appealing choice for investment and enterprise development.

When talking about attractiveness, is difficult to point out exactly what needs to happen to "make it attractive". Some may think of the strategic location, or the membership in the EU, others to consumption, or how favorable is the business environment and how many industries that country has, or simply at the qualified workforce or the low labor costs.

So, considering these factors as stand-alone might make the research more difficult, that's why a combination of those can be a better option. This combination can make the Romanian market an attractive destination for investment and business expansion, particularly for companies looking to access the rapidly growing markets of Central and Eastern Europe.

In this paper we will try to identify the underlying factors that contribute to the attractiveness of the Romanian market, taking into consideration several factors simultaneously, using Principal Component Analysis (PCA).

2. Theoretical background

The literature is vast when underlying the attractiveness of a market for foreign investment and business expansion and Romania's market has been an attractive destination for investments for several years.

It is a fact that foreign direct investment (FDI) has been a key driver for economic growth and development, the majority revealing a strong and positive correlation.

A study conducted on 42 G20 countries from 2005 to 2020 revealed that institutional quality positively influences FDI inflows, making the market attractive, increasing trade openness, and fostering industrial innovation. The role of institutional quality in FDI inflows is seen more in financial development and in the abundance of natural resources, while the tax level diminishes the inflows of FDI (Chen *et al*, 2023).

The direct relationship between FDI and institutional quality is seen in other works, too. For instance, a study conducted on 13 Organization of Islamic Cooperation (OIC) countries between 2002 – 2019 showed that the better the regulatory quality is, the higher the FDI are (Al Mustofa *et al*, 2021). In addition, they emphasized that GDP is strongly influenced by the proportion of FDI inflows, although corruption can play a huge role in increasing foreign investments.

Various factors play a significant role in the economic growth of a nation, along with direct investments. These may include inflation rates, unemployment levels, and the strength of the financial system (Siriteanu, 2022). So, Romania's low labor cost and favorable investment climate helped to attract a relatively large number of investors that contributed to job opportunities, knowledge transfer, and increasing competition in the domestic market. In addition, it was revealed that the level of human capital, technological development, and direct investment policies can influence the relationship between direct investments and GDP.

Authors also showed that, in the long run FDI inflows is influenced in a negative manner by the trade openness of Romania between 1997 – 2019 (Rathnayaka Mudiyansele *et al*, 2021). It is also suggested that fostering innovation and creating a stable political and economic environment increases the flow of FDI. At the same time, FDI increases more when the domestic currency depreciates, creating more wealth for the foreign investors compared to that of domestic ones. The research doesn't include other variables that can significantly influence FDI inflows and the attractiveness of Romanian market, like infrastructure, political stability, or wage rate.

GDP growth rate is another variable that should be considered by an investor to make a profitable investment (Tatomir *et al*, 2011). Researchers identified a framework of macroeconomic indicators that can help the foreign investors to easily choose Romania as an attractive market. The inflation rate and industrial production are other factors to be analyzed.

One major factor that greatly enhances the attractiveness of Romania's market is the caliber of its workforce. While Romania's income per capita has seen a rise in recent years, there remains an uneven economic growth hindered by ineffective institutions, unfavorable demographics, and insufficient human capital. Additionally, experts highlight competitive markets and a skilled and educated labor force as key factors driving future growth in Romania (De Rosa, 2020). Labor force is also seen as a significant impact on economic growth, leading to an increase of welfare (Wijaya *et al*, 2021).

The logistic component was found to have a direct and significant impact on economic growth and employment rates in the EU-27 countries, mainly in 2020, during COVID-19 pandemic (Karazijienė *et al*, 2023). The study analyzed a positive correlation between economic growth and employment level and transport infrastructure expenses by road and railway.

Studies also showed a high correlation between the development of logistics and the overall development level of a country. Besides other former communist countries, Romania is far from other developed countries, as seen in this research paper about logistics performance and economic development, at EU28 level (Bîzoi *et al*, 2014). In the case of Romania, the low level of GDP per capita, lead to a low logistic performance.

A crucial role in driving economic growth, being at the same time vital for sustainable development in Romania is played by political stability (Radu, 2015). To alleviate poverty, boost employment opportunities, and uplift the standard of education in the nation, a secure and steady political atmosphere is crucial.

Not all the factors are examined at the same time, but each of the studies offer significant data regarding the relationship between them and how this can make the Romanian market attractive.

The Romanian market has been consistently depicted as a highly appealing choice for foreign investment and business growth. This is largely due to its strategic location, favorable business climate, European Union membership, proficient labor force, cost-efficient workforce, and varied economy. Despite these advantages, the literature also points out certain obstacles and potential for enhancement, including concerns about regulatory consistency, corruption, and infrastructure development.

3. Research methodology

The methodology used in this study involved analyzing the factors that contribute to market attractiveness in Romania. For this, we conduct a Principal Component Analysis (PCA) on a set of five independent indicators to point out the factors that most influence the attractiveness of the market. The five chosen variables were: Foreign Direct Investments, net inflows (FDI), Gross Domestic Product growth (GDP_{_}), Labor Force Participation Rate (LFPR_{_}), Logistics Performance Index (LPI) and Political Stability (POLSTABILITY). We gathered all the data from 2000 to 2022 from the World Bank Database.

Foreign direct investments, net inflows (FDI) measure the amount of investment capital flowing into the country from foreign sources. High levels of FDI can indicate a favorable business environment and potential opportunities for growth. Data are in current U.S. million dollars.

GDP growth, annual % (GDP_{_}) is the percentage change in real GDP from one year to another.

Labor Force Participation Rate (LFPR_{_}) is the proportion of population over 15 years old that is economically active. So, the higher the rate, the more productive the workforce, so better chances for business growth.

The Logistics Performance Index (LPI) assesses the quality of logistics infrastructure and its impact on market attractiveness. It refers to the perception of a country's logistics related to 6 variables: the efficiency of customs clearance process, quality of trade and transport-related infrastructure, ease of arranging competitively priced shipments, quality of logistics services, ability to track and trace consignments, and frequency with which shipments reach the consignee within the scheduled time (World Bank, 2023). The index gets values from 1 (worst) to 5 (best).

For this analysis we used data from the 2023 survey conducted on 4,090 country assessments by 652 logistics professionals in 115 countries in all World Bank regions.

Political Stability (POLSTABILITY) assesses the degree of political instability and/or violent conflict (including terrorism) in a country. This index ranges from -2.5 to 2.5 and it's more like a perception measure. All the values were taken from the World Bank – Worldwide Governance Indicators (WGI) database.

The PCA identified the underlying structure of the data and created new variables (components) that capture the most important information in the original variables. The loadings of the original variables on the components were used to determine the most important factors that contribute to market attractiveness in Romania.

Additionally, a literature review was conducted to inform the selection of variables and guide the interpretation of the results. By combining these methods, the study aimed to provide new insights into the factors that contribute to market attractiveness in Romania.

4. Findings

Based on the data collected from 2000 to 2022, shown in Table no. 1, we used Eviews 12 to first calculate the descriptive statistics (mean, standard deviation, Skewness, and Kurtosis for the shape of the distribution) to better understand the distribution of the data and to find different outliers or issues that may affect our analysis.

Table no. 1 Independent variables that show the attractiveness of Romanian market

Year	FDI	GDP_	LFPR_	LPI	POLSTABILITY
2000	1037	2.461263459	64.41	-	-0.379039526
2001	1157	5.218136257	63.18	-	
2002	1144	5.70299165	57.77	-	0.464840323
2003	1844	2.341147329	55.93	-	0.320030123
2004	6443	10.42811302	55.6	-	0.059348613
2005	6498.650463	4.668148051	53.94	-	0.085602649
2006	11006.61484	8.028811076	54.97	-	0.148430079
2007	10103.08651	7.233807744	54.77	2.91	0.198067933
2008	13667.82424	9.307467171	54.51	-	0.180609092
2009	4637.68488	-5.517394408	54.44	-	0.359366298
2010	3213.737652	-3.90123628	54.87	2.84	0.273600399
2011	2370.097223	4.517086964	54.11	-	0.186090663
2012	3047.569714	1.924993262	54.61	3	0.082341559
2013	3854.819398	0.269963879	54.53	-	0.179133072
2014	3869.197075	4.120674963	54.87	3.26116	0.049136128
2015	4317.731472	3.16050387	54.54	-	0.181799337
2016	6252.035766	2.857546057	53.72	2.99312	0.266823202
2017	5952.909608	8.196506503	54.94	-	0.048513539
2018	7343.560129	6.029019041	54.98	3.12	0.036215875
2019	7365.441774	3.853163833	55.14	-	0.54217118
2020	3602.418172	-3.677510791	55.06	-	0.508895397
2021	11738.21741	5.708894558	51.07	-	0.581680298
2022	11882.52585	4.595360946	52.102	3.2	0.48802197

Source: (World Bank Database)

The mean GDP is 3.81 and its standard deviation is 4.06. The negative value of Skewness suggests that the distribution is leaned to the left. The kurtosis is positive, indicating that the distribution is more peaked than a normal distribution. For FDI the data is positively skewed, and the distribution is longer on the right side. The kurtosis is close to 3, so this implies a distribution close to normal. In the case of LFPR_ the distribution is also longer on the right (skewness = 2) and very peaked (kurtosis is very high). For LPI, the mean is 3.05, its standard deviation is 0.15, the distribution is close to normal (low skewness and kurtosis). Lastly, the data for POLSTABILITY show a left skewed and peaked distribution.

Table no. 2 Descriptive statistics 2000 - 2022

	GDP	FDI	LFPR	LPI	POLSTABILITY
Mean	3.81	5754.31	55.39	3.05	0.22
Median	4.52	4637.68	54.87	3	0.18
Maximum	10.43	13667.82	64.41	3.26	0.58
Minimum	-5.52	1037	51.07	2.84	-0.38
Std. Dev.	4.06	3748.89	2.93	0.15	0.22
Skewness	-0.73	0.63	2.00	0.12	-0.47
Kurtosis	3.17	2.32	6.92	1.71	3.83
Observations	23	23	23	7	22

Source: (Eviews 12, own calculation)

To sum it up, the descriptive statistics suggest that the data for the five indicators have different distributions and levels of skewness and kurtosis: the LPI data is close to normal, while the LFPR_ data has a very high kurtosis and is heavily skewed.

There is a high variation in GDP and FDI data (GDP_ ranges from -5.52 to 10.43, and FDI from 1037 to 13667.82), so this could affect the analysis. Except for the GDP_, all the median values are lower than the mean values, so we can predict that the distribution is right skewed, suggesting that there are extreme values that influence the mean. Since the values for kurtosis are higher than 3 (GDP_, Postability), the distribution is more peaked than normal, so, there are still some factors that influence the data.

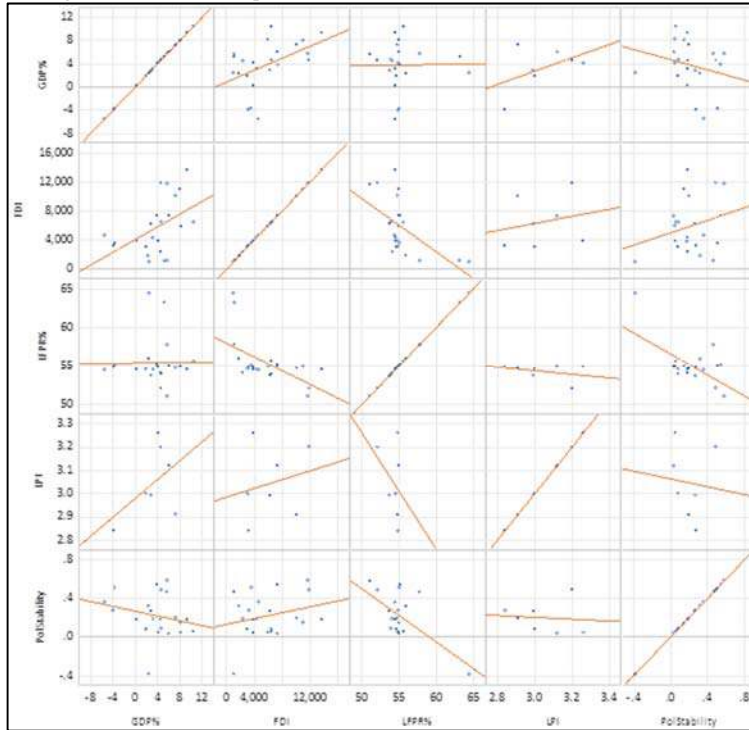
Before using these indicators for principal component analysis (PCA), we need to standardize the data (subtract the mean and divide by the standard deviation), so that each variable has equal weight in the analysis. In this way, the principal components are based on the correlation structure of the variables rather than their absolute values and the variables with larger values will not significantly influence the analysis.

To visualize the relationship between all 5 independent variables and to identify any strong relationships or any nonlinearity or multicollinearity, we created the scatter plot matrix.

The scatter plot matrix shows a linear relationship between the variables.

A correlation analysis was conducted to determine the strength and direction of the relationships between the analyzed independent variables. Correlation does not mean causation, so, other factors may influence the relationships between the independent variables.

Figure no. 1. Scatter plot matrix



Source: (Eviews 12, own calculation)

Table no. 3 Correlation matrix

	FDI	GDP_	LFPR_	LPI	POLSTABILITY
FDI	1.000000	0.658037	-0.634478	0.213925	0.579897
GDP_	0.658037	1.000000	-0.129325	0.482150	-0.171475
LFPR_	-0.634478	-0.129325	1.000000	-0.342308	-0.852023
LPI	0.213925	0.482150	-0.342308	1.000000	-0.089107
POLSTABILITY	0.579897	-0.171475	-0.852023	-0.089107	1.000000

Source: (Eviews 12, own calculation)

Between FDI and GDP_ there is a strong and positive correlation (0.65) showing the high dependence of the economic growth for foreign investments. Romanian market is attractive to FDI, maybe due to low labor costs or to a favorable business field or access to natural resources, so the government should continue focusing on creating a more favorable business environment to attract more foreign investments.

A value of -0.85 between LFPR_ and POLSTABILITY shows a strong negative correlation, meaning that political stability is very important in influencing the labor force participation. Political instability is a sign of work discouragement, uncertainty, and so a decrease in labor force participation rate. The government should be considering some measures to stimulate employment opportunities in a quiet and politically stable environment.

Investors are very sensitive to political stability, as it is seen in a correlation coefficient of 0.57, emphasizing a positive correlation between FDI and POLSTABILITY.

From the correlation matrix, we can also see the moderate positive correlation between GDP_ and LPI (0.48) that means that logistics performance played an important role in the economic growth of Romania. In this case, focusing more on improvement of logistics may be an option to make attractive the Romanian market.

A correlation coefficient of -0.34 indicate a moderate negative correlation between LPI and LFPR₂, underlying that Romania's logistics performance can be an obstacle to employment, so improving infrastructure may lead to job creation and economic growth.

In a nutshell, these correlations suggest complex relationships between the factors that contribute to market attractiveness in Romania.

Next, we will appeal to a principal component analysis (PCA) for a deeper understanding of these connections and to point out the underlying factors that lead to market attractiveness in Romania between 2000 and 2022.

The PCA will identify those dimensions that drive the variation in the independent variables, recognizing which variables are important for establishing the attractiveness of Romanian market.

PCA chooses patterns and relationships between variables. It transforms the original variables into uncorrelated variables named principal components, which are ordered by the amount of variance explained, the first component explaining the most variance.

The output of PCA for the five variables that were chosen to identify the components that drive market attractiveness in Romania is seen in Figure no. 2.

The Eigenvalues measure the variance explained by each principal component (PC). The higher the value is, the greater is the contribution of the component. Five components were extracted with the first two that have Eigenvalues higher than 1 (2.57 and 1.57 respectively) explaining 83.01% of the total variance in the data (51.49% by the first and 31.52% by the second principal component).

Although, Eigenvalue for the third component is not above 1, we can still take it into account since this explains 15.18% of the total variance.

The Eigenvectors or loadings represent the strength and direction of the relationship between each variable and each principal component. If the values are higher, the relationship is stronger.

In our case, the first PC is most highly correlated with FDI and POLSTABILITY, while the second PC is most highly correlated with GDP₂ and LPI.

Figure no. 2. PCA output for Romanian market attractiveness

Principal Components Analysis					
Date: 12/22/23 Time: 13:34					
Sample (adjusted): 2007 2022					
Included observations: 7 after adjustments					
Balanced sample (listwise missing value deletion)					
Computed using: Ordinary correlations					
Extracting 5 of 5 possible components					
Eigenvalues: (Sum = 5, Average = 1)					
Number	Value	Difference	Proportion	Cumulative Value	Cumulative Proportion
1	2.574665	0.998716	0.5149	2.574665	0.5149
2	1.575949	0.817188	0.3152	4.150614	0.8301
3	0.758761	0.680251	0.1518	4.909376	0.9819
4	0.078510	0.066396	0.0157	4.987886	0.9976
5	0.012114	---	0.0024	5.000000	1.0000
Eigenvectors (loadings):					
Variable	PC 1	PC 2	PC 3	PC 4	PC 5
FDI	0.559144	0.095371	0.458610	0.482601	-0.484805
GDP ₂	0.311012	0.629763	0.382908	-0.394287	0.452315
LFPR	-0.556620	0.246828	0.308233	0.646249	0.341475
LPI	0.266266	0.498501	-0.740152	0.359004	0.062372
POLSTABILITY	0.458155	-0.533738	-0.015000	0.255173	0.663234
Ordinary correlations:					
	FDI	GDP ₂	LFPR ₂	LPI	POLSTABILITY
FDI	1.000000				
GDP ₂	0.658037	1.000000			
LFPR	-0.634478	-0.129325	1.000000		
LPI	0.213925	0.482150	-0.342308	1.000000	
POLSTABILITY	0.579897	-0.171475	-0.852023	-0.089107	1.000000

Source: (Eviews 12, own calculation)

The ordinary correlations explain why certain variables are most highly correlated with each principal component.

According to the loadings of the original variables on the first two principal components, we can assume that some factors are likely to contribute to Romanian market attractiveness.

FDI and POLSTABILITY are highly correlated with the first PC, which explains 51.49% of the variance, making these two important factors that contribute to Romanian market attractiveness.

POLSTABILITY has a negative correlation with LFPR and a strong correlation with FDI, pointing out a potential nuanced connection among these variables.

The crucial role of GDP as a driver for market attractiveness is shown through the negative correlation between LFPR and GDP, combined with their high correlation with the second PC (explaining an additional 31.52% of variance). Moreover, LFPR may also be an indicator of market attractiveness, particularly in terms of economic growth.

LPI is most strongly correlated with the third principal component, suggesting that it may also be an important factor that contributes to Romanian market attractiveness, particularly in relation to the efficiency and effectiveness of logistics and supply chain management.

From the five components extracted, two components explain 83.01% of the total variance in the data. If we still want to take the third component, together they will explain 98.19% of the total variance.

The loadings of the original variables on these components suggest that factors such as FDI, GDP_, LFPR_, LPI, and POLSTABILITY contribute to Romanian market attractiveness.

However, the results of a PCA are not definitive and should be interpreted with caution. After all, PCA can be a useful tool for identifying underlying factors, but not a substitute for careful analysis and interpretation of the data. All the results are highly dependent on variables and data used.

For a better understanding of the factors that contribute to the Romanian market attractiveness, we can further consider factor rotation, regression, or clustering, exploring the relationships between the components and other variables, or even a comparison of the PCA with factor analysis to make sure that the results are consistent and reliable.

Considering other external factors that may influence market attractiveness can also be the subject of a future analysis.

Although we couldn't directly measure the attractiveness of the Romanian market without a dependent variable, but we still used the five independent variables to gain insights into the factors that contribute to its attractiveness.

5. Conclusions

Continuing to focus on consumption, Romania is one of the most rapidly developing markets in the EU. The stable business environment, the qualified workforce are real drivers that will put this country on the map of investments in key sectors in the years to come.

But what exactly does mean "being attractive"? Although briefly we can point out several factors, it's not so easy to answer the question, by underlining those that contribute to its attractiveness.

On the other hand, studying these factors as stand-alone will still be difficult because the environment is dynamic and reach of interdependences. This was the reason why we started the research of combining some key relevant factors assuming that the whole can make the Romanian market an attractive destination for foreign investors.

The aim of this study is to identify the underlying factors that drive market attractiveness from a pool of five variables, by conducting a Principal Component Analysis on the independent indicators: Foreign Direct Investments, net inflows (FDI), Gross Domestic Product growth (GDP_), Labor Force Participation Rate (LFPR_), Logistics Performance Index (LPI) and Political Stability (POLSTABILITY).

The correlation matrix suggested some complex relationships between the five factors. We can distinguish a strong correlation between FDI and GDP_ (as we expected), making the Romanian market attractive to foreign direct investments mainly due to low labor costs, or favorable environment. Political stability is another factor that influence the decision to invest in Romania, as

shown by the positive relationship between FDI and POLSTABILITY.

In addition, we obtained a negative correlation between LPFR_ and POLSTABILITY and LPI and LFPR_, revealing that unstable political conditions have huge effects in diminishing the labor force participation rate and, respectively, that employment and economic growth can be hindered by poor infrastructure.

Logistics contributed to the economic growth of the country, as well, being a suitable ingredient for market attractiveness.

The PCA analysis discovered those dimensions that drive the variation in the independent variables, specifying which variables are dominant in displaying the attractiveness of Romanian market.

Two out of five extracted components explained 83.01% of the total variance in the data (51.49% by the first and 31.52% by the second principal component). If we considered a third component, then we would have achieved 91.19% of the total variance explained.

Based on the Eigenvectors or loadings we concluded that the first PC is most highly correlated with FDI and POLSTABILITY, while the second PC is most highly correlated with GDP_ and LPI.

Looking at the loadings of the original variables on the first two principal components, we deduced that some factors are likely to contribute to Romanian market attractiveness.

FDI and POLSTABILITY are highly correlated with the first PC, making these two important factors that contributes to Romanian market attractiveness.

POLSTABILITY has a negative correlation with LFPR and a strong correlation with FDI, showing a potential nuanced connection among these variables.

GDP continues to be an important player for the market and in addition, LFPR may also be an indicator of market attractiveness, particularly in terms of economic growth.

All in all, the loadings of the original variables on these components urged that factors such as FDI, GDP_, LFPR_, LPI, and POLSTABILITY contribute to Romanian market attractiveness.

At the same time, we should be cautioned when putting forward these results. PCA provided a starting point for exploring the underlying most important variables related to Romanian market attractiveness. But these findings are dependent on the data and variables used.

Further exploration is required for a better understanding of the factors that lead to the Romanian market attractiveness, like factor rotation, regression, or clustering.

Even inspecting other variables that influence market attractiveness can be a topic for future research.

The absence of a dependent variable didn't allow us to directly measure the attractiveness of the Romanian market but familiarized us with the factors that contribute to its attractiveness.

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New Challenges of Financial Communication in the Context of Sustainability Standards

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Abstract

Companies face a diverse range of challenges and opportunities that have a significant impact on their long-term sustainability. This range includes factors such as climate change, resource limitations, urbanization and technological advances. Investors should evaluate the impact of these factors on companies to guide their investment choices. Stakeholders worldwide are looking to assess how companies manage sustainability risks and opportunities. They need access to standardized, comparable data, essential information in the decision-making process. The paper explores integrating sustainability standards in investment and governance, focusing on the ISSB's impact. Objectives include assessing their effectiveness for investor information, enhancing transparency, and promoting sustainable finance. The research analyzes the evolution, specific goals, and implications of these standards on decision-making and reporting.

Key words: financial communication, sustainability standards, integrated reporting, investors, decision

JEL classification: F64, L15, O13

1. Introduction

The paper aims to explore the integration of sustainability standards in investment decision-making and corporate governance practices, focusing on the impact of initiatives such as sustainability standards and the formation of the International Sustainability Standards Board (ISSB). The article aims to investigate the effectiveness of these standards in addressing the information needs of investors, enhancing corporate transparency and promoting sustainable financial practices.

The research examines the evolution of sustainability standards, and deepens the specific objectives of these standards, assessing their role in communicating consistent, comparable and high-quality sustainability information. The study also explores the implications of these standards for investor decision-making, corporate reporting strategies and risk management practices.

2. Theoretical background

Establishing sustainability principles is becoming an increasingly important concern in accounting and financial reporting, leading to increased recognition of general sustainability reporting standards and harmonization of reporting (Thejo, 2017, p.257). For instance, private enterprises aspire to enhance openness, boost brand worth, credibility, and legitimacy, enable comparison with industry peers, convey competitiveness, inspire staff, and aid corporate data and control procedures through the disclosure of sustainability details (Herzig *et al*, 2006, p.302). Furthermore, sustainability reporting is rapidly being considered as a critical aspect in business sustainability (Lozano *et al* , 2011).

International Financial Reporting Standards (IFRS) have evolved over several decades and were developed by the International Accounting Standards Committee (IASC) and later by the International Accounting Standards Board (IASB). These standards have become a significant influencer on the quality of financial reporting of companies globally, and we aim to identify how IFRS affects the quality of financial reporting by promoting transparency, comparability and relevance of information.

Currently, IFRS is a global standard in financial communication, and the IASB continues to develop and update the standards to meet the ever-changing needs of the international business environment.

In November 2021, the International Financial Reporting Standards Foundation - IFRS presented the strategic initiative to establish the International Sustainability Standards Board (ISSB), with the main objective of formulating a globally applicable framework of standards of sustainability reporting. The International Sustainability Standards Board aims to simplify the global sustainability communication environment by reducing the complexity associated with multiple reporting sources, while building on the experience and practices associated with high-quality frameworks and standards.

The standards developed by the *Sustainability Accounting Standards Board (SASB)* address information needed by investors, focusing on parameters specific to various business areas and explore risks and opportunities affecting cash flows, communication and financial accessibility and costs with obtaining borrowed sources. Thus, companies in different fields of activity can use the relevant standards for their sector to report specific and meaningful information related to sustainability. This aspect facilitates the integration of sustainability factors into investment and management decisions in various global portfolios. In addition, SASB standards play a vital role in communicating to investors information that supports the ecosystem as a whole.

The Council for Accounting Standards in the field of Sustainability proposes four main objectives that are embodied in:

- creating standards for a universal basis that aims to communicate information on sustainable development;
- meeting the information requirements of investors;
- motivating companies to communicate full information on the sustainability of global capital markets;
- ensuring the compatibility of communicated reports and adapting them to some specific jurisdictions or to wider groups of stakeholders.

The Council for Accounting Standards in the field of Sustainability, through these objectives, ensures a bridge between companies and stakeholders, the latter being correctly informed about the global sustainable development strategy, meeting the information requirements of investors and ensuring the compatibility of reported data.

3. Research methodology

The research method is based on a predominantly deductive approach, starting from the role of sustainability standards in the communication process, from the importance of presenting the fundamental notions of sustainability standards and continuing with the selection and synthesis of available information on the researched field, likely to allow opinions and documented conclusions that are useful in making sustainability decisions that have a direct impact on cash flow, access to finance and capital expenditure.

4. Findings

Many stakeholders from different fields see sustainability reporting as a component of the annual report that helps the firm monitor environmental performance and build its own corporate sustainability metrics (Bundy *et al* , 2013, p. 370, Lozano, 2015, p. 42).

In other words, sustainability reporting should be seen as a tool capable of helping firms become aware of their strengths and weaknesses, as well as identify specific interdependencies within them (Köppel et al., 2004, pp. 293–314).

Onicioiu et al. (2020, p.9) highlight the significance of businesses embracing sustainable strategies and goals. They advocate for a comprehensive approach, valuing the viewpoints of stakeholder groups when contemplating sustainability reporting. This involves considerations such as employee training and the delineation of responsibilities among groups involved in the development of sustainable practices. The authors also emphasize the positive outcomes derived from the reporting process. Consequently, the sustainability report functions as a dual-purpose tool, serving both as a promotional instrument for the enterprise and as a readily accessible source of information for consumers, existing and prospective investors, and other stakeholders. It provides insights into the tangible impact of the enterprise's activities on society and the environment.

The challenges brought to financial communication by the sustainability standards, issued by the SASB, are highlighted in particular by IFRS S1 *"General requirements for the development of financial information related to sustainability"*. The purpose of the standard IFRS S1 *"General requirements for the development of financial information related to sustainability"* is to oblige companies to communicate information on risks and opportunities related to sustainability, information beneficial to the primary users of financial reports and to potential investors in the process of allocation of resources.

Primary users benefit from information about sustainability risks and opportunities as the entity's cash flow generation across short, medium, and long-term horizons hinges on intricate interactions with stakeholders, society, the economy, and the environment. The entity operates within an interlinked system, encompassing existing resources and interactions. These resources and relationships, whether natural, self-created, intellectual, human, social, or financial, collectively shape and influence the entity. Also, these resources can be internal, such as the company's personnel, know-how, or organizational procedures, or external, such as the materials and services the business requires, or connections with suppliers, distributors, and consumers.

This standard specifies how an entity should prepare and communicate information related to sustainability and, at the same time, establishes general guidelines for the content and presentation of information relevant to key users in making decisions about the allocation of resources needed by companies.

Reporting entities provide financial information that primary users can use to make decisions about allocating and/or resourcing the entity's needs. These decisions involve choices regarding:

- buying, selling or holding shares and debt instruments;
- granting or repaying loans and alternative credit arrangements;;
- the exercise of voting or other influences on the activity of the management of the company that affect the use of economic resources by it.

Financial sustainability information holds value when it is pertinent and faithfully reflects the reality. Thus, relevance and faithful representation become important qualitative attributes of communication. Financial information on sustainability is more valuable if it is comparable, verifiable, timely and clear. Comparability, verifiability, timeliness and comprehensibility are properties that enhance the usefulness of financial information related to sustainability.

To increase the effectiveness of communication in the field of sustainable development, IFRS S1 *"General requirements for the development of financial information related to sustainability"* regulates the importance of providing information on:

- entity's governance through showcasing processes, controls, and procedures employed to oversee and address sustainability risks and opportunities;
- entity strategy, ie the methods used by the entity to manage the risks and opportunities associated with sustainability;
- risk management which involves presenting the methods an entity uses to identify, analyze and manage risks;
- indicators and objectives designed to assess the entity's performance concerning sustainability risks and opportunities. This includes tracking progress towards targets established by the company or mandated by relevant legislation.

Within sustainability reporting, an entity is required to reveal information facilitating comprehension of sustainability-related risks and opportunities affecting the company's outlook for users of general-purpose financial reports. The entity must:

- outline sustainability risks and opportunities influencing the entity's prospects.
- specify the anticipated timeframes—short, medium, or long term—when the effects of each sustainability risk and opportunity are expected to materialize.
- define time horizons and how they relate to the planning process.

The Board for Accounting Standards in the field of Sustainability, through IFRS S1, took over and adapted part of the definitions and general requirements from the Conceptual Financial Reporting Framework issued by the IASB to be completed with the full name and from the International Financial Reporting Standards (IFRS), and in this case from IAS 1 *Presentation of financial statements* and IAS 8 *Accounting policies, changes in accounting estimates and errors*, which ensures on the one hand a continuity of the standardization process of information communication and on the other hand an adaptation to the new trends and needs that it manifests itself in society.

Through sustainable reporting standards, the traditional framework of financial communication is overcome. In this context, the role of management becomes crucial in determining risks and opportunities. Sustainability reporting and climate risk assessment are complex and interconnected fields that require innovative and adaptive approaches. The implementation of relevant standards and guidelines, such as those developed by the International Sustainability Standards Board (ISSB) and the International Accounting Standards Board (IASB), provide an important framework for communication by companies of information on managing possible challenges and opportunities. The evolution and adaptation of these standards in the future will be essential to meet the ever-changing challenges of the global business environment.

Sustainability reporting is an expensive tool to begin with, but ultimately increases company value as organizations improve their ability to communicate sustainability efforts to stakeholders and investors become more adept at evaluating the quality of reports (Alghamdi et al, 2023, p.1).

5. Conclusions

The value of the Standards developed by the Accounting Standards Board in the area of Sustainability is primarily due to the fact that they allow investors to access corporate sustainability reports that are not only comparable and consistent, but also have a direct impact on crucial components such as cash flows of a company, financial accessibility and cost of capital. In addition, these standards help investors identify key issues for corporate governance engagement, allowing them to focus their efforts on company strategies.

In addition, the SASB standards improve the quality of fundamental analysis of equity and debt capital in both public and private markets. By incorporating a wider range of information beyond financial statements, investors gain a comprehensive understanding of companies' financial health and potential risks. These standards also contribute to the expansion of risk assessment by including sustainability risks. This comprehensive approach gives investors a holistic view of a company's risk profile.

Sustainability reporting has become a core element in the investment decision-making process, as a result of the growing demand for companies to provide high-quality, globally comparable information on risks and opportunities related to sustainability. This request for information is underlined by the feedback received, in the communication process of the entities, through the consultations with the capital market participants. Sustainability standards, on the one hand, provide invaluable support to investors and, on the other hand, play a crucial role in helping companies around the world recognize, measure and manage the sustainability risks and opportunities that they have a direct impact on cash flow, access to finance and capital expenditure.

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Digital Transformation of Agriculture in Romania: A Change Management Perspective

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Abstract

The purpose of this paper is to further strengthen the belief within the academic, professional and policy making communities about the need to speed up the adoption of Agriculture 4.0 technologies in the Romanian farms as the grassroots constituents of the national agriculture in order to secure their future competitiveness in the context of new European agricultural policies and regulations. A review of the most influential papers and the bibliometric mapping of articles on change management as well as ways to accelerate change processes through change agents is discussed. Agrinnovator is the think tank of young digital agriculture practitioners in the Romanian farms. Their public policy proposal to create The Farm Technology Officers Program in order to accelerate digitalization through relevant change agents is also discussed. Their interviews highlighted the need for government support in creating scale and impetus for the digitalization of agriculture. It is deemed to be a structural countrywide change that will happen faster if the adequate change agents are used.

Key words: digital agriculture, change management, knowledge management, public policies

J.E.L. classification: M50, O33, O35, Q10, R58

1. Introduction

Three global imperatives: food security, better profitability of the farms and enhanced sustainability of the food production ecosystem are favoring the adoption of digitally enhanced agricultural practices (aka Agriculture 4.0).

The foundational pillars of Agriculture 4.0 (Albiero et al., 2020) are: the interconnectivity of devices achieved through Internet of Things (IOT), the cloud computing infrastructure, the gathering and interpretation of Big Data using artificial intelligence (Elijah et al, 2018; Hadad & Bratianu, 2018; Kamilaris et al, 2017; Wolfert et al, 2017). In some more recent papers (Klerkx & Rose, 2020), robotics, nanotechnology, protein synthesis, cell agriculture, genetic editing technology, AI, blockchain, and ML are also already part of Agriculture 4.0 while in the CEMA position paper (CEMA, 2017) robotics and advanced AI were anticipated as characteristics of Agriculture 5.0.

Trendov and colleagues (Trendov et al., 2019) stated that digitalization will affect the agrifood chain making possible more food security, better profitability, and enhanced sustainability. Digital farming (aka Agriculture 4.0) will make possible the better management of resources (technological agricultural inputs, land, water, people), adaptability to changes, even climate changes through the monitoring and traceability of crops. According to the same report, the following conditions are required for a large-scale deployment of digital farming: solid connectivity infrastructure, affordability of the services as well as digital literacy. For the report authors digital literacy will be a requirement in the competence profile of agricultural jobs. The adoption of digital farming technologies and practices is one of the five main thematic clusters in the extant digital agriculture literature (Klerkx et al, 2019) illustrating its role as a major study field. In previous work done by the author (Markovits, 2022b) it was argued that the digital literacy requirement is to be extended to all farm personnel from management and owners all the way to the operators.

In a mirror like situation, the Romanian industrial domain workers also need upgrading of their skills. While analyzing the readiness of the Central European countries for the Industry 4.0 Nedelcu (Nedelcu, 2023) concludes that automation and connectivity, driven by AI, IoT, and robotics, are reshaping production globally, offering economic benefits to Central and Eastern European countries, including Romania. The opportunity for 4.0 investments in Romania is seen especially positively due to the availability of highly skilled yet low-cost labor and proximity to markets, but Romania needs to focus on education, especially digital education besides attracting capital, and fostering innovation to fully leverage its advantages in Industry 4.0 (Bratianu et al., 2021; Hadad & Bratianu, 2018).

As proven also by the COVID19 induced digitalization leapfrog, the double jeopardy rule does apply also to digitalization. Those that started, were more advanced or simply better prepared for digitalization initiatives corroborated with the right leadership capabilities, benefited it the most (Pinzaru & Zbucea, 2022). As a corollary, besides the many positive effects, negative effects are also possible, especially those generated by the uneven distribution of the benefits of digitalization. The possibility for a digital divide to appear between the highly vs. scarcely digitalized farms and farmers raises the chance to generate undesirable economic and social tensions (Rose et al, 2021).

2. Literature review

Change management is an important component of the management studies domain focusing on the change processes of organizations and their need to adapt to the business environment dynamism. It is a multidisciplinary domain of studies involving also knowledge and theories from organizational behavior, psychology, leadership, communication. The below literature review summarizes key themes and trends in change management literature within the management field.

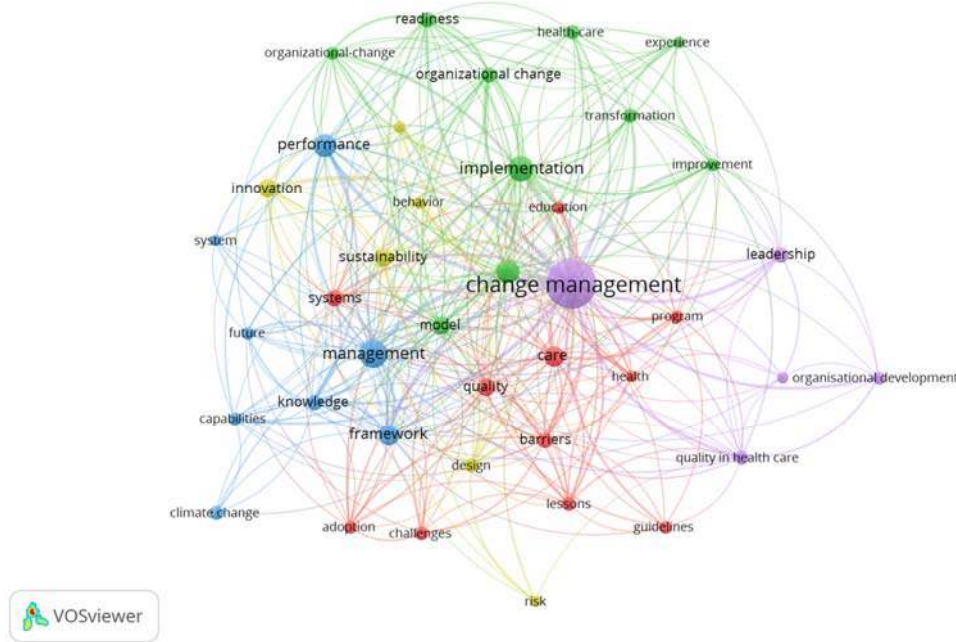
Table no. 1: Change Management topics in the management literature

Literature topic	Content summary of the debates
Approaches to Change	The pros and cons of the top-down (top management lead) vs. bottom-up approaches are discussed and analyzed. The importance of strong leadership vs. distributed leadership and empowerment of employees is also discussed
Communication and Engagement	Effective communication is considered very important during change initiatives. The role of top leaders in this process, and open communication as a way to reduce uncertainty and resistance.
Resistance to Change	The analysis is centered on finding the answer whether employees resistance is a natural reaction to change or is it due to poor communication and engagement.
Organizational Culture	Aligning changes with the prevailing culture is deemed essential, while others propose that culture itself should be transformed to support change.
Change Agents and Consultants	The debate centers on the use of internal and external change agents or consultants, their effectiveness, value ad and compatibility
Sustainability of Change	There's an ongoing debate about how to ensure that changes are sustainable and don't revert to the previous state. This involves exploring strategies for maintaining momentum and preventing relapse.
Measurement and Evaluation	Measuring the success of change initiatives is another debated issue. Metrics to evaluate the effectiveness of change and whether short-term or long-term outcomes are more critical.
Technological Advances and Change	The rapid advancement of technology, raises the question on how technology impacts change management. The studies also discuss digital transformations, remote work, and the role of automation.

Source: Author's compilation

This is reconfirmed by the VOSviewer (van Eck & Waltman, 2010) co-occurrence maps (see figure1) of a corpus of 322 review articles published in WoS under the Management and Business categories and containing the keyword "change management". A total of 2358 keywords at 7 co-occurrences yielded 5 clusters:

Figure no. 1 Keywords co-occurrence mapping at 7 co-occurrences



Source: Author's mapping of Web Of Science 322 review articles corpus, November 2023

Over the years, scholars have explored different aspects of change management covering a broad range of topics. During the past two decades, the change management literature has evolved significantly, emphasizing the importance of aligning change efforts with organizational strategies, fostering employee engagement, adapting to technological advancements, and recognizing the intricate interplay of cultural, psychological, and systemic factors:

Table no. 2 Themes in change management literature in the past two decades

Theme	Main argument	Representative authors
Digital transformation and technology adoption	The importance of aligning technological changes with broader organizational strategies, ensuring a seamless transition to a digitally transformed state	Westerman, G. et al., (2014) Bughin, J., et al., (2018) Ross, J. W., et al., (2019)
Agile transformation	An agile dual-operating system that combines a traditional hierarchy with a more agile network. The role of leadership in fostering adaptability	Cohn, M., (2010) Hiatt, J. M., & Creasey, T. J., (2012) Kotter, J. P., (2014)
Employee engagement and empowerment	The importance of creating a positive work environment	Harter, J. K., et al., (2002) Deci, E. L., & Ryan, R. M., (2008) Pink, D. H., (2009)

Sustainability & resilience in change	The need for organizations to build change initiatives that are not only effective in the short term but also sustainable over the long term	Bratianu, C., (2002, 2022) Holling, C. S., (2001) Walker, B., et al., (2004) Folke, C. (2006).
Behavioral economics & psychology	Explore the cognitive biases and irrational behaviors that influence decision-making during change	Ariely, D. (2008); Bratianu, C. & Bejinaru, R. (2018) Thaler, R. H., & Sunstein, C. R. (2008) Kahneman, D. (2011)
Cultural transformation	Organizations are encouraged to assess their existing cultures and align change efforts accordingly, recognizing the impact of cultural dynamics on successful change implementation.	Cameron, K. S., & Quinn, R. E. (2006) Denison, D. R. (1990) Schein, E. H. (1992)
Systems thinking	Organizations exist within interconnected and dynamic environments that require nuanced strategies for managing change.	Senge, P. M. (1990) Wheatley, M. J. (2006) Snowden, D. J., & Boone, M. E. (2007)
Leadership's role in change	the significance of leadership in guiding organizations through change initiatives.	Burns, J. M. (1978) Bass, B. M. (1985) Kotter, J. P. (1996)
Innovation and creativity	that organizations must embrace creativity as a core competency to navigate change in an increasingly competitive and fast-paced business environment	Amabile, T. M. (1988) Christensen, C. M. (1997) Dyer, J. H., et al (2011)
Globalization and cultural diversity	Organizations operating in diverse global contexts must tailor their change strategies to accommodate cultural nuances and differences	Trompenaars, F., & Hampden-Turner, C. (1998) Hofstede, G. (2001) Gudykunst, W. B., & Kim, Y. Y. (2003)
Data-driven change	The authors argue for the strategic use of data analytics to inform decision-making, monitor change progress, and evaluate the impact of change initiatives	McAfee, A., & Brynjolfsson, E. (2012) Davenport, T. H., & Harris, J. (2007) LaValle, S., et al (2011)
Human-centered design	These authors advocate for a user-centric approach to change	Brown, T. (2009) Norman, D. A. (2013) Kelley, T., & Kelley, D. (2013)

Source: Author's compilation

Change agents, are individuals entrusted to lead and facilitate change within organizations. The literature underscores the importance of understanding the characteristics and competencies of effective change agents. According to Kanter's seminal work, (Kanter, 1983) successful change agents possess a combination of leadership skills, strategic vision, and the ability to communicate a compelling narrative that motivates and mobilizes stakeholders. This aligns with the perspective of Conner (Conner, 1992) who argues that change agents need to be versed at managing ambiguity and uncertainty (Bratianu, 2018). The role of change agents most often extends beyond traditional top-down approaches, embracing also more participatory and inclusive styles.

Following the literature streams of the past two decades we may find that each of them had a position on the value of change agents. In digital transformations, change agents play a crucial role in navigating technological complexities and act as translators between tech and business leaders (Westerman et al., 2014). Agile and adaptive approaches are essential for change agents to accelerate business performance (Hiatt & Creasey, 2012) while navigating hierarchies and networks (Kotter, 2014).

Change agents create employee engagement by tapping into intrinsic motivation and creating conditions for open communication (Pink, 2009; Anderson & Anderson, 2010). Change agents need resilience and adaptability to face setbacks and evolving circumstances (Folke, 2006; Holling, 2001). Change agents are learning leaders (Senge, 1990) that stimulate cultural change by aligning initiatives with existing cultures or reshaping them when and where necessary (Cameron & Quinn, 2006; Schein, 1992). Very often change agents are called upon guiding organizations through change, following Kotter's eight-step process (Kotter, 1996) and act as catalysts for fostering a culture of innovation, encouraging experimentation, risk-taking, and lateral thinking (Christensen, 1997; Amabile, 1988; Dyer et al., 2011). Change agents navigate diverse contexts and act as cultural brokers (Gudykunst & Kim, 2003; Hofstede, 2001; Trompenaars & Hampden-Turner, 1998) while leveraging data analytics to inform and assess change initiatives and often also act as data interpreters (Davenport & Harris, 2007; LaValle et al., 2011; McAfee & Brynjolfsson, 2012). Change agents use human-centered design principles, prioritizing the needs and experiences of individuals within the organization (Brown, 2009; Norman, 2013).

In practice, the choice between internal change agents and external consultants often depends on factors like the scope of change, the organization's culture, available resources, and the level of expertise required. The debate continues as organizations adapt to changing business landscapes and explore the most effective strategies for managing change while considering the roles of various change agents.

Adoption of precision farming practices is influenced by both internal and external factors (Bucci et al., 2018) such as size of farms, farmer's experience with technology and their awareness of the precision agricultural practices as well as (the high) cost of initial investment. Other internal factors such as farmers age, education and farmers' perception of the advantages offered by the new technology (the potential to get better profit per ha) were also identified. External factors that influence adoption of agriculture 4.0 include: cost of labor and cost of land, the regulatory and market (clients) pressure for sustainability as well as availability of consultants. If we also consider that precision agriculture requires extensive use of digital tools (software and hardware), farmers' age and education manifested in their knowledge and comfort with technologies becomes an appropriate lens to evaluate the adoption differences between young and old farmers.

3. Research methodology

Thematic clustering of the principal streams of literature in change management was used to identify representative authors and their works with emphasis on the past two decades.

Key words search aiming to identify a corpus of articles in the Web of Science database under the Management and Business categories for "change management" have yielded 322 review articles. VOSviewer bibliometric mapping software (van Eck & Waltman, 2010) was used to plot the key words co-occurrence maps. For a more meaningful mapping the following generic keywords were eliminated from the final list of keywords mapped: "literature review", "systemic review", "systematic review."

4. Results and discussion

The analysis of the strategic options for the development of Romanian agriculture (Panagoret & Panagoret, 2017) identifies several essential support initiatives. Their first recommendation at the time was aimed at solidifying land ownership records (integrated cadastre and land registry) also as means to facilitate access to credits, but they also advocated for policies aimed to stimulate farmers' competitiveness by increasing the efficiency of the agricultural exploitations. The digital agriculture is a very probable and possible mean to increase farm efficiency and competitiveness, thus policies to stimulate digital agriculture adoption should be part of the stimulus package of public policy makers (i.e. Government ministries and Parliament).

By adopting precision agriculture methods farmers move from an experiential decision-making to a data-driven decision-making (Bucci et al., 2018) that requires usage of complex weather forecasts, satellite images, pest alerts, NDVI maps just to name a few of the new tools available in agriculture 4.0.

While assessing ways in which adoption of digital agriculture among Romanian farmers could be stimulated it is useful to exercise a multidisciplinary consideration of the literature bodies on change management, barriers to precision agriculture adoption (Bucci et al, 2018, Pierpaoli et al, 2013, Tey& Brindal , 2012) factors influencing digitalization in Romania (Iliescu, 2020, Pînzaru et al, 2017, 2019, 2022) as well as the decision making methods (Gerli et al 2022), complexity of the problems, and knowledge management (Bratianu, 2022).

The Romanian rural ecosystem was characterized in the past 30 years by a severe depopulation, aging of the workforce and resident population, as well as workforce migration to follow urban revenues and lifestyles. This was/is degrading the ecosystem and in consequence having an effect also on the food safety (Dumitru et al., 2019, 2021, Iancu et al. 2022, Paul, 2020). Another important particularity of the Romanian agricultural sector, to be considered, is the rather scarcity of strong associative structures that could undertake sectorial policy or vocational initiatives (Bratulescu, 2017; Wolz et al.,2020).

In this context, Agrinnovator (www.agrinnovator.ro) a think tank of young farming practitioners proposed a public policy aimed at creating 1500 Farm Technology Officers (FTO) that would be embedded in pre-qualified farms and act as change agents (Agrinnovator, 2022 a, b). The Farm Technology Officer Program is designed to create an agriculture dedicated vocational education and training stream to achieve sustainable competitiveness and resilience within the Romanian agriculture sector by facilitating the Romanians farmers' access to digitally enhanced precision agriculture solutions and increasing the number of youths engaged in the sector.

The FTO program is proposed to finance the formation of approximately 1500 rural youth whom are to be recruited and trained, and subsequently employed by qualifying farmers to work as FTO's and help a minimum of 1000 Romanian farms expedite their adoption of digitally enhanced technological solutions. The program will cover the full cost of tuition and will also provide gradually decreasing payroll assistance to the farmers employing the newly formed FTO.

During the recruitment phase preference will be given to the youth from the rural areas of Romania, farmers' children interested in gaining a short-term qualification (approximately 6 months) in applied digital agriculture. Upon graduation, the newly formed FTO will have assured employment with qualifying farmers (farms will be prequalified).

The participating farmers themselves will receive employment assistance via gradually decreasing payroll assistance decreasing in steps of 20% per year:



The total cost of the FTO program is estimated at €102 million of which approximately €15 million will cover the cost of tuition including accommodation meals tuition study materials while approximately €85 million will cover the cost of payroll assistance component and about two million will cover the administrative costs associated with the program during the five years proposed. Funding for this program is aimed through cooperation of several relevant ministries (Agriculture, Education, Environment, European Funds) and assistance of EU assistance funds.

From both the theoretical substantiality as well as practical perspectives, the proposal is novel and has several strong points. It is leveraging the rural youth as change agents for digitalization (Deac, P. in Agrinnovator, 2022 b) building on their propensity to go for job contents that are modern, relatively well paid and would evolve in time making them motivated to stay. By educating young mid-level technicians from the rural ecosystem, the FTOs fulfill almost all change agents' requirements identified in the literature review of this article.

The gradually decreasing payroll assistance is also a powerful tool to circumvent the eventual non-acceptance of the FTOs on the grounds of cost and would allow for the farmers to witness the benefits of having a team member in charge of technology similar to their today's agronomist or accountant (Prelipcean, R. in Agrinnovator, 2022a).

5. Conclusions

Up-skilling and re-skilling of the owners, managers and farm work force all the way to the operators is a key factor for the success of the effort to deploy the digital agriculture methods anywhere in the world and so much so in Romania. This should be done by leveraging knowledge building and sharing methods which are also adapted to the learning methods of the younger farmers in the Romanian farms (Bălan et al, 2019; Bratianu et al., 2021; Germain, 2020; Pinzaru et al, 2016). The use of external change agents that would be embedded in the daily activity system of farms would have a catalyst effect. In the absence of strong agricultural cooperatives or other strong market actors (digital agricultural advisors) the catalytic effect could be initiated via adequate public policies that should provide the initial impetus and scale of such efforts.

The Agrinnovator think tank policy proposal discussed in this paper it is an example of such an initiative. It is also a rather novel approach because beyond stimulating the diffusion of digital agriculture practices it also creates positive social impact in the rural communities by keeping the youth in their extended families and brings knowledge and revenue streams comparable to urban jobs thus limiting the depopulation of the rural ecosystem. These all would have a positive effect on food safety through more efficient, more productive and thus more competitive farms in Romania.

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The World Electricity Production and the Current Global Energy Crisis in Brief

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Abstract

This paper shows that the fossil fuels still account for over 60% of total global electricity generation and highlights how the current global energy crisis has placed electricity security and affordability high on the political agenda, favouring renewable solutions.

The global energy landscape has changed radically since Russia's invasion of Ukraine. Countries around the world have faced rising prices that have hit consumers hard, all against a geopolitical backdrop with energy security at its center and the world's dependence on fossil fuel consumption often supplied by only a few major producers. An accelerated transition to low-carbon energy sources such as renewable and nuclear sources is therefore necessary. In Europe, the ripple effects of the war were acutely felt due to the historical dependence on Russian gas imports. The risk of shortages has been and continues to be avoided through greater efforts to improve energy efficiency, deploy renewables, install heat pumps, promote energy savings and increase gas supplies.

Key words: global energy crisis, electricity, renewable solutions

J.E.L. classification: F51, L7, O13, P18, P48, Q3, Q4

1. Introduction

The energy industry is an important branch of the world economy that deals with the exploration, exploitation and use of energy carriers. Along with the economic development and the growth of the world population, the energy consumption has also increased. At present, energy is part of all economic and social processes. The superiority of an economy does not result from the amount of energy consumed, but from the efficient way it is used.

Russia's invasion of Ukraine in February 2022 caused a global energy crisis. Energy security has emerged as an additional strong motivation to accelerate the use of renewable energy. Fossil fuel supply disruptions have highlighted the energy security benefits of domestically generated renewable electricity, prompting many countries to strengthen policies to support renewables. Meanwhile, higher fossil fuel prices worldwide have increased the competitiveness of solar PV and wind generation against other fuels.

The energy crisis hit the EU while it was already discussing ambitious renewable targets under the Fit for 55 package. At EU level, the European Commission's REPowerEU plan launched in May 2022 proposes ending the bloc's dependence on Russian fossil fuels by 2027. REPowerEU plan aims to increase the share of renewable sources in final energy consumption to 45% by 2030, exceeding the 40% previously under negotiation.

The current global energy crisis brings both new opportunities and new challenges for the renewable energy. The International Energy Agency's Renewables 2022 report provides an analysis of the new policies introduced in response to the energy crisis. This year's report shows the current policy and the market evolution, given the current energy price increases and energy security challenges.

2. Theoretical background

Currently, electricity has become irreplaceable in all economic and social fields. Its advantages are multiple: it is non-polluting, it can be used at long distances from the place of production, it can be easily transformed into other forms of energy (mechanical, thermal, chemical).

Over time, progress has been made in the production, transportation and use of electricity. In the 17th century, Isaac Newton introduced the notion of energy, and in 1791 Luigi Galvani discovered the electric current. In 1840 heat was identified as a form of energy by the German Hermann von Helmholtz and the Englishman James Prescott Joule. The first power plants in the world came into operation in the 19th century: the Lancey hydroelectric plant in France (1869) or the thermoelectric plants in London and New York (1882). In Romania, the first thermoelectric power plants were built in 1882 in Bucharest, in 1884 in Timisoara (public lighting service) and in 1887 in Caransebeş. In the 20th century, large power plants were built, starting with the hydroelectric plants in the USA. New technologies were also developed that used new sources of energy: the first geothermal power plant in Larderello (1904, Italy), the first power plant that used the temperature difference of ocean waters in Matanzas (1930, Cuba), the first nuclear-electric power plant in Obninsk (1954, Russia), the first tidal power plant in the La Rance estuary (1967, France), the first solar power plant in Adrano (1981, Italy), the first wind power plant in the Crimea Peninsula (Ukraine).

The **primary sources of electricity** are especially the fossil fuels (coal, natural gas, oil), running water energy, radioactive ores and less geothermal energy, wind energy, solar energy, ocean water energy, biomass (Erdeli et al., 2009).

The energy production involves the use of raw materials or energy sources, classified as follows:

- *conventional energy sources (classical sources)*: fossil fuels (coal, hydrocarbons, bituminous shale, asphalt sands), vegetable fuels (wood), nuclear fuels, running water energy;
- *non-conventional energy sources (alternative sources)*: solar energy, wind energy, geothermal energy, ocean water energy, plant and animal waste, etc.

According to the criterion of sustainability of exploitation, the energy resources are classified into:

- *exhaustible (non-renewable) resources*: fossil fuels;
- *inexhaustible (renewable) resources*: solar energy, wind energy, running water and ocean energy, geothermal energy, vegetable fuels.

Other sources of energy may be added to these, some based on physical and chemical technologies, some known only experimentally, others little exploited, but very promising: biomass ("energy plants") for obtaining some fuels, the energy of ocean currents, the energy resulting from the temperature difference between surface and deep ocean waters, the hydrogen obtained by dissociating water, etc.

The EU's dependence on the Russian gas has grown steadily over the past decade. The bloc's gas consumption fell only marginally during this period, but production has fallen by two-thirds since 2010, and the gap has been filled by rising imports. As a result, Russia's share of total EU gas demand increased from 26% in 2010 to an average of over 40% in 2018-2021. The International Energy Agency (IEA) was among the first to raise concerns about this growing dependence.

The transition to clean energy has accelerated given the security concerns. After Russia's invasion of Ukraine in February 2022, the energy security emerged as an additional strong motivation to accelerate the use of renewable energy. The European Commission's REPowerEU plan, launched in May 2022, proposed ending the bloc's dependence on Russian fossil fuels by 2027. In direct support of Ukraine, the International Energy Agency signed a two-year joint work program to support its recovery, including short- and long-term energy priorities such as energy system security, hydrogen, renewables, biogas and collaboration on data and statistics. The IEA member countries agreed to release oil from their emergency reserves to ease market tensions and send a unified message that there will be no supply shortage as a result of the Russian invasion (62.7 million barrels of emergency oil stocks oil in March 2022 and an additional 120 million barrels from emergency reserves in April 2022; this action coincided with the release of additional barrels from the US Strategic Petroleum Reserve).

Russia has more than halved its gas supplies to the EU in the past year. But the European gas market has proven resilient as nations have been able to fill their storage sites to more than 95 percent capacity by increasing supplies from outside Russia and rapidly reducing consumption. As a result, Russia's share of European gas demand fell from 23% in 2022 to below 10% in January 2023.

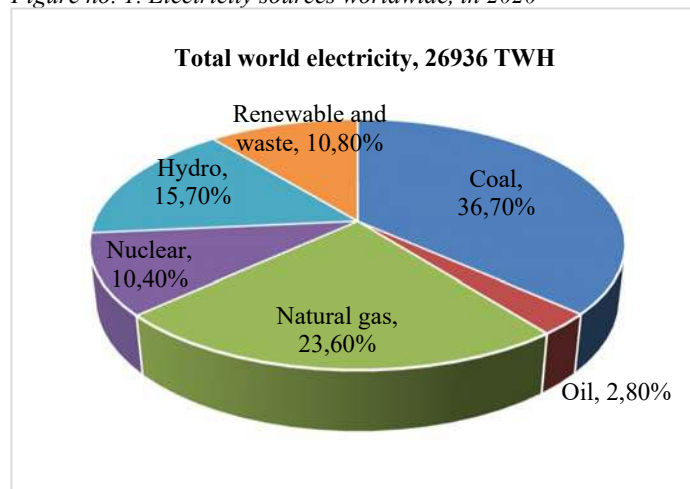
3. Research methodology

The theoretical research, the analysis and the synthesis were used in drafting this paper. The theoretical research consisted in the study of the specialized literature. The study was conducted based on the analysis, processing and interpretation of the most significant indicators of energy production. The research methodology was based on the analysis and interpretation of the latest data provided by the International Energy Agency (IEA), using descriptive statistics.

4. Findings

Most of the electricity production worldwide (Figure 1) comes from the use of fossil fuels (63 %). Running water energy accounts for 16% and nuclear fuels 10.4% of the total electricity production. The other non-conventional, inexhaustible and environmentally friendly sources of energy (solar, wind, geothermal, waste, etc.) still count for low shares (10.8%).

Figure no. 1. Electricity sources worldwide, in 2020



Source: Key World Energy Statistics, International Energy Agency, 2021

The classic **thermoelectric power plants** provide 67% of the world's electricity (17,007 billion KWh) and use coal, oil, natural gas, oil shale, wood, straw, waste as energy source (Table no. 1).

Table no. 1. Main electricity producing countries in fossil fuel power plants (2019)

Pos.	COAL	bn KWh	Pos.	OIL	bn KWh	Pos.	NATURAL GAS	bn KWh
1	China	4,876	1	Saudi Arabia	168	1	USA	1,640
2	India	1,181	2	Mexico	45	2	Russia	514
3	USA	1,070	3	Iraq	41	3	Japan	385
4	Japan	329	4	Japan	36	4	Iran	270
5	Korea	246	5	USA	36	5	Saudi Arabia	217
6	South Africa	222	6	Kuwait	28	6	China	213
7	Russia	188	7	Iran	28	7	Mexico	193
8	Germany	182	8	Egypt	26	8	Egypt	150
9	Indonesia	174	9	Lebanon	20	9	Korea	146
10	Australia	154	10	Cuba	17	10	Italy	142
Rest of producers		1,292	Rest of producers		302	Rest of producers		2,476
World total		9,914	World total		747	World total		6,346

Source: Key World Energy Statistics, International Energy Agency, 2021

The thermoelectric power plants offer rhythmicity in operation, high production capacity, short construction time and short term of investment amortization; fuels can be transported over long distances, which offers the possibility of locating thermoelectric power plants not only in the fuel extraction area, but also in large consuming centers. Among the disadvantages we mention: the high volume of fuels used, the need for large spaces for storing them and waste, high water consumption, polluting emissions into the atmosphere. The most widespread type of thermoelectric power plants is the one that operates on the basis of steam, using a large amount of water and fuel.

The thermoelectric power plants are the basis of electricity production in many countries (over 80% of the total), most of them having rich reserves of fossil fuels (China, USA, Russia, Algeria, Libya, Tunisia, Morocco, Kuwait, Australia, Qatar, Saudi Arabia, Iraq, Iran, the Netherlands, Poland, the Czech Republic, UK, India, Indonesia, Mexico) or being large consumers of electricity (Japan, Italy, Germany).

The geographical distribution of thermoelectric power plants shows their concentration as follows:

- high-power thermoelectric power plants were built near the coal-bearing basins: the Appalachian basin, Pittsburg, the Ruhr basin, the Moscow basin, Donetsk, Karaganda, the Upper Silesia basin, the Rovinari basin (Rogojelul and Turceni thermal power plants);
- in regions rich in hydrocarbons or along transport pipes: the Gulf of Mexico, Volga-Ural area, Baku, the Transylvanian Depression;
- in large urban centers that consume electricity, where the thermoelectric power plants mainly use natural gas and oil residues: Paris, London, New York, Chicago, Beijing, Tokyo, Bucharest, etc.;
- in port regions, especially for the fuel importing countries, such as Japan, Italy, Belgium, Germany, but also in some large hydrocarbon producing countries and coastal or submarine areas (Netherlands-Rotterdam, Mexico, USA);
- along large rivers that can provide the necessary amount of water and fuel transport: Rhine, Oder, Ohio, Volga.

The **hydroelectric power plants** use running water as a source of energy, the technology being quite simple: the hydraulic turbines transform the energy of a running water or a falling water into mechanical energy that drives electricity generators. The advantages that hydropower plants offer are multiple: low cost of the energy produced, low degree of pollution, improvement of navigation, the possibility of using water for irrigation, industry, domestic consumption, flood prevention and flow regulation. Among the disadvantages we mention: large investments and long execution time of hydropower facilities (dams, catchments, derivations), the possibility of clogging of reservoirs, changes in the environment, the disappearance of some fauna and flora species and sometimes population displacements.

Depending on the type of construction, the hydropower plants can be high-head (over 200m), medium-head, low-head (under 30m) and waterline (by-pass) power plants. In many cases, dams and reservoirs were built along a river in a chain or cascade, for the maximum exploitation of its hydropower potential (hydropower systems). High and medium drop hydropower plants require the construction of dams, behind which reservoirs are formed that provide the volume of water necessary to obtain energy; in many cases, to obtain the required volume of water, tributaries or neighboring rivers are captured, whose water is directed to the reservoir. Low-drop hydropower plants compensate for the reduced level difference with the high flow rate of the hydrographic artery.

Currently, the hydropower plants produce 15.7% of the world's energy, transforming the primary energy of flowing water into electricity. The amount of energy produced in hydropower plants increased from 1,295 billion KWh in 1973 to 4,329 billion KWh in 2019.

The theoretical hydropower potential of Earth was estimated at 6.2 million MW, but the technical-manageable potential is lower, only 2.3 million MW. The use of these resources is only 26% globally, with higher shares in Europe and North America.

The largest installed capacities are in: China 356 GW, Brazil 110 GW, the U.S.A. 103 GW, Canada 81 GW, Russia, Japan, India, Norway, Turkey, France, Italy, Indonesia, D.R. Congo, Colombia, Argentina.

The greatest producers of hydropower are: China (1,304 billion KWh), Brazil (398 billion KWh), Canada (380 billion KWh), USA, Russian Federation, India, Norway, Turkey, Japan, Vietnam, Venezuela and Sweden (Table no. 2).

Table no. 2. Main hydroelectricity producers and the installed capacity in hydropower plants (2019)

Pos	Hydroelectricity production	bn KWh	% of world total	Pos	Installed capacity in hydropower plants	GW
1	China	1,304	30.1	1	China	356
2	Brazil	398	9.2	2	Brazil	110
3	Canada	380	8.8	3	USA	103
4	USA	311	7.2	4	Canada	81
5	Russia	197	4.5	5	Russia	54
6	India	172	4.0	6	Japan	50
7	Norway	126	2.9	7	India	49
8	Turkey	89	2.1	8	Norway	33
9	Japan	87	2.0	9	Turkey	29
10	Vietnam	66	1.5	10	France	26
Rest of producers		1,199	27.7	Rest of producers		417
World total		4,329	100,0	World total		1,308

Source: Key World Energy Statistics, International Energy Agency, 2021

The largest hydropower systems are built by Russia on Volga (Volvograd 2,530MW, Samara 2,300MW), Enisei (with 6 hydropower plants, of which Saian-Sushensk 6,400MW, Krasnoirsk 6,000MW), Angara (Bratsk 4,600MW, Ust-Ilimsk 4,300MW, Boguciani 4,000MW).

Europe stands out for the hydropower installations on the Danube (Iron Gates I 2,100MW and Iron Gates II 850MW), Iller, Isar, Inn (Germany) and others in Norway, Sweden, France, Italy, and Austria.

In Asia, China has the most microhydropower plants (over 100,000), and the largest hydropower plants are built on Huang He (Liujiaxia and Sanmenxia of 1,100 MW each) and Chang Jiang (Gezhouba 2,710 MW) rivers. In October 2008, the largest hydropower plant in the world, the Three Gorges, came into operation, with 18,300 MW of power installed in the 26 functional generators. But this impressive construction on the Chang Jiang river started in 1994 will eventually have 22,500 MW of installed power, 32 generators of 700 MW and 2 generators of 50 MW, and the annual production of electricity will be 100 TWh.

In North America, the U.S.A. built large hydropower systems on the Columbia River (Grand Coulee I, II, III with 11,000MW), Colorado, Tennessee (47 hydropower plants) and Missouri. Canada has important hydropower systems on the rivers Churchill, La Grande (over 10,000MW in 4 hydropower plants), St. Lawrence, Saskatchewan, Nelson and Yukon. Canada and the U.S.A. produce together more than 20% of the world's hydropower.

In South America, although the hydropower potential is very high, only the rivers Parana-Itaipu 12,600MW (Brazil and Paraguay), Parana-Corpus 4500MW (Argentina and Paraguay), Panaraiba (Ilha Solteria 3,200MW), Rio Grande (Paulo Alfonso system with 5,100MW) and Garoni (Guri hydropower plant of 10,300MW in Venezuela) are equipped with hydropower plants.

Although Africa has large hydropower resources, there are few hydropower installations. The rivers Nile (with the Aswan I and II hydropower plants of 350MW and 2,100MW in Egypt), Zambezi (the Kariba hydropower plant of 1,200MW in Zimbabwe and Cabora Bassa of 4,150MW in Mozambique), Niger, Zaire are noteworthy.

Hydropower counts for the largest share in the electricity production structure of many countries (over 80%): Norway, Iceland, Paraguay, Zambia, DR Congo, Ghana, Uganda, Laos, Sri Lanka, Brazil, Peru, Ethiopia, Kenya, Costa Rica, Central African Republic, etc.

The **nuclear-electric power plants** or the atomic power plants provide 10.6% of the world's energy and represent a special type of thermoelectric plants, based on the nuclear fission reaction in which the main fuel is uranium (isotope U-235), but also thorium or plutonium. The energy power is very high, one gram of uranium releases an amount of energy 3 times higher than one gram of carbon. In such an energy system, most of the energy released by the fission of heavy radionuclides is in the form of heat, used to produce steam; the steam sets a turbine in motion, and the mechanical energy is transformed into electricity by a generator.

The first nuclear fission reactor was built in 1942 for the U.S. Manhattan Project, to build the atomic bomb. Immediately after the Second World War, nuclear reactors were built for the propulsion of submarines and for the production of electricity. The most significant certain reserves

of uranium are located in Australia, Canada, South Africa, Russia (Ural Mountains) and the U.S.A. (Rocky Mountains).

The first nuclear power plants were those in Obninsk (Russia) in 1954, Calder Hall (UK) in 1956, Mareuil (France) in 1956, Shippingport (the U.S.A.) in 1957.

The world production of nuclear energy increased from 203 billion KWh in 1973, to 2,790 billion KWh in 2019. The main producers of nuclear energy are: the U.S.A. (843 billion KWh, a third of the world production of nuclear energy), France (399 billion KWh), China (348 billion KWh), Russia (209 billion KWh), Rep. Korea, Canada, Ukraine, Germany, Sweden, Japan and U.K. (Table no. 3).

Table no. 3. Main nuclear energy producers and the installed capacity in nuclear power plants (2019)

Pos	Nuclear energy production	bn KWh	% of world total	Pos	Installed capacity in nuclear power plants	GW
1	USA	843	30,2	1	USA	97
2	France	399	14,3	2	France	61
3	China	348	12,5	3	China	48
4	Russia	209	5,2	4	Japan	32
5	Korea	146	7,5	5	Russia	29
6	Canada	101	5,2	6	Korea	23
7	Ukraine	83	3,6	7	Canada	14
8	Germany	75	3,0	8	Ukraine	13
9	Sweden	66	2,7	9	UK	9
10	Japan	64	2,4	10	Germany	8
Rest of producers		456	2,3	Rest of producers		60
World total		2,790	100,0	To World total		393

Source: Key World Energy Statistics, International Energy Agency, 2021

Currently, the largest powers installed in nuclear power plants belong to: the U.S.A. (97 GW in 104 reactors), France (61 GW in 59 reactors), China (48 GW in 28 reactors), Japan (32 GW in 53 reactors) and Russia (29 GW in 31 reactors).

The nuclear energy holds high shares in the structure of electricity production in some countries: Lithuania, France, Belgium, Slovakia, Ukraine (over 50%) and South Korea, Japan, Sweden (over 25%).

The **electricity production** has recorded a continuous increase up to **26,936 billion KWh** in 2019, compared to 6,116 billion KWh in 1973. Most of it is obtained in North America and Europe. Asia, the most populated continent, produces 34% of the world's electricity, more than half being produced by China and Japan.

The main electricity producers are: China (with 7,472 TWh and over a quarter of the world production), the U.S.A. (4,371 TWh), India (1,624 TWh), Russia, Japan, Canada, Brazil, Germany, South Korea and France (Table no. 4). The main electricity exporters and importers are presented in Table no. 5.

Table no. 4. Top 10 electricity producers (2019)

Pos	Country	Electricity (TWh)	% of world total
1	China	7,472	27,7
2	USA	4,371	16,2
3	India	1,624	6,0
4	Russia	1,120	4,2
5	Japan	1,037	3,8
6	Canada	645	2,4
7	Brazil	626	2,3
8	Germany	603	2,2
9	Korea	578	2,1
10	France	566	2,1
Rest of producers		8,294	31,0
World total		26,936	100,0

Source: Key World Energy Statistics, International Energy Agency, 2021

The world average of electricity production per inhabitant exceeds 2,800 KWh/year. High values of this indicator are recorded in Norway, Canada, Iceland (over 20,000 KWh/year/inhabitant) and Sweden, the U.S.A. (over 10,000 KWh/year/inhabitant). Below the world average are the poorly developed states in Africa, Asia and South America (Mali, Sudan, Chad, Rwanda, etc.).

Table no. 5. Top 10 electricity exporters and importers (2019)

Pos	EXPORTERS		Pos	IMPORTERS	
	Country	TWh		Country	TWh
1	France	58	1	USA	39
2	Canada	47	2	Italy	38
3	Germany	33	3	Brazil	25
4	Paraguay	32	4	Thailand	23
5	Sweden	26	5	UK	21
6	Laos	23	6	Finland	20
7	Russia	18	7	Iraq	14
8	China	17	8	Hungary	13
9	Czech Republic	13	9	Hong Kong	12
10	Israel	6	10	Argentina	11
Rest of exporters		63	Rest of importers		116
World total		336	World total		332

Source: Key World Energy Statistics, International Energy Agency, 2021

The geographical distribution of electricity industry and production shows great regional disparities depending on the level of economic development of different states. The highest concentration is recorded in Europe, North America, Japan, China, Russia, the largest producers, but also consumers of energy.

The U.S.A. focus on the hydropower potential, especially in the Rocky Mountains and the Waterfalls Mountains, but also on nuclear energy, because they have large resources of nuclear fuels. Canada focuses mainly on hydropower and nuclear power. Thermoelectric energy predominates in Russia (75%), where the power plants are located near coal or oil basins and around the large consuming cities. The hydropower plants contribute 18% to Russia's total energy production, exploiting the immense potential of the Siberian rivers.

In Germany, the electricity is produced mainly in thermoelectric and nuclear power plants. France, lacking fossil fuels, turned to the production of nuclear energy and hydropower. In the U.K., the thermoelectric power plants using coal and hydrocarbons predominate, but also nuclear power plants. Italy relies on the production of electricity from the hydropower plants in the Alps and Apennines, but also from thermoelectric power plants that use imported fuels. Norway, the country with the highest energy production per capita, relies almost entirely on hydropower, and Sweden on both hydropower and nuclear power.

China has large reserves of coal and oil, therefore 80% of its total electricity is produced in thermoelectric power plants. In Japan, the thermoelectric power plants predominate, followed by nuclear power plants, geothermal and solar power plants. India, the most important energy producer in South Asia, is currently developing hydropower systems on the rivers Indus, Ganges, Brahmaputra and Krishna. Brazil has a production dominated by hydropower (over 80%). In Mexico, Venezuela and Argentina, the thermoelectric power plants predominate, to which hydropower plants are added. Australia relies on thermoelectric energy, but it has also built hydropower systems on the river Murray.

The fossil fuels still account for over 60% of total global electricity generation. Over the last 40 years, the share of oil has decreased and the shares of nuclear energy and alternative energy (biofuel, waste, solar, wind, geothermal) have increased.

The use of fossil fuels as main energy source has had a negative impact on the environment. Internal combustion engines, thermal power plants burning coal or natural gas emit considerable amounts of sulfur dioxide and nitrogen oxides into the atmosphere. When these gases combine with the water vapors in the atmosphere, they form sulfuric acid and nitric acid, and then acid rain. After 1850, the share of carbon dioxide in the Earth's atmosphere was continuously increasing, as a result of the burning of fossil fuels.

Carbon dioxide together with other industrial gases (such as methane or chlorofluorocarbons) can induce the greenhouse effect, which has increased the temperature at the Earth's surface, due to the increase in the amount of heat trapped in the lower atmosphere. This has serious consequences: climate changes and upheavals or repercussions on ecosystems (Simoni, 2015).

Moreover, the fossil fuel reserves are unequal distributed: the majority of oil reserves are located in the Middle East (66%), of natural gas in Russia (34%) and Middle East (31%), and the reserves of coal in Russia and the U.S.A.

5. Conclusions

Economic development and the growth of the world population determined the increase in energy consumption, present today in all economic and social processes. The superiority of an economy does not result from the amount of energy consumed, but from the efficient way it is used.

The fossil fuels still account for over 60% of total global electricity generation, and fossil fuel reserves are unevenly distributed across the globe. The use of fossil fuels as the main energy source has had a negative impact on the environment. Over the last 40 years, the share of oil has decreased and the share of nuclear energy and alternative energy (biofuel, waste, solar, wind, geothermal) has increased. In many states, programs have been initiated for the development of non-polluting technologies and the use of renewable resources that could allow the reduction of fossil fuel consumption and all the problems caused by them. But currently, although the amount of potential energy from renewable and non-polluting sources is greater than the world's energy needs, only a small part is transformed into electricity at a reasonable price.

The transition to clean energy has accelerated given the present security concerns. The high inflation and the supply chain disruptions, resulting from the war in Ukraine and exacerbated by the consequences of the COVID-19 pandemic, have highlighted the risk of energy dependency. Many countries are revising the policy to accelerate a clean energy transition alongside economic recovery and to avoid repeating past mistakes (for example the Inflation Reduction Act in the U.S., the REPowerEU plan in Europe and the GX Green Transformation programme in Japan).

Concerns regarding energy security, the increase in global energy consumption, pollution and the depletion of hydrocarbon and uranium reserves influence the evolution of energy systems and drive the development of alternative and viable energy sources.

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Pupils Left Behind? An Analysis on the Data from National Evaluation Exams in Romania 2023

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Abstract

In the 2022-2023 school year, about 47% of candidates were admitted to their first-choice high school, while 1.44% were not admitted to any school. This research paper explores the dynamics of Romania's educational landscape, focusing on the National Evaluation Exams in the 2022-2023 school year. The paper investigates the path of pupils who, despite obtaining passing final admission scores, were not assigned in the first admission round to an upper-secondary educational facility. Two crucial research questions guide this study: on one hand, how many of these students competed in a different county than their residential county? On the other hand, what similarities and differences exist among them in terms of performance at the National Exam and average scores in the lower-secondary educational cycle? The findings aim to shed light on the challenges and opportunities within Romania's education system.

Key words: educational system, upper secondary education, National Evaluation Exam, cluster analysis, R-Shiny

J.E.L. classification: A19

1. Introduction

Successfully completing the upper secondary school cycle “is often considered to be the minimum credential for successful entry into the labour market” (OECD, 2022, p. 3). Admission policies to the upper secondary school cycle vary across developed and developing countries, yet some similarities concerning the characteristics of the educational environment could be observed for this level: students in private school perform better in science compared to students in public schools (OECD, 2016, p. 39); there is a weak correlation between prior academic performance and high school students’ performance in science, after controlling for the socio-economic background (OECD 2016, p.42); there is a strong correlation between the number of years spent in pre-primary school and the score in PISA tests in high school (OECD 2016, p.44).

Law no. 1/2011 of the National Education in Romania, article 74, paragraph 5, states that all pupils must attend a mandatory national evaluation exam at the end of the 8th grade (last grade of the lower secondary school cycle). The score obtained in this mandatory evaluation constitutes the admission score for accessing the upper secondary school cycle with the exception of vocational, artistic, sports, theological and military schools (see the Order of the Ministry of Education no. 5243/2022, annex 2). According to the same source, after the National Evaluation Exam, each pupil must state the options for its targeted schools; if the pupil was not admitted to any of these schools in the first distribution round in July, he/she will enter the second distribution round in August (see the Order of the Ministry of Education no. 5243/2022, annex 1). After intense debates over how the admission in the upper secondary school cycle should be performed, the Law 198/July 4th 2023 of National Education (entering into force from the school year 2023-2024), states that high schools

may organise a separate admission exam for at most 50% of the available seats (article 101, paragraph 2).

After the National Examination Exam in 2022-2023 school year, approximately 47% of the total candidates were admitted to their first's choice high school, while 1.44% were not admitted to any school, due to the insufficient number of options stated (Ministry of Education, 2023). However, students and parents often claim that the cause is the lack of counselling and orientation from schools' representatives, sometimes resulting in not being admitted in the second round either (see for example Nicolescu 2023).

This paper aims to answer two research questions regarding the pupils who were not assigned to an upper-secondary educational facility in the first round but have a passing final admission score (above 5):

- Q1. How many of them decided to compete in another county than their residential county?
- Q2. What are the similarities and differences between these pupils in terms of their performance at the National Exam and average score in the lower-secondary educational cycle?

2. Literature review

High school admission can be studied from a variety of perspectives. First, regardless the chosen criteria for admission there are various implications for the pupils, parents and society. Second, the criteria themselves may be analysed with respect to different phenomena, such as discrimination. Third, an emerging literature focuses on pupils' perspective on the admission process.

Scientific literature focuses, first and foremost on the implications of the admission criteria for the academic path of pupils. For example, Dustan et al. (2017 p.797) point out that pupils admitted to elite high schools are more likely to drop out in comparison to their non-elite peers either because of the extremely high standards in teaching or because of the long distance to the school; this is a particular issue for pupils with poor academic background. Furthermore, de Janvry (2012 p.1) emphasize that poor educational background of the parents or living in poverty are significant predictors for early leaving high school, when controlling for score in entrance exams. On the other hand, attending an elite high school increases the chances for a student to attend an elite university (Berkowitz and Hoekstra, 2011 p. 287). According to Espenshade et al. (2005 p. 276), attending an elite school increases the odds for a candidate to attend an elite university by 34%. Tam and Sukhame (2004, p.12) argue that the college admission process should control for the prestige of the applicant's high school. Attending a high school that offers advanced courses and the opportunity of extracurricular activities also plays a major role when acceding to university (Kretchmar and Farmer, 2013, p.33). Often, a student's family puts considerable effort in ensuring access to best schools, as "elite high schools are stepping stones to elite universities" Han et al (2021, p.115). The authors point out that moving into districts with good schools leads to a significant increase of house prices.

A vast body of scientific literature regarding high school admissions is dedicated to analysing admission criteria with respect to discrimination. Consolo (2019 p. 1244) proposes a composite score based on the entrance exam score, GPA, rank in 8th grade graduating class, rank within the district and diversity. However, Barrow et al (2018 p. 1) concluded that the "selective enrolment high school system" based on the application score and socio-economic background proved to be ineffective in Chicago as "75 percent of Chicago Public Schools (CPS) ninth-graders opted out of their assigned high school".

Various other admission policies and criteria were proposed. For example, Corcoran and Baker-Smith (2018, p. 259, 276) considered that state test scores and course grades in lower secondary educational cycle may be an alternative to "specialised high-school admission tests", yet would not produce significant changes in the demographic composition of elite high schools. Also, Rizan et al. (2020 p. 1) propose a dashboard comprising of scores in mathematics, maternal language and science, grades during lower secondary school cycle, academic certificates and zoning. Regardless of the admission criteria, transparent admission standards are proved to increase students' motivation in their academic pursuit (Keller et al., 2022 p. 342).

Pupils' perspective might offer valuable insights regarding the entire admission process in high school. Liu (2015 p. 76) points out that students have a positive attitude towards an open admission system based on "excess application sequencing score". According to the same source, this score includes service learning, a combination of community service and learning.

3. Research methodology

For the purpose of this paper data was gathered from <http://admitere.edu.ro/> on July 22nd 2023. All pupils who obtained a score above 5 for the final admission score were considered. Next, a graphical analysis is used in order to evaluate the number of pupils who competed in a different county than their county of origin, by county of origin.

In order to answer the second research questions, a cluster analysis is performed as it is most widely used to assess similarities and differences between individual cases (see Andrei et al., 2023 p.260). The following variables are included:

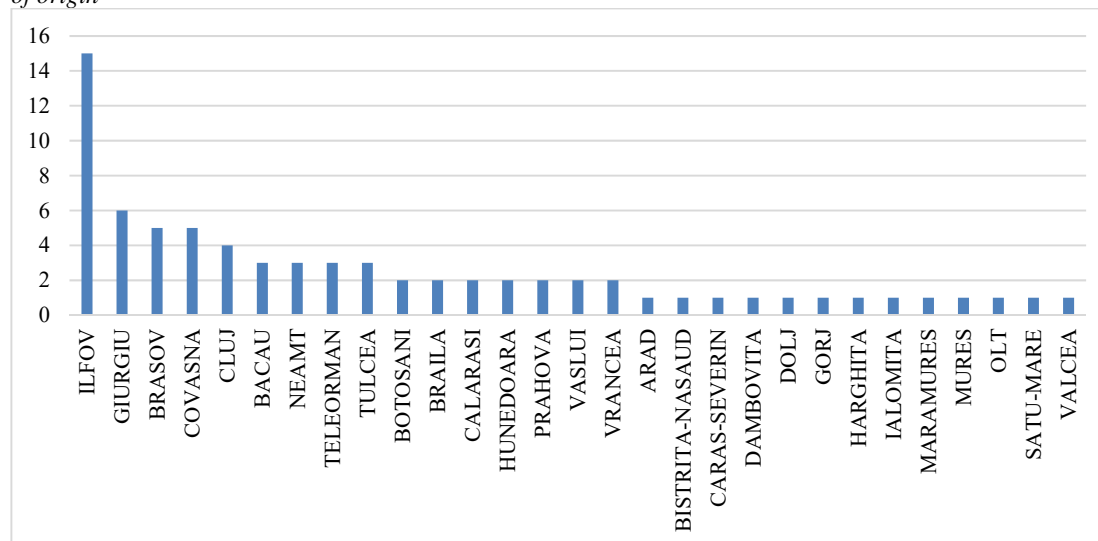
- Exam score for Romanian language;
- Exam Score for Maths;
- Average score in Lower Secondary Education;

The analysis was conducted using an R-Shiny app developed by Mizumoto (2015) with the following parameters: the Spearman rho correlation coefficient was chosen in order to avoid possible issues due to non-normality in the data (Bishara et al., 2015 p.785).

4. Findings

Figure 1 shows the number of pupils who competed for a place in the upper secondary education in a different county than their county of origin, by county of origin. Most of them come from Ilfov, the area surrounding Bucharest, the capital. In Arad, Bistrita-Nasaud, Caras-Severin, Dambovita, Dolj, Gorj, Harghita, Maramures, Mures, Olt, Satu-Mare and Valcea, only one pupil respectively decided to compete in another county than the county of their origin.

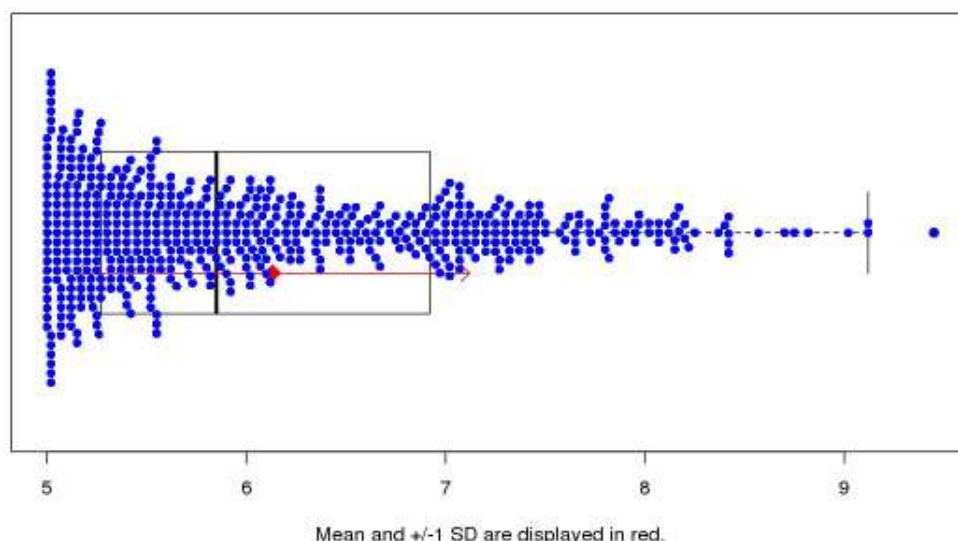
Figure no. 1. Number of pupils who competed in a different county than their county of origin, by county of origin



Source: Designed by the authors

Figure 2 presents the final admission score for all pupils who were not assigned to an upper-secondary educational facility but obtained a passing score in the admission contest. Most of these pupils registered a score between 5 and 6. One outlier can be observed above 9.

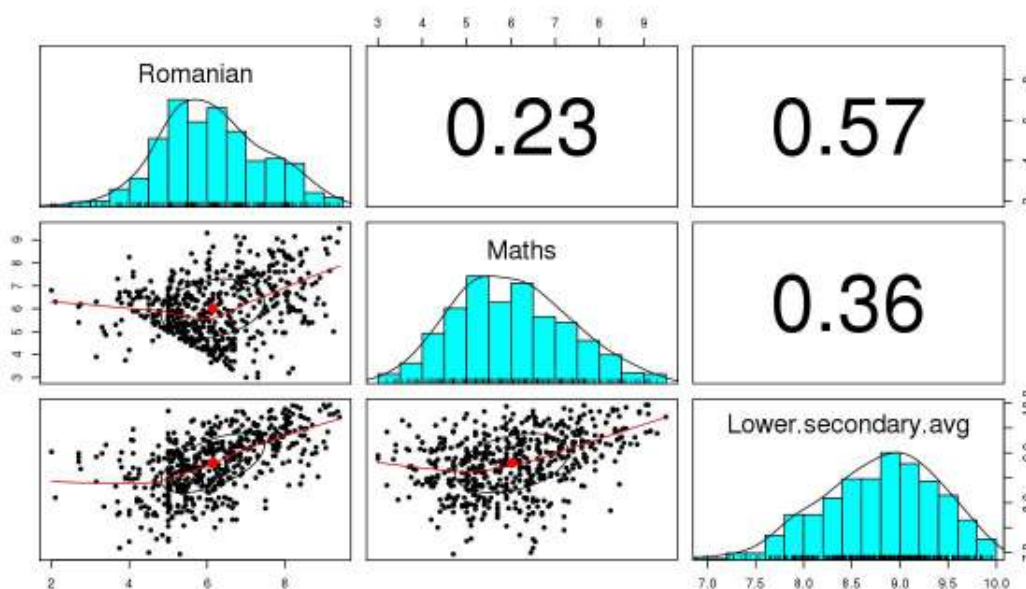
Figure no. 2. Box-Plot Final Admission Score for all pupils who were not assigned to an upper-secondary educational facility but passed the exam



Source: Designed by the authors using <https://langtest.jp/shiny/bs/>

Figure 3 shows the scatterplot matrices and the correlation coefficients between the analysed variables (Exam score in Romanian, Exam score in Maths and the Average in Lower Secondary Education). A moderate positive correlation occurs between the Exam score in Romanian and the Average in Lower Secondary Education and a relatively weak correlation between the other pairs of variables.

Figure no. 3. Scatterplot matrices (based on Spearman's rho)



Source: designed by the authors using <https://langtest.jp/shiny/cluster/>

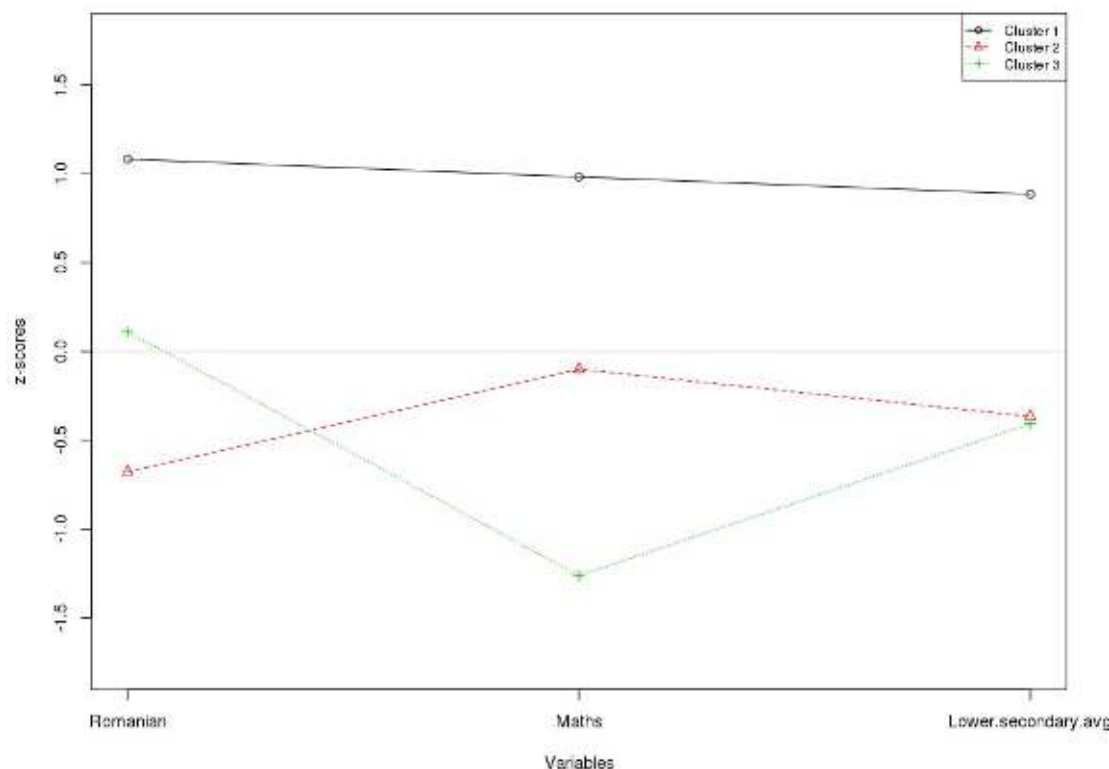
Next, cluster statistics are presented. Table 1 presents the descriptive statistics by cluster group and figure 4 presents the profile plot for each cluster. Most of the cases were included in group 2 (283), 166 cases were included in group 1 and 107 cases were included in group 3. The first cluster is characterised by relatively high scores in Romanian and Maths and very high average in lower secondary education. The second cluster contains cases with a low performance in the Romanian exam, a relatively good performance in the Maths exam and a high average in lower secondary education. Pupils in the third cluster have very low performance in the Maths exam, a relatively good performance in the Romanian exam and a high average in lower secondary education.

Table no. 1 Descriptive statistics by group

	n	mean	sd	min	max	skew	kurtosis
Group 1							
Romanian	166	7.58	0.86	5.60	9.40	-0.12	-0.68
Maths	166	7.28	0.99	4.95	9.50	-0.06	-0.57
Lower secondary average	166	9.32	0.36	8.04	9.96	-0.54	0.48
Group 2							
Romanian	283	5.25	0.93	2.0	7.95	-0.24	1.12
Maths	283	5.89	0.77	3.75	8.25	0.30	-0.18
Lower secondary average	283	8.58	0.52	6.97	9.84	-0.46	0.21
Group 3							
Romanian	107	6.29	0.57	5.0	8.2	0.61	1.07
Maths	107	4.41	0.55	3.0	5.40	-0.38	-0.21
Lower secondary average	107	8.55	0.55	7.5	9.67	0.13	-0.95

Source: Designed by the authors using <https://langtest.jp/shiny/cluster/>

Figure no. 4. Profile plot (standardized, ward linkage method, squared Euclidean distance)



Source: designed by the authors using <https://langtest.jp/shiny/cluster/>

5. Conclusions

The present paper sought to answer two fundamental research questions regarding pupils who possessed passing final admission scores but were not initially assigned to an upper-secondary educational facility. These questions explored whether the students chose to compete for admission in a different county than their residential county and both similarities and differences in their performance at the National Exam and their average scores in the lower-secondary educational cycle.

The research revised in this paper highlights the multi-layered implications of high school admission criteria. The academic path of pupils is significantly influenced by the type of high school they attend. Joining elite high schools can increase the chances of entering elite universities, creating a considerable academic advantage. Contrarywise, it was noted that pupils admitted to elite high schools may face challenges, as well as a higher risk of dropping out, particularly if they come from a weaker academic background. Another key aspect explored in the literature review is the matter of discrimination in admission criteria. Various policies and standards have been proposed to address this concern, such as considering state test scores, course grades, and socioeconomic backgrounds. Having transparent admission standards is vital for keeping students' motivation in their academic pursuits.

The empirical findings of this study reveal thought-provoking insights. First, it was observed that a significant number of pupils from various counties chose to compete for admission in a different county than their county of origin. Ilfov, the area surrounding Bucharest, had the highest number of such pupils, suggesting that urban-rural dynamics could be further investigated.

Second, the final admission grades for pupils who were not initially assigned to an upper-secondary educational facility, yet obtained a passing score in the admission contest were diverse, with most falling between 5 and 6. These scores are indicative of the competitiveness of the admission procedure.

It is important to note that the present study has some limitations. The data was gathered from a specific source, and the analysis was based on a specific set of variables. Consequently, the results may not be generalizable to all high school admissions frameworks. Future research could explore additional factors that influence pupils' choices to compete in another county and also further explore the characteristics of different clusters of pupils.

Overall, this research provides valuable insights into the dynamics of high school admissions and the experiences of pupils who were not assigned to their first-choice high school. The conclusions can advise policymakers and educators in developing strategies to improve the admission process and offer support to pupils who face challenges in accessing their chosen educational facilities.

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Civil Service Reform – Expectations Related to the Implementation of The National Recovery and Resilience Plan (NRRP)

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Abstract

In various analyzes of the European institutions, including in the document related to the European Semester 2020, it is found that the progress in the reform of the public administration in Romania is limited in terms of the decision-making process, the quality and the effective use of the evaluations of the impact of the regulations. Also, an effective framework for strategic and budgetary planning in the field of public administration has not yet been created. Frequent reorganizations and the excessive use of temporary management instead of contests for the appointment of managers hinder the independence of the administration. Excessive bureaucracy and diminished possibilities for providing high-quality public services negatively influence the life of the citizen and the business environment. All these aspects highlight the need for a genuine reform of the civil service. The purpose of this paper is related to the study of the expectations generated by the civil service reform in the context of the implementation of the NRRP.

Key words: public administration reform, public service administration reform, National Recovery and Resilience Plan (NRRP), objectives, directions of action, result

J.E.L. classification: D73, H83

1. Introduction

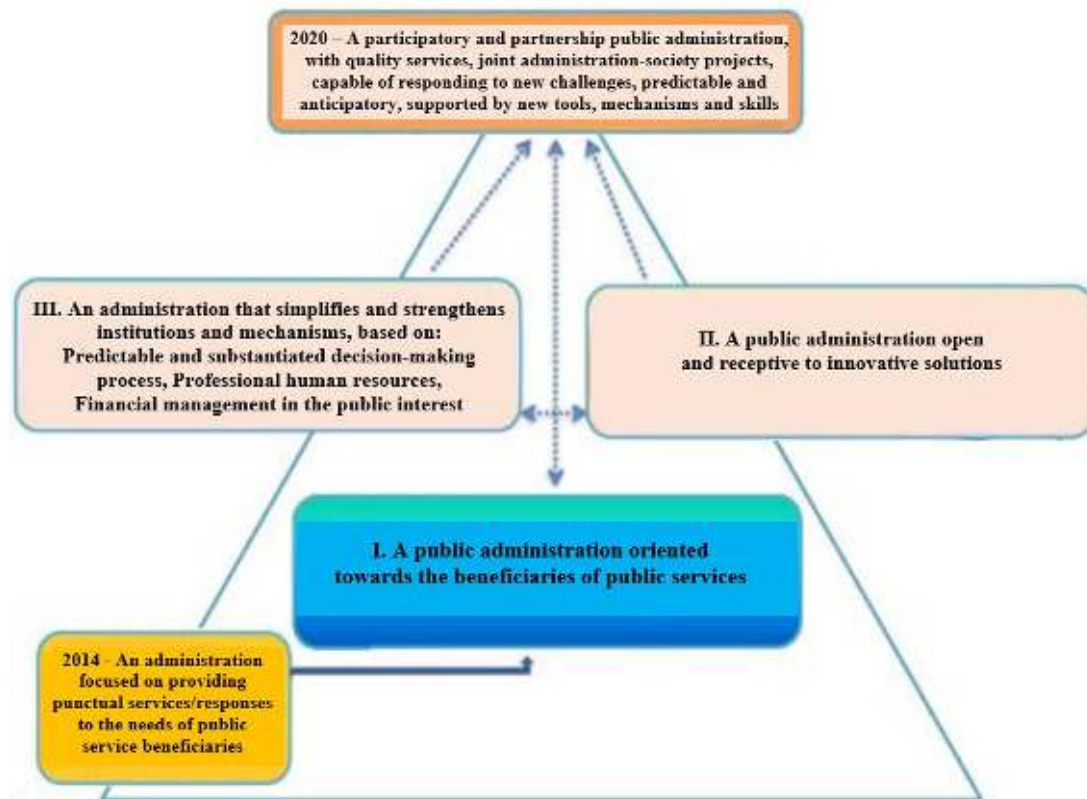
The national states aim for institutions and administrative systems to become as flexible as possible in order to adapt to the multiple transformations that have been manifested in the last period, knowing that "in the new geopolitical context, the central and local public administration have become defining factors in the economic competitiveness of a country or economic region" (Profiroiu et al., 2006).

It has long been established that "the values underlying the development of administration are transparency, professionalism, predictability and responsiveness/responsiveness, all subordinated to the public interest." (Filip&Onofrei, 2004).

In any country, the role of public administration is to provide high-quality services to citizens, promote economic growth in its area of responsibility, support the development of local potential and attract investors. At the same time, the public administration must be resistant to cultural and economic changes have solid capacities for managing European funds and implement public policies. It is essential to remain open and receptive to innovative solutions, having competent human resources in the team to efficiently manage public funds (Burciu et al., 2008; Onofrei, 2007; Morariu, 2007; Onofrei et al., 2022; Bostan et al., 2022).

When we talk about public administration reform, it includes "all aspects of state organization, each of which requires checks and adjustments to achieve the most appropriate combination of hierarchical structure and administrative capacity with managerial effectiveness and efficiency and the ability to achieve increased results and performance. (...)" (Profiroiu et al., 2006). In the same sense appears the vision of the Government of Romania regarding the public administration (Figure 1).

Figure no. 1. The vision of the Romanian Government regarding public administration – 2020



Source: (RG, 2014)

Obviously, in order to achieve the desired progress, it is necessary to develop the capacity of the public administration, acting in multiple ways, through increasing the level of training of public officials at the level of public administration institutions (Bercu, 2009; Morariu, 2008). In another expression, from one stage to another, the desire to record high-performance results in the activity of the public administration made the issue of reforming this sector always come into discussion, with an emphasis on the reform of the public function.

What needs to be mentioned is the fact that, in Romania, "Even if the government programs and reform strategies contained ambitious objectives, they were never fully implemented because there was no administrative capacity and coordination necessary to implement them. Most of the time, after each change of political coloration, the following governments have avoided continuing the steps taken towards a certain reform, even if sometimes it has been proven that the progress for the efficiency of the public administration and the increase of the satisfaction of the citizen were beneficial." (Dincă&Mihaiu, 2019).

It remains the task of the legislator or even the Executive to carry out "wide public consultations to determine which public office system best suits a modern Romania in the long term. Whether it is a career-based body of civil servants or a more flexible system, adapted to the demands of the labor market and built on the principle of open competition for each position" (RG, 2023a), full implementation and without avoiding procedures is essential, regardless of the solution adopted.

2. Theoretical background regarding public service reform

In the last 30 years, issues related to public administration reform have been repeatedly discussed in Romania, with several governments attempting such changes. These efforts included reforms designed to restructure the civil service, recognizing the importance of forming a body of politically neutral, professional and honest civil servants essential for the real transformation of public

administration in the country. This transformation involves significant changes in all levels of public administration, "both central and local, and in public services in general. (...)" (Dincă&Mihaiu, 2019).

Public administration reform is "a broad concept that includes all aspects of the organization of the public sector, among which stand out: the general architecture of ministries and agencies, organizations and institutions at the local level, systems, structures, processes, motivations, as well as the way of supervising them and periodic adaptation of the system. On the one hand, administration refers to the way in which the coordination of activities in the public sector is formally authorized, ordered and organized, and on the other hand, it refers to the administrative capacity (...)." (Profiroiu et al., 2006).

In order to improve the administrative capacity in accordance with the requirements of the reform in this area, a coherent series of measures in the sphere of civil service is necessary. They also aim at "creating a body of professional, stable and politically neutral civil servants (...)." (Dincă&Mihaiu, 2019). It should be noted that the Partnership Agreement with the EU for the period 2014-2020 highlights the main deficiencies that affect the public administration in Romania at the level of human resources management. Among them (according to the 2014 Agreement) appears "the lack of an integrated and long-term policy for a consistent and unitary management of human resources, as well as a high-performance management, starting from recruitment, evaluation, promotion and motivation".

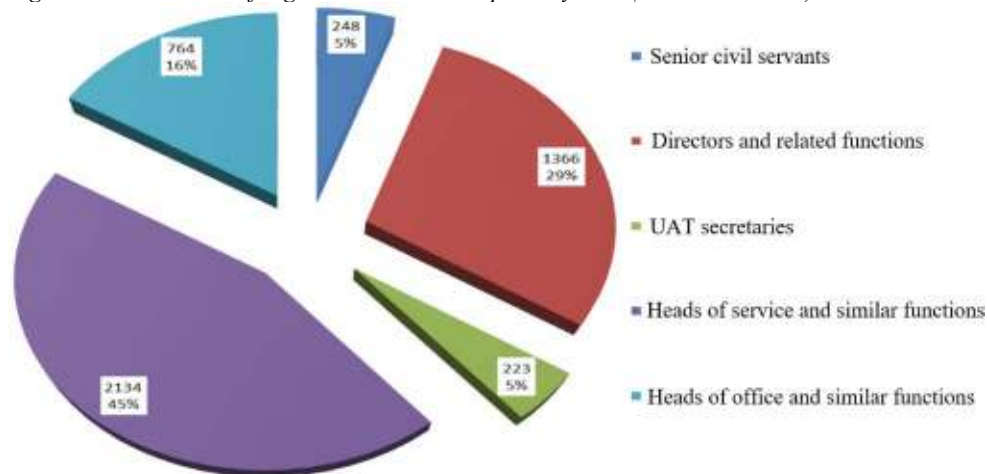
In the scope of the targeted analysis, the following were mentioned (Partnership Agreement România, 2014): the outdated organizational culture, which is based on the procedural and bureaucratic approach, ignoring the achievement of measured performance according to clear objectives and targets. Also, there is instability in the civil service and a rigidity of the mechanisms of selection, management, evaluation and promotion of personnel.

As a result, the necessary measures and short-term directions regarding the reform of the public administration were identified, including those measures that refer to the professionalization of the administration (RG, 2015): (i) selection and evaluation based on individual skills and performance; (ii) creating a higher institution for public administration and supporting public career advancement through professional development programs; (iii) the development and implementation of a performance management system for public administration employees, including a differentiated remuneration system based on performance; (iv) implementation of programs to evaluate the professionalism and integrity of public administration personnel.

In the context of the need for "the development and adaptation of policies and the human resources system to the demanding objectives of a modern administration", the Strategy for the consolidation of public administration 2014-2020 (RG, 2014) aimed at an important objective related to the attraction of "professional human resources. Thus, the public administration was to recruit its staff based on professional and transparent criteria, offering them opportunities for growth within a modern organizational culture" and neutrality in the public office. The goal was to develop a body of employees with strong skills in quality service management and strategic planning, with a special focus on motivating human resources and continuous professionalization, constantly adapting to changes in society. Civil servants were encouraged to show initiative, be receptive to change and provide solid technical support in the decision-making process, respecting the principles of integrity and professional ethics. The selection was thought to align with the objectives and strategic directions of the public institutions.

However, despite the rigor and validity of the mentioned strategic documents, in terms of public administration, an effective framework for strategic and budget planning has not yet been achieved. Frequent reorganizations and excessive dependence on temporary management (appointing leaders without organizing the competition - Figura 2) prevented the independence of the administration. In addition, excessive bureaucracy and the inability "to provide quality public services have had a negative impact on citizens and the business environment" (NACS, 2023).

Figure no. 2 Positions of high civil servants temporarily held (number/%, 2022)



Source: (NACS, 2023)

To these aspects are added (NACS, 2023): the aging of the body of civil servants and the phenomenon of the "inverted pyramid in the structure of employment by professional grades, where more than 70% of civil servants occupy the highest available professional grade". Regarding the aging of the body of civil servants, in 2022, the phenomenon of the "pyramid" of the civil service remains fundamentally reversed (reflecting the trend from 2019-2021). Thus, 76.8% of the filled positions are at a higher degree, and the percentages for assistant and principal positions are relatively evenly distributed (9.5% and 11.7%); in addition, only 2% of executive positions are open to early-career individuals.

The number of vacancies, quantified in high (RG, 2023), almost 61% for public positions at the beginning of their careers, aggravates the situation to which I referred.

3. Research methodology

The approach of our research topic ["Civil service reform—expectations related to the implementation of the National Recovery and Resilience Plan (NRRP)"] is based on the analysis of a problem by investigating several specialized works of real relevance. For this purpose, we examined the official documents of the European Commission and the Government of Romania, as well as the materials issued by NACS, along with certain European/national normative acts focused on the subject of our research.

The investigation of the general objectives and directions of action included in the Regulation 2021/241 of the European Parliament and of the Council on the establishment of the Recovery and Resilience Mechanism called for the examination of the legislation aimed at reforming the recruitment and selection of human resources, including the rules or policies related to the competences of the personnel. We also base our research on some official reports of the Ministry of Development, Public Works and Administration, the National Institute of Administration, the Ministry of Finance, the Ministry of Investments and European Projects, the Ministry of Labor and Social Solidarity and other ministries.

4. Findings

4.1. Strategic objectives for the period 2023-2027 in the field of the public function

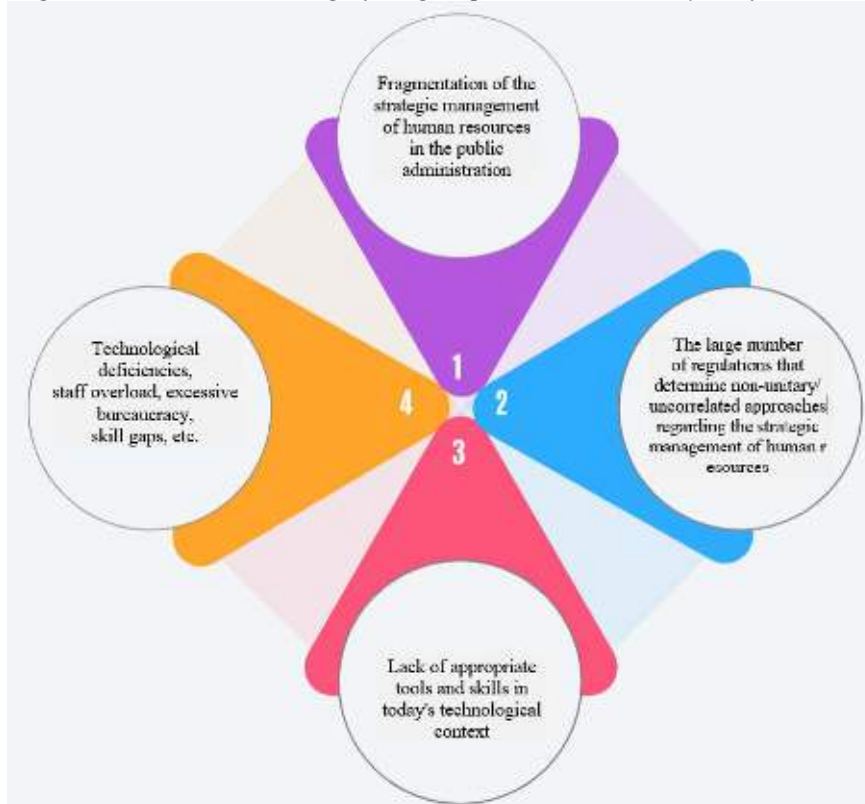
The recent reform measures in the field of public office - after the adoption of GEO no.57/2019 on the Administrative Code - aims at "the introduction of an objective and impartial model of recruitment in the public administration, by establishing a system of competitions that privileges the competence and integrity of civil servants, while also aiming to achieve performance" (RG, 2023b).

This objective was implemented (with the involvement of NACS/National Agency of Civil Servants) by developing and testing "a transparent and inclusive recruitment and selection process in the central public administration using recruitment competitions. The plan is to gradually extend this system to all categories of civil servants in the central public administration. It is important to note that within component C14 - Good governance, reform 3 - Performance management of human resources in the public sector (National Recovery and Resilience Plan/NRRP), Milestone 417 establishes the obligation for NACS to complete at least two national competitions for recruitment of civil servants for at least three categories/grades of public positions by the end of 2023" (RG, 2023c). The respective contests are based on the subsequent analysis of the pilot contest for the occupation of public positions, carried out within Milestone 416.

Among the responsibilities of the NACS is the facilitation of assistance from the specialized institutions at the central level for the local public administration in the adoption and application of recruitment tools oriented towards the competence and integrity of civil servants. Milestone 417 (NRRP) stipulates the implementation of contests for the occupation of public positions in both central and territorial public administration; however, the IT platform developed within this milestone, for now only supports the previously mentioned contests and not the contests for occupying public positions at the local level. Thus, supporting contests at local level in parallel with those for occupying public positions at central and territorial level is currently not feasible, because expanding the IT platform to include local contests would involve the allocation of additional resources, and the authorities would have to bear expenses additional for the assessment of specific skills and specialist knowledge. A phased implementation of the new recruitment methods is also being considered to avoid a negative impact on the entire administration (RG, 2023c).

Even if in recent years certain reform commitments have been fulfilled to an appreciable extent along the lines of strengthening the state administration and developing the public function, there are still some challenges that the national administrative system still faces (Figure 3).

Figure no. 3. The main challenges facing the public administrative system from Romania



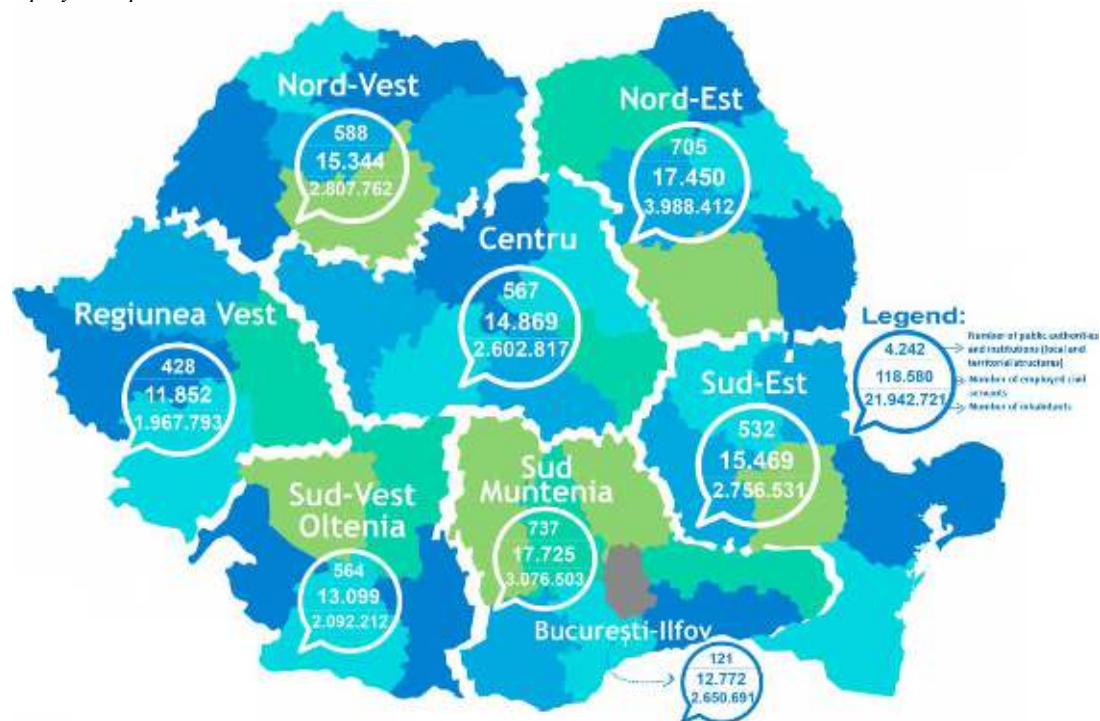
Source: (RG, 2023)

Besides those captured in Figure 3, equally harmful are the problems related to the lack of correlation between institutional requirements, employees' skills, the system of career advancement and performance management, in terms of the application of reforms in public administration, in a marked context of technological, social, demographic changes, etc.

The deficiencies in question are to be reduced through the application of the Public Service Strategy (2022-2027), (RG, 2022, 2023), aiming at "the development of a unitary, strategic, transparent and fair management system of public functions for the Romanian administration, oriented towards performance, competence and results (...)".

All of this presupposes, in fact, the implementation of the reform measures established by the Administrative Code adopted in 2019 (EOG no. 57) and those assumed by Romania through the National Recovery and Resilience Plan. With certainty, the tasks that appear now raise great difficulties, if we take into account the extent of the problem at the national level, which can only be intuited through the quantitative prism (Figure 4).

Figure no. 4 Teritorial profile indicators: number of civil servants, related to the number of inhabitants, employed in public authorities and institutions



Source: (NACS, 2023)

Important civil service reform measures - aimed, above all, at the recruitment and selection of civil servants, their training and development, as well as the evaluation of individual performances - can be found in the Government Program (2023 – 2024) (RG, 2023a).

The program proposes the implementation in the administration, for civil servants, of a new competence framework, a unified competence structure and clearer career guidance. By establishing the new skills framework, the aim is to define the set of knowledge, skills and abilities necessary for filling positions in the public administration, supporting its professionalization and improving the quality of human resources in the public sector.

Regarding the human resources in the public sector the program aims to (RG, 2023a): (i) to completely adapt the administration to the needs of citizens and to be oriented towards achieving results, with the introduction of the evaluation of each institution and each official in relation to the performances achieved; (ii) developing the digital skills of public administration staff and ensuring the necessary human resources for the digital transformation process; (iii) implementing a robust training program for public administration management positions, focused on developing leadership

skills and managing team performance; (iv) creation and consolidation of a centralized "budgetary personnel record (e-budgetary) system for civil servants, contractual personnel in the administration and public sector employees". NACS is already working on some of these, and some of the measures are in the process of implementation.

In the same context, the revision of the career of civil servants is of particular importance, aiming to become more attractive, with a more extensive professional development, facilitating the evaluation of performances in order to orient civil servants towards achieving results and to impose on them a greater responsibility towards citizens and the business environment.

4.2. The implementation of the NRRP and the anticipation of some results in the field of public function

Obviously, those contained in the Governmental Program (2023-2024), which we referred to previously, have a counterpart in the strategy applicable to the public function related to the time interval 2022-2027, correlated in turn with the approved National Recovery and Resilience Plan of Romania by the EU Council.

Within the Strategy for the public function for the period 2022-2027 (RG, 2022), related to the implementation of the NRRP, a major priority is the "Digital transformation of human resources management in the public administration". Component 7 of the NRRP - Digital transformation - Investment 10 - addresses "the development and expansion of the management platform of civil servants - E-ANFP. This involves the design of an architecture for the management of the careers of civil servants at the central, territorial and local level", by expanding/developing existing functionalities (interconnection with collaborating institutions).

The same Component (7) also includes the development of the SIMRU facility for public administrations, addressing "HR" processes (personnel data administration, organization, time management, goal setting and reporting). This system manages multiple aspects of human resources - from recruitment and onboarding, to job descriptions, employee documents and career stages, etc.

The component (14 - Reform 3) also aims at the effective introduction of frameworks regarding competences in central public administration institutions and the proposal of a legislative act for a human resources management based on meritocracy. Also, the NRRP proposes the implementation of some solutions to increase the prestige of the public office, such as an integrated research on the management of human resources and the initiation of two normative acts for the management of the careers of civil servants and contractual staff.

Regarding the results related to the implementation of the NRRP in the civil service, partial results are already being recorded; some of the anticipated significant achievements refer to the normative framework for digitization and electronic systems for specific management - E-ANFP/E-NACS, SENEOSP /NESREPS (The National Electronic System for Recording Employment in the Public Sector), SIMRU/IHRMS (Integrated Human Resources Management System), a portal of the national competition. Also, the NRRP already contributes to the adoption of skills frameworks in the mentioned system (in standard job descriptions and in "HR" processes), to the transition to a performance management in the public administration and to a performance-oriented career system and results.

5. Conclusions

The objectives of the reform in the field of public function aim to establish a transparent, strategic and fair management system for the Romanian administration, focused on performance, competence and obtaining concrete results. The goal is to attract and retain the right professionals in the right positions to provide quality public services.

These objectives include: (i) development and implementation of information-based and results-oriented/future-oriented policies for public service human resource management; (ii) the digital transformation of this type of management; (iii) the management of those skills vital to the provision of high-quality public services and the achievement of a good work climate in the sphere of the public function; (iv) the professionalization of human resources management in public institutions; (v) promoting ethics, integrity, transparency and preventing corruption.

The actions planned for the period 2023-2027 in the field of civil service and the implementation of the NRRP provide solid foundations for making significant progress. Some steps have already been taken and significant improvements are expected in the normative framework adapted to digitization and in the electronic systems for the management of public administration personnel, through the SENEOSP /NESREPS projects and the digitized recruitment system.

Justified expectations are also related to the transition to a performance management in the public administration to a career system oriented to performance and results, as some benefits could also come from the adoption of competence frameworks in the said system.

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Phasing of the Contest for the Occupation of Public Office, a Solution to Increasing Competition and Transparency in the Process of Recruiting Candidates

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Abstract

In Romania, the process of recruiting civil servants suffers from obvious deficiencies in terms of attracting the most qualified individuals to the public sector. In order to correct this problem, an important measure was recently introduced - based on the Administrative Code: a new type of competition to fill vacant positions in the public administration. We refer to the "two-stage national competition" and its aim is to ensure a transparent recruitment, based on skills and merit, in direct accordance with the identified needs and requirements of the institutions. The new model was the result developed by NACS/National Agency of Civil Servants and GGS/General Secretariat of the Government in collaboration with the World Bank and is aligned to a performance-oriented general competence framework. The purpose of this paper is identified by x-raying the current reform of the recruitment and selection of civil servants, in the context of the need for a better fit between the newly recruited human resource and the requirements of the employing institutions.

Key words: Romanian Administrative Code, public function, recruitment, selection, two stage competition, advantages

J.E.L. classification: M12, H83, M19

1. Introduction

With certainly, the achievement of high standards in the field of public administration depends decisively on the professional performance of the human resources integrated into this system. Whether it is civil servants or contractual staff, their activity ensures successful results - individual and organizational - if the best human resource management principles and norms are established and applied (Bercu 2009; Morariu 2010).

In this paper we mainly capture: a critical look at the recruitment system applicable to the public office prior to the adoption of the Administrative Code; the new model of public office recruitment (conditions for acquiring the quality of civil servant; holding public positions through the two-stage competition; advantages regarding the new way of holding the public office competition) and conclusions.

2. Theoretical background

Over time, at the level of those who take decisions on a national scale, the issue of the imperative to redefine the professional trajectory of civil servants has repeatedly been raised. Although in some cases this was only formally mentioned, the aim was to transform the career into a more attractive option with an extended pathway that would truly provide the framework for performance appraisal, thus guiding the civil servant body towards achieving results and accountability to citizens. (Profiroiu 2002; Onofrei 2007; Porfiroiu 2010; Vazquez et al. 2010).

It is important to remember in this context that the Recommendation of the EU Council of July 20, 2020 regarding Romania's National Reform Program for 2020 is to improve the performance of the public administration, as well as the predictability of the decision-making process, in the short term. The respective pro-European noted that "Public administration reform is stagnant (...)" ; "High

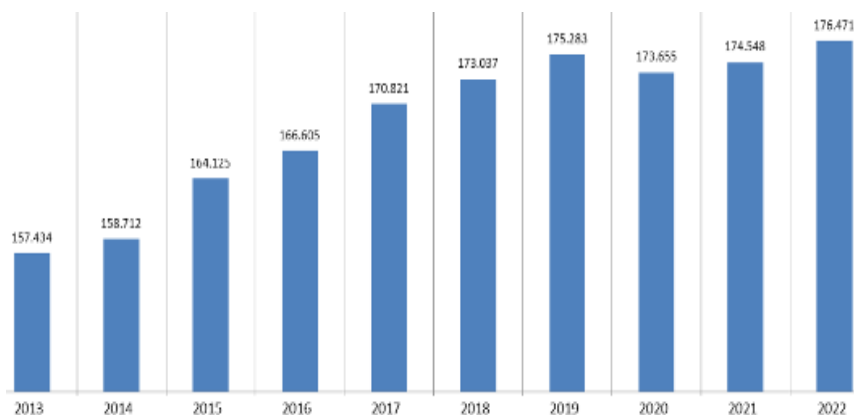
fragmentation of skills and resources continues to have a negative impact on the delivery of public services, particularly at the local level and in poor communities"; "Bureaucracy and insufficient capacity to deliver quality services, including digital services, have a negative impact on citizens and businesses, especially in times of crisis"; "The burdensome administrative procedures applicable to the establishment of enterprises and the requirements imposed on service providers, including regulated professions, through various legislative and administrative acts, prevent the development of the market to a greater extent"; "Frequent reorganizations and the recurring practice of keeping people who occupy the respective positions ad interim affect the independence of the administration" (EC 2020).

The administrative code, adopted relatively recently in Romania, includes a series of essential priorities and directions for the development of human resources management within the public administration and civil service. These directions are as follows: (i) Rigorous design and implementation of competency frameworks. These frameworks offer for the recruitment process: i.1 – better structure aimed at the necessary skills/knowledge, in accordance with the requirements of public institutions; i.2 - concrete specifications regarding the expectations for the various positions; i.3 - increased transparency in relation to vacant positions in the public administration; i.4 - improving the fairness and quality of the recruitment process. (ii) Introducing a significant reform in the recruitment system by implementing the national competition for the central public administration. (iii) Creation and implementation of a computerized system regarding the record of personnel and employment in the state sector, as well as the record of all employees from public financial resources. (iv) Performance management reconfiguration and other relevant reforms. These directions represent important steps in the transformation and modernization of public administration, with the objective of improving the efficiency, transparency and quality of public services (RG2019).

It should be emphasized that the public administrative structure in Romania is quite extensive. During 2022, the total number of public authorities and institutions registered in the records of the National Agency of Civil Servants (NACS) reached 4,344 (compared to 4,335 registered on December 31, 2021), with a total of 176,471 public positions (more than in the previous year, when there were 174,568 such positions).

The evolutionary trend of the total number of public positions in the period 2013-2022 is presented in Figure 1.

Figure no. 1. Evolution of public functions as a total number at the end of the year (2013-2022)



Source: (ANFP/[NACS] 2023)

https://www.anfp.gov.ro/R/Doc/2023/Rapoarte/1_Raport%20Mangementul%20Funcției%20Publice%202022_30.05.2023.pdf

Although the process of achieving quality administrative actions for the benefit of citizens and the business environment involves the joint effort of civil servants, dignitaries and contractual staff, our approach focuses exclusively on the sphere of public function. This is very important due to its involvement in the exercise of the prerogatives of public power: the drafting of normative acts and specific regulations, the development of public policy proposals and strategies, as well as the management of the acts necessary for the implementation of laws, the administration of human resources and public funds, authorization, control, etc.

Therefore, we focus our attention on the implementation of the new recruitment model in the sphere of the public function, as regulated by the Administrative Code. This model is characterized by the organization of a system of contests that gives importance to the competence and integrity of civil servants, encouraging them to orientate themselves towards obtaining optimal performance.

3. Research methodology

The approach of our research topic ["The phasing of the Competition for the occupation of public positions, a solution for increasing competition and transparency in the process of recruiting candidates"] is based on the analysis of several specialized works. In this sense, we have examined the official documents of IBRD-BM/International Bank for Reconstruction and Development - World Bank, EC/Council of European Union and the Government of Romania, as well as documents issued by NACS, together with European/national normative acts and other works related to the topic of our research.

4. Findings

4.1. A critical look at the recruitment system applicable to the public function prior to the adoption of The Administrative Code

The recruitment system used for a significant period in the sphere of the civil service brought with it numerous shortcomings, which led to difficulties in attracting and adequately integrating people into the available positions. It is important to emphasize that this situation was also compromised by the lack of proper human resource planning and the proper development of job descriptions. Other notable issues include: (i) HR planning was not approached strategically (institutions focused only on the total number of vacancies); (ii) The various points of entry into the system were not considered; a lack or weak connection between the strategic or operational needs of the institutions and the required competences was evident; (iii) Human resources planning was carried out without being correlated with strategic plans, being carried out from the bottom up; coordination between institutions on this subject and consultation on human resources planning were non-existent; (iv) Management level commitment to strategic human resource planning was low. These problems made the recruitment and human resource planning process inefficient and inadequate, preventing institutions from achieving their objectives properly (IBRD-BM 2022).

In practice, the recruitment process at the administration level for civil servants was based on the written assessment and an interview, and for the competition, the competition committee and the committee for the resolution of appeals were constituted. However, the main criticism is directed at the assessment criteria that favored candidates able to accurately memorize legal texts, neglecting verbal, numerical, abstract and situational reasoning skills (IBRD-BM 2019). Thus, even if the recruitment procedures for civil servants were complex, the effective recruitment practices used in other European countries were underestimated (Androniceanu 2007), which affected the ability to attract and fit suitable candidates for positions.

ANFP carried out a form of almost "real-time" surveillance or recruitment for positions related to the public office, by organizing, approving or (indirectly) monitoring compliance with recruitment procedures based on notifications from institutions and petitions submitted by candidates. Even if it is true that the recruitment procedures, including the supervision/monitoring function of the ANFP, ensured the necessary legality, they imposed a complex procedural burden both on public institutions and on the ANFP and candidates for public office positions, but not always meeting the requirements of performance required in the selection process.

The table below (Table 1) gives us an insight into why a new model is needed, a model that encompasses all aspects of the recruitment system: processes, institutions, people involved, tools, test content, etc.

Table no. 1. Justification for the need of the new model of the recruitment of public functions

Structural problems HRM	Problems related to recruitment	Proposed solutions for the new model
Politicization and cronyism	Issues of integrity in testing Alternative access points in the system	Competition Commission system IT tools Test methods Varied decision-making body in the different stages Minimum guarantees The new RU planning process
Absence of planning strategic of RU Fragmented practices and disunity	Low coordination and recruitment capacity	The Competence Framework (CF) as the main pillar The centralized model Institutional mechanisms Regular training Capacity building and assurance the necessary tools
Lack of clarity and transparency regarding public posts	Ineffective advertising campaigns	The Competence Framework (CF) and standard job sheets Multiple channels + new advertising messages
Low ability to improve processes	The content and way of applying the tests is ineffective Limited Warranties Regarding Process Quality Burdened processor	Advanced testing based on CF Selected panel of expert evaluators Adequate institutional and procedural framework Simplified process. IT tools

Source: (BIRD-BM 2022)

https://www.anfp.gov.ro/R/Doc/2022/Proiecte/SIPOCA%20136/Prezent%C4%83ri%20webinarii/3.%20BM%20prezentare%20Noul%20model%20de%20recrutare_webinarii.pdf

From the perspective of the financial impact on the public budget, we highlight that in the previous system, the average cost per recruited person was significantly high (similar to Great Britain, but much higher than in Slovakia): 11,777 lei (2,505 Euro) for management positions; 5,746 lei (1,220 Euro) for execution positions (BIRD-BM 2022).

These costs were also accompanied by considerable advertising expenses - 40,000 Euros per month for all announcements (related to recruitment at the national level). ANFP incurs similar costs for advertising related to recruitment contests, ranging from 5,000 to 8,000 Euros per month.

4.2. The new model of recruitment in the public service

Starting from the shortcomings of the recruitment system previously used in the public service, the Strategy for the Public Service Domain for the period 2022-2027 (ANFP 2021) and the Administrative Code (RG 2019) have foreseen the introduction of an objective, more professional and performance-oriented recruitment system for civil servants. This new system presupposes that a process organized in two stages, according to article 467 of the Administrative Code, is implemented regarding the filling of vacancies at the central/local level:

(I) First stage – ANFP will organize a national competition that will lead to the pre-election of a group of candidates. In this phase, a wide range of skills and competences are targeted for assessment, including verbal, numerical, abstract and situational reasoning skills, and not just general knowledge of legislation.

(II) The second stage involves the competition for the specific position, the organization of which falls to the employing public institutions, in which the only candidates from the previously preselected group participate. At this stage, members of the competition committee, including staff

from the Human Resources departments, must evaluate the candidates in a more complete way, using interviews, simulations and other appropriate methods. At the end of this stage, the position put up for competition goes to that candidate who has been declared admitted.

The objectives targeted by the care system are shown in Table 2.

Table no. 2. Objectives of the new recruitment system (base don competnces)

Objective	Performance Indicators (PI)
Increased use of strategic human resource planning in relation to the skills required in central public administration	% of vacancies included in the recruitment plan for which a justification was formulated in relation to the skills framework and institutional needs
Increasing the number of new recruits in junior level positions to solve the problem of the inverted pyramid of recruitment by professional grades in the civil service	% of vacancies at entry level and assistant level that are put up for competition as a share of the total number of positions covered by annual competitions
Ensuring merit-based recruitment	% of staff/applicants who perceive that the new model ensures merit-based recruitment
Improving the efficiency of the recruitment process	% time saved per candidate/recruit (compared to baseline as identified in this report) Cost per candidate The cost per preselected candidate in the national competition Cost per recruited person
Improving the effectiveness of advertising methods used to promote recruitment contests	% increase in the number of candidates for the position
Improving the suitability of newly recruited staff to the requirements and expectations of employing institutions	% of staff turnover for newly recruited staff % managers satisfied with the selection result after six months
Improving the skills of the members of the competition commissions for the evaluation of skills	% of competition committee members who have received recent (at least one year before the competition) and relevant training (aimed at skills assessment)

Source: (BIRD-BM 2022)

https://www.anfp.gov.ro/R/Doc/2022/Proiecte/SIPOCA%20136/Prezent%C4%83ri%20webinarii/3.%20BM%20prezentare%20Noul%20model%20de%20recrutare_webinarii.pdf

We note that a pilot experiment regarding the competition for the filling of vacant positions in public positions and how to forecast the need for public positions for the implementation of this pilot project (RG 2022), for which only certain intermediate results have been made public (being ongoing at the time of writing this paper), provides a solid foundation to achieve the aforementioned goals (ANFP 2023).

This pilot project, generic, applies to entry-level professional public positions in general, for central and territorial public authorities and institutions, but also to those specific to senior civil servants.

4.2.1. Conditions for acquiring the quality of civil servant

Under the Administrative Code (RG 2019), "the quality of civil servant is acquired through a competition, open to any person who (according to article 465): (i) is of legal age, holds Romanian citizenship and resides in Romania;(ii) knows the Romanian language; (iii) has full exercise capacity, is fit from a medical and psychological point of view to perform a public function; (iv) meets specific education and experience requirements, as well as other specific requirements, as applicable;(v) has not been convicted of committing certain crimes" etc.

In the case of public management positions, candidates must prove that they have completed university master's studies in the field of public administration, management or in the specialty corresponding to the public position (...).

If seniority is not required for entry-level public positions, the minimum seniority requirements in the specialty of studies for the occupation of the other executive public positions (RG 2019, Article 468) are as follows: (i) *assistant* position - minimum one year in the specialty of the studies necessary for the exercise of the public function;(ii) *main* professional degree - minimum 5 years in the specialty of the same studies;(iii) *higher* professional degree - minimum 7 years (...).

In the case of holding public management positions, the minimum experience in the specialty of the required studies must be at least 5 years for the positions of head of office/service/general secretary of the municipality and 7 years for other positions apart from those previously mentioned.

4.2.2. Occupying public functions through a two stage competition

The process of occupying available public positions is generally carried out through a competition (schematic shown in Figure 2), according to the rules stipulated in article 467 of the Administrative Code.

Figure no. 2. Scheme of the new recruitment model

General skills	CENTRALIZED MODEL	<p>i. planning the recruitment process (planning human resources and recruitment plan);</p> <p>STAGE I: THE NATIONAL COMPETITION</p> <p>ii. advertising campaign;</p> <p>iii. selection and appointment of the competition committee;</p> <p>iv. the application process;</p> <p>v. eligibility verification;</p> <p>vi. preliminary testing (including aptitude tests, tests of language, IT tests, tests of general knowledge in the field public administration);</p> <p>are you coming. advanced assessment/testing center;</p> <p>viii. managing the pool of pre-selected candidates.</p> <p><i>All testing stages (vi and vii) include specific actions related to appeal procedures.</i></p>
Specific skills	DECENTRALIZED	<p>STAGE II: COMPETITION FOR THE POST</p> <p>ix. advertisement and invitation sent to pre-selected candidates from the group managed by ANFP;</p> <p>x. appointment of the selection committee;</p> <p>xi. interviews, including appeals procedures;</p> <p>xii. appointment to office.</p>

Source: (BIRD-BM 2022)

https://www.anfp.gov.ro/R/Doc/2022/Proiecte/SIPOCA%20136/Prezent%C4%83ri%20webinariu/3.%20BM%20prezentare%20Noul%20model%20de%20recrutare_webinariu.pdf

The contest is based on the principles of competition, transparency and competence, also respecting the principle of equality for access to public offices for all citizens who meet the legal requirements. Other ways of employment include changing employment relationships or redeployment to a vacant public position, but these aspects are not addressed in the present study.

In this type of competition, the topics and bibliography will also include topics related to respect for human dignity, the protection of fundamental human rights and freedoms, as well as the prevention and combating of incitement to hatred and discrimination.

It should be noted that those who successfully pass the national competition (Figure 3) do not immediately acquire the status of civil servant, but for the next three years after the promotion of the first stage, they receive the right to present themselves in the next stage of the competition to fill positions.

Figure no. 3. National competition– recruitment stage – ANFP

1. Registration of persons interest	2. Creation of the file of competition	3. Eligibility check
Competition computer platform - User enrollment mechanism, authorization, change password + unique candidate identifier; Registration/profile creation - permanent, prior to the start of a contest procedure; Attachment of supporting documents.	Notification of Enrolled Candidates Completing the form sign up Choice of supporting documents Transmission of the file of registration for the competition - within the deadline (automatic registration number).	Validation of meeting the minimum conditions for the position; Request other documents, if any necessary; Automatic notification in the profile and on the site about the results; test center choice option available for "admit"; Possibility of submitting appeals.
4. Preliminary testing	5. Advanced testing	6. Managing the group of promoted candidates
General knowledge of public administration; Language skills, English/French – basic level; Competences in the field of IT - basic level; Cognitive skills.	Beginners: solving a situational questionnaire - checking general skills; VET: in specialized assessment centers – direct observation of behavioral indicators	The group of "admitted" candidates - 3 years - right to participate in the job competition; The candidate profile can be updated.

Source: (Iacob 2022)

https://www.anfp.gov.ro/R/Doc/2022/Proiecte/SIPOCA%20136/Prezent%C4%83ri%20webinarii/ANFP_Prezentare%20proiect%20HG%20model%20recrutare_webinarii.pdf

This competition is organized in accordance with the ANFP plan for the recruitment of civil servants (which requires the approval of the Government) and aims to forecast the needs of human resources for the public office - within the authorities and various public institutions - for a maximum period of 3 years. It should be noted that the responsibility for approving the Procedure for organizing and conducting the contests rests with the Government.

The announcement regarding the national competition is published in the Official Gazette of Romania and on the ANFP website, at least 30 days before the scheduled date for the competition.

Competitions aimed at occupying public positions at the level of local public administration have the character of "competition for the position", assuming the evaluation of general/specific knowledge/skills. In these cases, the announcement of the competition is made through the web pages of ANFP and the employer, with at least 30 days (15 days in the case of temporary occupation of vacant executive public positions) before the date of the competition.

The competition for the position (Figure 4) is organized and carried out as follows: "a) By the competition commission and, as the case may be, by the appeals resolution commission, in accordance with the powers of these commissions, for the filling of vacant public positions intended for the category of senior civil servants;b) By the public authorities and institutions in which the public positions for which the competition is organized are established, whose leaders have the competence to appoint in the public positions for which the competition for the position is organized, for the occupation of vacant public management and execution positions" (RG 2019).

Figure no. 4. The competition for the position – selection stage

1. Creation of the file of competition	2. Eligibility check	3. Additional evidence (as the case)
Notification of candidates admitted to the stage recruitment (national competition) Completing the registration form Choice of supporting documents Sending the registration file to contest - within the deadline (registration no automatically generated).	Validation of fulfillment of conditions for the post – through the platform competition informatics; Request other documents, if required; Automatic notification in profile and on results site; Possibility of submitting appeals.	Organized if not requested previously that certain skills be proven by documents. Separate procedure for deployment additional evidence.
4. The written test	5. Interview	6. Appointment to public office
Synthesis, grid tests, tests with questions open/exercises – practical situations Automatic extraction of topics from computer application.	Evaluation criteria: beginners and VET Possibility of submitting appeals.	Only the candidate declared "admitted" has the obligation to present documents loaded in the platform, in the original, sub the penalty of non-appointment.

Source: (Iacob 2022)

https://www.anfp.gov.ro/R/Doc/2022/Proiecte/SIPOCA%20136/Prezent%C4%83ri%20webinari/ANFP_Prezentare%20proiect%20HG%20model%20recrutare_webinari.pdf

In order to conduct the competition for the occupation of a position of the type we referred to above, the composition of the *competition committee and the appeals resolution committee* is called (their members having the right to allowances and settlement of expenses related to travel).

It is important to emphasize that in the case of organizing job competitions, public institutions/authorities are obliged to inform ANFP at least 10 working days before the date on which the competition announcement is published.

4.2.3. Advantages regarding the new way of conducting the public function competition

Meritocracy implies transparent selection processes, characterized by impartiality, based on objective criteria (professionalism, independence, integrity, impartiality), with the aim of ensuring the choice of the most competent candidates (optimal fit for the position). Transparency is ensured by the existence of well-defined tender procedures, open communication, prompt notifications and extensive publicity.

Ensuring equal opportunities is fundamental for the new recruitment model addressed in the paper. Moreover, at the various stages of selection, specific measures are taken to ensure equal opportunities for candidates with special needs/disabilities. The evaluation of candidates is carried out by methods that guarantee an unbiased evaluation.

The recruitment model under discussion puts competences in a central position, in relation to the entire process that takes place - starting with human resources planning actions and ending with the selection of the most suitable candidates. In a synthetic form, it can be said that human resources planning aims to identify those profiles needed by employers in the public administration system, the national competition ensuring the selection of the best candidates, testing their general skills (with test batteries developed in collaboration with the academic environment; the cognitive tests are approved by the College of Psychologists), so that in the end the competition for the position identifies those candidates who will be selected according to the specific skills possessed.

Performance-oriented simplification and standardization are evident. From human resources planning, to the well-known media campaigns, the presentation of candidates, the testing/appointment of candidates, the processes are streamlined and, frequently, digitized (dedicated information platforms, automatically selected topics, online communications and notifications, online registration and testing, generated results automatic). For example, candidates submit their applications online (electronic application files, permanent access to information about the application) and take preliminary tests online.

5. Conclusions

The new model of public service recruitment, called the national competition, is the result of the collaboration of NACS, GGS with the World Bank, in close connection with an appropriate model of general skills cadres. The model provides a strategic approach, as unitary as possible, in the processes of human resources planning, recruitment and performance management in the public administration system.

Regulated by the Administrative Code, the two-stage competition formula introduced the reform regarding recruitment in public positions, based on the initial pilot project and later expanding the competition at the national level, taking into account the experience gained during the implementation of the respective pilot project. The aim is to ensure a transparent selection, based on skills and meritocracy, in accordance with the human resource needs identified at the level of the employing institutions.

ANFP manages *the national competition*, while the employing public institutions deal with *job competitions*. This approach involves optimal collaboration between institutions and/or public authorities, from human resource planning to appointment and close monitoring of the integration of new employees for one year after appointment.

The paper emphasizes that the recruitment system (competency/merit-based) provides the identified/planned human recruitment requirement for a period of 3 years, creating a pool of pre-selected candidates for this period. The efficiency of the processes outlined here and the effectiveness of the methods of promoting the competition are improved, aiming to ensure a better fit between the newly recruited staff and the requirements of the employing institutions.

On the other hand, the continuous improvement of the various skills that the members of the competition commissions must have in evaluating certain skills of candidates for public positions is highlighted.

The limits of the research. We gave our work a descriptive rather than an applicative character. The approach to practical aspects is partly limited by the fact that the analyzed model is relatively new, and the experiences accumulated within the pilot project regarding the implementation of the new model of recruitment in the public office in Romania are not fully known, the project being in progress, moving to a new stage.

Also, the research focused to a small extent on the norms and good practices found in other member states of the European Union.

Therefore, future research efforts should insist on these aspects and place the problematic of the work in a different, empirical light.

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The Dark Side of Digitalisation: Wealthier but Unhappier

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Abstract

Since the first industrial revolution, the world economy has passed a troubled path with many salient transformations that have shaped today's human relations, commercial trades, innovation and governance. Now, humanity is going through the digital revolution, which seems to change the world even more rapidly than its predecessors. Despite the myriad of digitalisation advantages connected with this, one cannot neglect the downsides. Terms such as technostress, cyberbullying or technology addiction emerged to express the harm the accelerated digitalisation has brought into our lives. The present paper focuses on digitalisation's effects on happiness, using a VAR model for the EU countries from 2017-2022. Despite the positive effect on economic growth underlined in the literature, a positive impulse in terms of digitalisation generates a persistent negative effect on happiness in the next three years.

Key words: digitalisation, economic growth, happiness, human relations, healthy and meaningful life

J.E.L. classification: I15, I31, O11, O38

1. Introduction

In the winter of 2022, on a train somewhere in the mountains.... a guy with a small boy, 5-6 years old, was watching the scenery. At some point, it began to snow. The boy looked amazed first at the snowflakes, and just after, he made strange gestures at the window. He was trying to zoom out what he considered a screen to see the snowflakes better and was disappointed and angry that "the device" was not working..... Some of us would smile imagining this scene, but this kind of reality distortion may raise some questions for some (true story that inspired this paper).

Digitalisation is one of the critical topics on the agenda of the European Commission. In a strict sense, digitalisation may be defined as converting information into a computer-readable, digital format for computerised processing. Nowadays, digital development includes new forms of communication such as social networks, smartphones and tablets, video games, new alternatives for data processing using big data, networked objects, regulation and new forms of computer-human interactions such as autonomous cars and voice-activated personal assistants.

Nobody could deny the positive transformation and progress that digitalisation has brought to our lives, and a substantial body of literature proves it. Among many others, digitalisation opens a path to enhance learning possibilities and developing skills, may diminish human errors in different decisions, increases flexibility in professional life, offers greater consumer choice and power, enhances the better flow of ideas, pluralism and innovation through greater exposure not limited to physical proximity (Gluckman and Allen, 2018). Digitalisation eases transactions and interaction at the corporation's level, makes them observable and controllable in real-time, and lowers transaction and production costs (Varian, 2014). Sophisticated software and online platforms help firms to outsource more of their production of goods and services (Azmeah and Nadvi, 2014; Körfer and Röthig, 2017), develop new products and services (Yoo et al., 2012) or enable tracking of each worker and the time dedicated to a specific task (Phoebe, 2018).

The literature focused on the adverse effects of digitalisation is scarcer. However, several studies have drawn attention in the last years to how digitalisation may impact different areas of happiness, including family life, education, mental and physical health, work relations, social cohesion, and personal and public security. For example, Behne and Teuteberg (2020), Wöhrmann and Ebner (2021) or Rohwer et al. (2022), and Turel et al. (2021) raised serious questions regarding the human ability to cope with the digital revolution's rapid, aggressive, status quo-shattering transformations. Humans are not computers, and their ability to adjust to the fast-moving rhythm the digitalisation imposed is limited. Humans must stay healthy, have a meaningful life, and connect with friends and family to be happy. Excessive digitalisation may lead to digital addiction, associated with loneliness, anxiety and depression (Peper and Harvey, 2018).

One may be optimistic or pessimistic about the changes induced by digitalisation in all aspects of our lives, but those changes cannot be neglected. To our knowledge, digitalisation's effects on national aggregated happiness in the last years, dominated by accelerated digitalisation, have not been studied yet. To fill this gap, the main aim of this paper is to assess the relationship between digitalisation and happiness in a period between 2017-2022, a period that, due to the COVID crisis, included the sharpest and forced increase in digitalisation one may see starting from the beginning of this pervasive transformation. Happiness is often considered the final goal of each individual. Extrapolating this at the macroeconomic level, happiness can be seen as the target for any economic and social policy. As Bentham said in 1776, "It is the greatest happiness of the greatest number that is the measure of right and wrong". This is why it is so important to see if this ongoing digitalisation process is leading us towards happiness or, on the contrary, is decreasing our happiness, so further policy measures are needed to shape the future of this process.

The paper is structured as follows. The second part is dedicated to the previous literature, structured using the framework proposed by Gluckman and Allen (2018) in evaluating the relationship between digitalisation and well-being determinants. The literature has pros and cons about how well-being and happiness may be defined and whether one may be used interchangeably. In this paper, we use the terms in their broad, interchangeable sense, in accordance with Seligman's (2002) view. The third part presents the research design: variables, data and method. The fourth part is dedicated to the results. The last section concludes.

2. Literature review

The digital revolution, humankind's most pervasive transformation, affects all the patterns of human activities and networks, institutions, governance processes and, as an outcome, economic growth and individual and aggregated happiness.

The previous literature seems to agree that digital transformation was able to help economies develop, create and exploit new opportunities, and increase innovation. New technologies allowed the creation of new business models, maximised the efficiency and productivity of traditional firms and overall determined an increase in economic growth. (Olczyk and Kuc-Czarnecka, 2022).

The relationship between digitalisation and happiness seems to be much more complicated. From ancient times, the individual's most precious desire was happiness.

Happiness is a complex, multifaceted state of mind affected by several factors. However, according to the framework proposed by Gluckman and Allen (2018), some of the most important are human development, including early childhood learning, physical and mental health, social inclusion and relationship, personal and public security and governance.

Human development, including early childhood learning

Digital technologies may be a helpful tool or a dangerous distraction in early childhood learning.

On the one side, digital media, including social media, offers direct and immediate access to an immense volume of information, ideas and networks, increasing connectivity. Also properly used and designed, some digital games may be used in classrooms to improve the children's interest and engagement in learning or to develop different social and emotional skills (Jabbar and Felicia, 2015; Clark et al., 2016).

Conversely, recent research pointed out that digitalisation may have several adverse effects. For instance, free and unlimited access to information and networks can also be associated with a high misinformation and manipulation risk. The so-called "influencers" often distribute false news and

information, leading their followers in the wrong direction. Different digital platforms use algorithms to collect, analyse and manipulate the data to influence individuals' attitudes and behaviours (Lanier, 2018). As a result of availability bias and herd behaviour, the child may adopt a radical position toward a subject without evaluating the reality of information or the downsides of his position, rejecting any alternative vision without arguments (Supovitz et al., 2017; Woolley and Howard, 2017). Digitalisation excess was associated with increased attention deficit, aggressive behaviour (Belanger et al., 2011) and a higher risk of cyberbullying (Gardella et al., 2017). The researchers also found that the significant periods spent playing video generated more disinhibition (Aiken, 2016), lower capacity to assess their behaviour and the effects of their actions, caused confusion between the video game script and the reality and increased aggressive behaviours by increasing the aggressive thinking (Carnagey and Anderson, 2005). Heavy use of digital media negatively influences the child's cognitive empathy, reduces the ability for self-control, leads to lower parent-child interaction and increases conflict propensity (Chassiakos et al., 2016)

Physical and mental health

Healthcare informatics has evolved tremendously in recent years, changing the health industry's picture. Remote diagnostics, portability of medical care through electronic health record-keeping, cellular technologies, the use of digital technologies to reduce human errors, and internet group support for different diseases are just a few examples of advantages and opportunities brought by digitalisation in this field (Reddy and Sharma, 2016).

Analysing the impact digitalisation has on health, one may also see the other side of the coin, the side effects. First, the time spent in front of a computer or other device increases sedentary behaviours, decreases sleep quantity and quality and increases the prevalence of junk food, all negatively impacting health outcomes. Vandelandotte et al.(2009) point out that individuals with high internet and computer use have the largest Body Mass Index (BMI) compared with other groups, and this was significantly associated with overweight and obesity. Video or computer game playing was associated with a higher prevalence of insufficient rest or sleep (Falbe et al., 2015). From a dietary point of view, social networks are often used by companies that sell junk food to promote their products and magnify the relevance of their marketing messages (Freeman, 2014).

On the mental health level, digitalisation is associated with different phenomena, starting from accentuated loneliness, technostress, technology addiction and depression. Even if we need human contact to be happy, the digital alternatives are often cheaper. Banks are replacing their tellers, most supermarkets have self-scan checkouts, teleworking has changed the labour market, and online commerce has experienced exponential growth. At the same time, people seem to have less time to see their friends and spend quality time in a face-to-face environment. All those changes have a substantial impact on loneliness and mental health. The internet may be considered a loneliness reducer if it enhances existing relationships. However, it has opposite effects if used to escape the social world and interactions (Nowland et al., 2018). Technostress and technology addiction complicate the scenario even more. The inability to cope with digital technologies healthily (technostress with all five components: techno-overload, techno invasion, techno complexity, techno insecurity and techno uncertainty defined by Ragu-Nathan in 2008) is associated with health outcomes such as exhaustion and satisfaction (Rohwer et al., 2022). Technology addiction is now a widespread phenomenon that includes some typical symptoms such as salience (all individual's thoughts and behaviours are run by technology), withdrawal (in the absence of technology, negative emotions emerge), conflict (due to the excessive use of technology other tasks are neglected), relapse and reinstatement (inability to decide oneself about reducing the use of technology), mood changes (technology is used to provide thrill and relief), tolerance (the technology use has to be extended to be able to produce thrill)(Turel et al., 2011). Lastly, in recent years, more and more symptoms of depression have been observed. A new form of depression is connected with social network sites as the „Fear of Missing Out” (FOMO) phenomenon arose. The users start to fear missing something vital if they are not continuously connected and do not receive instant confirmation from their internet community through likes, followers and comments (Haidt and Allen, 2020; Yoon et al., 2019).

Social inclusion and relationship

Internet and social media provide more significant opportunities for new groups and communities to form and grow outside their geographic boundaries, a proper incentive for well-being increase. Due to the digital revolution, the ability to establish and develop social interaction is unlimited.

However, the nature of the relationship between their members may be quite different and less satisfying than the one found in the real world, outside the virtual space. Social support may be less stable if it is not supported by real interaction, and the concept of „Friends on Facebook” seems very often a more shallow concept than one of Aristotelian friendship in all its four dimensions: reciprocity, empathy, self-knowledge and shared life (Vallor, 2012).

A significant concern is that aside from the potential positive outcomes, the development of social networks and the dark web allows the creation and proliferation of criminal groups with violent antisocial behaviour and the organisation of illegal actions and attacks (Marcu and Balteanu, 2014).

Personal and public security

Recent information technology advances improved data collection and the applications created to use this data, offering an essential tool for increasing personal and public security, with significant implications for well-being. Problems such as traffic congestion or increased noise and pollution have been addressed in the last years through advanced technologies due to the rapid growth of the urban population (Rizi and Seno, 2022). Aside from the obvious advantages, the extensive surveillance of public space may increase public safety feeling but raise critical questions about personal freedom, data and privacy protection. Is the general security more important than individual rights? Where do we have to set the line to meet the public goal without burdening human rights? This question is still debated, with many implications on individual and aggregate happiness. (Milanovic, 2015).

Governance

Digitalisation has brought a significant impact both on democratic processes and on the way governments are delivering their core services. Once the different online platforms emerged, a two-way communication channel between government and citizens was created. It is much easier nowadays for a citizen to voice views, request information and interact directly with policymakers due to digital technologies (Chen et al., 2021). Also, social media provide the needed tools for all levels of society to raise jointly their voice on specific topics of public interest. Considering the primary roles of the government, in the last decades, eGovernment changed the face of public services by rethinking organisations and processes, providing access to cross-border digital services and new communication channels for citizens and public bodies and their interactions. However, digitalisation is not free of risks since problems such as manipulating public opinion, data privacy, or cybersecurity governance still need to be mitigated.

Hence, the main research question concerns the nature of the relationship between overall happiness and digitalisation. We are interested in the nature of this relationship and, in extending the previous research, the effect of persistence in time.

3. Research methodology

The empirical analysis is based on a set of balanced data, with 27 cross-sections (for each EU country) spanning between 2017-2022. The study relies on the Happiness Index (HI) included in the World Happiness Dataset for overall happiness. At the same time, digitalisation is captured through the Digital Economy and Society Index overall index (DESIO).

Our central hypothesis is that the overall effect of digitalisation on happiness is negative despite the positive effect it might have on some variables connected with happiness. Since we were interested in the effect of a digitalisation variation in happiness and preferred to use stationary variables to avoid spurious results, the first difference of both variables was used in our model, denoted with $D(HI)$ and $D(DESIO)$ (stationarity in the row and adjusted variables was checked only with individual intercept since, due to hour short series of data we could not assume the existence of a trend, using Fisher-PP and Hadri tests, functional for such a short period).

Both variables depend on their previous variables, and simultaneously, both could represent an explanatory variable for the other. Present overall happiness is connected with prior happiness, and in terms of digitalisation, the overall present digitalisation depends on the progress the digitalisation has made in the past. The relation between variables may be considered a double-sense one, too. The previous literature offers substantial incentives to consider that digitalisation positively or negatively impacts happiness. At the same time, all technological advances, including digitalisation, are

enhanced by a positive, happy state of spirit, so we have reasons to believe that a correlation between happiness and digitalisation may also exist in the opposite sense.

This is why, to analyse the relationship between digitalisation and happiness, we proposed a VAR model with lag 1, based on the lag exclusion test (the results of the test are presented in the table below):

Table no.1. Lag exclusion test results

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-62.79676	NA	0.037784	2.399880	2.473546	2.428290
1	-54.33722	15.97913*	0.032039*	2.234712*	2.455710*	2.319942*
2	-51.04586	5.973206	0.032918	2.260958	2.629288	2.403008
3	-47.43157	6.291541	0.033454	2.275243	2.790906	2.474114

Where:
Endogenous variables: D(HI) D(DESEO)
* indicates lag order selected by the criterion
LR: sequential modified LR test statistic (each test at 5% level)
FPE: Final prediction error
AIC: Akaike information criterion
SC: Schwarz information criterion
HQ: Hannan-Quinn information criterion

Source: author's computation

The proposed model may be written as follows:

$$\begin{cases} y_{it} = c + \beta x_{it} + \delta y_{it-1} + \varepsilon_{it} \\ x_{it} = c + \sigma y_{it-1} + \vartheta x_{it-1} + \varepsilon_{it} \end{cases} \quad (1)$$

In the above system of equations, c is the intercept, the terms β , δ , σ , ϑ stand for the slopes of independent variables, x is the independent variable D(DESEO) in the first part of the system, and the dependent variable in the second part, y reveals the independent variable D(HI) in the first part and the dependent variable in the second one, i denotes the country, t is the time while ε_{it} represents the error term which varies over both country and time.

4. Findings

As expected, the proposed model validated our hypothesis. Even if the correlation is not statistically significant when we analyse the second equation, one may see that digitalisation has an overall negative impact on happiness, statistically significant since the value of the digitalisation variable coefficient is higher compared with standard error and t stat has a normal value (see the results included in Table no. 2).

Table no. 2. VAR model results

Variables	D(HI)	D(DESEO)
D(HI(-1))	0.208821	0.023253
	(0.10061)	(1.22049)
	[2.07554]	[0.01905]
D(DESEO(-1))	-0.034873	0.529040
	(0.00914)	(0.11088)
	[-3.81542]	[4.77138]
C	0.157940	2.196099
	(0.03408)	(0.41346)
	[4.63399]	[5.31158]

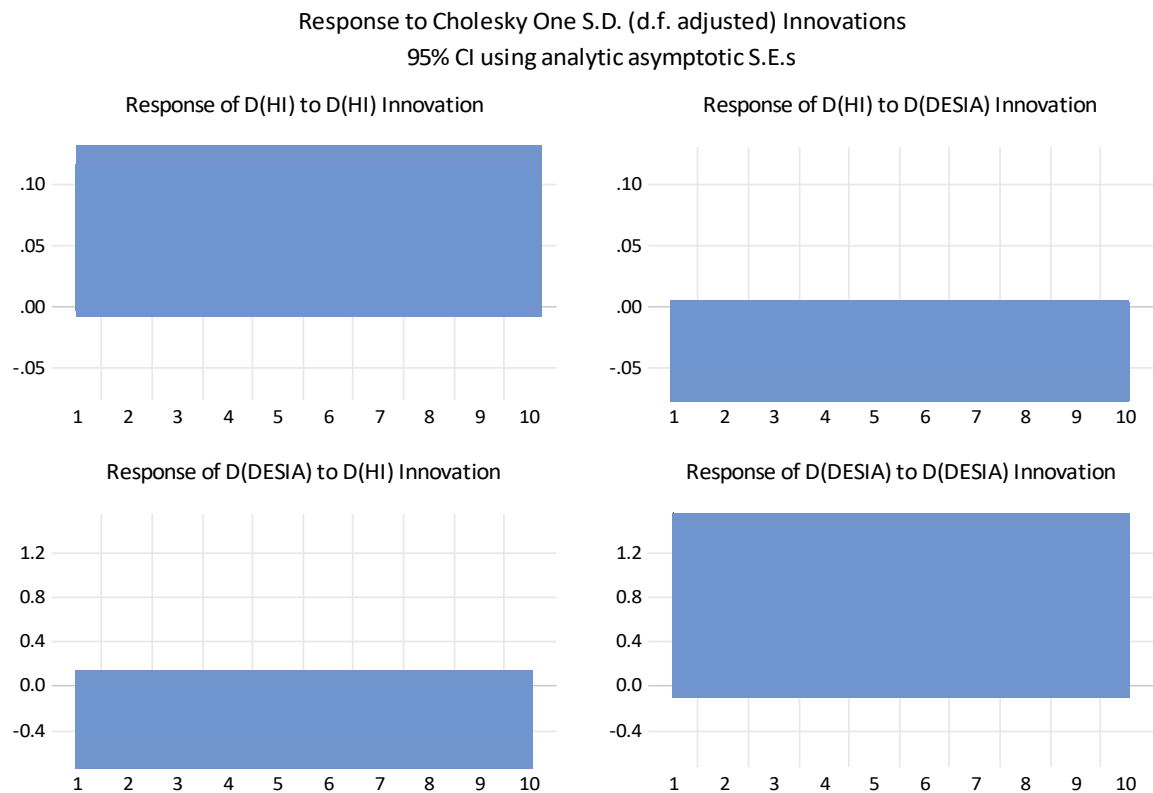
Standard errors in () & t-statistics in []		
R-squared	0.193659	0.189932
Adj. R-squared	0.178300	0.174502
F-statistic	12.60890	12.30939
Akaike AIC	-1.391106	3.600404
Schwarz SC	-1.316603	3.674908

Source: author's computation

The model was tested for stability; no roots were outside the unit circle. In the next step, the robustness was checked through the VAR residual Portmanteau test for autocorrelation, VAR residual serial correlation LM and VAR residual Heteroskedasticity Test. All the results show that the VAR model with 1 lag is robust and stable.

As one can see in the following figure, current happiness and current digitalisation are positively correlated with their past values, and an impulse toward happiness or digitalisation is prone to generate a response in the same sense in the future. As we might expect, an impulse in digitalisation generates a strong negative response in happiness, persistent in the following three periods, validating our initial hypothesis. The response of digitalisation to happiness is not very clear since the confidence bands overlap the ox axis. However, since the primary goal of our analysis was to study the impact digitalisation has on happiness, the results shown by the impulse functions prove that despite the potential positive effects digitalisation may have on some aspects of life connected to happiness, the overall effect of an increase in digitalisation is a negative one, in other words, digitalisation may make us unhappy.

Figure no. 1. Impulse functions results



Source: author's computation

5. Conclusions

As the results of the present study reflect, the overall impact of digitalisation on happiness is a negative one, not a positive, as the European governments expected when they put digitalisation on their priorities.

As a new step in the knowledge era, digitalisation should aim to increase the quality of life and well-being. According to European Commission declarations, the second priority for the 2019-2024 agenda, named "A Europe fit for the digital age", aims to **"put the people first"** by opening new business opportunities, encourage the development of trustworthy technology, foster an open and democratic society, enable a vibrant and sustainable economy, help fight climate change and achieve the green transition". (European Commission website). Little endeavour is put on people's happiness. Digitalisation transforms how individuals interact with the world and changes their beliefs and attitudes toward themselves, the world, human interaction, and right and wrong.

Several aspects related to life quality are seen by the European Commission only in a positive sense. Digitalisation is, in the Commission's view, a valuable tool for better diagnosis and treatment, an enhancer of lifelong learning, a provider of trusted digital identity, a promotor of a cleaner environment, etc. However, the truth is more nuanced than this. It is true, for example, that by using digital solutions, better diagnoses and treatments may be provided. However, one cannot neglect digitalisation's negative impact on metabolic diseases associated with sedentary and junk food promoted by different media channels and, even more importantly, the skyrocketing increase in depression, especially in young individuals. It is true again that digitalisation may help life-long learning. However, there is clear scientific evidence that excessive digitalisation is more prone to impair than enhance student learning. One may see the Sweden example where the government reverses the process after aggressive digitalisation progress in schools because the effects seen are not expected. Cognitive skills, memory, and concentration seem to be impaired because of the distraction technology use provides. Also, quick gratification provided by technology changes the learners' patience and expectations, limiting their curiosity and ability to put some effort into their studies. In terms of a cleaner environment, only parts of the devices we use daily are recyclable; the others are polluting the environment in an irreversible and pervasive way. Those are just a couple of examples that we cannot neglect the dark side of digitalisation and see just its bright side.

Governments are responsible for national happiness, and more impact studies are needed before extending digitalisation's role in our lives. Digitalisation cannot be a purpose per se; happiness should be. If digitalisation is not increasing individual happiness, maybe our path is not the right one and other ways must be found.

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Digitalisation and Happiness in the European Union

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Abstract

Digitalisation is for sure one of the most pervasive and significant transformations that humanity has undergone in the last decade. Technology changed how we see and relate to the world, the interhuman relationships and represented an essential catalyst for innovation and development. The paper aims to analyse the relationship between digitalisation (overall and its components) and happiness in European countries from 2017-2022 using an OLS naïve panel model and Granger causality. The results show that, overall, digitalisation has a negative impact on happiness. At the same time, Internet user skills, Fixed broadband coverage, Mobile broadband, and E-government seem to be the digitalisation components with the most significant impact on happiness.

Key words: digitalisation, happiness, European policies, future

J.E.L. classification: I15, I31, O11, O38

1. Introduction

Happiness is for sure the primary goal of any individual, no matter if we refer to ordinary happiness (a brief state of mind where the individual feels that all the important goals have been reached and the essential needs fulfilled) or to genuine happiness (a durable state of mind during which the individual manages to achieve a balance between goals and needs on the one side and surrounding on the other) defined by Jacobsen (2007). Despite the fast technological evolution, the human brain and the drivers of individual happiness have not changed. We still need to be healthy, connected with our beloved, have spare time to enjoy life and have a meaningful existence aside from the virtual space.

Digitalisation has many advantages in creating new business opportunities, encouraging innovation, and providing new instruments and tools for different sciences, including medical, engineering and social sciences. In the European Commission's priority agenda for 2019-2024, entitled "A Europe fit for the digital age", digitalisation is also seen as a promoter of an open and democratic society that enables a sustainable economy and helps governments and individuals fight climate change.

Governmental and non-governmental organisations have also benefited from digitalisation, primarily through artificial intelligence, big data, the Internet of Things, and digital twins (Andersson and Ivory, 2022; Efthymiou and Sidiropoulos, 2023; Germann and Jasper, 2020). For example, UK Transport for Greater Manchester uses different Microsoft Azure solutions to monitor traffic flow and reduce congestion. In Qatar, the TASMU platform helps the state to manage virtual healthcare consultation and intelligent parking and protect national food security using artificial intelligence, cloud and digital twins. In NGOs, for example, the Association for Social Affairs and Health in Northern Ostrobothnia created the Toimeksi 2.0 project, the aim of which is to create an online service for NGOs and citizens targeted to activate the citizens' participation in society through events, training courses, support group and volunteer work. (Kurtti and Berg, 2018).

On the other side, digitalisation is found to impact negatively on health and personal traits. Sedentarism and obesity were connected with more extended periods spent in front of a screen and reduced physical activities. Also, digitalisation generates significant changes in personal life and work, leading to increased dissatisfaction, higher inequality and a more polarised society (Frey and

Osborne, 2017). Frequent use of social network sites seems to lead to increased stress, harassment and aggressive acts, impairs personality, increases task distraction, reduces positive emotions, and overall reduces quality of life (Baccarella et al., 2018; Moqbel and Kock, 2018; Sands et al., 2020).

This paper aims to see if there is a direct relation between overall digitalisation and its components and happiness in a period characterised by the massive digitalisation enhanced by the COVID-19 pandemic. Even if many papers connect digitalisation with several aspects related to the quality of life, the literature that links digitalisation with aggregated happiness is still extremely scarce. From this point of view, the present paper could be an instrument in governmental policies to shape the digitalisation process to serve the people better. The paper is structured as follows: the second section presents the literature and the research questions, the third section is dedicated to the data and methodology used, the fourth section presents the results, and the last one concludes.

2. Literature review

The literature that assesses the direct correlation between digitalisation and aggregated happiness is relatively scarce, especially in empirical studies. Most studies highlight both digitalisation's opportunities and threats to well-being/happiness.

Büchi et al. (2018) analysed whether internet use impacts the five dimensions of social well-being: social integration, contribution, coherence, actualisation and acceptance (in the present paper, happiness and well-being are used in their interchangeable sense, in accordance with Seligman's (2002) view). Based on structural equation modelling, the results point out that how people feel about digital belongingness directly increases social well-being more than the behaviour of digital participation itself. Overall, at the adult population level, digital participation's net effect is negligible.

Torres and Augusto (2020), based on an empirical study conducted in 27 countries in 2016-2018, state that digitalisation may improve national well-being and represent a catalyst if the country has an adequate educational system, a sound governance system, and a philanthropy-oriented financial system. Social entrepreneurship was found indifferent to well-being in countries with high levels of digitalisation coupled with a good education system, stable governance and philanthropic financial systems, such as Finland, Austria and Netherlands. However, in countries such as Thailand, Indonesia and Morocco, the absence of social entrepreneurship, associated with low levels of digitalisation, inadequate governance and an educational system, seems to lead to low levels of well-being.

Using the components of the Digital Economy and Society Index (DESI) on a period from 2014 to 2019, Elmassah and Hassanein (2022) found that, for EU countries, internet connectivity, the use of the internet and integrated digital technology are related positively to life satisfaction while human capital and digital public services seem to be negatively correlated.

Kiviaho and Einolander (2023) analysed the impact of digitalisation in rural areas and shrinking communities (eight shrinking municipalities in Finland). They found that digital transformation impacts well-being mainly positively in their case. Digitalisation enables small communities to use public services priorly out of reach and opens new opportunities. In this way, due to the help of technology, secluded, isolated communities benefit from remote working, distance learning, remote services and e-commerce, all important considering the citizen's well-being.

Overall, the relationship between digitalisation and happiness is still under debate, with a clear need for more empirical studies to address digital transformations' impact on aggregated happiness and how governments may shape this process to increase the benefits and limit its downsides.

Due to the COVID crisis, the last period may be considered the largest experiment of forced digitalisation humanity has known. That offers us the data to reexamine digitalisation's impact on happiness, considering the scarcity of the previous studies and the contradictory results found in the literature.

Consequently, the present study proposes the following research questions:

RQ 1: Is there any correlation or causality between the increase in overall digitalisation and aggregated happiness?

RQ 2: What components of digitalisation are more prone to influence happiness?

3. Research methodology

To answer the *first research question* and capture the digitalisation effect on aggregated national happiness, the study uses yearly data (2017-2022) of the Digital Economy and Society Index (DESI) in overall values and its sub-dimensions and Happiness Index for the EU countries. Additionally, the study uses population density as a control variable since the previous literature states a negative correlation between urban agglomeration and happiness due to the associated undesirable outcomes as pollution, crimes, and diseases increase (Okulicz and Mazelis, 2018). All the used variables, their acronyms used in the econometric study, and the source of data are included in the following table:

Table no. 1. Variables description

Variable acronym	Description		Source
HI	Happiness Index - includes an aggregated self-assessment of life evaluation provided by the Gallup World Poll.		World Happiness Report available at: https://worldhappiness.report/
DESIO	DESI overall index - computed as a weighted average of the four dimensions: human capital, connectivity, integration of digital technology and digital public service		European Commission, available at: https://digital-agenda-data.eu/charts
IUS	DESI sub-dimensions	Internet User Skills	
ASD		Advanced Skills and Development	
FBTU		Fixed broadband take-up	
FBC		Fixed broadband coverage	
MB		Mobile broadband	
BPI		Broadband price index	
DI		Digital intensity	
DTB		Digital technologies for businesses	
ECOM		e-commerce	
EGOV		e-governance	
PD	Population density		European Union, available at: https://ec.europa.eu/eurostat

Source: author's compilation

Raw data were logarithmised in the case of population density, where the historical values exceeded 100 to reduce the amplitude and ensure better results. All variables were tested for stationarity to avoid spurious regressions with Fisher-PP and Hadri tests, with constant only (because the series has only six years, we assume the trend inconsistency). Except for lnPD, all variables were found to be non-stationary in value but stationary in first differences. As a result, all the presented models in this study use the main variables in the first difference, denoted with D (i.e. DHI, DDESEO, DIUS, etc.).

A naive OLS panel model below is proposed first to test the correlation between the overall digitalisation. In the equation, c is the intercept, y stands for happiness ($D(HI)$), x denotes the overall digitalisation (expressed by the variable $D(DESEO)$), μ is the population density ($D(PD)$), α , β , δ are the slopes of the independent variables, ε is the standard error, i represent the country while t stands for time. National happiness is a persistent variable. Even if, at the individual level, happiness can have quite a high volatility, the aggregated happiness is a pretty stable variable, dependent on its previous year's values. As a result, an auto-regressive effect was included in the equation.

$$y_{it} = c + \alpha y_{i(t-1)} + \beta x_{it} + \delta \mu_{it} + \varepsilon_{it} \quad (1)$$

The panel may present homogeneity issues since each country may exhibit some specificities that may influence the variables included in the regression. Fixed-effects panel models may represent an excellent solution to mitigate this problem. The model, in this case, looks as follows:

$$y_{it} = c_i + \alpha y_{i(t-1)} + \beta x_{it} + \delta \mu_{it} + \varepsilon_{it} \quad (2)$$

In some cases, fixed-effect panel models do not control for all covariates, so that a random-effects panel may be helpful. Even if the number of cross-sections in our case is larger than the number of periods, a random-effect panel is also created and tested.

$$y_{it} = c_i + \alpha y_{i(t-1)} + \beta x_{it} + \delta \mu_{it} + (v_i + \varepsilon_{it}) \quad (3)$$

where v_i stands for a standard random variable with zero mean.

The F-test and Hausman tests were performed to discriminate between the three models, OLS, fixed-effects models and random-effects models. The Granger causality test was employed to check for causality between the variables.

To answer the *second research question* related to the impact of digitalisation sub-dimensions on happiness, the first step was to create the correlation matrix since we expect some correlation between different sub-dimensions. The correlogram results are presented in the table below.

Table no. 2. Correlation matrix for digitalisation sub-dimensions

Correlations	IUS	ASD	FBTU	FBC	MB	BPI	DI	DTB	ECOM	EGOV
IUS	1.0000									
ASD	0.6235	1.0000								
FBTU	0.3425	0.3062	1.0000							
FBC	0.1143	0.3325	0.5535	1.0000						
MB	0.3654	0.3560	0.4200	0.3445	1.0000					
BPI	-0.3056	0.0090	-0.1060	0.2749	0.1483	1.0000				
DI	0.7251	0.6671	0.4731	0.2710	0.5967	-0.1952	1.0000			
DTB	0.7107	0.6746	0.4714	0.3839	0.6039	-0.1558	0.9223	1.0000		
ECOM	0.5572	0.4854	0.3143	0.0841	0.2981	-0.3232	0.6321	0.5618	1.0000	
EGOV	0.6917	0.6798	0.4604	0.5397	0.4568	-0.0274	0.7572	0.7264	0.4975	1.0000

Source: author's computation

As one may see, the only two variables that have high correlation coefficients (higher than 0.8) are digital intensity (DI) and Digital technology for business (DTB), so we decided to exclude one of them from our list of independent variables, and the initial OLS panel model is as follows:

$$y_{it} = c + \alpha y_{i(t-1)} + \sum_{k=1}^n \beta_k x'_{it} + \delta \mu_{it} + \varepsilon_{it} \quad (4)$$

where x' is digitalisation sub-dimensions k by n type (first-order differences of IUS, ASD, FBUTU, FBC, MB, BPI, DTB, ECOM, EGOV).

Similarly to overall digitalisation, fixed-effects and random-effects panels were created and tested with F-test and Hausmann tests. The equations for the fixed and random-effects panels may be written as follows:

$$\text{for fixed effects panel: } y_{it} = c_i + \alpha y_{i(t-1)} + \sum_{k=1}^n \beta_k x'_{it} + \delta \mu_{it} + \varepsilon_{it} \quad (5)$$

$$\text{for random effects panel: } y_{it} = c_i + \alpha y_{i(t-1)} + \sum_{k=1}^n \beta_k x'_{it} + \delta \mu_{it} + (v_i + \varepsilon_{it}) \quad (6)$$

4. Findings

The empirical results for the first set of equations show that the OLS naive model (model 1) is a better representation than the fixed-effects (model 2) and random-effects models (model 3). As one may see in Table 3 below, the F-test shows that there is an 18% probability that the fixed effect model will generate better outcomes than the naive OLS, and the Hausman test shows that there is a 0% probability that the random effects model to generate better results compared with the fixed effect one.

The overall DESI is negatively correlated with happiness, significant at 1% (Table no. 3). As expected, the control variable, population density, negatively correlates with happiness since it is usually associated with higher pollution, crime, and disease (at a significance level of 5%).

Table no. 3. Empirical results for overall digitalisation -happiness correlation

Dependent variable	D(HI)		
Independent variables	OLS	FE	RE
	(1)	(2)	(3)
Intercept	0.308*** (0.063)	13.428** (4.996)	0.308*** (0.061)
D(HI(-1))	0.208** (0.095)	-0.213* (0.122)	0.208** (0.091)
D(DESEO)	-0.032*** (0.007)	-0.030** (0.007)	-0.031*** (0.006)
LNPDI	-0.030** (0.011)	-2.846** (1.074)	-0.029** (0.011)
R squared	0.279	0.498	0.279
F-test		1.306	
[p-value]		[0.183]	
Hausman test			28.12
[p-value]			[0.000]
No. Of Observations	108	108	108

(a) (...) denotes the standard error, while [...] is the p-values;
(b) ***, **, and * show significance at 1, 5 and 10 % level of significance, respectively

Source: author's computation

The reverse causality hypothesis was tested in the second step by employing a Granger causality. The results presented in Table no. 4 allow us to reject the null hypothesis (DDESEO does not Granger Cause DHI) and conclude that increased digitalisation leads to reduced happiness.

Table no. 4. Results of the Granger causality test

Null Hypothesis:	Prob.
DDESEO does not Granger Cause DHI	0.0001
DHI does not Granger Cause DDESEO	0.8999

Source: author's computation

At the sub-dimension level, after testing the OLS naive model specification, statistically significant correlations were found only in the case of internet users' skills, fixed broadband coverage, mobile broadband and e-governance, all of them negatively correlated with happiness (see model 1 results in Table no.5 below). To improve the model's efficiency in the next step, the variables that do not correlate significantly with happiness were excluded from the model and population density, as a control variable, was added to see if the coefficients of the significant independent variables maintained their significance (see model 2 results). As one may notice, the R-squared values are improved in the second model, and the independent variable coefficients maintain their signs.

Table no.5. Empirical results for the relation digitalisation sub-dimension and happiness

Dependent variable	D(HI)			
Independent variables	OLS	OLS	FE	RE
	(1)	(2)	(2)	(3)
Intercept	0.333*** (0.059)	0.490*** (0.079)	9.396** (5.194)	0.490*** (0.080)
D(HI(-1))	0.195** (0.099)	0.140* (0.096)	-0.197 (0.124)	0.140 (0.096)
D(IUS)	-0.118** (0.058)	-0.140** (0.054)	-0.187*** (0.070)	-0.140** (0.054)
D(ASD)	0.009 (0.010)			
D(FBTU)	-0.015 (0.014)			
D(FBC)	-0.012*	-0.012*	-0.014**	-0.012*

	(0.007)	(0.007)	(0.007)	(0.007)
D(MB)	-0.004* (0.003)	-0.005* (0.002)	-0.006** (0.002)	-0.005** (0.002)
D(BPI)	-0.003 (0.018)			
D(ECOM)	0.006 (0.019)			
D(EGOV)	-0.036** (0.011)	-0.041*** (0.010)	-0.041*** (0.014)	-0.041*** (0.010)
D(DTB)	-0.016 (0.009)			
LNPDI		-0.033*** (0.011)	-1.937* (1.122)	-0.033*** (0.011)
R squared	0.338	0.362	0.553	
F-test			1.236	
[p-value]			[0.237]	
Hausman test				26.03
[p-value]				[0.000]
No. Of Observations	108	108	108	
(a) (...) denotes the standard error, while [...] is the p-values;				
(b) ***, **, and * show significance at 1, 5 and 10 % level of significance, respectively				

Source: author's computation

Similar to the analysis conducted for overall digitalisation, in this case, the OLS naive model is superior to the fixed effect model (model 3) and the random effects model (model 4). There is a 23.7% probability that the fixed effect model will generate better results than the naive OLS, so we would choose naive OLS against the fixed effect model and a 0.00% probability that the random effect model will perform better than the fixed effect model. Hence, the OLS is our best choice.

Unsurprisingly, all the significant sub-dimensions correlate negatively with happiness at different levels of significance (e-governance at 1%, internet user's skills at 5%, fixed broadband coverage and mobile broadband at 10%).

Even if the highest coefficient appears to be the one for internet users' skills in this case, the causality seems to be reversed, meaning that a happiness-positive shift determines an unfavourable evolution of internet users' skills (see Table no.6 below). This may be explained if we consider the fact that usually happy people are the ones who live a meaningful life, are surrounded by friends and family and depend less on the virtual environment to attain pleasure and a good mood.

Table no. 6. Granger causality test results

Tested causality	Null Hypothesis	Probability
Internet user's skills and happiness	DIUS does not Granger Cause DHI	0.125
	DHI does not Granger Cause DIUS	0.005
E-governance and happiness	DEGOV does not Granger Cause DHI	0.008
	DHI does not Granger Cause DEGOV	0.387
Fixed broadband coverage and happiness	DFBC does not Granger Cause DHI	0.157
	DHI does not Granger Cause DFBC	0.546
Mobile broadband and happiness	DMB does not Granger Cause DHI	0.001
	DHI does not Granger Cause DMB	0.532

Source: author's computation

Null Hypotheses „DEGOV does not Granger Cause DHI” and „DMB does not Granger Cause DHI” may be rejected due to their probability values. Hence, the two sub-dimensions that negatively impact happiness are e-governance and mobile broadband.

5. Conclusions

In the last decades, digitalisation has often been seen as a way to increase economic growth and innovation, reduce inequalities, improve public services and public health, promote democracy and fight climate change. Various governments, including the EU countries, included digitalisation among their priorities, considering that this approach better serves their citizens.

In recent years, several researchers (Gluckman and Allen, 2018; Behne and Teuteberg, 2020; Turel et al., 2021; Rohwer et al, 2022; Olçum and Gülova, 2023) pointed out that digitalisation also has a dark face and that it has to be made with caution to exploit only its advantages without damaging public health, social relationships and, in the end, the individual's quality of life.

The results of this empirical study support this last idea. Despite the positive effects digitalisation may induce, its overall effect on such a complicated construct as happiness is negative. Individuals still need friends and family, free quality time, physical health and mindfulness to be happy; no computer or virtual interaction can replace that.

The results in the digitalisation sub-dimension reinforce the overall digitalisation impact on happiness.

Even if it is strange at first glance, since e-government is often considered a way to improve citizens' quality of life, the results may be explained easier if we rely on psychology. Individuals suffer very often from status-quo bias and are reluctant to change. Digitalisation may create stress, especially in older adults' cases when they must learn about new technologies and digitalise their interaction with public entities. Plus, digitalisation limits the direct social interactions needed to live a fulfilled life. For some individuals who work remotely or in solitude and have no family, or for elderly individuals, the e-government may cause an even lower level of direct social interaction and a decreased quality of life.

Referring to the mobile broadband connection with happiness, the obtained causality may be easily explained. High-speed internet access via mobile networks has made our lives easier in various ways, but, at the same time, one cannot neglect the adverse effects. Individuals spend much more time in solitude or the virtual world, and kids and young adults are often trapped by their phones, tablets or computers, losing the connection with the real world; minute after minute, we change the way we see life, social interaction, work environment, friendship, even love. Life seems to be easier but is not happier.

These conclusions and previous research highlight the need for a policy twist from „unlimited digitalisation” to „shaped digitalisation to serve the people better”, considering both digitalisation's advantages and disadvantages and setting clear lines and limits. Humanity cannot return to the pre-digital era but may design digitalisation public policies to serve its supreme goal: happiness.

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The Potential of Introducing Heat Pumps (HP) and Thermal Energy Storage for the Crucea Commune, Constanta, Romania Systems in Order to Enable the Decarbonization in Romania

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Abstract

This case study aims to analyse the market potential of heat pumps and thermal energy storage in Romania at the level of a small commune, Crucea from Constanța. It was carried out on the basis of interviews with the main decision-makers of the commune. During the study, documents regarding the thermal energy and electricity consumption of the main public buildings in Crucea have been analysed and field visits have also taken place. Documents such as the existing energy certificates of the buildings and their RLVs were also studied. It presents the structure of the thermal energy consumption of public buildings and analyses the data on the consumption and costs of thermal energy in order to reduce electricity consumption and the carbon footprint. The study proposes technical solutions based on integrated systems with heat pumps and thermal energy storage, customized for each public building analysed.

Key words: heat pumps, thermal energy, decarbonization, cost and electricity reduction, public buildings

J.E.L. classification: O33, Q42

1. Introduction

This paper will firstly present a short description of the Crucea Commune of Constanta, considering the number of population and annual temperatures. It will continue with a description of the heating-cooling and the hot water supply systems of the commune. It will analyse of the current energy consumption of buildings in the Crucea commune from the perspective of the new energy standards of the European Union. Afterwards, it will give solutions to solve specific problems regarding the installation of heat pumps (hp) in Romania and give proposals regarding the installation of new integrated technologies based on heat pumps in public buildings in Crucea commune.

Crucea is a commune in Constanța County (3,482 inhabitants), Dobrogea, Romania, consisting of the villages of Bălțăgești (513 inhabitants), Crișan (395 inhabitants), Crucea (residence with 1204 inhabitants), Gălbiori (336 inhabitants), Stupina (773 inhabitants) and Șiriu (261 inhabitants). (INS, 2021).

Regarding the climate conditions, the territory of Crucea Commune is characterized by a temperate-continental climate. The average annual temperature varies between 10.8 degrees °C, for the areas of the villages Bălțăgești and Gălbiori and 11.4 degrees°C for the area of the village

Crucea. The absolute maximum temperature was 41 degrees C and the absolute minimum was minus 24 degrees °C.

2. Theoretical background and research methodology

The present case study is developed based on the following data sources: (1) the case study regarding the potential of introducing heat pumps and thermal energy storage systems for the Crucea Commune, an integral activity of this project (activity A4, 2023), (2) the interviews conducted by the members of the project team with different interested parties (stakeholders) from the Crucea Commune, (3) the documents relating to the thermal energy and electricity consumption of the main public buildings in the Crucea Commune. Also, to carry out the study, on-site visits were carried out, in order to determine the specifics of each individual building and to be able to identify the best solutions for implementing systems based on heat pumps. The research is substantiated with the help of studies and documents presented in the bibliography.

Baseline analysis - the process of identifying, collecting and evaluating data about existing energy resources, energy suppliers and producers of the Crucea Commune, as well as about the structure of consumption. In the first part of the paper was considered the development of a framework structure regarding the diagnostic analysis from an energetic point of view, establishing and identifying the data categories, the required information and the main data providers. In the second part of the paper, due to the large temperature differences from one season to another in the area of Crucea Commune, the proposals regarding the installation of new integrated technologies that allow the reduction of greenhouse gas emissions are based on air-water or soil-water heat pumps, proposals presented further. To determine the value of the heat pump, the regression line is made using the least squares method.

3. Findings

Crucea Town Hall is responsible for ensuring the thermal energy supply of all public buildings under its authority. This supply will be provided in different forms, as follows: with the help of gas propane, electricity and wood. Each public building has its own specific amenities and means for consumption measurement. Electricity consumption for thermal heating is measured monthly by the thermal energy supplier, ENEL Energie SA. One of the gas suppliers required for heating thermal company is GASPECO L&d S.A., and here gas consumption is estimated quarterly when paying bills, there being no monthly gas consumption measurement system. For the purchase of wood for thermal heating, no information on consumption and related costs were received, but this is the smallest source of the total consumption.

3.1. The heating-cooling and the hot water supply system in Crucea commune

The heating-cooling and the hot water supply system in the Crucea Commune is decentralized, this being independent at the level of each representative building for the local public administration. The main public buildings in CRUCEA Commune and their heating sources are highlighted in the table no. 1.

Table no. 1: The main public buildings in CRUCEA Commune with the heating sources highlighted

TAU name (territorial administrative unit)_	Public building	Amenities	Heating/cooling source
CRUCEA VILLAGE	1.Town Hall 2.Elementary school and high school 3.Kindergarten 4.Community Centre 5.Gym 6.Tourist Centre/ Integrated Medical-social Community Centre	1.Insulated; with air conditioners 2.It will be renovated C10 (COMPONENT C10 – LOCAL FUND FROM THE NATIONAL REDRESSION AND RESILIENCE PLAN) and will benefit from energy rehabilitation and alternative sources; has air conditioners. 3.Insulated	1.Gas 2.Gas and Power (air conditioner) 3. Power 4. Power 5.The changing rooms have an electric supply (4 rooms), and the hall had a gas-based ventilation system, which is no longer functional.
BĂLTĂGEȘTI	1.Kindergarten 2.Community Centre		1. Power 2. Power
CRÎȘAN	1.Kindergarten	1.Insulated	1. Power
GĂLBIORI	1.Kindergarten 2.Community Centre		1.Gas 2. Wood
STUPINA	1.Kindergarten + School 2.Community Centre 3.Senior Centre	3. Insulated	1.Power 2.Wood 3.They went from wood to gas (evidence of consumption)
ȘIRIU	1.Community Centre		1.Wood

Source: Interview with the Mayor of Crucea Commune on 22.02.2023

A central heating system is used to heat the Town Hall of the Crucea Commune during the cold months powered by propane (table no. 2), while the space cooling during the peak summer period is ensured with electric air conditioners.

In 2015 three Max Optimus central heating systems of 31 kW that run on propane have been installed for heating the Town Hall.

At the Crucea community centre and at the Crucea kindergarten, 24 kW Romstal central heating systems are installed, respectively PROTHERM (see table no. 2).

Table no. 2: The heating systems of the main public buildings in Crucea Commune

Building	Type of heating	Brand	Heating system power
1 Crucea Town Hall (3 pc)	GPL propane	MAX OPTIMUS	31 KW
2. Crucea Community Centre	ELECTRIC	ROMSTAL	24 KW
3 Crucea kindergarten	ELECTRIC	PROTHERM	24 KW

Source: Processing of official data of the Crucea Town Hall

The air conditioners, numbering 11 (Town Hall), 2 (Community Centre), 2 (Kindergarten) and having an output of 2.78 kW (Town Hall), were installed in 2021 (Crucea Community Centre), in 2015 (Town Hall) and in 2017 (Crucea Kindergarten).

The other representative public buildings of the Crucea Commune benefit from different types of wall-mounted central heating systems with an output between 24 and 35kW that use different types of power: electricity, propane, coke or wood (see table no. 3).

Table no. 3 Types of central heating systems in public buildings from Crucea Commune

Building	Type of power (fuel)	Brand	The heating system output	Age (year of installation)
Gălbiori Community Centre	COKE (solid)	DEM RAD SOLITECH PLUS	23 KW	2015
Șiriu Community Centre	COKE (solid)	FERROLI DP. 35	35 KW	
Crucea Community Centre	ELECTRIC	ROMSTAL	24 KW	
Stupina Community Centre	COKE (solid)	VIADRUS	24 KW	
Bălțăgești Community Centre	ELECTRIC	ROMSTAL	24 KW	
Crucea kindergarten	ELECTRIC	PROTHERMRY	24 KW	
Bălțăgești kindergarten	ELECTRIC	PROTHERMRY	28 KW	2018
Crișan kindergarten	ELECTRIC BOILER	FERROLI	6 KW	2020
Stupina Senior Centre (3 pc)	PROPANE GAS	CT. MOTAN MKDENS	35 KW	
Tourist Centre	WOOD (solid)	VIADRUS	25 KW	
Town Hall (3 pc)	PROPANE GAS	MAX OPTIMUS	31 KW	

Source: Processing of official data of the Crucea Town Hall

3.2. Analysis of the current energy consumption of buildings in the Crucea commune from the perspective of the new energy standards of the European Union

The annual energy consumption of the Crucea Town Hall building is highlighted in table no. 4. It is delimited in energy consumption for heating and domestic hot water (propane-based) and for air conditioning and lighting (including that for the operation of the propane-based central heating system).

Table no. 4 Annual energy consumption of the main public buildings in Crucea Commune

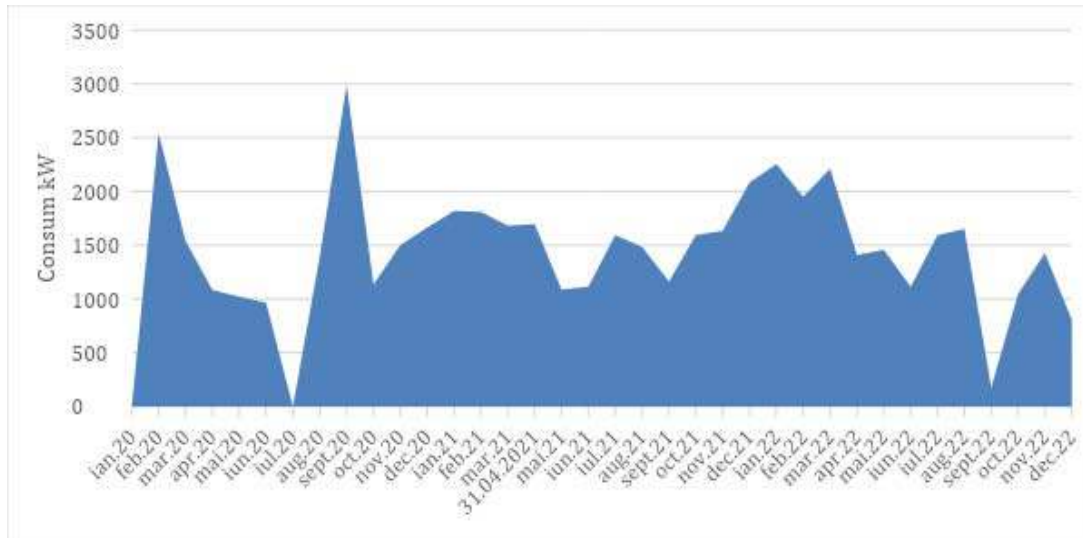
Type of energy carrier	Representative buildings	Year of consumption	Energy used [MWh/an]	Measuring report-surface [m ²]	Reference energy indicator [kWh/(m ² and year)]	Expenditure/ year expressed in Ron	Remarks
Thermal energy for heating and domestic hot water (Propane gas)	1 Crucea Town Hall	2020	4200 Liters (L)	294	14,28 L/m ² (98,532 kWh/m ² *year)	17.295,5	GPL propane (1L= 6,9kWh)
		2021	9000 L	294	30,611/m ² (211,2159 kWh/m ² *an)	39.674,6	GPL propane
		2022	6000 L	294	20,41 L/m ² (138 kWh/m ² *an)	29.797,6	GPL propane
Electricity for lighting and air conditioning and for the functioning of the gas-based heating system	1 Crucea Town Hall	2020	15.833	294	53,85		consumption on 10 months
		2021	11.914,54	294	50,52		consumption on 12 months
		2022	17.097	294	58,15		consumption on 12 months

Source: Processing of official data of the Crucea Town Hall

The building of Crucea Town Hall has recorded in the last three years an almost constant consumption for lighting and the use of air conditioners of 58kWh/m²*year (see table no. 4).

Regarding energy consumption for heating and domestic hot water, it fluctuated significantly from a minimum of 98.532 kWh/m²*year in 2020 to a maximum of 211.2159 kWh/m²*year in 2021 and at an intermediate value of 211.2159 kWh/m²*year in 2022.

Chart no. 1 Histogram for the monthly energy consumption of the Crucea Town Hall (2020-2022)



Source: Processing of official data of the Crucea Town Hall

Given the fact that the Town Hall of the Crucea Commune has been thermally insulated from the outside, the recorded thermal energy consumption is high, being far from the new European consumption standards for buildings. The fluctuating values of thermal energy consumption at the Crucea Town Hall headquarters can be explained by the limitations of the COVID19 pandemic, unheated/uninhabited space, different temperatures in the same month, but in different years or poor use of doors and windows.

Thus, the measures that will be taken to reduce the energy consumption and reduce the carbon footprint of this building will have to consider both the replacement of the thermal agent and the possibilities of improving the insulation of the building and even the efficient management of the thermal agent through the appropriate use of doors and windows during the cold months, but also of proper ventilation during the hot summer months.

3.3. Solutions to solve specific problems regarding the installation of heat pumps (HP) in Romania

The main solutions identified to facilitate the implementation of integrated systems with heat pumps in Romania are presented below.

1. Education and awareness: The government and non-governmental organizations should implement information campaigns to educate the population about the benefits and advantages of using heat pumps. These campaigns should emphasize energy savings, carbon emission reduction and positive effects on the environment.

2. Financial incentives: The government could provide various forms of financial incentives for the installation of heat pumps, such as subsidies or tax reductions. This would reduce the initial costs for owners and they would consider this option more attractive.

3. Favorable regulations and policies: Adopting clear and environment-friendly policies and regulations to promote heat pumps would facilitate the transition to this technology. For example, the government could implement energy efficiency requirements for buildings or introduce restrictions on the use of fossil fuels.

4. Specialist training programme: Investing in specialist training and certification in the field of heat pump installation and maintenance would ensure correct and quality installations, increasing owners' confidence in this technology.

5. Infrastructure development: Local authorities could invest in developing the necessary infrastructure to support the installation of heat pumps, such as electricity or geothermal energy networks in suitable regions.

6. Public-private partnerships: Collaboration between the public and private sectors could facilitate access to finance and expertise, helping to promote heat pumps and their wider implementation.

7. Developing more affordable and innovative technologies: Governments and industry should continue to invest in research and development to bring more affordable and innovative heat pump solutions to the market.

By adopting a complete set of solutions and coordinated measures, Romania can overcome the specific problems regarding the installation of heat pumps, benefiting from all the advantages of these ecological and energy efficient technologies. (Activity A6, 2023)

3.4. Proposals regarding the installation of new integrated technologies based on heat pumps in public buildings in Crucea Commune, Constanța County

From an administrative point of view, Crucea Town Hall is responsible for ensuring the supply of thermal energy to all public buildings in the commune. Therefore, this has been analyzed from the perspective of energy consumption, degree of insulation and energy management.

From the collected data a diversified profile of these buildings can be observed from the perspective of an energy management. The energy supply to buildings for heating and cooling is carried out on a regular basis decentralized. Thus, although each public building has its own heating and cooling facilities and its own means of measuring energy consumption, heating sources are different. Gas supply for heating is provided by GASPECO L&d S.A., but gas consumption is invoiced mainly by quarterly estimation, as there is no monthly gas consumption measurement system. For example, the Town Hall headquarters in Crucea Commune is heated with the help of a heating system that works with propane (Activity A4, 2023)

Three of the main community centres in Crucea Commune are heated with the help of thermal energy systems between 23 and 35kW, powered by coke (solid), namely the Gălbiori community centre (23kW), the Șiriu community centre (35kW) and the Stupina community centre (24kW).

There are also wood-heated buildings (e.g. Tourist Centre), but in this case the supply is not rhythmic and highlighting the real associated costs is more difficult.

A more accurate record of energy consumption is recorded in the consumption of electricity for thermal heating which is monitored by ENEL Energie SA, but accumulated with other electricity consumption. For example, 24kW thermal energy systems are installed at the Crucea Community Centre and the Crucea Kindergarten.

The same situation also occurs with the cooling of the spaces during the peak summer period, which is provided with electric air conditioners, therefore recording electricity consumption. The air conditioners, numbering 11 (Town Hall), 2 (Community Centre), 2 (Kindergarten), have a power of 2.78 kW (Town Hall) and have been installed in 2021 (Crucea Community Centre), in 2015 (Town Hall) and in 2017 (Crucea Kindergarten).

The project team analyzed every important public building in Crucea Commune and made a series of proposals for integrated systems based on heat pumps which are centralized in Table no. 6.

These proposals were formulated for each public building that proved to have a technical-economic potential for the implementation of a technical solution based on heat pumps.

To determine the value of the heat pump, the regression line was made using the least squares method.

Table no. 5: Determining the average power of the heat pump using linear regression

Surface (m2)	Power (Kw)	Power average (Kw)
200	3-5	4
400	6-12	9
600	10-18	14
800	15-25	20
1000	20-30	25
1400	25-40	32,5
1800	30-50	40
2200	40-60	50
2500	50-80	65
3000	70-100	85
3500	80-120	100

4000	100-150	125
4500	120-180	150
5000	150-200	175

Source: Activity 6, 2023

Based on the information provided in table no.5 we have used SPSS 20 for the regression line and we got the following results:

Coefficients ^a							
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95,0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
1 (Constant)	-11,801	4,188		-2,818	,016	-20,927	-2,675
Suprafata	,034	,002	,988	21,991	,000	,031	,038

a. Dependent Variable: Puterea

Where: -11.801 is the intercept or constant b.

The unstandardized regression coefficient is 0.034 which means that for every one unit increase in the Surface variable, the Power variable increases by 0.034. It is the slope of the right.

The standardized regression coefficient is 0.988, it is close to the regression coefficient.

Based on data related to energy consumption for both heating and cooling, data analyzed for the years 2020, 2021 and 2022 for all public buildings in Crucea Commune (Activity A4, 2023) and as a result of considering the particularities specific to each building, of its surface, the degree of insulation, the climatic conditions, the proposed powers for the heat pumps have emerged from Table no. 6.

Table no. 6 Proposals regarding the type and power (P) of heat pumps (HP) that can be installed in the public buildings of Crucea Commune

Building	HP type	P average of HP (kW)	Surface Objective (m ²)	No. photovoltaic panels
Gălbiori Community Centre	Air-water or Soil-water, with provision of domestic hot water	15	178	23
Gălbiori School	Air-water or Soil-water, with provision of domestic hot water	7	79	11
Șiriu Community Centre	Air-water or Soil-water, with provision of domestic hot water	20	237	30
Șiriu School	Air-water or Soil-water, with provision of domestic hot water	32	376	48
Cămin Cultural Crucea	Air-water or Soil-water, with provision of domestic hot water	15,5	180	23
Stupina Community Centre	Air-water or Soil-water, with provision of domestic hot water	15,5	180	23
Stupina School	Air-water or Soil-water, with provision of domestic hot water	16	181	24
Băltăgești Community Centre	Air-water or Soil-water, with provision of domestic hot water	15,5	180	23
Crucea	Air-water or Soil-water, with provision	25,5	300	38

Community Centre	of domestic hot water			
Băltăgești Kindergarten	Air-water or Soil-water, with provision of domestic hot water	25,5	300	38
Crișan Kindergarten	Air-water or Soil-water, with provision of domestic hot water	25,5	300	38
Crișan School	Air-water or Soil-water, with provision of domestic hot water	13,5	158	20
Stupina Senior Centre	Air-water or Soil-water, with provision of domestic hot water	25,5	300	38
Tourist Centre	Air-water or Soil-water, with provision of domestic hot water	8,5	98	13
Town Hall	Air-water, Soil-water or Hybrids, with provision of domestic hot water as well	25,5	300	38
School and high school	Air-water, Soil-water or Hybrids, with provision of domestic hot water as well	51	600	76
Boarding school	Air-water, Soil-water or Hybrids, with provision of domestic hot water as well	26	351	39
Health Centre	Air-water, Soil-water or Hybrids, with provision of domestic hot water as well	8,5	98	13
Gym	Air-water, Soil-water or Hybrids, with provision of domestic hot water as well	25,5	300	38

Source: Activity A6, 2023

It can be seen that the proposed heat pumps are of low power and vary from the lowest power of 7 kW recommended for the School of Gălbiori village, which has a developed surface of only 79m², with an output ranging from 25.5kW (most buildings analyzed) to 51kW in the event that a heating system will provide thermal energy for both the school and the high school in Crișan village.

If, in the case of determining the power of the heat pump, in addition to the surface of the public building, the climatic factors specific to Crucea Commune with the associated temperatures and the insulation level of the building were considered in terms of sizing the number of photovoltaic panels, the calculation considers both the conditions of climate, as well as the efficiency of the panels. In the last column of Table no. 6, the number of photovoltaic cells needed to be installed on each of the public buildings for which implementation solutions of an integrated system with heat pumps were proposed, was estimated by calculation. The photovoltaic panels considered are those with standard dimensions. The standard size of a monocrystalline or polycrystalline photovoltaic panel is 1-meter wide x 1.6 meters long. The panels considered are monocrystalline (monocrystalline silicon) and produce an average of 235W. They are known for their high efficiency and good performance in low light conditions. The advantages are: high yield, good efficiency in limited spaces, durability. The number of panels is the average number required to fully cover the electricity consumed by the heat pump.

We specify the fact that the calculation model used did not consider the daily and seasonal fluctuations of solar radiation in the area, which instead will be highlighted in the Detailed Technical Project, which will be made for each public building in the Crucea Commune where the implementation of an integrated system based on heat pumps.

4. Conclusions

Following the analysis of the consumption and the geographical position of the Crucea Commune, one of the options to improve the efficiency of the energy system correlated with the reduction of CO₂ emissions consists in the use of heat pumps together with photovoltaic panels and/or wind energy. At the same time, Crucea Commune should hire or appoint a person in charge of energy consumption and increase its capacity to collect data on monthly consumption and at the level of each public building. These recommendations also come after the field visit report, where water sources were identified in the event of the installation of water-air pumps, the identification of roofs that could be used for the installation of photovoltaic panels, as well as the fields in the vicinity of the commune, where there are already working wind turbines.

The study presents the results of the analysis regarding the possibilities of reducing heating and cooling costs and greenhouse gas emissions from public buildings in Crucea Commune, Constanța County. The proposals of the expert team are based on the implementation of integrated systems of heat pumps of different sizes (depending on the specificity of each public building) associated with photovoltaic panels and intelligent control systems corresponding to the proposed dimensioning.

For the implementation of the solutions associated with these proposals based on integrated systems with heat pumps, it is necessary to develop Detailed Technical Projects for each separate building, for which the implementation of an integrated system based on heat pumps is desired.

5. Acknowledgement

This study was conducted within the framework of the project "The potential for starting and developing a business for integrated technology based on heat pumps, thermal energy storage, and smart control systems in order to enable the decarbonization in Romania", financed by EEA and Norway grants 2014-2021, Fund for Bilateral Relations, and implemented by the Bucharest University of Economic Studies, Romania, contract no. 132477/2022.

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The Potential of Introducing Heat Pumps (HP) and Thermal Eenergy Storage for the Tulcea Municipality, Romania Systems in Order to Enable the Decarbonization in Romania

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Abstract

This case study aims to analyze the market potential of heat pumps and thermal energy storage in Romania. It was done at the level of a medium-sized city, the Tulcea Municipality. It was carried out on the basis of interviews with the main stakeholders of the city, such as the deputy mayor, the employees of the urban planning department, the director and the employees of Energoterm, the heating company. Documents were analyzed regarding the thermal energy and electricity consumption of the main public buildings, their existing energy certificates and their RLVs were also studied together with field visits. The study presents the structure of thermal energy consumption of public buildings in the municipality, analyze the possibilities of reducing heating and cooling costs and greenhouse gas emissions of public buildings and proposes some technical solutions based on integrated systems with customized heat pumps for each analyzed public building.

Key words: heat pumps, thermal energy, decarbonization, cost and electricity reduction, public buildings

J.E.L. classification: O33, Q42

1. Introduction

This case study was done at the level of a medium-sized city, the Tulcea Municipality in Tulcea County, where there is interest in the implementation of such technologies. This study was carried out on the basis of interviews with the main decision-makers of the municipality. Besides the interviews with the main stakeholders, the analyze of the most relevant documents regarding the thermal energy and electricity consumption of the main public buildings, there were also on-site visits taken, which followed the photography of these buildings in order to verify the existence of their insulation and to identify the spaces where the thermal and electric heating systems of the buildings are installed. Moreover, documents such as the existing energy certificates of the buildings and their RLVs were also studied. The study presents the structure of thermal energy consumption of public buildings in the municipality and analyzes data on thermal energy consumption and the costs from the perspective of the new energy standards of the European Union in order to reduce carbon footprint and energy consumption.

The study presents Romania's specific overall problems regarding the installation of heat pumps and comes with proposals regarding the installation of new integrated technologies based on heat pumps in the public buildings from Tulcea Municipality.

Tulcea is the city of residence of Tulcea County. The resident population in Tulcea Municipality on December 1, 2021 is 65,624 people according to the first definitive results of the Population and Housing Census published by the Tulcea County Statistics Directorate (INS Tulcea, 2023a).

The centralized heat supply system in Tulcea Municipality serves approximately 6686 users (88-90% natural persons, 10-12% legal and public persons; and of the surfaces 78% for natural persons, 22% legal and public persons; according to the interview in May 2023 with the director of S.C. ENERGOTERM S.A). In 2012 it served about 42,000 people (approx. 63% of the total population of Tulcea Municipality, Tulcea City Hall, 2013).

At the end of 2021, there were 33,721 existing homes in Tulcea Municipality, with a living area of 1,322,144 m², meaning with an average area per home of 39.2 m². It should be noted that in 2021, 59 homes were completed (INS Tulcea, 2023b).

The climate in Tulcea Municipality is temperate-continental, with arctic air from the north during the winter. The temperature registers in Tulcea some of the highest extremes in Romania. Thus, the maximum temperature recorded was 40.3 °C, and the minimum was -26.8 °C in 1942. Regarding the average annual temperature in Tulcea, it is one of the highest in the country, having a value of 10.8 °C. On the other hand, average annual precipitation is low, recording only 350–500 mm/year.

2. Theoretical background and research methodology

The present case study is developed based on the following data sources: (1) the case study regarding the potential of introducing heat pumps and thermal energy storage systems for the Tulcea Municipality, an integral activity of this project (activity A4, 2023), (2) the interviews conducted by the members of the project team with different interested parties (stakeholders) from the Tulcea Municipality, (3) the documents relating to the thermal energy and electricity consumption of the main public buildings in the Tulcea. Also, to carry out the study on-site visits were carried out, in order to determine the specifics of each individual building and to be able to identify the best solutions for implementing systems based on heat pumps. The research is substantiated with the help of studies and documents presented in the bibliography.

3. Findings

3.1. The heating-cooling and hot water supply system in Tulcea Municipality, Tulcea County, Romania

The analysis of the existing situation in Tulcea Municipality in terms of energy was based on a process that identified, collected and evaluated data on the existing energy resources, energy suppliers and producers of Tulcea Municipality, as well as on the structure of energy consumption. At this stage, the development of a framework structure regarding the diagnostic analysis from the energy point of view, the establishment and identification of data categories, the necessary information and the main data providers was considered.

Currently, the structure of thermal energy consumers in Tulcea Municipality consists of:

- a) the population, which lives in residential buildings (condominium) or individual homes;
- b) socio-cultural institutions, economic agents and units assimilated to them.

They are being supplied from the city's centralized heating system served by S.C. Energoterm S.A., which is the local operator of the centralized thermal energy system.

The population that lives in condominium type dwellings (blocks) or in individual dwellings (houses) is added to the consumers connected to the centralized heating system, and who, following the disconnection from the centralized heating system of the city, opted for alternative sources of heating (individual central heating units powered by natural gas or electricity).

The centralized heating system of Tulcea Municipality was put into operation in 1982, consisting of: two C.A.F. hot water boilers, each with a capacity of 100Gcal/h and 39 thermal points.

The thermal points went through successive transformations, especially of a heritage nature, thus, 23 thermal points were taken over by R.A.C.E.T., and 14 thermal points were transformed into district heating systems in 1995, being taken over by the MONTENAY company (later becoming S.C. Dalkia S.A. and S.C. Veolia S.R.L. Romania). The latter ended up in the administration of the S.C. Energoterm S.A. company, in 2015, being taken over together with the

distribution networks for the respective districts. Thus, since 2015, a C.A.F. hot water boiler no. 1 of 50 Gcal/h (fueled with natural gas) has been operating within the Energoterm SA centralized heating system, as well as transport networks, intermediate pressure raising station, 10 thermal points, 75 thermal modules and distribution networks, 20 district heating systems, of which 19 operate with natural gas and a heating system works with CLU, 4 apartment buildings thermal energy systems that serve the ANL buildings on Izvorului Street., one heating system that serves the multifunctional Hall and a heating system that serves the Swimming Pool (Tulcea Strategy, 2021).

The primary heating network transports hot water over a length of 11.6 km, through steel pipes with diameters between 150mm-800mm, mounted partly above ground and partly underground, in concrete channels. The distribution network related to thermal points has a route length of 27.6 km and consists of classically insulated pipes, laid underground in protective channels.

3.2. Analysis of the current energy consumption of buildings in Tulcea Municipality from the perspective of the new energy standards of the European Union

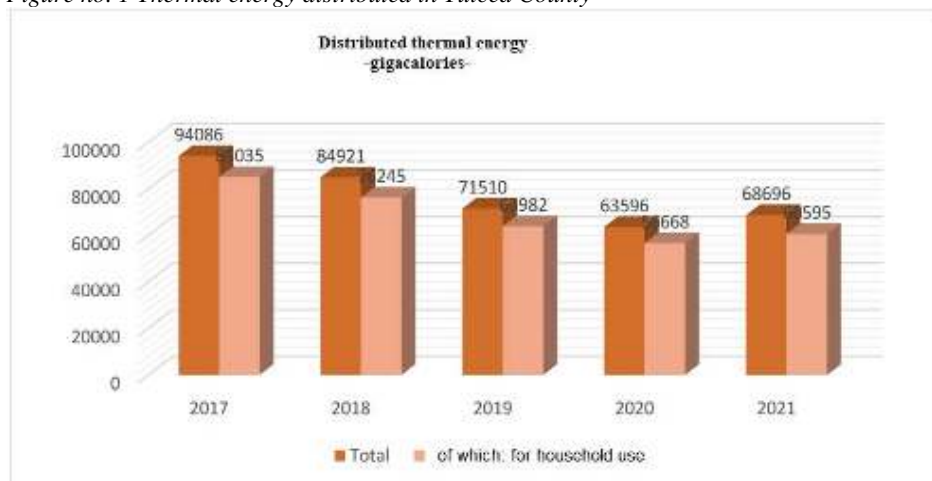
The Tulcea Municipality is one of the two cities of Tulcea County where a centralized heating system was planned. The values of the thermal energy distributed in the last years (until 2021) are recorded in Table 1. Regarding domestic consumers, a significant decrease in the consumption recorded in 2020 (56.668 Gcalories) is observed compared to previous years (see Table 1, Figure 2). This was due to the continuous increase in the rate of disconnections from the centralized system.

Table no. 1 Thermal energy distributed in Tulcea County

Indicators	Years				
	2017	2018	2019	2020	2021
➤ localities where thermal energy is distributed - no.	2	2	2	2	2
of which					
• municipalities and cities	1	1	1	1	1
➤ Distributed thermal energy -gigacalories	94086	84921	71510	63596	68696
of which					
➤ For household use - tousends m ³	85035	76245	63982	56668	60595

Source: Tulcea INS, 2022

Figure no. 1 Thermal energy distributed in Tulcea County



Source: Tulcea INS, 2022

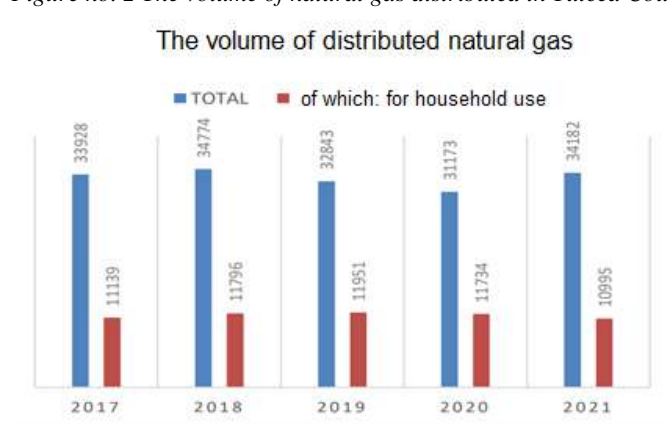
Regarding the evolution of natural gas consumption in recent years (until 2021) is presented in Table 2 and Figure 2.

Table no. 2 Natural gas consumption in Tulcea County

Indicators	Years				
	2017	2018	2019	2020	2021
➤ Localities where natural gas is distributed (at the end of the year) - no.	4	4	4	4	4
of which					
• municipalities and cities	3	3	3	3	3
➤ simple length of distribution pipes (at the end of the year) - no.	170,7	176,3	165,5	172,6	174,4
➤ Distributed natural gas - thousands m ³	33928	34774	32843	31173	334182
of which					
• For household use - thousands m ³	11139	11796	11951	11734	10995

Source: Tulcea INS, 2022

Figure no. 2 The volume of natural gas distributed in Tulcea County



Source: Tulcea INS, 2022

It is noted that with regard to domestic consumers the consumption of natural gas did not show significant fluctuations.

The project team's analysis focused on energy consumption in 24 buildings of public institutions in Tulcea Municipality (see Table 3).

From the collected data, a very diversified profile of public buildings can be observed from the perspective of energy supply. Thus, depending on the building, the energy used for heating is provided with: electricity, natural gas, thermal energy or liquid fuel (diesel).

The energy consumption of the 24 analyzed buildings is presented in Table 3.

Table no. 3 Centralizer of electricity, natural gas, thermal energy, liquid fuel gasoline consumption for the years 2020, 2021, 2022 and their total costs

Nr Crt	Objective	Electricity (KW)			Natural gas (mc)			Thermal energy (Gcal)			Liquid fuel gasoline (l)		
		2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
1.	SC Agropiete SA	354.506	403.833	313.759									
2.	Kindergarten with Extended Hours no. 19	12.659	20.824	17.904							10990	15600	12450
3.	Kindergarten with Extended Hours no. 3	24.100	30.847	34.611	12.995	16.796	17.222						
4.	Kindergarten with Extended Hours no. 17	9.250	21.564	12.432				105,7	124,4	70,57			
5.	Kindergarten with Extended Hours no. 18	7.415	8.691	10.385				186,7	150,5	128,1			
6.	G. Georgescu Arts High School	44.648	49.550	32.249	13.915	24.170	188.27 7	125,8	145,9	204,1			
7.	G. Moisil Theoretical High School	65.892	88.199	96.307	81.848	128.82 5	126.68 3						
8.	Ion Creanga Theoretical High School	42.897	60.360	88.785									
9.	Elementary School No.12	15.005	22.913	10.859									
10.	Alexandru Ciucurencu Elementary School	24.770	46.437	33.796	234.19 6	417.75 1	370.10 4						
11.	Sf. Ioan Casian Orthodox Theological Seminary	40.610	39.073	38.198	19.994	27.223	25.274						
12.	Anghel Saligny Theoretical High School	83.312, 7	52.641,5	78.288,2	90.767, 54	120.99 3,0	122.42 0						
13.	Danube Delta Economical College	93.766	106.714	150.371	1.237	1.323	1.560						
14.	Spiru Haret Dobrogean College	50.886, 49	47.769,77	58.866,27	44.722, 17	30.903, 72	45.611, 71						
15.	Brad Segal Technological College	95.855	97.671	88.237	800.23 0,2	801.74 1,8	726.17 3,1						
16.	Henri Coandă Technological High School	71.646	87.416	102.211	664.31 2,1	899.64 6,8	790.23 3,3						
17.	C. Gavenea Elementary School	30.836	32.184	90.648				299	203	176			
18.	Elena Doamna Elementary School	13.128	20.442	6.687,6	20.147	23.244	28.549						
19.	Nifon Balasescu Elementary School	40.901	42.017	52.965	28.354	34.333	253.76 6,2						
20.	Ion Mincu Technological High School		14.335	9.384		248.10 3	245.92 0,8						
	Grigore Antipa Elementary School		27.539	24.613		188.84 7,7	160.18 0						
21.	I. L. Caragiale Elementary School		20.428										
22.	Danubius Professional School	18.837	34.057	21.515							9.456	8.487	10.850
23.	Agricol N.Corlateanu Technological High School	89.948	112.074	117.172	960.39 0	1.114.0 44	990.74 4						

24.	SC Energoterm SA	4.129.099	4.214.916	3.252.447	11.688.718	11.803.122	8.632.344						
Total Quantity		5.359.967,21	5.702.496,08	4.762.690,14	14.661.827,40	15.881.067,30	12.725.063,60	717,48	623,70	578,75	20.446	24.087	23.300
Total Value (thousands Ron)		2.943	3.508,4	5.007	16.843	23.726	33.481	417	362,	582,1			

Source: Tulcea City Hall Data, 2023

The continuation of the phenomenon of disconnections will further increase the price of heat because, according to the calculation of costs, production decreases while the fixed component in the structure of total costs remains the same, thus the price increases.

The reduction of this phenomenon and possibly the return of disconnected consumers to the centralized system, will not be possible without offering a feasible alternative solution to the consumers of Tulcea Municipality, and this solution will only be able to increase the efficiency of the centralized heating system, and implicitly lowering the set price of Gcalories.

Based on the energy consumption data analyzed for the years 2020, 2021 and 2022 at the main public buildings in Municipality Tulcea and the specific features of each building, its surface area, degree of insulation, climatic conditions in Tulcea Municipality in Study A6 Tulcea, measures are proposed to implement integrated systems based on heat pumps. They will allow the significant reduction of greenhouse gas emissions, according to the new EU targets and the strategy implemented through the European Green Deal.

The case study aims to analyze the possibilities of reducing heating and cooling costs and greenhouse gas emissions in Romania by implementing integrated technologies based on heat pumps and thermal energy storage systems in Tulcea Municipality.

3.3. Romania's specific overall problems regarding the installation of heat pumps

Romania has a series of specific overall problems regarding the installation of heat pumps, which we list below:

1. *High initial costs*: One of the main problems faced by building owners is the initial cost of purchasing and installing heat pumps. Although they are considered a long-term investment, the initial investment can be quite high for many homeowners.

2. *Lack of information and awareness*: A large part of the population does not have enough knowledge about heat pump technology and its advantages. Many people are still educated in the idea that traditional fossil fuel heating systems are the most affordable and efficient solution.

3. *Incompatibility with existing systems*: Installing heat pumps in older buildings can be difficult due to incompatibility with existing heating systems. This may require additional infrastructure investment to facilitate heat pump implementation.

4. *The need for clear rules and financial incentives*: To encourage the switch to greener and energy efficient technologies, the government and local authorities should provide financial incentives and create clear support policies for the installation of heat pumps.

5. *Deficiencies in the training and certification of specialists*: To ensure a correct and efficient installation of heat pumps, it is necessary for the technicians to be well trained and certified. Sometimes the lack of qualified specialists can be a problem.

6. *Infrastructure issues*: In certain regions, access to electricity or geothermal power grids may be limited, making it difficult to implement heat pumps in these areas.

7. *Heating with wood as a cheaper alternative*: Many Romanians still prefer heating with wood, as it can be considered a cheaper option compared to heat pumps or other ecological systems. This can be a barrier to the adoption of heat pumps.

Overall, in order to surpass these problems and promote the use of heat pumps, an integrated approach is needed, involving educational efforts, financial incentives, professional training and supporting government policies oriented towards greener and energy efficient technologies. (Activity 6, 2023)

3.4. Proposals regarding the installation of new integrated technologies based on heat pumps in the public buildings from Tulcea Municipality, Tulcea city

From an administrative point of view, Tulcea City Hall is responsible for ensuring the supply of thermal energy to all public buildings, (the central heating system being served by the operator S.C. Energoterm S.A.) which have been analyzed from the perspective of energy consumption, the degree of insulation and energy management.

From the collected data, a very diversified profile of public buildings can be observed from the perspective of energy supply. Thus, depending on the building, the energy used for heating is provided with: electricity, natural gas, thermal energy or liquid fuel (gasoline).

The project team analyzed every important public building in Tulcea Municipality and made a series of proposals for integrated systems based on heat pumps which are centralized in Table 5.

These proposals were formulated for each public building that proved to have a high technical-economic potential for the implementation of a technical solution based on heat pumps.

To determine the value of the heat pump, the regression line was made using the least squares method.

Table no. 4 Determining the average power of the heat pump using linear regression

Surface (m2)	Power (Kw)	Power average (Kw)
200	3-5	4
400	6-12	9
600	10-18	14
800	15-25	20
1000	20-30	25
1400	25-40	32,5
1800	30-50	40
2200	40-60	50
2500	50-80	65
3000	70-100	85
3500	80-120	100
4000	100-150	125
4500	120-180	150
5000	150-200	175

Source: Activity 6, 2023

Based on the information provided in table no.4 we have used SPSS 20 for the regression line and we got the following results:

Coefficients ^a							
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95,0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	-11,801	4,188	-2,818	,016	-20,927	-2,675
	Suprafata	,034	,002	,988	,000	,031	,038

a. Dependent Variable: Puterea

Where: -11.801 is the intercept or constant b.

The unstandardized regression coefficient is 0.034 which means that for every one unit increase in the Surface variable, the Power variable increases by 0.034. It is the slope of the right.

The standardized regression coefficient is 0.988, it is close to the regression coefficient.

Table no. 5 Proposals regarding the type and power (P) of heat pumps (HP) that can be installed in public buildings in Tulcea Municipality

Building	HP Type	P average HP (KW)	Surface Objective m ²	No. photovoltaic panels
SC Agropiete SA	Air-water with provision of domestic hot water	12	150	18
Kindergarten with Extended Hours no. 19	Air-water with provision of domestic hot water	68	800	100
Kindergarten with Extended Hours no. 3	Air-water with provision of domestic hot water	87	1.028	128
Kindergarten with Extended Hours no. 17	Air-water with provision of domestic hot water	66	740	98
Kindergarten with Extended Hours no. 18	Air-water with provision of domestic hot water	60	710	89
G. Georgescu Arts High School	Air-water with provision of domestic hot water	170	2000	251
G. Moisil Theoretical High School	Air-water with provision of domestic hot water	420	2.759	622
Ion Creangă Theoretical High School	Air-water with provision of domestic hot water	200	2500	296
Spiru Haret Dobrogean College	Air-water with provision of domestic hot water	200	2500	296
Henri Coandă Technological High School	Air-water with provision of domestic hot water	350	4.125	518
Constantin Gavenea Elementary School	Air-water with provision of domestic hot water	365	4.270	540
I.L.Caragiale Elementary School	Air-water with provision of domestic hot water	168	1978	249
Danubius Professional School	Air-water with provision of domestic hot water	200	2363	296

Source: Activity A6, 2023

Based on the analyzed energy consumption data for both heating and cooling for the years 2020, 2021 and 2022 at the main public buildings in Tulcea Municipality (Activity A4, 2023) and the specific features of each building, its surface area, degree of insulation, climatic conditions, the powers proposed for the heat pumps from Table 6 emerged. It can be seen that they are of low power and vary from the lowest power of 12 kW recommended for SC Agropiete SA, which has an area of 150 m², at powers up to 420kW, recommended for G. Moisil Theoretical High School/Elementary School No. 12.

If, in the case of determining the power of the heat pump, in addition to the surface of the public building, the climatic factors specific to Tulcea Municipality with the associated temperatures and the level of insulation of the buildings were considered, in terms of sizing the number of photovoltaic panels, the calculation considers both the conditions of climate, as well as the efficiency of the panels. In the last column of Table 5, the number of photovoltaic panels needed to be installed at each of the public buildings, for which solutions were proposed to implement an integrated system with heat pumps, were estimated by calculation. The photovoltaic panels

considered are those with standard dimensions. The standard size of a monocrystalline or polycrystalline photovoltaic panel is 1-meter wide x 1.6 meters long. The panels considered are monocrystalline (monocrystalline silicon) and produce an average of 235W. They are known for their high efficiency and good performance in low light conditions. The advantages are: high yield, good efficiency in limited spaces, durability. The number of panels is the average number required to fully cover the electricity consumed by the heat pump.

We specify the fact that the calculation model used did not consider the daily and seasonal fluctuations of solar radiation in the area, which instead will be highlighted in the Detailed Technical Project that will be made for each public building in Tulcea Municipality, where the implementation of an integrated system based on heat pumps is intended.

4. Conclusions

Following the analysis of the consumption and the geographical position of Tulcea Municipality, one of the options to improve the efficiency of the energy system correlated with the reduction of CO₂ emissions consists in the use of heat pumps together with photovoltaic panels and/or wind energy.

These recommendations came after the field visit report, where water sources were identified in the event of the installation of water-water type pumps, the identification of roofs that could be used for the installation of photovoltaic panels, as well as the fields in the vicinity of the municipality.

The proposals of the expert team are based on the implementation of integrated systems of heat pumps of different sizes (depending on the specificity of each public building) associated with photovoltaic panels and intelligent control systems corresponding to the proposed dimensioning.

For the implementation of the solutions associated with these proposals based on integrated systems with heat pumps, it is necessary to develop Detailed Technical Projects for each separate building, for which the implementation of an integrated system based on heat pumps is intended.

5. Acknowledgement

This study was conducted within the framework of the project "The potential for starting and developing a business for integrated technology based on heat pumps, thermal energy storage, and smart control systems in order to enable the decarbonization in Romania", financed by EEA and Norway grants 2014-2021, Fund for Bilateral Relations, and implemented by the Bucharest University of Economic Studies, Romania, contract no. 132477/2022.

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Effective Promotion and Communication in modern Censuses: A study about 2021 Romania's Census

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Abstract

This study underscores the vital importance of conducting a census to obtain accurate population data, crucial for informed decision-making in various domains. Censuses are pivotal national events, requiring effective promotion. Adapting to technological advancements and societal needs is imperative, with a shift from traditional paper questionnaires to digital tools for enhanced data quality and reduced costs.

The 2021 census in Romania, organized amid the COVID-19 pandemic, introduced unique challenges and transformed communication strategies. Evolving public attitudes, influenced by factors like census complexity, question sensitivity and time constraints, underscore the need for adaptable communication and promotion approaches.

This research sheds light on census promotion dynamics, social media engagement, and public perceptions, offering valuable insights for policymakers, researchers, and government agencies striving to enhance census efforts and build public trust in an increasingly digital age.

Key words: census, communication strategy, promotion methods, social media, interest in census

J.E.L. classification: A10

1. Introduction

To make the best decisions in domains such as economics, social development, administration, and scientific research, the collected data must reflect the size, nature and structure of the population. Therefore, a census becomes an important event for a nation, as it provides information about the population's status at a critical moment, thus requiring adequate promotion. Expectations following a census are high from all participants and the institutions involved in the organization face increasing challenges. At the European level, efforts are being made to standardize the methodology and legislation regarding the organization and conduct of censuses, ensuring data comparability between European countries. According to Colibabă D. Ș. (2007), the census is an indispensable tool, a safe and long-used method for counting the population and houses.

Technological advancement and society's needs are the main reasons why censuses will require adaptations. Abandoning the traditional paper questionnaire is inevitable, both for ecological reasons and to ensure higher data quality, given the massive volume of data. The preference will mainly be for the use of mobile applications or web tools (email or dedicated websites), reducing costs and the time needed for data collection.

For Romania, the 2021 census holds special importance among citizens because of the involvement of the National Institute of Statistics. It is a unique census, given its organization during the COVID-19 pandemic and the registration method - self-enumeration and direct interviews.

Compared to 2011, the approach to promotion has changed, and communication campaigns have evolved, driven by technological advancements. These were not the only changes; the population's attitude toward all these actions and statistical research has also changed. The reasons are diverse, such as the complexity of the actions, the type of questions (especially their sensitivity), and the lack of time. All these factors are taken into account in the development of the communication strategy and promotion.

2. Literature review

According to the UNECE, the presentation of official statistics is an essential element in the decision-making process. The use of tools like social media, international collaborations, online applications and media has facilitated communication and presentation. The impact of the message presented contributes to both the understanding of the data by users and the improvement of quality and transparency.

In recent years, social media has become an indispensable tool for authorities, as it is a useful solution for communicating with citizens. Thus, social media can be seen as an opportunity to strengthen the relationship between governments and the community, as suggested by Yavetz G. and Aharony N. (2020). In critical situations, social media can rapidly transmit information, becoming a bridge between authorities and citizens. Al-Omouh et al. (2023) states that that social media can contribute to shaping citizens' opinions about the government and can impact trust through contradictory discussions among users. Therefore, decisional transparency and collaboration are essential elements that contribute to enhancing the government's image. As example, in US, social media applications have become an accepted way of communication by government, with the aim of becoming more transparent and strengthening collaboration with citizens.

Understanding the characteristics of the population is more easily achieved through segmentation and the identification of target groups. The population's perception of the census is influenced by the level of education, standard of living, age, environment, and civic engagement. Each target group has defining characteristics that will influence the choice of communication methods and the adaptation of messages.

According to Ghetau V. (2022), a modern census has various advantages, such as cutting-edge technological and economic resources. It is necessary for society to conduct a proper census because the demographic data collected during it will support development programs and government policies.

3. Research methodology

Considering the importance that the population attaches to social media networks, I conducted a selection of the most used platforms and analyzed various elements of posts to examine the effect of the promotional campaign on the population. On the other hand, social networks are a place where people can express their opinions and share their experiences.

The communication campaign was carried out in stages, as follows:

- Education Phase (Attention) - September - November 2021
- Awareness Phase (Interest) - December 2021 - February 2022
- Motivation Phase (Desire) - March - April 2022
- Reminder Phase (Action) - May - June 2022
- Appreciation Phase - August 2022

I analyzed the posts of the National Institute of Statistics on the social network Facebook, regarding the 2021 Population and Housing Census, from August 1, 2021, to October 31, 2022. (<https://www.facebook.com/INSTATISTICA/>, accessed on 04/24/2023, at 8:41 AM) The analysis was conducted in April 2023. The total number of posts was 297, of which 72% (213) addressed the subject of the Population and Housing Census.

To gain a closer insight into the population's attitude towards the Population and Housing Census, I used the Google Trends platform, a tool provided by Google that offers information on the popularity of specific search terms or groups of search terms over a period of time and in various geographical locations. With its assistance, I can track trends, public interests, and make comparisons of search terms. (<https://support.google.com/trends/answer/4365533?hl=en>, accessed on 04/23/2023, at 5:44 PM)

The selected time interval was from September 1, 2021, to September 1, 2022, as it allows us to observe the impact of the promotion campaign carried out before the actual census and the public's interest following the census. The level of interest is measured on a scale from 0 to 100, and the obtained data is aggregated weekly. I analyzed the search term "Recensamant 2022".

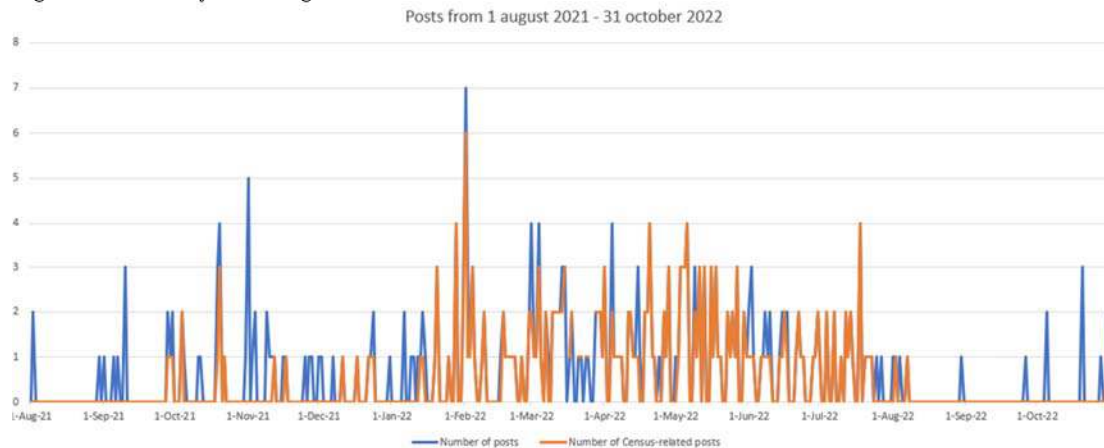
Using GeoDa, I created a map with unequal interval ranges, comprising 6 groups, providing a clearer picture of the spatial distribution of the variable "interest." This approach ensures that there are no intervals with zero frequency and it maximizes homogeneity within the groups.

4. Findings

I have classified the posts related to the census into main categories: Census News, Census Promotion, Census Clarifications, and Participation in TV, Radio, and Podcast Shows.

The day with the most posts was February 1, 2022, with a total of 7 posts, out of which 6 were related to the Population and Housing Census. The average number of likes on census-related posts is 95 likes. Most posts did not receive comments. The posts received a total of 3,588 comments, predominantly with a negative tone related to distrust in the purpose of the census, data processing, platform functionality, standard of living, conducting the census during the pandemic, and enumerator compensation. There were also comments supporting the initiative, as well as questions regarding how to complete the census. Additionally, there were comments unrelated to the census, even if the post's subject matter was related.

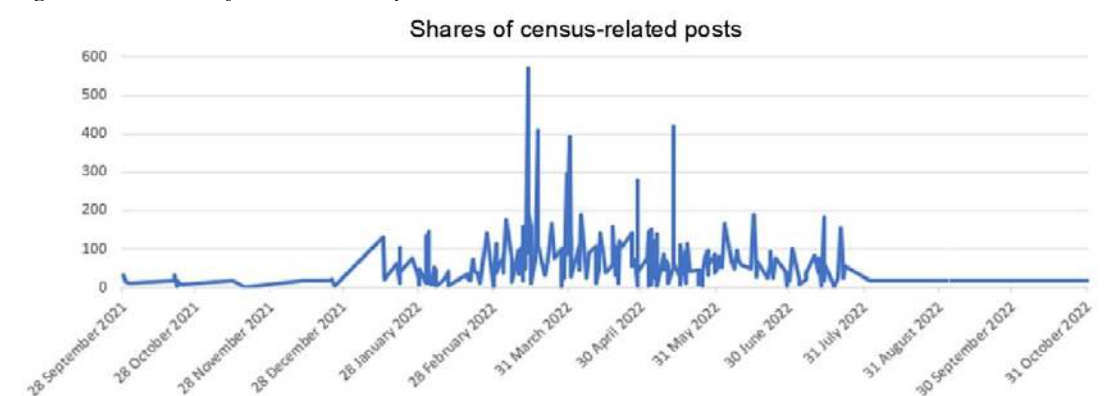
Figure no. 1 Posts from 1 august 2021 - 31 october 2022



Source: Own elaboration

The posts related to the Population and Housing Census by the National Institute of Statistics on Facebook were shared 14,069 times from August 1, 2021, to October 31, 2022, with the most intense sharing activity occurring during the census period.

Figure no. 2 Shares of census-related posts



Source: Own elaboration

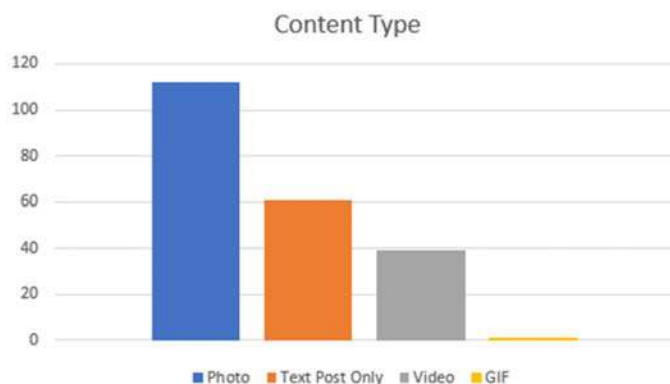
The post with the most likes and comments is from April 28, 2022, during the self-enumeration period, and it's about correctly filling in the birthplace. This post has 521 likes, 437 comments, and 278 shares. It contains two links to the European Regulation governing the census and a press release by INS defining the birthplace. It also encourages the population to complete the self-enumeration, and the post includes a photo drawing users' attention to correctly filling in the birthplace.

The post with the most shares is from March 14, 2022, one day before the start of self-enumeration. It has 365 likes, 214 comments, and 569 shares. It contains two links to the self-enumeration platform and a tutorial for completion. Hashtags (#startrecensamant, #rpl2021, #catimaisuntem, #recensamant) were used to attract users' attention. The post includes a photo with various illustrative elements: the census logo, the slogan "om cu om, casă cu casă" (person by person, house by house), and the self-enumeration online period (March 14 - May 15).

A total of 59 hashtags were used 572 times, with the most used ones being: #rpl2021 (110 times), #catimaisuntem (86 times), #recensamant (84 times), #populatie (35 times), and #omcuom (30 times). In this analysis, hashtags like #startrecensamamt and #startrecensământ, #rlp2021 and #rpl2021, #auorecenzare and #autorecenzare were combined due to typing errors. Also, hashtags in uppercase and lowercase were combined.

The most frequent posts contain photos (112 posts). 61 posts had neither photos nor videos, and 39 posts had an attached video. Only one post had a GIF attached. Out of a total of 213 census-related posts, 90 contained a link redirecting the user to another page.

Figure no. 3 Content Type



Source: Own elaboration

Unlike Facebook, posts on Twitter are less frequent, have no comments, and most of them have fewer than 10 likes.

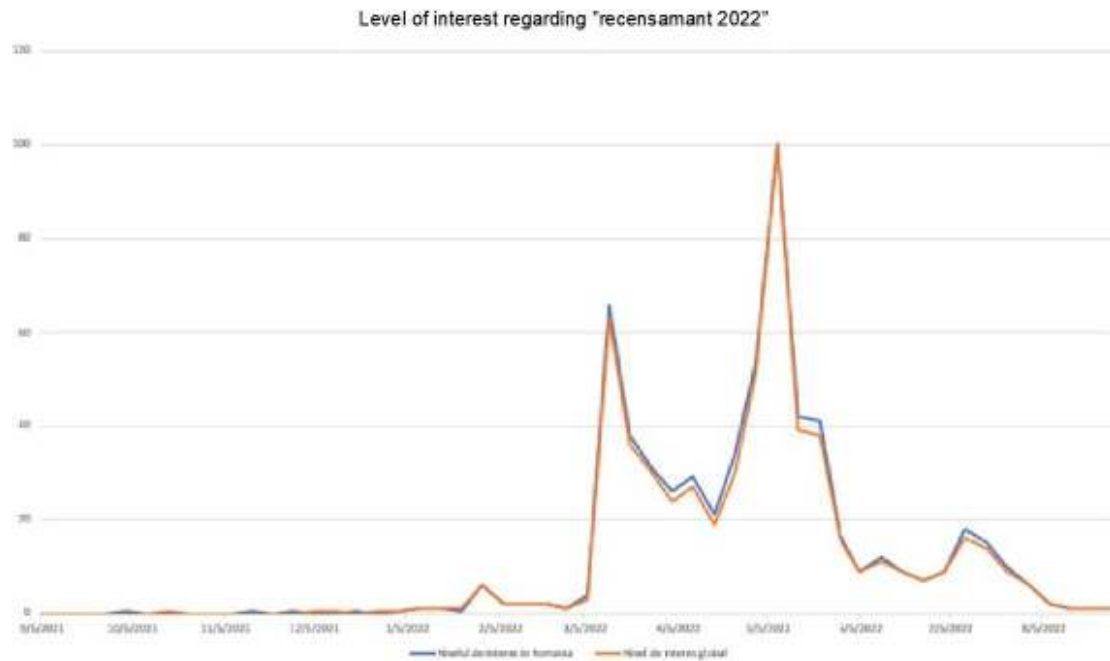
(https://twitter.com/ro_statistics?ref_src=twsrc%5Egoogle%7Ctwcamp%5Eserp%7Ctwgr%5Eauth or, accessed on 04/23/2023, at 7:35 AM)

On March 9, 2022, a YouTube channel, @RPL-InstitutulNationaldeStatis, was created. (<https://www.youtube.com/@RPL-InstitutulNationaldeStatis/about>, accessed on 04/23/2023, at 9:46 PM) The types of videos published are diverse and cover various topics. A helpful category for all users includes videos that explain frequently asked questions. Promotion videos are available in different languages: Romanian, English, Hungarian, and Romani. There are tutorials for self-enumeration, promotional clips and public interest messages. The most viewed video is the self-enumeration tutorial available in Romanian with 169,515 views, 65 likes, and it was published on April 12, 2022, followed by the video that clarifies who the head of the household is that will complete the pre-registration form, with 8,792 views. For all videos, comments have been disabled.

In the following chart, we can observe the evolution of the popularity of the 2022 census. Interest remains low at the beginning of the selected period, with a noticeable increase at the start of self-enumeration. The National Institute of Statistics' social media posts had a higher frequency during the census period.

As a result, the promotion campaign was actively carried out during the census. The peak interest in this group of words occurred one week before the end of self-enumeration. Significant interest was also noted at the beginning of the self-enumeration period. There is a slight difference between the interest shown by people in Romania and the interest at the global level, with the latter being slightly lower during the sequential peak moments.

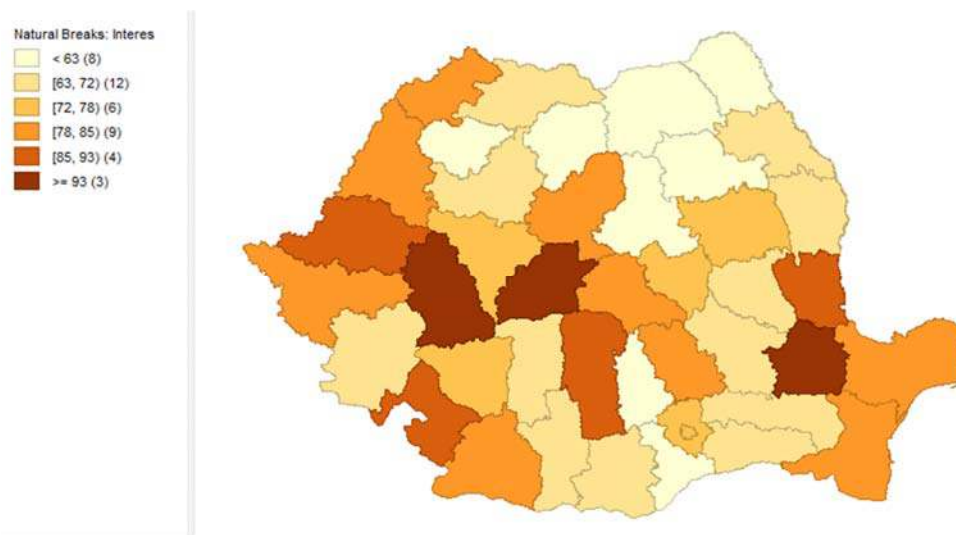
Figure no. 4 Level of interest regarding "recensamant 2022"



Source: Own elaboration

We can observe that most counties fall within the range of 63 to 72. High interest in the 2022 census can be observed in the Brăila, Sibiu, and Hunedoara counties. Residents of Harghita, Bistrița-Năsăud, and Sălaj counties show lower interest in the 2022 census.

Figure no. 5 Interest of "recensamant 2022"



Source: Own elaboration

5. Conclusions

The data collected in census is indispensable for making informed decisions across various domains, including economics, social development, administration and scientific research. The census represents a pivotal event for any nation, as it offers insights into the population's status at a crucial juncture, demanding appropriate promotion efforts to ensure its success.

This study also emphasizes the need for adapting census methodologies to keep up with technological advancements and changing societal needs. Traditional paper questionnaires are becoming increasingly obsolete, and embracing digital tools, such as mobile applications and web platforms, not only promotes ecological sustainability but also enhances data quality while reducing costs and collection time.

In the context of the 2021 census in Romania, the article highlights the unique challenges posed by the COVID-19 pandemic and the switch to self-enumeration and direct interviews. The transformation of communication strategies, driven by technological progress, is a noteworthy aspect of this census. The population's evolving attitudes, influenced by various factors, including the complexity of the census, question sensitivity, and time constraints, have further necessitated an adaptive approach in communication and promotion.

In conclusion, this study offers significant insights into the dynamics of census promotion, social media engagement, and public perceptions, shedding light on the evolving landscape of data collection in an increasingly digital age. It serves as a valuable resource for policymakers, researchers, and government agencies seeking to optimize census efforts and foster greater public engagement and trust.

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- <https://www.youtube.com/@RPL-InstitutulNationaldeStatis/about> accesat la 23/04/2023

Web Scraping and Review Analytics. Extracting Insights from Commercial Data

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Abstract

Web scraping has numerous applications. It can be used complementary with APIs to extract useful data from web pages. For instance, commercial data is abundant, but not always relevant as it is presented on websites. In this paper, we propose the usage of web scraping techniques (namely, two popular libraries – BeautifulSoup and Selenium) to extract data from web and other Python libraries and techniques (vaderSentiment, SentimentIntensityAnalyzer, nltk, n consecutive words) to analyze the reviews and obtain useful insights from this data. A web scraper is built in which prices are extracted and variations are tracked. Furthermore, the reviews are extracted and analyzed in order to identify the relevant opinions, including complaints of the customers.

Key words: web scraping, price tracking, sentiment analysis, alerts

J.E.L. classification: Z13, C55, C81

1. Introduction

Web scraping has numerous applications for Human Resources (HR) companies, banks for their competitors, election, projects data to start with, marketing (Boegershausen et al., 2022), price comparison, public sentiment regarding Bitcoin, psychology (Landers et al., 2016), patterns of depression and suicidal thoughts (https://www.sas.com/en_ca/insights/articles/analytics/using-big-data-to-predictsuicide-risk-canada.html), etc. Data that can be extracted using web scraping may be included in the big data paradigm. A case study using Python and web scraping to extract big data in psychology filed is provided in (Landers et al., 2016). They also debate legal and ethical aspects related to web scraping projects. Nonetheless, some researchers focused on data validity, legal and ethical concerns regarding the collection of data from web. They reviewed more than 300 papers related to web usage in marketing. Several interesting questions were posed in this research, such as: "What information to extract? How to sample? At what frequency to extract information? How to process the information?" (Boegershausen et al., 2022).

Furthermore, there are many programming languages, techniques and tools that facilitate web scraping (Khder, 2021), (Saurkar and Gode, 2018). Web scraping is a technique to extract, parse, and organize data from the web in an automated way. Many webpages nowadays offer an API to access the data in a structured manner. Both APIs and web scraping are used and applied to investigate credibility of information on Twitter. They offer different views to extract data. On one hand, the study showed that some Twitter attributes cannot be extracted using only web scraping. Both methods required extensive pre-processing on tweets (e.g., normalization) and generate similar credibility values. Web scraping proved to be faster and more flexible than Twitter API. On the other hand, web scraping failed more often due to the webpage changes (Dongo et al., 2021).

However, APIs may not expose the desired functionality (Glez-Peña et al., 2013). The API may be rate limited: meaning that the data can be only accessed a number of certain times per second or per day. The API may not expose all the required data whereas the website does, therefore scraping is necessary in some cases. "Why is more efficient to combine BeautifulSoup and Selenium in scraping for data under energy crisis" was investigated by two authors (<https://stec.univ-ovidius.ro/html/anale/RO/2022-issue2/Section%201%20and%202/19.pdf>). They compared the scraping performance of the two Python libraries, demonstrating that the combination of BeautifulSoup and Selenium is better when both data extraction and dynamic actions are required to obtain data.

2. Theoretical background

Several use cases were described in (vanden Broucke and Baesens, 2018). The authors presented cases when a researcher has to extract data that is not available on research platforms (such as Kaggle, ResearchGate). Scrape once and extract data is a case that is usually applied for proof-of-concept applications. Usually, data for new projects requires multiple data sources from where various time series can be merged into an updated data set. Another case can be to use scraping at each execution of an application to get data from invertors for daily forecast, for instance. The latter requires a more robust approach, to consider and treat more scenarios, and the availability of the webpage.

The so-called fair use of web scraping data is defined in the Copyright or Trademark Infringement of the United States. No explicit permission is required if the data is included in the academic research. Most commercial usage of copyrighted material requires explicit permission, however. Furthermore, in the Computer Fraud and Abuse Act (CFAA), it is stated that "intentionally accesses a computer without authorization... and as a result of such conduct recklessly causes damage" are considered an abuse, especially if the webpage owner can demonstrate damage or loss. Moreover, in Europe, there are regulations, directives and Computer Misuse Act and Trespass to Chattels. However, web scraping, especially on a large scale (also known as crawling when more sources are repeatedly scraped) for commercial purposes may lead to legal implications if permission is not obtained (Krotov, Johnson and Silva, 2020).

Several alternatives to BS and Selenium libraries do exist. They are PHP (curl package), R (rvest package), etc. Furthermore, Python libraries (like Scrapy) offer an alternative. However, a notable drawback of Scrapy is that it does not emulate a full browser, hence handling JavaScript could be difficult with this library. CatchControl is a tool offered by Python to avoid continuously stressing servers with requests, which is especially handy during development of scraping scripts where frequently a script is restarted to check if a bug has been fixed, the expected results are obtained, and so on. Moreover, there are interesting graphical scraping tools, such as: Portia, Parsehub, Kapow, Fminer, Dexi. Their main disadvantage is that there are scraping issues with heavy loaded JavaScript. Sometimes, these ready-made tools fail when the page is built in a less-straightforward manner. Web scraping can be a cat-and-mouse challenge as some webpage designers work hard to avoid or prevent scraping. For instance, Completely Automated Public Turing test to tell Computers and Humans Apart (CAPTCHA) designers are challenged by artificial intelligence and deep learning implementations (<https://www.npr.org/sections/thetwo-way/2017/10/26/560082659/ai-model-fundamentally-cracks-captchas-scientists-say>) that are used to pass such obstacles (Olufemi et al., 2021).

Sentiment Analysis or opinion mining is the process of assessing if a text is positive, neutral or negative. It extracts an opinion from texts that can be sometimes lengthy in order to clearly show the attitude of a customer. This process is applied especially in marketing, politics and public actions. Business companies are interested in finding out customers' opinions and feelings to craft their strategies. They are interested in understanding customers' sensitivity to campaigns and new products and finding out why some products are not desired. In politics, text mining is also relevant as it reveals the consistency and inconsistency of political opinions. Furthermore, public opinion can be analyzed, and estimations of election outcome may be designed.

Political statements are investigated to measure their impact on the economy and on particular assets, such as Bitcoin, electric cars, RES technologies, etc. Public actions can be monitored to understand social movements and identify moods and events that can emerge from public initiatives.

In this paper, the goal is to investigate how do the prices change for a popular category of tech products in a short period of time, as well as retrieving and studying the attitude of the customers towards that specific product. Only the products with a significant number of reviews will be used for analysis, reducing the large sample of products to a much smaller one, with more significant elements. A similar thinking will be applied for the price tracking over the selected period.

3. Research methodology

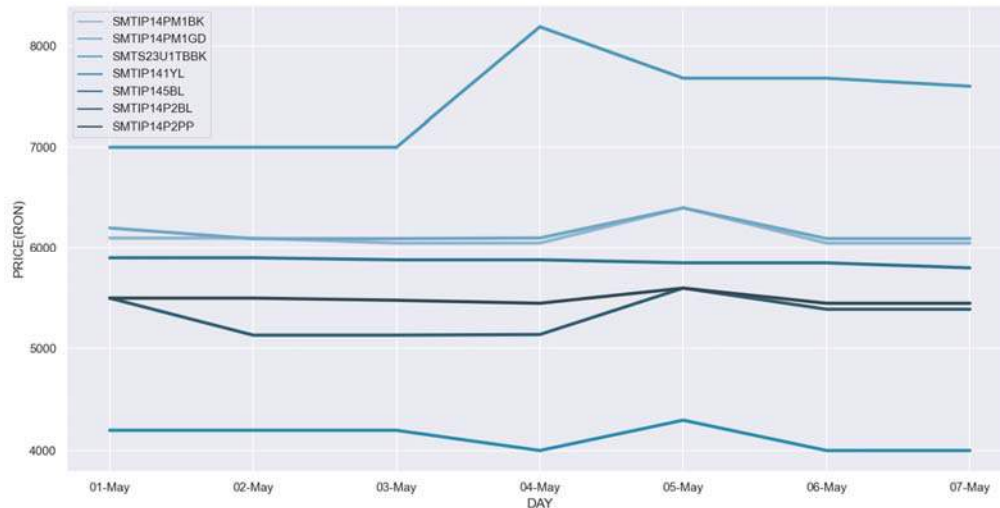
In this paper, a combination of Python libraries is proposed to extract and investigate data from the web. Python has a variety of libraries that interact with HTTP. For instance, *httplib2* is a small, fast HTTP client library. Originally it was developed by Googler Joe Gregorio, and now it is supported by the community. Another library is *urllib3* that is a powerful HTTP client for Python. *Requests* is also a popular library. *Grequests* extends requests to deal with asynchronous HTTP. *Aiohttp* is another library focusing on asynchronous HTTP. *Requests* and *get* method with a webpage string as parameter (url) create a page object. For static page elements, in order to obtain page's information, a BeautifulSoup (BS) object is created. This library is especially useful for finding html elements in the webpage source. For this purpose, the BS library relies on an HTML parser. In Python, multiple parsers do exist, such as: *html.parser* that is a built-in Python parser that is useful especially when using recent versions of Python 3 and requires no extra installations. *Lxml* is very fast parser, but it requires extra installations. *Html5lib* parses the webpage as a web browser, but it is slower. BS's main purpose is to transform the HTML into a tree-based representation. Extracting the content is facile using a BS object, and the two methods (find and findAll) fetching the data from the webpage. However, *requests* and BS are not enough to deal with script tags. Selenium is a powerful web scraping tool that was originally developed for the purpose of automated website testing. Selenium operates by automating various browsers to load a webpage, retrieve its contents, and control it like a user would when using the browser, clicking on buttons, on links, etc. Thus, it is a powerful tool for web scraping focusing on the dynamic actions that a user might do. Selenium can be used by several programming languages (Java, C#, PHP, and of course, Python). However, Selenium does not come with its own web browser and requires a WebDriver to interact. WebDrivers are available for browsers, including Internet Explorer, Chrome, Firefox, Edge, Safari, etc. With these WebDrivers, a browser window will open and simulate actions included in the Python code. The WebDriver has to be downloaded (<https://sites.google.com/a/chromium.org/chromedriver/downloads>) and its path inserted into Advanced System Setting Environment variables PATH or locate the WebDriver in the same directory as the Python scripts. Selenium finds elements and perform actions using several methods (like send_keys). Both libraries run on online platforms such as Google Collaboratory. Sentiment analysis using *vaderSentiment*, *SentimentIntensityAnalyzer* and *nltk* libraries are applied to identify whether the reviews are positive, neutral or negative. Moreover, the content of reviews is investigated measuring the combination of *n* consecutive words in order to identify the most frequent complaints.

4. Findings

The purpose of this section is to provide the price tracking results and review analysis. The data analysed was extracted from an e-commerce website of a Romanian retailer which focuses on technology related products and the category chosen for the analysis is phones. Using *BeautifulSoup*, the following data was extracted and processed to match the purpose of the analysis: the product's code, the URL to the product's information page, details about the price (the initial price, discount and the final price), as well as data related to reviews which will be used later, such as the total rating from the reviews and the number of them.

The movement of the prices has been followed during two separate weeks: 15-April to 21-April and 01-May to 07-May. The number of products varied from one day to another, but after merging the tables, 386 products remained. Since there are over 385 products daily in the chosen category, the purpose of the analysis was to seek the products for which prices fluctuated the most in each of those two weeks. A sample was taken from the total number of products for each week, consisting in 11 products for April and 7 products for May, so as to clearly see the evolution for the selected products in the diagrams from Figure 1 and Figure 2.

Figure no. 1. Price fluctuation for the week 01 - 07 May



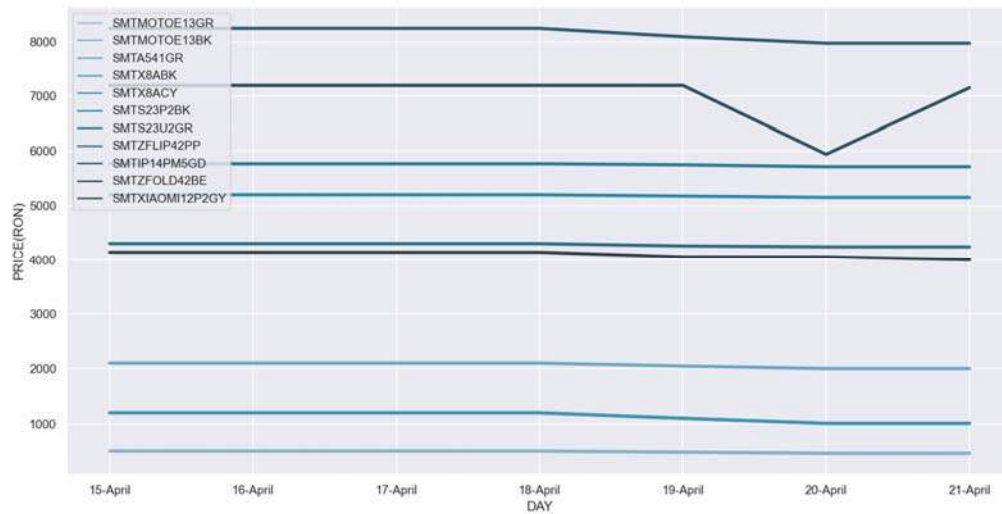
Source: the authors

Figure 1 represents the fluctuation in the prices for May, which, compared to Figure 2, representing the prices in April, is more dynamic. If we look at the names of the products corresponding to these codes, we observe the following connections:

- SMTIP14PM1BK → APPLE iPhone 14 Pro Max 5G, 128GB, Space Black
- SMTIP14PM1GD → APPLE iPhone 14 Pro Max 5G, 128GB, Gold
- SMTS23U1TBBK → SAMSUNG Galaxy S23 Ultra 5G, 1TB, 12GB RAM, Dual SIM, Phantom Black
- SMTIP141YL → APPLE iPhone 14 5G, 128GB, Yellow
- SMTIP145BL → APPLE iPhone 14 5G, 512GB, Blue
- SMTIP14P2BL → APPLE iPhone 14 Plus 5G, 256GB, Blue
- SMTIP14P2PP → APPLE iPhone 14 Plus 5G, 256GB, Purple

As we can see, the products which suffered multiple price changes within a single week were the latest phones from the brands Apple and Samsung. SMTS23U1TBBK, the Galaxy S23 Ultra 5G, had the most sudden change, a raise of 17%, followed by a fall in the next two days. For this week the prices had a predominantly upward trajectory, with visible changes from one day to another. For the week 15 April to 21 April, there were not many sudden price fluctuations, but more subtle differences suggesting that mostly the prices went down. We see that the most visible change was for the product with the code SMTZFOLD42BE, which had a dramatic decrease on 20 April, then went back up a day later. The name of the product impacted by this change was "SAMSUNG Galaxy Z Fold4 5G, 256GB, 12GB RAM, Dual SIM, Beige", another one of most recent Samsung releases.

Figure no. 2 Price fluctuation for the week 15 - 21 April



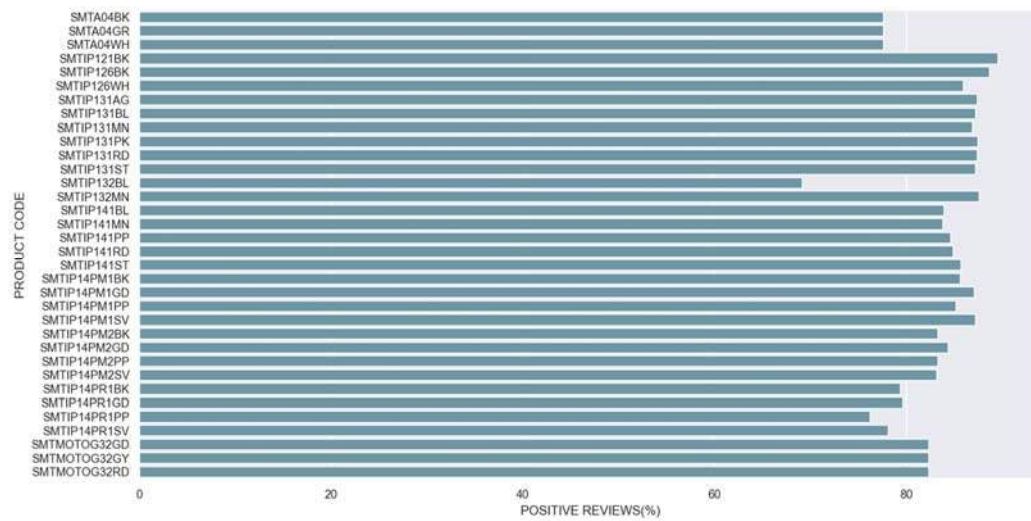
Source: the authors

It can be concluded that the products which are most prone to price changes from one day to another during the mentioned two-week period are, more often than not, the latest released phones.

A sample of 392 tech products was extracted from the website, only from the phones category. From each device, all the reviews were extracted, alongside the review score and the number of reviews, which will be later used to compare the response received from the sentiment analysis to the overall opinion of the product. The products were filtered by the number of reviews, excluding those with no reviews (6,12%) and those which received less than 100 reviews (75,77%). All the reviews were translated to English using *googletrans Translator*, a free Python library which uses the Google Translate API to be able to translate at once pieces of text with a maximum of 15000 characters (<https://py-googletrans.readthedocs.io/en/latest/>). The reviews were selected and analysed with the purpose of establishing the customer's feeling towards the acquired product.

Sentiment analysis was used to determine the opinion of the buyer by placing it in the pertaining category: positive, negative or neutral. Each review returned a scoring system which consisted of three values: negative, neutral and positive, all of which should add up to 1 to create a whole. The last component of the scoring system is called 'compound', which was used as the overall score for each review (https://vadersentiment.readthedocs.io/en/latest/pages/about_the_scoring.html). The review was considered positive if it had a compound of at least 0.5 and negative if it was less than or equal to -0.5. Anything in between was considered neutral. Only the devices with more than 100 written reviews were selected, the percentage of the positive reviews was calculated for each one of them and the results are presented in Figure 3.

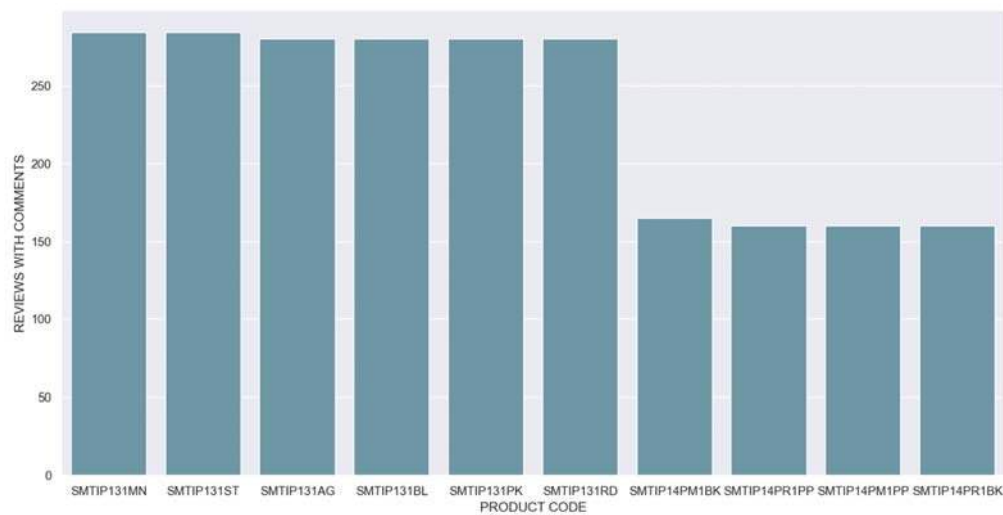
Figure no. 3 Percentage of positive reviews



Source: the authors

In Figure 3, it is clearly seen that the percentage of positive reviews is well over 65%. The lowest one (69.15%) belongs to code SMTIP132BL, corresponding to the product "APPLE iPhone 13 5G, 256GB, Blue" and the biggest score (89.57%) belongs to product SMTIP121BK which is the product "APPLE iPhone 12 5G, 128GB, Black ". Product SMTIP121BK had an overall score of 4.87 out of 115 reviews, while product SMTIP132BL had an overall score of 4.90 out of 295 reviews. By looking at the difference between the grade-only reviews and the written ones, for SMTIP121BK there are 113 written reviews and 2 grade-only, whereas for SMTIP132BL there are 110 written reviews and 185 grade-only. From this, it can be deducted that the higher grade for the device with the lowest percentage of positive scores comes from the grade-only reviews which could not be included in the sentiment analysis. The top 10 devices with the most written reviews are represented in Figure 4. Upon searching the product codes, it was observed that all the products correspond to the latest iPhones models from Apple: iPhone 13, iPhone 14 Pro and iPhone 14 Pro Max, with varying specifications.

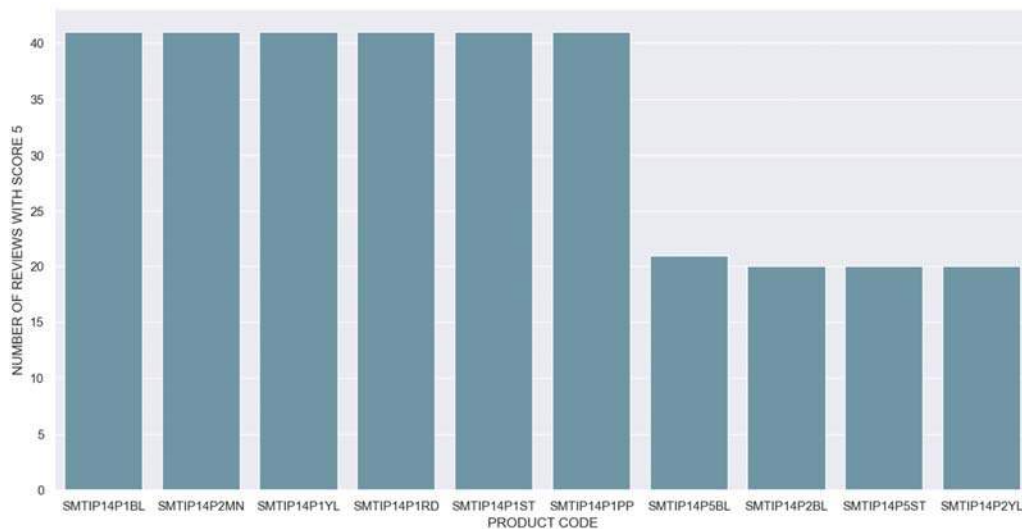
Figure no. 4 Top 10 devices based on written reviews



Source: the authors

Product code SMTIP131MN, which is one of the devices with the most written reviews, corresponds to "APPLE iPhone 13 5G, 128GB, Midnight" with a review score of 4.91 from a total of 290 reviews. Out of these 290 reviews, 284 consisted of written reviews with 252 having a positive sentiment (86.9%) and 33 having a negative sentiment (11.38%). On the other side of this top, product SMTIP14PR1BK corresponds to "APPLE iPhone 14 Pro 5G, 128GB, Space Black" and has 160 written reviews out of 160 reviews in total. The written reviews were analyzed, which led to the conclusion that 127 reviews were found with a positive sentiment (79.38%) and 25 (15.62%) with a negative sentiment, having a 4.89 review score. It can be concluded that the latest iPhones were the most requested, leading, thus, to a great number of written reviews, whereas for many other devices the review was only resumed to the grade itself.

Figure no. 5 Devices with a perfect score rated by number of reviews

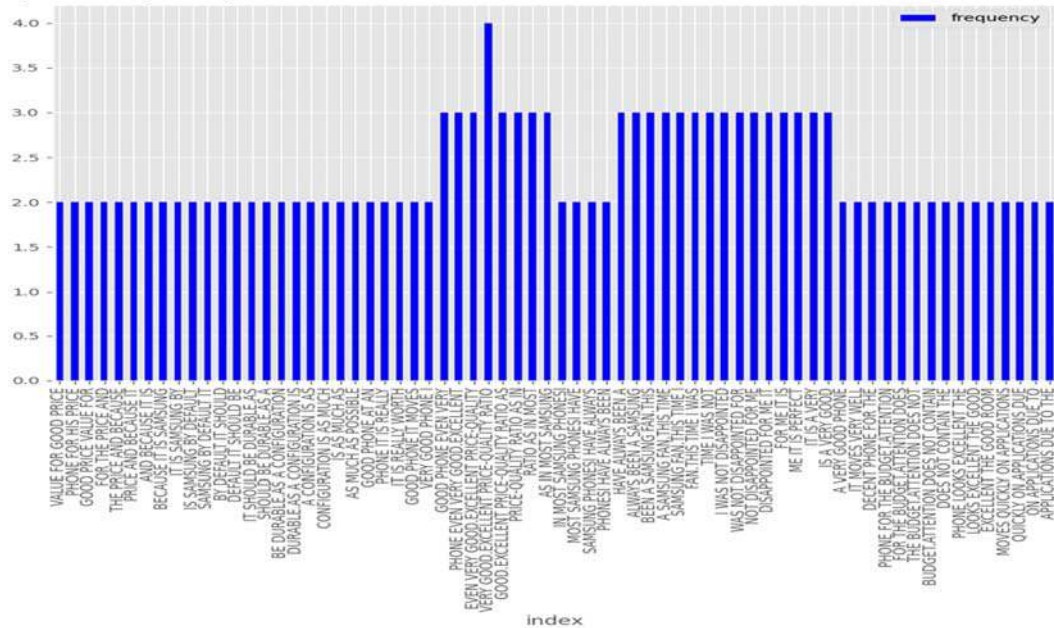


Source: the authors

Figure 5 aims to highlight the devices with a perfect review score, 5 out of 5, taking into account only the phones which have at least 15 reviews, sorted in a descending order by the number of reviews. As we can see, the first 6 devices have the same number of reviews, 41, while the remaining 4 have a significantly lower number, 21 and 20. All the devices present in the above chart are different versions of the same product, iPhone 14 Plus 5G, which have a few distinctions such as color and storage capacity. Just as in Figure 4, it seems that the latest versions of iPhones have the highest ratings, being among one of the most popular devices.

A n-gram analysis is performed for three devices in order to identify common segments of words based on their frequency. The first device is Phone: SAMSUNG Galaxy A04s, 32GB, 3GB RAM, Dual SIM, Black; Review score 4.73; Number of reviews: 116; Code: SMTA04BK. The total number of 4-grams is 1243. Analyzing the frequencies that are higher than 2, we obtained the following text elements that all reveal positive opinions of customers. A selection of opinions is displayed in Figure 6.

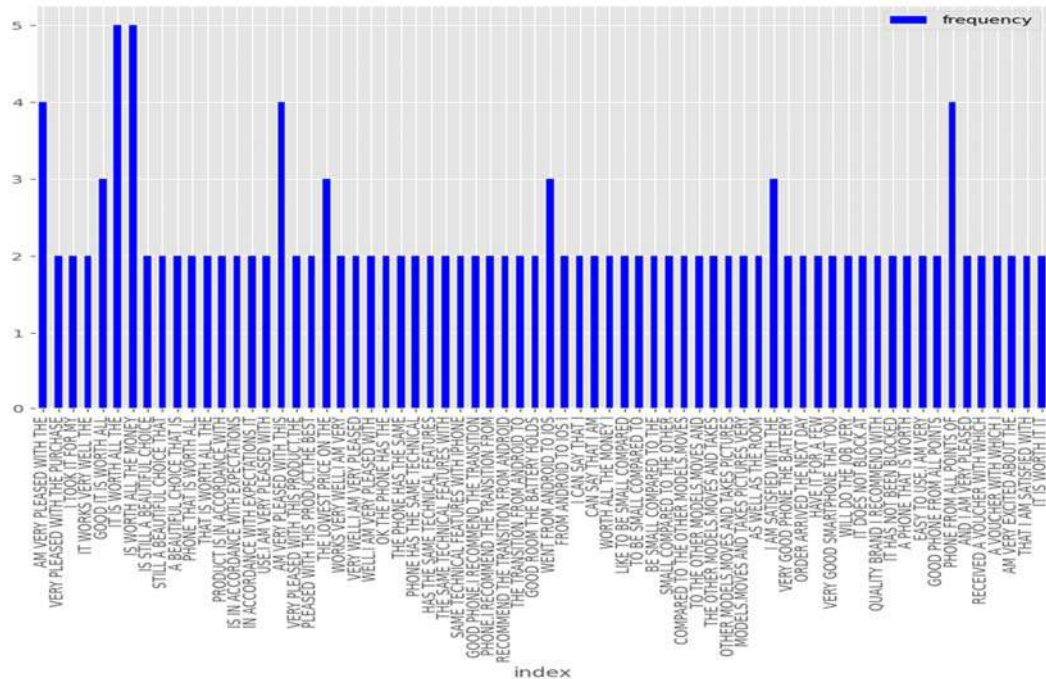
Figure no. 6 Opinions for SMTA04BK



Source: the authors

The second device is Phone: APPLE iPhone 14 5G, 128GB, Midnight; Review score 4.82; Number of reviews: 101; Code: SMTIP141MN. The total number of 5-grams is 5770. The higher number compared to the previous device convinced us to increase the analysis from 4 to 5-grams. Analyzing the frequencies that are higher than 2, we obtained the following text elements that again reveal positive opinions of customers. A selection of opinions with the highest frequencies is displayed in Figure 7.

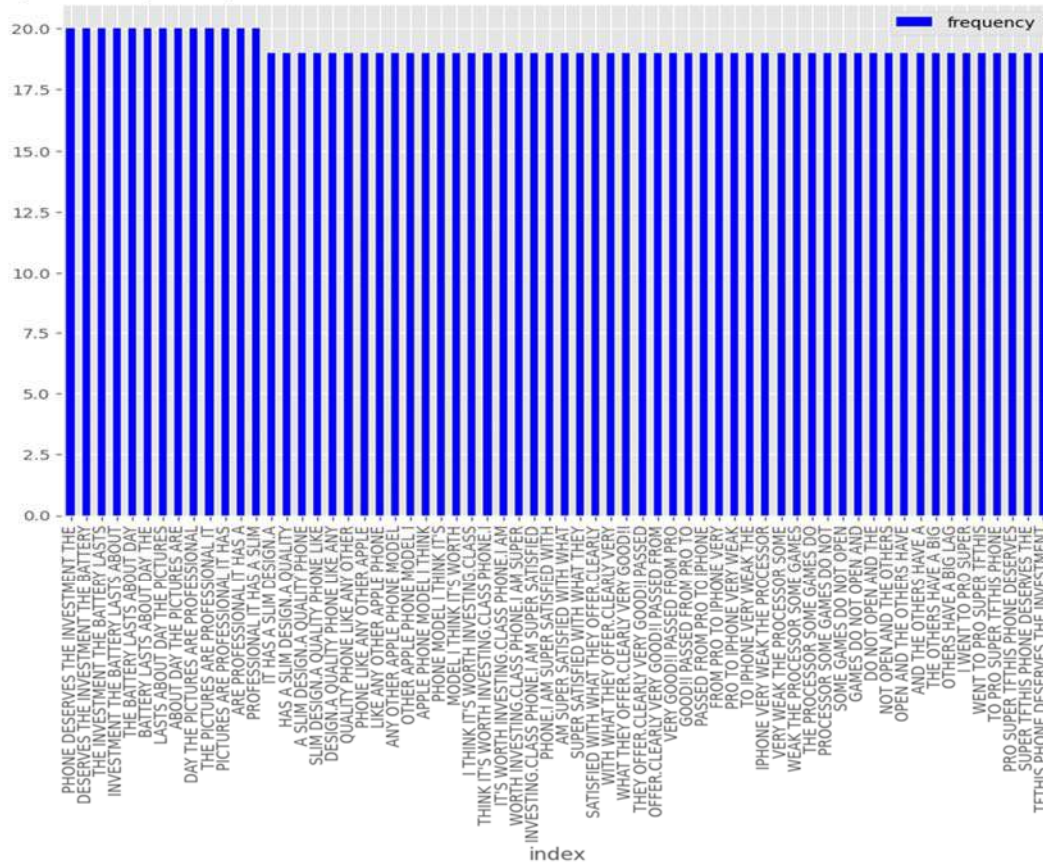
Figure no. 7 Opinions for SMTIP141MN



Source: the authors

The third device is Phone: APPLE iPhone 14 5G, 512GB, Purple; Review score 4.82; Number of reviews: 101; Code: SMTIP145PP. This phone is indicated to have a lower positive opinion. The total number of 5-grams is 119. Analyzing the frequencies that are higher than 2, we obtained the following text elements.

Figure no. 8 Opinions for SMTIP145PP



Source: the authors

Analyzing the higher frequencies, one can notice negative opinions, such as IPHONE VERY WEAK THE PROCESSOR; OTHERS HAVE A BIG LAG, etc.

5. Conclusions

In this paper, we scraped and tracked changes in prices for a popular category of tech products in a short period of time. The attitude of the customers towards that specific product was analyzed using sentiment analysis techniques. Only the products with a significant number of reviews were used for analysis, reducing the large sample of products to a much smaller one, with more significant elements.

We analyzed the prices over two weeks in April and May and we found out that the products which suffered multiple price changes within a single week were the latest released phones from the brands Apple and Samsung.

Sentiment analysis using *vaderSentiment*, *SentimentIntensityAnalyzer* and *nlk* libraries were applied to identify whether the reviews are positive, neutral or negative. Moreover, the content of reviews was investigated measuring the combination of *n* consecutive words in order to identify the most frequent complaints.

6. Acknowledgement

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Social Protection Expenditure - Comparisons and Discussions for the EU Countries

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Abstract

The period of the Covid-19 pandemic is a special one, it is a period in which governments around the world have allocated large sums to social protection spending, when many parts of the economy have seen a reduction or even closure of activity. The present paper is structured as empirical research that analyses longitudinally and cross-sectionally social protection expenditure with the purpose of identifying those countries in the EU that have significantly increased this expenditure and to see whether in the last decade the growth rates are significant. So, we found that at EU-27 level, the social protection spending has expanded and intensified during the pandemic and that the governments have adopted measures to support vulnerable groups.

Key words: social protection expenditure, GDP

J.E.L. classification: H50, H55

1. Introduction

One of the main functions of governments is the redistribution of income and wealth, which is financed by compulsory payments from the state budget. The category that dominates budgetary expenditure is social benefits and transfers paid to households to reduce the risk of poverty and to cover social needs. This includes unemployment benefits and pension payments.

Social protection policy is an important part of public policy in EU countries. The European institutions are constantly striving to increase employment in parallel with active social policy to prevent social exclusion, unemployment or inequity. Substantial funding is allocated at EU level for food and material aid through numerous projects with the aim of ensuring the full fundamental rights of European citizens.

2. Literature review

A 2019 study shows that the global recession of the past decade has had a significant impact on welfare spending. In almost all EU countries, their share in GDP increased, even reaching an average of 28% in 2016, even though, after 2010 European countries limited this expenditure as much as possible. Three patterns of countries can be observed, the Nordic and continental countries allocating the highest amounts to social protection, the southern European countries allocating medium amounts and the Central and Eastern European countries allocating the lowest amounts to social protection. Moreover, this hierarchy also respects the hierarchy in terms of GDP of these countries, the higher the GDP, the higher the level of social protection. (Spasova, 2019)

In terms of the level of taxation and its impact on the redistribution of welfare income, it has been found that countries with relatively low taxes and social protection have a comparative performance with countries where taxes and transfers are much higher, such as Germany. (Jourmard et al., 2012)

If we consider inequality in terms of social protection, Saracenco argues that inequality must be considered ex ante in terms of the sources of its formation and its reproduction, rather than ex post, which only redistributes income and, in many cases, increases social inequality. (Saracenco, 2019)

Detailed research about the volume and structure of social protection expenditure at EU level between 2007 and 2016 concludes that Nordic countries have a higher level of social protection compared to Eastern European and Baltic countries. Also, the largest share of social protection

expenditure is spent on old age, illness and disability benefits in most European countries. There is also great diversity across the EU in terms of social assistance policies, demographic trends and the economic, social and institutional factors determining the volume and structure of social protection expenditure. (Halaskova, 2018)

A recent study identifies economic and demographic trends, the economic crisis at the beginning of the century and the pandemic period as the main factors determining changes in social protection spending in the EU. Among these factors, the trends in Member States' economies are particularly notable. In this context, social protection systems have adapted, but substantial reforms are needed to ensure the sustainability of public finances. (Szymańska, 2023)

3. Research methodology

In this paper we aimed to see what the evolution of social protection expenditure at EU level has been, with a focus on the post-crisis period and the pandemic Covid-19 period.

We tried to find a balance between theory and practice. To this purpose, we have empirically studied in which EU countries budget allocations for social protection have increased significantly and if the growth rate of these expenditures has exceeded the growth rate of GDP. The methods used are longitudinal and cross-sectional, concentrating on identifying groups of countries for which social protection expenditures are significant.

4. Findings

We analysed the statistical data provided by the European Commission and observed significant increases in social protection expenditure in 2020 compared to 2019 for all EU countries. In total, the increase in social protection expenditure per capita was 7.22%.

Table no. 1 Country level of total expenditure on social protection per head of population (Euro per inhabitant, at constant 2010 prices)

Country	2010	2019	2020	2021	Percentage change 2020 compared to 2019 (%)	Percentage change 2021 compared to 2010 (%)
EU-27	7130.25	7937.62	8510.53	8556.32	107.22	120.00
Countries with the highest social protection expenditure per capita						
Denmark	14921.55	15660.38	15982.50	15966.15	102.06	107.00
France	10213.70	11277.11	11821.19	11874.73	104.82	116.26
Luxemburg	11639.39	18641.75	20720.30	20424.65	111.15	175.48
Austria	10461.94	10931.90	11843.50	11947.81	108.34	114.20
Finland	10223.45	11341.88	11781.68	11879.04	103.88	116.19
Sweden	11322.94	12136.47	12438.55	12531.97	102.49	110.68
Countries with the lowest social protection expenditure per capita						
Bulgaria	879.26	1182.94	1340.04	1472.37	114.36	158.52
Romania	1083.57	1490.74	1704.86	1717.72	115.12	150.01
Estonia	1944.88	2626.04	3023.19	2917.60	110.27	167.84
Latvia	1531.06	1981.40	2184.96	2569.66	116.55	161.56
Lithuania	1730.54	2358.30	2748.55	2795.94	110.43	171.53
Poland	1874.38	2809.19	3102.31	3215.14	114.36	158.52

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

For the group of countries that have allocated more than 10,000 per capita in the last decade, we see moderate increases. For Denmark the increase is 2.06%, for Sweden 2.49%, for Finland 3.88% and for France 4.82%. Only Luxembourg allocated higher amounts to social protection expenditure, with an increase of 11.15%.

For countries with the lowest allocations of social protection spending, increases in 2020 compared to 2019 exceed 10%. Thus, Latvia recorded an increase of 14.55%, Estonia 10.27%, Lithuania 10.43%. Romania and Bulgaria recorded similar increases, both 14.36%. For these countries, the Covid-19 period required more substantial budgetary efforts.

Regarding the trends of the last decade in the evolution of budgetary allocations per capita to social protection, we note that for countries with a high level of GDP per capita the increases in 2021 compared to 2010 are significantly lower than for other countries. The growth of this expenditure is 7% for Denmark, 16.26% for France, 16.19% for Finland. The exception is Luxembourg, which has increased this expenditure by 75.48% over the last decade.

For countries with a low level of GDP per capita, the last decade's increases in social protection spending have been significant, exceeding 50%. For example, Bulgaria recorded an increase of 58.52%, Romania 50.01% and Lithuania 71.53%. This shows that budget allocations have been higher, perhaps also due to the increase in GDP per capita over the last decade.

We note that we have chosen to compare the 2021 values with the 2010 values, given that 2020 was a special year that caused additional spending on social protection in a pandemic context.

Table no. 2 Total expenditure on social protection as percentage of GDP

Country	2010	2019	2020	2021	2022
EU-27	28.6	28.0	31.6	29.9	27.2
Countries with the highest social protection expenditure as percent of GDP					
Italy	28.4	29.2	34.3	31.8	29.6
France	33.2	33.4	38.0	35.8	32.2
Austria	29.6	29.3	34.0	33.0	29.7
Belgium	29.6	28.7	32.7	30.0	27.9
Denmark	34.0	31.7	32.9	30.7	27.0
Germany	30.0	30.0	32.8	31.9	29.2
Countries with the lowest social protection expenditure as percent of GDP					
Bulgaria	17.0	16.6	18.7	18.9	19.5
Romania	17.1	15.2	17.7	16.6	-
Estonia	17.6	16.4	19.2	17.4	15.6
Latvia	17.9	15.6	17.5	19.3	17.2
Hungary	22.3	16.6	18.3	17.8	16.0
Ireland	25.4	13.7	15.4	13.6	11.3

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

At UE-27 level, the expenditure of social protection as a percentage of GDP increased from 28.0 % in 2019 to 31.6 % in 2020. In 2021 there are 29.9 %, more than in the last decade which preceded the pandemic Covid-19 period.

In volume terms, the growth of social protection expenditure is with 8.27% more in 2020 compared to 2019, which means 311,453 million euro. We also notice that GDP at the level of all Member States, and, therefore, also at the EU-27 level, recorded significant decreases in 2020.

The highest percentage of GDP spent on social protection in 2020 was allocated by France at 38%, followed by Italy at 34.4% and Austria at 34%. At the other end of the scale, Ireland allocated the smallest percentage 15.4%, followed by Lithuania with 17.5%, Romania with 17.7% and Bulgaria with 18.7%.

In the post Covid-19 period, social protection spending as a share of GDP decreased, less in 2021 and more in 2022. Thus, at EU-27 level in 2021 the rate was 29.9%, and in 2022 it was 27.2%, even lower than in 2010 or 2019.

We also specify that one of the limitations of the study is that when making comparisons between countries we will consider that for some countries specific social benefits are taxable, while for others they are not. Specifically, some social benefits are granted under the form of tax deductions, while others are paid directly to the beneficiary.

5. Conclusions

During the period Covid-19, social protection expenditure increased significantly in all EU countries. Increases were highest for countries that previously had the lowest social protection expenditure per capita. Much of this expenditure was accounted for by sickness benefit schemes, unemployment benefits, minimum income, short-time working schemes, leave for parents to care for children during school closures.

In the post Covid-19 period at EU-27 level and in all Member States the level of social protection expenditure decreased significantly as percent of GDP, reaching pre-pandemic levels or even lower. At the same time, if we talk about the amounts of social protection expenditure, these have increased, which is due to the faster growth of GDP, in the context that in all economies there is a rebound effect from the negative effects of the pandemic.

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Section IV

Marketing – Management

Analysis of Management Challenges and Strategies in Human Resources at the Level of a Company with a Tradition in Resita

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Abstract

The paper addresses aspects and challenges from the economic and social realities of one of the largest companies in Resita, with the largest number of employees and with a focus on the tradition of steelmaking in Resita. The choice of the title and these approaches are considered relevant for the scope and results of the proposed research and analysis, for the generation of realistic conclusions and recommendations but also some premises for future research in the field of human resources management and not only. Complexity, pertinence and relevance reside also in tradition, continuity in activity, longevity and stability in leadership positions, alignment with legislation, rules and principles, managerial professionalism, prompt response to challenges, strategic vision and economic resilience.

Key words: manager, management, human resources, strategies, analysis

J.E.L. classification: J21, M11, M12, M20, E24

1. Introduction

Starting from theories and approaches of human resources management, the studies carried out over time and especially during and after the pandemic, but also from the approaches in the field, belonging to the famous professors Manolescu A. (1998), Nicolescu O. (2007), Verboncu I. (2013), Ilieş L. (2005), Petrişor I. (2007), an attempt was made to present some complex issues in a dynamic and challenging systemic context that could include, in addition to strategic managerial approaches at the level of the company chosen for study, the legislative aspects approach, which explains the support of the Romanian state in maintaining tradition in Resita, in maintaining decent working conditions, in continuing to meet all the needs of employees and ensuring work satisfaction and performance.

The challenges and measures identified both theoretically and practically in the proposed field, through documentation, observation, analysis and interpretation, can give lead to the knowledge and highlight of skills and the abilities to adapt to change and especially to exceptional situations both belonging to the management at the legislation level as well to the company level management, which have proven the ability to choose the most optimal strategic decision-making options for the situations and challenges that have arisen in the field.

Both the title of the research and the results of the proposed analysis can create premises for future thematic approaches at the company level to maintain the state of functionality in conditions of profitability, but also of decent work in compliance with the legislation in the field and the principles common to the European Union member states, aiming at human resources, namely pluralism, human dignity, freedom, non-discrimination, tolerance, justice and the rule of law, equity, solidarity and equal opportunities.

2. Theoretical background

Considering the fact that the company chosen to be analysed was established with Russian capital and operated under the Law of Commercial Companies, interstate agreements, agreements and financial-fiscal facilities granted by the Romanian state for the takeover of assets and liabilities to a commercial company with state capital that, after two failed attempts at privatization, could no longer operate with the traditional activity of the Resita Municipality - iron and steel, these incidental legislations and the legislation before was necessary to be developed, during and after the pandemic that regulated some restrictions and some facilitates for employers, as well as the basic theories and principles regarding the organization, reorganization and operation of companies, managers and human resources management from the specialized literature mentioned.

Starting from the analysis of the legislative and evolutionary aspects that concerned the establishment, organization and operation of this company, but also from the results of the research and that of several specialists in the field of human resources before, during and after the pandemic, and also taking into account the fact that most human resource departments were forced in these contexts to automate most of their work processes (www.pwc.ro/ro/media/press-release-2020 showed that 68% of the responding companies declared that the need for change and digitization was felt most intensely in the human resources department, then in the financial department 63%, IT 56%, closing the sales operations with 46%, trends that are still maintained today), some recommendations regarding amendments and additions to the legislation are required in this area as well as the content of future managerial theories.

3. Research methodology

The unpredictable, complex and often interpretable legislative issue for the big companies that operated in our country, supplemented by the pandemic challenges and the influences of the Russian-Ukrainian war, had an important impact especially on the human resources of the companies that had Russian shareholding and had to change the shareholding, this also being the case for the company analysed. Thus, the method chosen to analyse the quantitative data taken from the annual company financial statements, as well as the qualitative data, was the case study method which allowed the use of observation, documentation but also thematically directed discussions with some of the employees intertwined with the individual interview applied to the longest-serving manager in the company, who has been in charge for over 20 years.

It can be observed that for the rigor of the research, information collection through several methods and from several sources was realized (Sekaran, 2003 and Ștefan et al., 2021).

The methodology was approached in hope to achieve progress in knowledge, starting from theory, but also from the good practice of the company management, so tried and challenged over time, taking as a model the renowned professor Crăciun C. (2015), who stated that the principles of the analysis investigations or researches are extracted from the theory principles (Andreș S., 2021a.).

In this context, this methodology can practically lead to a positive interaction between theory and the investigation of the managerial field, thus creating premises for good practice models (Andreș S., 2012). The main objective of this paper was to identify some strategies used by the company's management in the field of human resources as well as the challenges that most often generated restrictive measures but also certain opportunities for the company. Secondary objectives were:

- [[Os]] _ (1): Identifying the personnel's potential and personnel fluctuations;
- [[Os]] _ (2): The influences of managerial decisions on human resources;
- [[Os]] _ (3): Determining the factors that influence the adoption of managerial strategies;
- [[Os]] _ (4): Identifying the challenges faced by the company manager regarding human resources;
- [[Os]] _ (5): Establishing measures and implementing strategies regarding human resources.

The purpose of the study and of the analysis was to highlight the issues in this field at the level of one of the largest and companies with a rich tradition in Resita, but also to identify the influence of managerial challenges and strategies on work productivity and activity efficiency. The study was carried out during the period 15.01.2023 to 20.05.2023 and the hypotheses from which the study started were also determined by previous studies and are confirmed now, as follows:

H_(1): The company grants quite a lot of material benefits in order to prevent personnel fluctuations, using financial motivation as a priority;

H_(2): Identifying all the factors that negatively influence the company's activity is a priority for the manager;

H_(3): Management strategies greatly influence the human resource in the company;

H_(4): Several measures are established for the human resource, in order to fulfil the company's objectives;

H_(5): The company manager relies on specialized labour and the division of labour.

Also, the main objective of the interview administered was to identify the challenges faced by the company from the point of view of human resource management in order to highlight the qualitative, non-numerical aspects. The actual interview contained short, simple, open-ended questions that also had a predominant orientation towards the respondent's experiences.

The secondary objectives of the interview were:

[[Os]]_(1): Identifying the influencing factors that caused certain deficiencies or difficulties;

[[Os]]_(2): Determining how certain labour conflicts and misunderstandings between company employees were handled;

[[Os]]_(3): What are the company's challenges from a managerial point of view;

[[Os]]_(4): Carrying out a comparative analysis of the company's employees over time.

The hypotheses that led to the realisation of the study were the following:

H_(1): The most significant challenge for the company was the suspension of production at a given time;

H_(2): From the point of view of the executive manager, one of the biggest challenges was finding qualified staff when resuming the activity;

H_(3): Over time, staff migration has become one of the important issues for the company;

H_(4): As a general rule, financial problems are what lead employees to look for other jobs;

H_(5): The executive director is the one who makes every effort to create a stable work environment and tries to respond to the challenges encountered in carrying out the activity.

Some of the conclusions of the study concerned the following aspects:

- The company needs a more advanced technology in terms of production but also specialist assistance in the field, even if it holds a large number of 2350 employees;
- Staff fluctuations have directly affected productivity, thus the company's customers who cannot receive the products within the set deadline are also affected;
- The biggest challenges for the future regarding human resources appears over a certain period of time, when most of the employees retire;
- More involvement and measures are needed to prevent work accidents, to ensure safety at work but also rewards related to performance and job satisfaction.

4. Findings

The proposed analysis was carried out on the basis of the data and information obtained using the case study method. The company was initially a Russian one established in 2001 with production activity, and later took over the steel production in Resita through a transaction with the Romanian state made on one euro, having the obligation to pay the debts of the company that the state failed to privatize, but later enjoying tax facilities that our Romanian companies did not have. It should be noted that later during and after the pandemic, the facilities, especially those aimed at employees and employers, were granted uniformly.

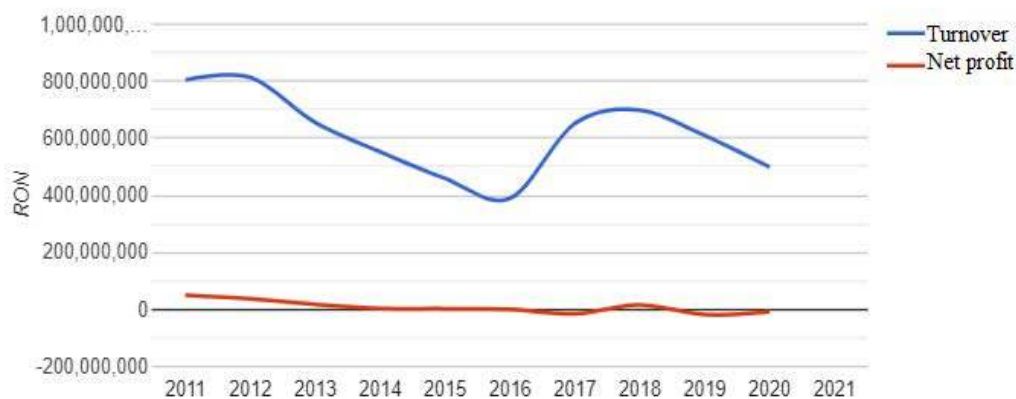
The last reorganization was in 2023 when the number of employees reached 2350, but they these numbers were not made public until the date of the study. The data and information reflected by the financial statements generated by the activity carried out in the last two years, which is why

the analysis was limited to the period up to the year 2021.

The evolution of the relevant elements from the company financial statements is presented in figure no. 1 and the analysis of these indicators, the turnover and the profit highlights the fact that the company's business was more profitable before the takeover of the combined company. According to the implementation of the financial-fiscal facilities granted by the Romanian state, there was some recovery after which, even an increase in turnover, in the period 2016-2018 followed by a significant decrease in the pandemic period 2019-2020 and maintaining the trend in the following year.

It should be noted that even in these circumstances, the company maintained a low level of profitability, even less so during the pandemic years, which can mainly explain the concern for maintaining employees and the increased personnel expenses, which outstripped the shareholder's objective of profit maximization.

Figure no. 1. Analysis of relevant indicators for the company, turnover and profit



Source: <https://www.listaфирme.ro/>

The company's main objectives for the year 2027, analysed from public data and thematically directed discussions with some of the company's employees, are the following:

- Continuing the activities of pollution reduction;
- Increasing energy efficiency;
- Increasing the efficiency of waste management;
- Increasing the workplace level of security;
- Expanding the production capacity;
- Increasing product quality and minimizing costs through the use of technology;
- Consolidating the company leading position on the global market;
- Concluding new partnerships.

The secondary objectives of the company are as follows:

- Improving the safety and health management system;
- Improving working conditions;
- Implementing new technologies in order to ensure better working conditions, in addition to providing appropriate equipment;
- Permanent training of all employees;
- Increasing the managers' responsibilities.

Within the company, the human resource has proven to be very important, even in the situation where the company largely owns the technology necessary to carry out the activity, it is not possible to eliminate the human resource. In this regard, a collective labour contract was concluded with a validity of 2 years, and after the expiration of this term if neither party summons the other party to negotiations, the contract can be extended once more for a period of 12 months.

Following the analysis carried out, one can observe that this company records personnel fluctuations during the analysed period, which were recorded due to the economic situation of the company, from 2014 when the company's profit decreased by 14363139 lei compared to the year 2013, following the downward trend until 2016 when the company starts to recover. Prior to this period, the salaries of the employees were quite low compared to the hard work they were doing and for this reason these staff fluctuations may have occurred.

Analysing the entire company over a period of 9 years, the following personnel fluctuations are observed:

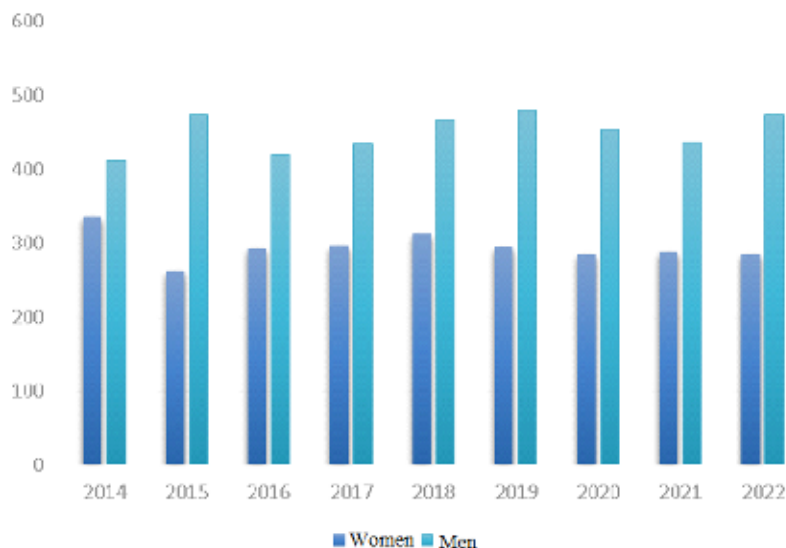
Figure no. 2. Personnel fluctuation



Source: based on known information

Considering that both women and men work in the company, it was necessary to highlight the fluctuation also according to gender, thus:

Figure no. 3. Personnel fluctuation according to employees' gender



Source: based on known information

A significant difference when taking the gender of the company's employees into consideration. Many are men, who are directly productive, but a very large part of women are involved in management activities.

Many of the company's employees are between the ages of 43 and 57, but it seems that more and more young people are choosing to work in this field due to the fact that it offers an attractive salary, many benefits and some stability.

The company is a big one and in the context of the pandemic and the war that greatly affected production and exports, it has passed through difficult times, it has responded well to the challenges of being on the market, with profitability, with increasing labour productivity, offering the majority of jobs in the town of Resita. In the following figure, the evolution of labour productivity for the period 2008 – 2020 is shown:

Figure no. 4. Analysis of company productivity



Source: based on known information

Analysing the evolution of the labour productivity indicator, one can observe that the biggest decrease was recorded in 2009, although the company had double the number of employees at that time. In the following years an increase in productivity can be observed with an average number of employees of 769 and in the year 2016 a decrease in productivity can be observed primarily due to the lower number of employees.

These numerical analyses are not sufficient to meet the requirement of the chosen title, thus an analysis of the non-quantifiable, qualitative data, resulting from the unstructured interview administered to the executive director was also necessary, through which several questions were asked regarding the human resource field, but also regarding the challenges faced throughout one's career, implicitly the measures taken to meet challenges.

In the first part of this interview, identification questions were asked, in order to conclude that the director interviewed was both in the management of the old company and in the current management, that he is an executive director for more than 20 years, possessing extensive knowledge in the field of management, being an engineer by profession, who graduated from the Polytechnic University of Bucharest in 1995.

A first thematic question concerned the known staff fluctuations over time and the executive director answered that the company faced such situations, and that these have a major impact on the activity carried out, confirming what the previously analysed numerical indicators also showed us, but also the fact that the biggest challenge in this context was the attraction of young people willing to work within the company. In this regard, the general manager stated that he tried to make the working environment as pleasant as possible and is ready to make some changes in the way he perceives certain things. In time, the biggest challenge will be finding qualified employees, but also those who want to work in this field, because many, in a few years, will get close to retirement, at which point the company will face a real problem.

One of the biggest challenges, according to the words of the executive director, was the SARS-COV-2 pandemic, when most activities were put on hold, although the activity was not interrupted, the employees were scared because they could get sick. There was a time when the general manager tried as much as possible to change shifts and working hours to take distancing measures, but in the following period many of the employees got sick and were quarantined for 14 days.

It was only when a lot of people had direct contact with a sick person or they themselves got sick, that the lack of staff was felt, because many could not come to work, a context in which the general director had to increase the protection measures, but especially to talk to the company's customers to let them know that there are delivery delays due to the pandemic. The protective measures against this virus were many, the employees and those in the management of the company were constantly tested not to spread the disease, but the biggest problem was the fact that the staff was little in number, most of them being on sick leave which delayed the orders.

Another challenge was when the war in Ukraine started, at that time the majority stake was owned by a Russian company. More and more measures were taken against Russia in order to stop the war, and a solution found by the states of the world was freezing bank accounts and the total blocking of companies with Russian capital. The chief executive stated that it was the most difficult time encountered in his entire career, people were desperate, management as well considering the large number of employees and employee expenses.

After the accounts were blocked, a strike was organized because the employees did not receive their salaries. During the large-scale protests, the majority shareholder withdrew one's holdings, but the accounts were not unblocked. The management of the company, but also the employees mentioned that they no longer hold Russian capital and all the raw material needed was purchased from the European Union. After a series of negotiations, the employees were offered 75% of their salary, but they did not accept and claimed that they would protest until their salaries were paid.

Shortly after this strike, activities were resumed due to the fact that the company's accounts were unblocked. The government understood the company's major impact at regional and national levels. Although the accounts were unblocked and the workers returned to work, there was still a period of time in which certain problems related to production, product delivery, and the extension of some contracts had to be resolved. The company's customers were also very affected by this, as they no longer received their orders on time or were uncertain about the company's financial situation and ensuring the continuity of the partnership.

Over time, the company's activity was also overshadowed by several unfortunate events, in which several employees lost their lives as a result of work accidents, this being the reason why the general manager placed an emphasis on labour protection. And in this sense, an objective established by the company was the reduction and prevention of work accidents, the director declaring that in the last 10 years, three employees in the company died as a result of work accidents and precisely for this reason, great emphasis is placed on labour protection, on prevention because the accidents were results of carelessness, lack of responsibility or lack of experience in using some machinery.

In addition, the director claimed that he constantly carries out unannounced checks to see if the regulations imposed by the company are respected, but also to prevent accidents. The same reason, he strived to maintain a close relationship with the team leaders who must communicate all events in order to take proper action.

Like any large company, it encountered quite a few challenges, in production, the lack of qualified human resources, production stoppages, human errors, financial crises, but all these problems were successfully solved. It demanded a lot of involvement, passion and professionalism. Since the director started his activity, he has tried as much as possible to develop a friendly relationship with those he worked and works with, management of the company or employees working in production.

The conflicts between the company's employees were also real challenges for the general manager. Many of the employees complained about the attitude or behaviour of certain colleagues, and most of the time they asked to be transferred from one department to another or for the person in question to be penalized, but these types of problems were resolved amicably and the proper way

to reconcile those in conflict was found, because the transfer to other departments cannot be done especially because of the specialisation employees must have for each job.

When asked to what extent he believes that changes are necessary and in which area, the director replied that it is necessary to purchase new machines, more advanced and offer greater protection to those who carry out that activity. But as they all depend on the human resource, the director mentioned the organization of events periodically, events which could contribute to the development of friendships between work colleagues, to ensuring the cohesion of teams, to get closer to the management of the company. He also stated that one goal was to share as much as possible to solving problems, but also to listen to employees, thus also being able to observe what were the problems of the staff and of the society.

Another question addressed to the general director was to what extent he considered it necessary to establish sanctions for non-compliance with internal regulations, and he answered that it was absolutely necessary to establish sanctions in order to create the idea of order, not to influence the behaviour of other employees, although he didn't wish for such situations to exist. He also stated that he proposed to review the personnel policy and hire young people who can be trained until the retirement of qualified and experienced people.

In this context, it is recommended to try to find sources of recruitment of young people eager for training or even already trained and easily specialized, but also opportunities for involvement in certain projects in order to be able to finance the qualification or retraining, for the reorientation of the company's personnel, especially in the context in which most companies use high-performance machines, tend towards digitization, even robotization.

Considering the urgent need to equip with new machinery, it is also recommended to find financial resources for equipping with technology and ensuring specialized assistance for the trained human resource, considering that it would be welcomed to recommend access to funding in the form of subsidies or state aid, even European funds.

5. Conclusions

Taking into account the analysis of the evolution of the relevant indicators for the theme requirement and the managerial challenges, especially in the management of human resources, previously identified, it is justified to highlight the strategic actions that have been or should be adopted by the company (Andreş S., 2021b.), as follows:

- The necessary measures regarding the safety of employees by providing new protective equipment, and these to be changed with certain performing equipment in this field;
- Granting higher salaries, to prevent personnel fluctuations, but also ensuring the correlation of rewards - performance - work satisfaction;
- Another strategy also adopted by the general manager would aim at other non-financial motivational elements, implicitly the employees' free time, by organizing recreational activities;
- Strategies regarding the health of the company's employees, the company already starting this by opening a cabinet within the company to combat certain diseases. This was used during the Covid-19 pandemic, and it is recommended to continue for certain emergencies that may occur during carrying out the activity;
- Carrying out unannounced checks, both during the day and at night, in order to identify if there are people consuming alcohol or other prohibited substances, if work discipline is respected and to check if each employee fulfils one's duties properly according to the activities established in the job description;
- The intense involvement of the management team in improving one's activity, but also in ensuring the continuous improvement, training or specialization, as the case may be, of the company's employees.

As for the employer's fear related to the productivity of the employees' work in the new forms of telework, Kurtz Arbeit, this can be mitigated especially against the background of the facilitation of remote work and intensified digitalization.

Concluding, certainly the strategic future of the human resources management activity, especially in the case of the analysed company which, through strategic measures, managed to anticipate the challenges for a very large number of employees, will be able to be shaped and positively imprinted by the changes that are imposed and digital transformation even in the context of the increase of work complexity, the diversification of the fields of activity, the requirements to change the structure of the workforce. Thus, the company must not ignore the fact that digitization and automation will soon become the essential components of management and of the management of human resources, implicitly in the management of labour relations.

In addition, the company's management must pay increased and continuous attention to the foundation and implementation of human resources strategies on each specific activity of their management, from recruitment to the conclusion of the employment relationship.

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The Use of Digital Technologies in Tourism Management

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Abstract

In the conditions imposed by the pandemic, technology has helped provide digital travel options, leading to an even greater awareness of its importance in our lives. The ease of mobility and the power of information has led to a growth in the online tourism market; more and more travel platforms and apps have emerged, social media and global distribution have taken a well-deserved place in tourism marketing. Due to these factors and taking into consideration the growth of online tourism in recent years, as well as its expanding in the foreseeable future, it is imperative to continuously conduct studies concerning the integration of digital technologies in tourism management strategies. The purpose of this research is to evaluate the use of technology in tourism, focusing on the online travel agency market and its influence on tourism management and tourists' consumer behaviour.

Key words: tourism, digitalization, management

J.E.L. classification: Z3

1. Introduction

With the rapid development and implementation of information technologies, the tourism and hospitality sector has adapted and updated its use in all areas of activity, and in recent years, especially in the development of the online tourism market. Online platforms provide interfaces that allow customisation of customer (tourist) searches and facilitate choices to be made, while also providing valuable information on previous experiences of other customers. Favourable brand attributes and images increase the search and demand for tourist destinations among customers. With the development of specific online platforms and the growing trend towards new and more efficient ways of improving the service package and the offer and making them accessible to customers, expectations and requirements are rising.

From this context lies the need to understand the important role that digital technologies play in the design and delivery of tourism services and in the experiential value of tourism customers. The use of technology has a significant positive impact on tourism business development because it makes it possible to accurately analyse tourist preferences. Modern software applications can quickly respond to tourist preferences, assist in destination search and perform an evaluation of the organisation's tourist attractions. On the basis of this information, data about the profile of a tourist, the objects he/she visits, the time spent sightseeing, etc. can be analysed.

Underlining this importance, this paper aims to highlight the importance of the use of technology, especially online travel platforms, in the management strategies used and their potential and influence on customers. It also analyses the different online travel platforms, their place and role in the tourism market and the extent of their use by both tourism business owners and customers. Technology is part of everyone's lives and we need to use and exploit its positive side in every area of business.

2. Literature review

Digital marketing as a means of promoting a product or service has become an important part of the modern economy. Every major market segment is growing with the help of digital technologies, using them to increase sales, brand awareness and to create certain trends related to the activities of the company or organisation. Tourism sees digital technologies as the shortest and most efficient way to achieve its goal, as the end user can be thousands of miles away from the travel destination. That is why the use of technology plays an important role in the tourism industry (Ziyadin et al., 2019).

The tourism sector has seen an improvement in its global reach due to easy accessibility through the use of digital technology compared to traditional tourism. However, to create an impact on customers requires complex ways to make the tourism experience as favourable as possible. Technology can be used to enhance every stage of a journey leading to the creation of memorable experiences for tourists. Technology is also present in the interactions with services and touch points in the physical tourist destination or online space with various stakeholders, differentiating it from other experiences. Immersive technologies add value to customers through high levels of interaction and co-creation options (Flavian et al., 2019).

Technology-enhanced tourism experiences allow customers to actively participate and shape the creation of their experiences. Thus, customers interact with websites and various online platforms through comments, reviews and ratings, thus having the opportunity to share experiences (Tussyadiah Fesenmaier, 2009). The higher level of customer involvement in the tourism experience makes it a dynamic process between the company, the tourism customer and other consumers through a platform.

Technology has made it possible to create these online distribution methods/platforms in the travel industry that serve to improve the process of planning and booking a trip. Search engines, websites owned by travel companies and travel agencies using different business methods (merchant model, agency model or opaque model) facilitate the process of purchasing tourism services. The most important distributors of hotel accommodation services are online travel agencies (OTAs). They have emerged to expand hotel distribution channels and increase business opportunities, thus playing a critical role in the distribution of tourism products and facilitating access to potential customers worldwide (Park et al., 2019)

Kotler et al. (2017) defined OTA as a "travel agency that conducts business over the internet without physical locations or stores" (Kotler et al, 2017). According to Kim & Han (2007), OTA is an online travel agency that provides travel information as well as options for booking products and services (Kim et al, 2007).

Using the merchant model, OTAs buy hotel rooms at a discount and put them on sale at a profit (Denizci&Basak,2008). By doing so, OTAs accept the risk of the unsold offer and make a profit when a room is booked. Under the agency model, OTAs arrange bookings for hotel-owned stock at agreed prices that have been made available to them and receive an agreed commission for each. With the change in tourism technology more choice is being offered to customers and a very competitive environment has emerged among OTA providers. Since then, every OTA has tried to ensure a high level of customer satisfaction with online booking systems.

In 1996, the OTA giant Booking.com was founded and followed by several sister companies such as Agoda.com, based in Asia, and Kayak.com in the United States. The success of OTAs in distributing hospitality products and services led to the establishment of other OTAs. Many of the emerging OTAs attract their customers by selling several tourism products in addition to accommodation, such as air tickets, car rental or restaurant reservations. By offering more choice, OTAs are becoming the best alternative to travel. For this reason there is a great need for hotels, especially small ones, to be available in OTAs for greater visibility and also to meet consumer needs. (Toh et al., 2011).

Technology greatly influences customer expectations, their needs and desires are constantly evolving, which must be carefully managed. The use of technology in tourism management contributes considerably to brand image and customer satisfaction which have been widely confirmed as influential antecedents of customer loyalty. Customer satisfaction and loyalty in the hospitality industry is a critical issue to be addressed in dealing with an online travel agency.

(Serenko&Stach, 2009) The relationship with OTAs is based on an exchange between these partners, as the hotel feeds the OTA websites with information and the OTA attracts customers to the hotels (Chang et al., 2019). However, in terms of relationship between OTAs and hotels, the latter can be disadvantaged if they do not manage the situation well because the high fees charged by the platforms can reduce hotels' profit margins.

In this respect, when entering into a contract with an online travel agency, contractual provisions related to market exposure, securing rates and setting commissions should be taken into account. From a transaction cost theory perspective, hotels should benefit from a collaborative relationship in which OTAs can economically perform the distribution function. The hotel, in turn, will focus on its service and accommodation functions. Thus, some hotels with low visibility end up paying a commission-type fee to an online agency to increase their visibility and get more visitors. (Ling et al., 2011)

However, the setting of commissions paid is not the only way to establish a relationship between OTAs and hotels. Their cooperation is also made more effective by alignment of interests and commitment, as the relationship is specifically affected by the power and dependency between the partners. In this respect, research on inter-organisational relationships should be mentioned, whose relationships are often based on power conflicts over managerial decision makers and the development of trust.

To create and maintain a productive relationship, the mediating role of goal congruence is necessary. Industrial marketing research highlights how much symmetry and power asymmetry influence the development of trust in a counter-intuitive way and that goal congruence has an effect on this interaction (Cuevas et al., 2015). On the one hand power symmetry has a positive influence, and on the other hand power asymmetry has a negative influence on the development of trust in organizational relationships (Hingley, 2005a). The development of a trust-based relationship between organizations requires symmetry of power and information, with the balance of power being crucial between actors. When one party has more information than the other, it also has more contractual power and at the same time will not serve the interest of the other party.

As far as the relationship between hotels and OTAs is concerned, the asymmetry of power is caused by the fact that OTAs have much more information about the consumer and their purchasing options than the hotels themselves. In this respect, hotel managers should aim to establish relationships based on symmetry and trust. B2B relationships should be developed between OTAs and hotels by increasing trust through active cooperation and by sharing information and power equally.

3. Research methodology

The development of online tourism has led to the emergence of more online platforms and their diversification, with the value of online travel bookings peaking at USD 613 billion in 2021.

The information presented was obtained from previous research consisting of statistical data at an European and international level and a thorough review of literature. The collected data was analysed, selected and interpreted so as to provide truthful information. The data analysed concern the ways in which tourists book tourist accommodation, the extent to which independent hotels use online promotion and booking platforms; the criteria for choosing a tourist destination or accommodation using online platforms and the evolution of the online tourism market. We also analysed and presented the benefits of using online tourism platforms and how they are integrated into management strategies. In addition to data collection, observation and analysis were key activities for the study. As a result of these activities, important findings were and conclusions were drawn about the online tourism market.

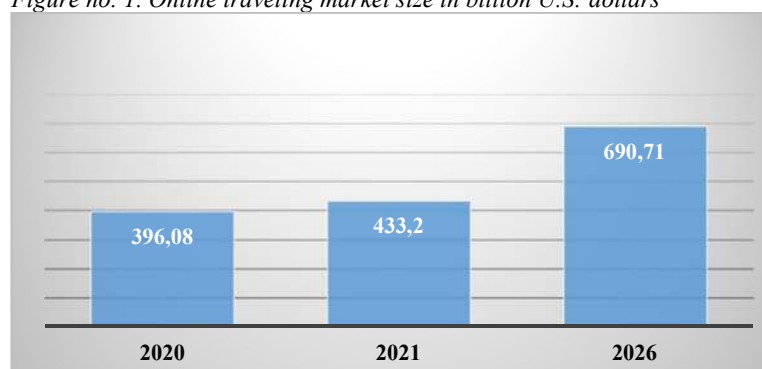
4. Findings

Interest in online travel services is growing worldwide. As most travellers have access to mobile phones and/or computers, online travel is easily accessible. The demand for online travel is also growing as a result of innovative travel apps that appeal to the general public, as well as social networks used to share videos, information and travel destinations. Higher booking rates are a result

of this information provided online, as well as reliable package deals and travel events. In addition, booking on social media has a higher conversion rate than booking on the website. These factors will increase the overall profit in the online travel market and further progress is expected in the coming years. (Global Online Travel Market Size to reach USD 1,835.6 Bn by 2030, 2020). Consumer intention to fly and book hotels online was 50% higher in September 2021 than in September 2020 (Deloitte holiday travel survey, 2021).

According to a market study by Spherical Insights & Consulting, demand for the global online travel market size and share has been estimated at around USD 354.2 billion in 2021. The market is expected to grow over a CAGR of 14.8% and is anticipated to reach over USD 1,835.6 billion by 2028 (Global Online Travel Market Size to reach USD 1,835.6 Bn by 2030, 2020). According to the statistical study conducted by Statista Research Department, the market size of the online travel sector online travel market increased in 2021 compared to the previous year. Thus, the global online travel market is worth about 433 bn. USD in 2021, up from about 396 bn. US\$ compared to 2020 and this market is projected to reach approximately US\$ 691 bn. in 2021 by 2026.

Figure no. 1. Online traveling market size in billion U.S: dollars

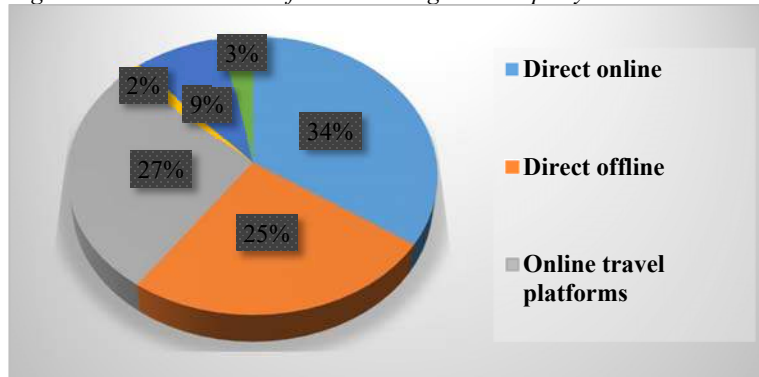


Source: processed by the authors based on data obtained from: <https://www.statista.com>

Many tourists nowadays consult websites or online travel apps when they want to plan a trip because it is much easier, which has led to an increase in demand. Also, the emergence of travel businesses as well as changing standards and lifestyles among people who want to travel more have resulted in a steady growth of the online travel market. Moreover, the market could be supported by an increase in incomes, the popularisation of weekend tourism culture or the introduction of more low-cost air services.

The advanced use of technology has led to an increase in bookings made online, so that they are preferred by tourists wishing to book accommodation in Europe. In total, online bookings made directly with the hotel, via online travel platforms and through social media accounted for 64.6% of all bookings at European hotels in 2022, while offline bookings made directly with the hotel (25.3%) or through a tour operator or travel agency (8.5%). More than half of all bookings made during 2022 in Europe, either online or offline, were made directly with the hotel. This means that online bookings were predominantly made on accommodation establishments' websites (34.5%) and to a lesser extent via online platforms (27.1%). Still, despite the increasing digitalisation in the accommodation industry, offline bookings still account for a quarter of all European hotel bookings.

Figure no. 2. Distribution of hotel bookings in Europe by channel in 2022



Source: processed by the authors based on data obtained from: <https://www.statista.com>

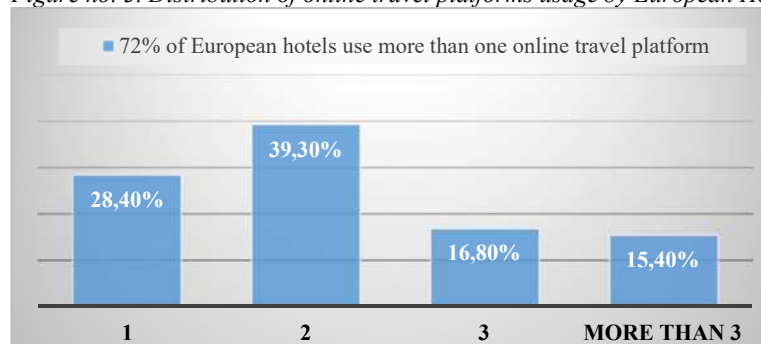
Over the past 10 years hotel management has focused on developing trusting relationships with online travel agencies, but also with communities and social media platforms. These relationships are based on the exchange of information, with the aim of reaching the public as easily, quickly and efficiently as possible. Interaction between hotels and online travel agencies must be based on continuous interaction and trust in order to create long-term value and confidence on brand community development.

In this context, accommodation establishments have complied with the current conditions and are increasingly using travel platforms or online travel agencies (OTAs), which play a crucial role in the marketing strategies of any travel organisation. According to Phocuswright's 2022 research report, bookings via OTAs accounted for around 64% of total online hotel and accommodation bookings and have more visibility and marketing power than most individual properties could have individually (OTA bookings projected to climb 55% in Europe, Phocuswright Research, 2021).

So hotels of all sizes - including bed and breakfasts, inns and ryokans - sign contracts to list their properties on online travel platforms. There are no upfront fees for listing rooms on the marketplace, and online travel agencies only earn money when hotel rooms are booked, collecting a percentage (between 15-25%) of the total value of each secured booking. Many hotels choose to contract with more than one TAO in order to get the most visibility.

According to statistics provided by The Statistics Portal of Market Data, 72% of hotels in Europe use more than one online travel platform. According to this study, 28.40% of hotels use one online travel platform, while almost 40% use 2 such platforms. Of the hotels in Europe 16.80% use 3 online travel platforms and 15.40% use more than 3 (as shown in figure no.3).

Figure no. 3. Distribution of online travel platforms usage by European Hotels



Source: processed by the authors based on data obtained from: <https://www.statista.com>

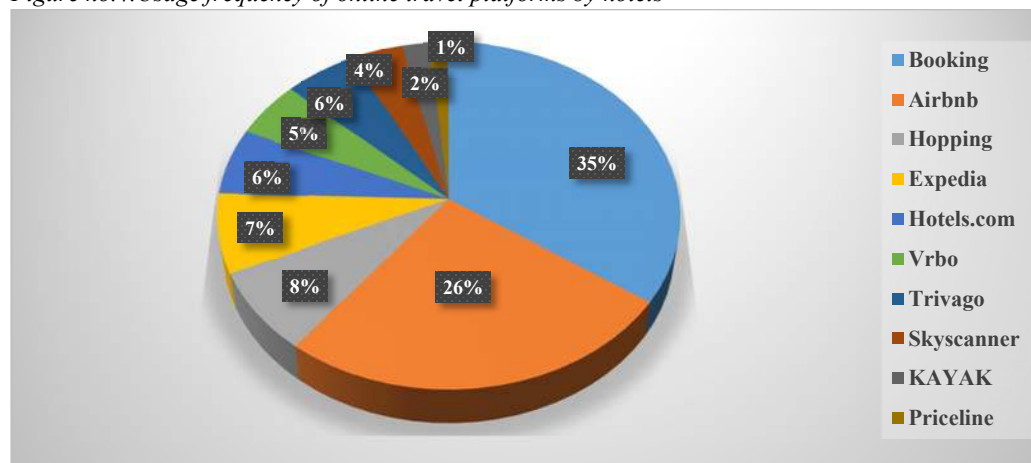
Online travel agencies have come to life with the adaptation to new technologies, with the internet playing a significant role in the travel industry in recent years. Most traditional suppliers and intermediaries have extended their distribution to the online channel by setting up online travel agencies (OTAs). OTAs have been recognized as key agencies in travel distribution because they

provide reliable and efficient platforms for consumers to purchase travel and also provide the opportunity for consumers to share information about their travel experiences (PhoCusWright, 2014).

Today there are many online travel agencies because they influence service quality, customer satisfaction levels, customer behavioural intentions and loyalty, and tour operators' profits. The leaders in the online travel market in terms of bookings are Booking Holdings and Expedia Group, accounting for about 60% of all travel bookings in the US and Europe. Airbnb is the new entrant, taking an innovative approach to online tourism by offering people's homes (apartments, houses) for tourists to book. This agency is seen as a direct threat to the hotel industry.

These OTAs are followed by newer travel apps such as Hopper, Vrbo or Hotels.com. Trivago is a German OTA app that may be best remembered for advertising "Hotel Trivago". SkyScanner is an important website when it comes to researching flight prices and trying to find the best deals on flights. Kayak is a subsidiary site of Booking Holdings, which operates in much the same way as Booking, as a one-stop shop for all areas of travel. Another Booking subsidiary, is Priceline which was the name of the holding company before the change to Booking Holdings. And last but not least, TripAdvisor known mainly for restaurant and hotel reviews, but recently offering booking services as well. (Curry, 2023). Booking.com was the most used travel app worldwide in 2021, with a market share of nearly 35%. Expedia took a step back in market share, while Hopper and Vrbo moved up the rankings.

Figure no.4. Usage frequency of online travel platforms by hotels



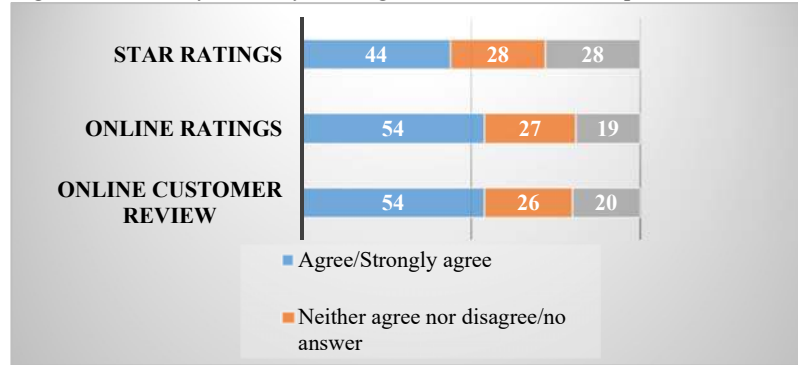
Source: processed by the authors based on data from: <https://www.businessofapps.com/data/travel-app-market/>

Today's travel consumers rely heavily on online information when making decisions about tourist destinations or hospitality establishments. Online travel platforms allow customers to provide feedback on their travel experiences by providing a star rating and through reviews. 72% of new customers do not book a hotel room until they read reviews from other travellers. More than half of Tripadvisor users don't choose a hotel or vacation property that doesn't have reviews (The Influence Reviews have on the Travel Industry, 2022). Positive reviews provide reassurance and make people feel comfortable about their decisions, while negative reviews act as a warning sign, prompting them to avoid negative experiences from previous customers.

According to European statistics, more than half of consumers are influenced by online reviews and ratings from previous customers when purchasing an accommodation service online, while only a fifth of them do not take such reviews and ratings into account. Two out of five European consumers also consider star ratings as a reference factor when booking hotel rooms, while for around one in three consumers, star ratings do not play a role. So online reviews are more important to tourists than star ratings when it comes to choosing a hotel (see figure no.4).

Another study shows that in the analysis stage of corporate travel planning and booking, videos and photos are the two most important factors affecting global travel decisions. Travel planners also consider a hotel's ability to showcase its facilities and amenities (Diosi, 2022).

Figure no. 5 Main factors influencing customers' decision to purchase an accommodation service in 2022



Source: processed by the authors based on data obtained from: <https://www.statista.com>

Three of the types of reviews that have a negative impact on most tourists relate to unappealing hotel rooms, unsightly food photos and boring content presentation. (Diosi, 2022). According to a survey by Booking.com, 63% of travellers believe technology plays a key role in controlling health risks while travelling and reducing travel anxiety. (Sustainable Travel Report, Booking, 2022). In 2022, 64% of online bookers make online purchases from desktop and 44% make them on a mobile device. This shows a change from 2021, when 59% of bookings were made on desktop and 41% on a mobile device. (Charlton, 2022).

5. Conclusions

Online travel agencies have revolutionised the travel industry and changed the way travel is planned by aggregating information from the internet in one place so customers can compare options, prices, reviews and more. So today, most travellers plan their trips online using OTAs such as Booking, Hopping, Expedia or Hotels.com. Most tourists who purchase accommodation online are influenced by reviews from previous customers and the rating a hotel has on an online travel platform such as Bookin.com.

In this context, the collaboration of hotels with online travel platforms is a clear benefit, but management should be aware that pitfalls can arise. They need to actively manage registrations, pricing and inventory and take a strategic approach to online distribution to reap the benefits of this method of promotion and booking. When done correctly, working with the right online travel platforms as part of your distribution strategy can effectively help generate direct bookings through the 'billboard effect'. Creating a comprehensive channel mix that incorporates different types of online travel agents can ensure access to the target audience and ensure a steady flow of bookings.

Consequently, tourism management in general, and hotel management in particular, needs to pay more attention to online visibility and the use of technology by working with online travel agencies and building positive relationships with them. If the relationship with online travel agencies is a positive one, tourism management can be helped by understanding the motivations that lead the consumer to choose a destination, accommodation and/or services and in this way the manager can act to improve the service and respond to the current needs of the tourist.

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Implementation of Knowledge Management in Intelligence Agencies: a VOSviewer bibliometric analysis

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Abstract

This article is based on a literature review regarding the possible connections between knowledge management and intelligence domain. Although intelligence has got, over time, a large variety of interpretations, such as business intelligence, competitive intelligence or national security intelligence, in this research the term intelligence is used to describe the knowledge required by the decision makers and leaders of a country in order to act for achieving the social, economic, political and military stability. The methodology used for conducting this research is based on the capabilities of the specialized software VOSviewer, respectively the bibliometric analysis with the co-occurrence of certain keywords, which emphasizes the correlation of certain fields. Also, the data needed for this research was exported from Web of science core collection and Scopus, the two largest bibliographic databases in the world. The results showed that the knowledge management and intelligence domain were not researched together.

Keywords: knowledge management, intelligence, intelligence structures, intelligence organizations, bibliometric analysis

J.E.L. classification: D83, H83, H56

1. Introduction

As both researchers and practitioners concluded, knowledge is one of the most important intangible assets within an organization, being the foundation of the competitive advantage that is widely chased by all parties (Bratianu, 2002; Bratianu, 2022; Grant, 1996; Nonaka, 1994; Nonaka & Toyama, 2003; Porter, 1985; Spender, 1996; Zack, 1999). Knowledge is processed by intelligence that represents a human capacity to gather, analyze and make decisions (Gardner, 2006; Sternberg, 1997). Being a powerful concept, intelligence was used for defining many aspects of our life, including those focusing on the business completion or national security agencies.

The first definition for *intelligence*, used for security reasons, was given by Kent (1949, p. XXI), who saw intelligence "as the knowledge which our highly placed civilians and military men must have to safeguard the national welfare". Although there were formulated a large number of definitions for intelligence over time, it can be concluded that the core meaning is the same: intelligence is obtained after the processing of data, information and knowledge by the special law-enforced entities, in order to inform the decision makers of a country, having the single purpose of ensuring the national security. In the specialty literature, those entities are called intelligence agencies, intelligence organizations, intelligence structures or intelligence community.

Living in an uncertain world, where unexpected events take place on a regular basis (Israel-Palestine war being the last example), intelligence and, therefore, knowledge, are two of the most important intangible assets for a nations, in order to protect their national security and to overcome all types of external or internal threats.

Therefore, the purpose of this paper is to analyze the state of the literature regarding knowledge management and intelligence domain, to identify the lack of publications and literature gaps and to give an understanding on the necessity of these two areas of research to be studied together, in order to enrich the intelligence practices field.

This article is structured as follows: introduction, followed by literature review, research methodology, findings and conclusions.

2. Literature review

Nonaka and Takeuchi (1995, p. 87) defined knowledge as a "justified true belief", being the most used definition in the knowledge studies. They also created the explicit-tacit dyad, representing the explicit knowledge, that can be transferred through symbolic language, and tacit knowledge, represented by experiences, emotions and values (Nonaka 1994; Nonaka & Takeuchi, 1995). Later, the researchers stated that knowledge cannot be defined by an universal definition because of its intangible characteristic. Therefore, knowledge should be understood using metaphors, by mapping the characteristics from a tangible object (source domain) to the intangible concept (target domain) (Andriessen, 2006). For example, knowledge was defined using the image of an iceberg, the visible and hidden parts representing the explicit and tacit knowledge from the nonakian dyad (Nonaka & Takeuchi, 1995).

Bratianu (2011) first introduced the thermodynamics paradigm in understanding the knowledge concept, and later on he developed the theory of knowledge fields, decomposing this concept in three parts: rational knowledge, emotional knowledge and spiritual knowledge (Bratianu, 2022). In this framework, rational knowledge is the correspondent of the explicit knowledge from the nonakian dyad, while emotional (emotions and feelings) and spiritual (values, beliefs and meanings) knowledge form the tacit knowledge. The managers need to understand these fields of knowledge and their transformation from one field to another one, in order to motivate the employees and to make better decisions. Knowledge management can be understood as a management of intangible resources, as Bratianu (2022, p.1) explained, "knowledge management is a complex process that integrates knowledge creation and acquisition; knowledge sharing and transfer; knowledge transformation, storage, and retrieval; knowledge risks; and knowledge application in creating products and services".

Waltz (2003, p.1) considered that knowledge management is also need to "produce and deliver a special kind of knowledge: intelligence—that knowledge that is deemed most critical for decision making both in the nation-state and in business". In his vision, Waltz (2003, p.3) considered that once the data and information obtained by the intelligence structures is analyzed, understood and explained, it becomes knowledge or foreknowledge. This knowledge is later used either to achieve the competitive advantage in a certain field (Bratianu, *et al*, 2021; Spender, 1996; Zack, 1999), or to ensure the national security of a country (Kent, 1949).

Likewise, intelligence resulted after analyzing the data and information obtained by the intelligence structures can ensure a decision advantage for the decision maker, giving the possibility to better understand a specific aspect, fact or phenomenon and, therefore, being better informed about a subject (MacGaffin & Oleson, 2016; Pili, 2018). In this perspective, the concept of intelligence is related to that of knowledge risk (Bratianu, 2018).

Focusing on national security intelligence, the specific activities for obtaining the data and information needed are conducted by specialized entities enforced by national law, named intelligence structures, organizations or agencies. Their activity is also regulated by strategies formulated at government level, is classified and controlled under strict rules.

The methods and sources used in the intelligence field are also classified, Wirtz (2010, p.59) offering some examples such as "information gleaned from espionage, images obtained by earth-orbiting satellites, intercepted communications, to publicly available media reporting, avoiding detection and surveillance, maintaining secret communications, and the fine art of recruiting and running clandestine agents and various social-science methodologies, computer-based analytic tools, or the use of collaborative work spaces that exploit emerging information-revolution technologies".

Oleson (2016) presented the categories of information based on how it is collected, respectively HUMINT (human source intelligence), OSINT (open source intelligence), IMINT (imagery intelligence), SIGINT (signals intelligence) and MASINT (measurement and signatures intelligence).

3. Research methodology

Based on the VOSviewer software capabilities, which include the identification and visualization of similarities and common subjects within a certain area of literature, this research propose a bibliometric analysis of the publications indexed in Web of Science core collection and Scopus, concerning the knowledge management implementation in intelligence community. In order to achieve this intended purpose, the research was conducted using the co-occurrence investigation procedure, finding the possible connections and similarities within titles, abstracts and keywords.

The data required for this research was retrieved from Web of Science core collection and Scopus (world's largest citation and bibliographic databases) in 09 November 2023, using "All fields", "All types", "All languages" and all the time range criteria.

The expressions used for searching through the Web of Science core collection and Scopus where the following: "knowledge management – intelligence structures", "knowledge management – intelligence organizations", "knowledge management – intelligence community" and "knowledge management – intelligence agencies" (see Table 1).

Table no. 1. Expressions used to retrieve database from Scopus

Expression	Total number of publications in Web of Science core collection	Total number of publications in Scopus
"knowledge management – intelligence structures"	2	133
"knowledge management – intelligence organizations"	2	52
"knowledge management – intelligence community"	6	312
"knowledge management – intelligence agencies"	0	137

Source: Authors' own research

The results obtained from searching using the mentioned expressions were exported containing "Full record" from Web of science core collection, under the ".txt" extension, and Citation information", "Bibliographical information", "Abstract & keywords", "Funding details" and "Other information" from Scopus, under the ".csv" extension.

Given the fact that the databases retrieved from Web of Science core collection contain a relatively low number of publications, the databases for "knowledge management – intelligence structures" and "knowledge management – intelligence organizations" will not be analyzed using VOSViewer as it wouldn't give any relevant information.

Later, these databases were processed and analyzed using the specialized software VOSviewer, in order to identify the co-occurrence of certain expressions and keywords and to generate the maps for visualization of links.

4. Findings

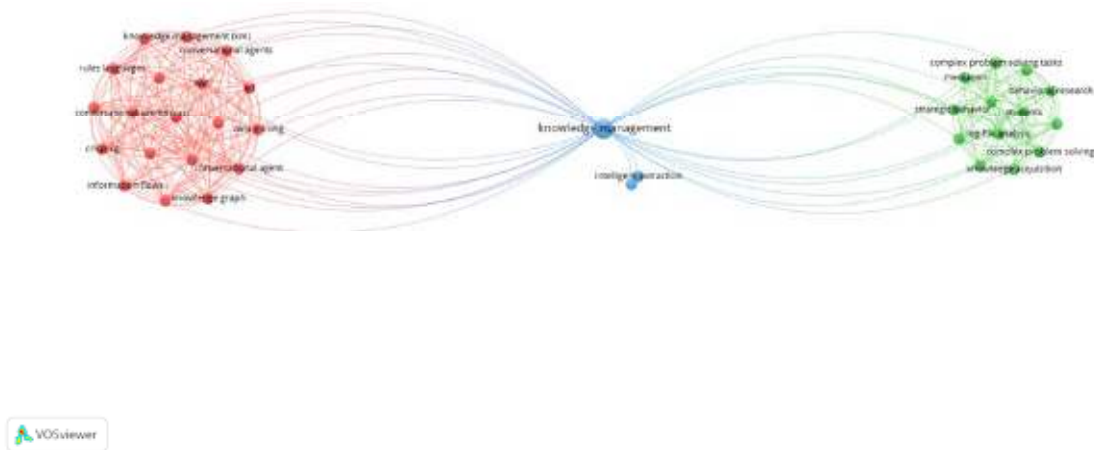
The purpose of this study is to analyze the raw data generated by Web of Science core collection and Scopus, in order to identify the possible connection between knowledge management and intelligence domain and if there were any publications regarding the correlation between these two fields.

The possible connection between knowledge management and intelligence domain is researched using the co-occurrence investigation procedure from VOSviewer for the expressions that were mentioned above, respectively "knowledge management – intelligence structures", "knowledge management – intelligence organizations", "knowledge management – intelligence community" and "knowledge management – intelligence agencies".

Thus, VOSviewer generated the maps needed for identifying the possible connections, showing the keywords in different clusters and placing them at a specific distance, based on how closely related they are.

Using the database exported for the "knowledge management – intelligence structures" expression from Scopus, respectively the 133 publications, VOSviewer generated 69 keywords, but none of them met the threshold of minimum 2 occurrences. Given so, the map was generated using all the 69 keywords, with only 35 of them being connected to one another, which were placed in 3 clusters (Figure no.1).

Figure no. 1. The map generated by VOSviewer using the keywords for "knowledge management – intelligence structures"- Scopus



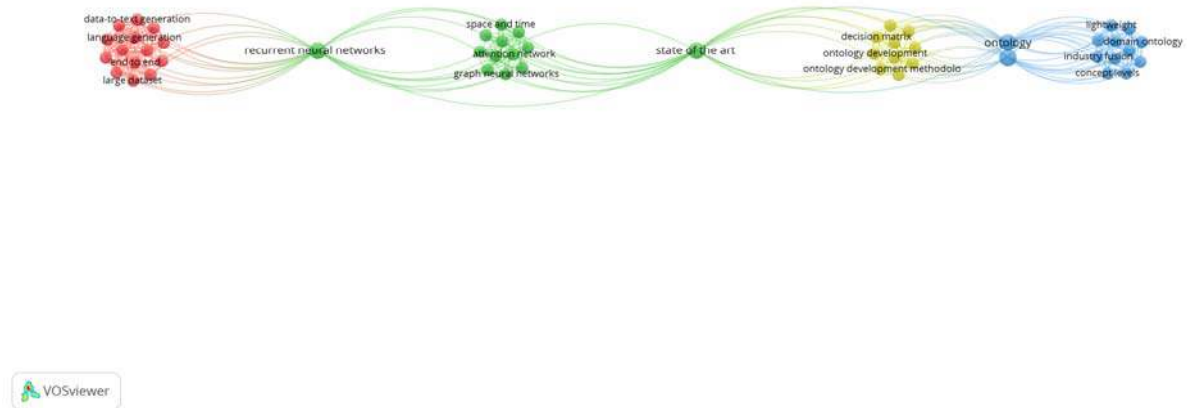
Source: Authors' own research

The specialized software placed the "knowledge management" keyword in the center of the map, in the blue cluster among "intelligent extraction" and "meta-synthesis", being linked with both other clusters, respectively the red and green ones, and with almost all keywords from the map. The green cluster contains keywords specific to knowledge studies, respectively "knowledge application", "system knowledge", "complex problem solving", "knowledge acquisition" or "strategic behavior", while the red cluster is formed by keywords from a broad range of fields like "intelligent robots", "healthcare", "data mining", "semantic web rule language", "information flows" or "conversational agents".

By analyzing Figure no.1 it can be concluded that the publications indexed in Scopus that formed the database for "knowledge management – intelligence structures" cover a various area of research, all connected to knowledge management. However, there cannot be found any possible connection between knowledge management and intelligence domain.

Moving forward, for the database retrieved from Scopus for "knowledge management – intelligence organizations", VOSviewer generated 76 keywords, with only 4 meeting the minimum threshold of 2 occurrences. Therefore, the map was generated using all 76 keywords, with only 50 keywords having connections with at least other one. These keywords were placed in 4 clusters (Figure no.2).

Figure no. 2. The map generated by VOSviewer using the keywords for "knowledge management – intelligence organizations"- Scopus



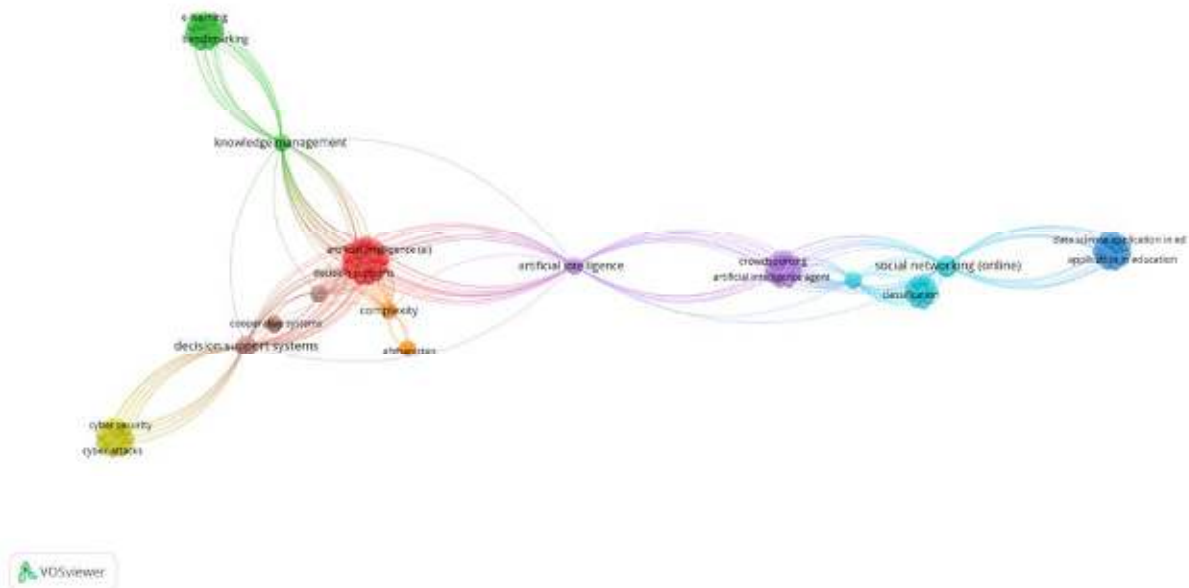
Source: Authors' own research

The red cluster is formed by keywords like "neural-networks", "end to end", "sequence models", "text generations" and "large dataset", specific to computer science and artificial intelligence field. The green cluster, placed in the center of the map, has two keywords, "recurrent neural networks" and "state of the art", linked with all the keywords from the red cluster and the yellow cluster respectively. The other keywords from the green cluster, like "speed", "speed and time", "spatio-temporal data" or "speed prediction", are specific to physics. The other two clusters (yellow and blue) are connected through "ontology" keyword, and both contain expressions specific to knowledge studies: "surveys", "pilot studies", "decision matrix", "development methodology" (yellow cluster), "knowledge sharing", "industry fusion", "concept level (blue cluster).

Therefore, by analyzing Figure no.2 it can be concluded that these publications do not cover the research domain of knowledge management implementation in intelligence area.

Using the 312 publications from Scopus for "knowledge management – intelligence community" expression, VOSviewer found 130 keywords, with only 7 meeting the threshold of minimum 2 occurrences. Therefore, the research was continued with all the 130 keywords, while only 115 keywords were connected to at least one another. In this case, VOSviewer generated 8 clusters (Figure no.3).

Figure no. 3. The map generated by VOSviewer using the keywords for “knowledge management – intelligence community”- Scopus



Source: Authors' own research

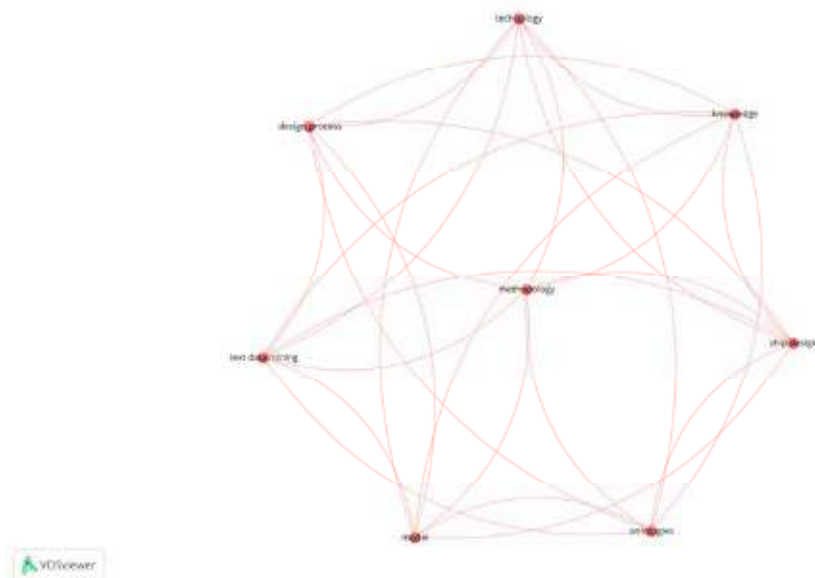
In the center of the map, VOSviewer placed the “artificial intelligence” keyword, from the purple cluster, connected with all the keywords from the red cluster which contains keywords specific to management domain, such as “uncertainty”, “decision making”, “uncertainty analysis”, “decision support”. Besides “artificial intelligence”, the purple cluster contains keywords related to this field, such as “learning frameworks”, “artificial intelligence agent” or “large dataset”. Both light blue and blue clusters that are placed near the purple cluster are connected through “social networking (online)” keyword and are specific to computer science domain, with keywords like “social media”, “fake detection”, “contextual information” (light blue), “online systems”, “science applications” and “learning community” (blue).

The “knowledge management” keyword is placed in the green cluster, being connected with all the keywords from the red cluster, specific to management. “Knowledge management” is also connected to “decision support systems”, from the brown cluster, who also has strong links with the red cluster. In the brown cluster, VOSviewer placed keywords like “local government”, “intelligent systems” and “strategic planning”. “Decision support” is also linked with the yellow cluster, specific to information security, with keywords like “cybersecurity”, “security operations”, “private data” and “defence mechanism”.

Although “knowledge management” is related to the red and brown clusters, by analyzing the distribution of keywords and the placement of clusters inside the map it can be concluded that the publications indexed in Scopus that generated the database exported and used in this case do not cover the domain of knowledge management in intelligence area.

The “knowledge management – intelligence community” expression is the only one that generated relevant results in Web of science core collection and, by using this database, VOSviewer generated 23 keywords, with only 8 being connected. These keywords were placed in only one cluster (Figure no.4).

Figure no. 4. The map generated by VOSviewer using the keywords for “knowledge management – intelligence community” – Web of science core collection

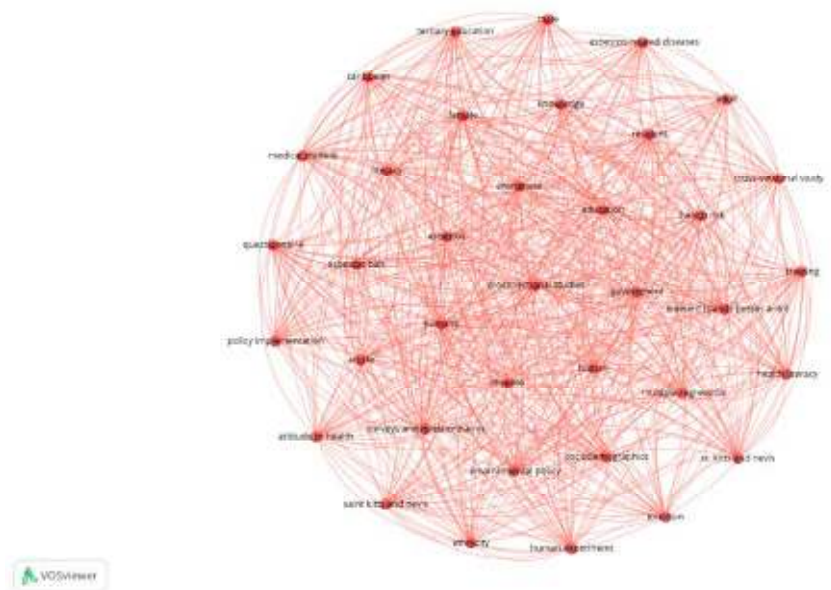


Source: Authors' own research

The only cluster is formed by the following keywords: “knowledge”, “ship design”, “ontologies”, “model”, “text data mining”, “design process”, “technology” and “methodology”.

The database for the last expression, respectively “knowledge management – intelligence agencies”, generated a total number of 112 keywords in VOSviewer, but none of them met the threshold of minimum 2 occurrences. From this total number, only 37 were connected to each other and VOSviewer placed them in only one cluster (Figure no.5).

Figure no. 5. The map generated by VOSviewer using the keywords for “knowledge management – intelligence agencies” – Web of science core collection



Source: Authors' own research

The only cluster generated by VOSviewer contains keywords specific to social sciences, like "education", "awareness", "humans", "disease", "environmental policy", "ethnicity", "female", "male", "adult" or "health risk". Given so, it can be stated that this publications do not refer to knowledge management implementation in intelligence domain.

5. Conclusions

The purpose of this research was to analyze the state of the literature regarding the implementation of knowledge management in intelligence area, as well as the possible relationships between these two domains.

In order to achieve this goal, it was conducted a bibliometric analysis using data retrieved from Web of science core collection and Scopus, the two largest bibliographic databases in the world, for the following expressions: "knowledge management – intelligence structures", "knowledge management – intelligence organizations", "knowledge management – intelligence community" and "knowledge management – intelligence agencies".

By analyzing the results generated by the specialized software VOSviewer, it can be concluded that these two domains, respectively knowledge management and intelligence, were never researched together in a publication indexed in Web of science core collection or Scopus. Although Scopus generated a significantly larger number of publications, it cannot be found any correlation between knowledge management and intelligence.

In conclusion, I consider that these domains need and should be researched together, in order to find the possibility of implementing the knowledge management concepts in intelligence area that could support the decision making process with high value information and new capabilities.

The main contribution of this study represents the bibliometric analysis conducted for the expressions indicated above, which is the first one to cover these fields, being thus demonstrated that the knowledge management and intelligence fields need to be researched together.

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Unveiling the Power of Social Media: Innovative Strategies and SOCMINT Insights in Modern Marketing

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Abstract

In the era of rapid technological advancements, traditional marketing strategies no longer wield the same effectiveness. The focal point has shifted to social media, a pivotal virtual realm where platforms not only serve as social networks but also as digital advertising spaces utilizing innovative and captivating marketing techniques. Marketers recognize the indispensability of these digital forums, leveraging them to reach a vast audience while optimizing budgetary resources.

In addition to conventional marketing, the less highlighted realm of social media intelligence (SOCMINT) plays a crucial role. SOCMINT involves harnessing data collected from social media platforms to gain deeper insights into consumer behavior. This article delves into research conducted among social media users, unveiling the voluntarily shared data and information. It also measures users' awareness of how other entities utilize their publicly displayed information. In this dynamic landscape, the fusion of strategic digital marketing and SOCMINT emerges as a powerful tandem for navigating the evolving realm of consumer engagement.

Key words: social media marketing, consumer behaviour, social media intelligence

J.E.L. classification: M31

1. Introduction

In the rapidly evolving landscape of digital marketing, the traditional strategies that once defined success are giving way to a new era dominated by the power of social media. The term "traditional" itself has become somewhat antiquated, as marketers navigate an ever-changing terrain where innovation is key to capturing the attention of a digitally-savvy audience. In this article, we will delve into the transformative role of social media in modern marketing, exploring innovative strategies and shedding light on the concept of Social Media Intelligence (SOCMINT).

Social media platforms have transcended their initial purpose as mere channels for social interaction. They have evolved into dynamic spaces where brands and products can harness the potential of digital advertising in ways that were once unimaginable. The traditional boundaries between social networking and advertising have blurred, paving the way for a more integrated and immersive marketing experience.

At the forefront of this marketing revolution is the recognition that social media is not just about creating a presence; it's about engagement and interaction. Brands are no longer limited to static advertisements; they now have the opportunity to craft narratives, build communities, and establish genuine connections with their audience. This shift in approach has given rise to innovative strategies that prioritize authenticity and relatability over conventional marketing tactics.

One of the driving forces behind this paradigm shift is the sheer number of users on these platforms. With a global audience that spans billions, social media provides an unparalleled opportunity for marketers to reach a vast and diverse demographic. What's even more enticing is the ability to achieve this reach with a relatively modest budget compared to traditional advertising channels. The democratization of marketing has empowered businesses of all sizes to compete on a

level playing field within the digital realm.

Amidst the myriad strategies employed in the social media sphere, the concept of Social Media Intelligence (SOCMINT) emerges as a game-changer. SOCMINT goes beyond the surface-level metrics and engagement statistics; it involves the strategic use of data collected from social media platforms to gain a deeper understanding of consumers. This goes beyond demographic information – it delves into consumer behaviors, preferences, and sentiments.

In the course of our research, we explored the landscape of social media users to unravel the layers of data voluntarily shared by them. Users willingly put forth a plethora of information, from personal preferences to lifestyle choices, creating a treasure trove for marketers. The challenge, however, lies not just in collecting this data but in using it responsibly and ethically.

Understanding the implications of SOCMINT requires a closer look at the delicate balance between personalized marketing and privacy concerns. As marketers leverage the wealth of information available, there is a responsibility to ensure that the use of this data respects user privacy and complies with ethical standards. The awareness of users regarding how their data is utilized by entities adds another dimension to the evolving discourse on digital ethics.

2. Theoretical background. Social Media Marketing

In today's business landscape, well-executed marketing has become an indispensable component for achieving pinnacle success, permeating every aspect of our surroundings (Kotler and Keller, 2012, p.1). In recent years, companies have recognized that traditional marketing methods are no longer sufficient to sustain a business, and social connectivity has emerged as the key to optimizing marketing efforts (Geho and Dangelo, 2012, p.61).

For most organizations, including businesses and government agencies, the use of social networks begins in marketing, public communications, or specific departments directly linked to customers. The advent of Web 2.0 and social networks has brought about significant changes, giving rise to innovative and highly effective social business programs (Evans, McKee, and Bratton, 2010, p. 4). The internet represents a massive opportunity for companies to reach consumers directly with information that costs only a fraction of the advertising expenses allocated to traditional advertising (Scott, 2011, p. 6).

Social publishing entails the creation and dissemination of content through websites and platforms that meet the audience's needs, enabling the sharing of user-generated content without barriers and without adhering to traditional broadcasting and publishing models. There are four categories of social marketers: individual users, independent professionals, professional collaborators associated with organizations such as mass media news, and brands. Brands utilize social media for content marketing distribution or promotion within a campaign. Social publishing channels include blogs, microsharing sites, bookmarking sites, and social news, allowing sharing and participation similar to social communities. Social community orientation is based on creating networks, and social publishing relies heavily on knowledge exchange (Tuten and Solomon, 2018, p. 14).

Given the connectivity of today's world, the influence of social conformity is growing, and customers are increasingly curious about others' opinions, sharing ideas and reviews, collectively shaping their own brand image, often different from the one companies intend to project (Kotler, Setiawan, and Kartajaya, 2017, p.13). Sharing and reading for pleasure are considered common desires, and as a result, 70% of Internet users claim to have posted some type of content on social networks. The popularity of visual sites is continually growing, emphasizing that images are the most popular type of content (Quesenberry, 2018, p. 144).

The use of social media allows overcoming traditional constraints such as geography, time zones, and digital technology enables the refinement of marketing messages to target specific market segments, achieving connectivity with a much larger audience (Ryan, 2014, p. 22).

However, this strategy is not always easy to implement, especially when it comes to the challenging issue of attribution. That being said, there are certainly many brands that seem to master it, including some of the most globally renowned companies such as KFC, Nike, Netflix, Red Bull, Lego, Starbucks, Coca-Cola, Heineken, Chanel, Uber, etc. (Gilliland, 2020).

It seems, however, that recently, social media marketing has increasingly adapted, providing users with a more personalized experience, made possible by the information they publicly share. For instance, if a user posts on their Facebook account details such as gender, date of birth, residence (through information about place of birth and current address), education level, and job (implicitly providing an idea of income level), socio-demographic characteristics become easily accessible and can be readily utilized by marketing professionals for targeting. Furthermore, if the user shares information about their interests (through photos, group memberships, liking certain pages), marketers find it even easier to precisely target them for products or services they may purchase or use.

Social media intelligence involves the collection of data from social media conversations to inform future marketing actions. Unlike social listening, which focuses on monitoring conversations, social media intelligence goes a step further by utilizing patterns and trends in data for decision-making.

For instance, marketers seeking to leverage social data intelligence observe conversations on platforms like Instagram, Facebook, and Twitter to gauge sentiment around their brand or products. This data can then be utilized for more effective ad targeting or adjusting the topics covered in blog posts.

In addition, social media intelligence can analyze demographic data, identify trends in customer behavior, and track competitor activity. All of this information contributes to informing campaigns, creating more effective content, and enhancing the return on investment (ROI) of social media efforts.

The four main components of social media intelligence include monitoring, collecting, analyzing, and taking action. In the monitoring phase, various social networking sites where the target audience is active are observed to understand responses to products or services in different scenarios. Social media listening tools, such as Hootsuite Streams, aid in monitoring by tracking keywords, hashtags, and phrases related to the brand.

Once relevant conversations are identified, the next step is data collection, encompassing demographic information, user behavior, sentiment analysis, trends, and more. The goal is to gain a comprehensive understanding of the target audience to tailor campaigns accordingly.

After collecting substantial data, the analysis phase interprets the information, either manually or through automated tools, to uncover insights into customer behavior and conversational trends. For example, positive conversations from a specific demographic may lead to an increased advertising spend for that group, while negative sentiment about a competitor might present an opportunity to gain market share.

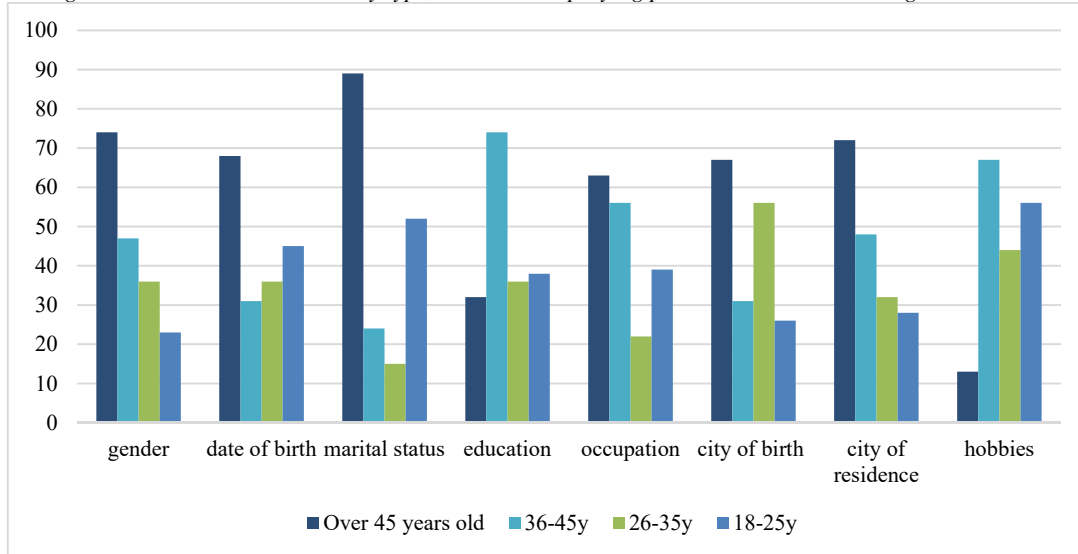
The final step is taking action, translating the comprehensive view of the target audience into actionable steps. This could involve A/B testing, optimizing landing pages, creating targeted campaigns, or adjusting product offerings. The ultimate aim is to use insights from data analysis to make decisions that enhance the customer experience and increase ROI.

3. Research methodology

Within this article, a quantitative research study was conducted among social media users to identify publicly displayed personal information. The research aimed to determine consumers' awareness of the use of their publicly displayed personal information on social media. Among the objectives were the quantification of publicly displayed personal information, the identification of reasons leading to the display of personal information, and the measurement of awareness regarding potential marketing uses of this information.

The data was collected through an online questionnaire, and the data analysis was conducted using the Excel software program.

Figure no. 1. Social media use by type, Internet. Displaying personal data based on age



Source: graphic made by the author

Taking into account the display of personal data based on age, it can be observed that younger and older individuals are more inclined to publicly share a larger quantity of personal information. Meanwhile, individuals aged between 25 and 45 years old tend to be more discreet regarding the public display of personal data.

When asked about the reasons for making certain personal information public or not on their social media accounts, users provided the following responses:

Reasons for displaying personal data on social media platforms can vary and may be influenced by several factors. Here are some common motives:

Connecting with Friends and Family: Many users choose to display personal data to maintain connections with friends and family, allowing them to know more about their lives.

Expressing Personal Identity: Some users believe that displaying personal data, such as interests, hobbies, and significant life events, contributes to expressing their personal identity and creating a more comprehensive image.

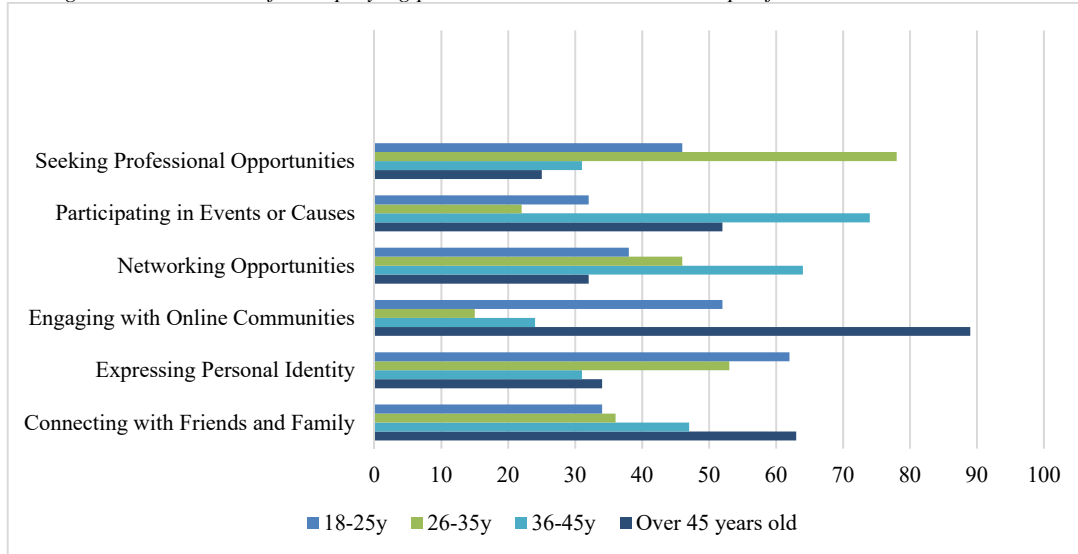
Engaging with Online Communities: Actively participating in online communities with similar interests can be a motive for displaying personal data. Users can find people with common interests and facilitate interaction with them.

Networking Opportunities: In a professional context, some users display personal data to benefit from networking opportunities and collaboration, thereby building relationships in their field.

Participating in Events or Causes: Displaying personal data can also serve marketing or activism purposes. Users may want to share opinions or support specific causes, and personal data can be used in this context.

Seeking Professional Opportunities: Displaying details such as education or professional experience can help users in seeking professional opportunities or help potential employers identify suitable candidates.

Figure no. 2. Reasons for displaying personal data on social media platforms

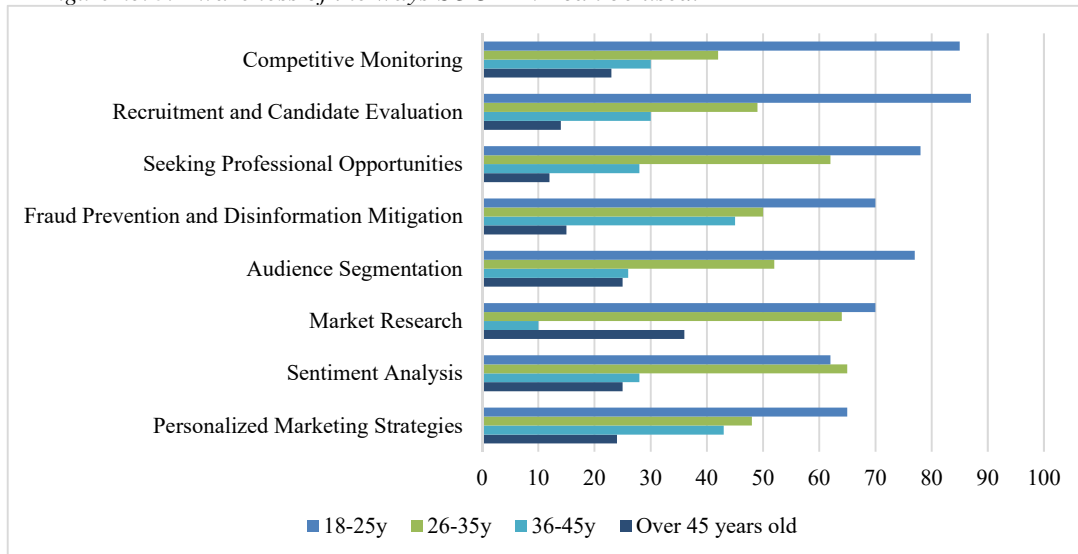


Source: graphic made by the author

In Figure 2, it can be observed that younger individuals predominantly have motives such as seeking new professional opportunities, while older individuals desire to belong to communities.

In response to the question regarding awareness of how publicly displayed personal data on social media platforms can be used, respondents provided the following answers:

Figure no. 3. Awareness of the ways SOCMINT can be used.



Source: graphic made by the author

In Figure 3, we can observe that younger individuals are much more aware than older ones of the ways in which the personal information they publicly display on social media platforms can be utilized.

4. Conclusions

The analysis of social media intelligence (SOCMINT) and the public display of personal information on social media platforms reveal intricate patterns of behavior, preferences, and awareness among users. Understanding these dynamics is essential for businesses, marketers, and

researchers seeking to navigate the complex landscape of online interactions and leverage the wealth of information available.

In exploring the motives for sharing personal data on social media, it becomes evident that users are driven by a variety of factors. Connecting with friends and family, expressing personal identity, and engaging with online communities are common motivations. Additionally, users may seek professional opportunities, participate in events or causes, and contribute to networking. The decision to share personal data is nuanced and influenced by individual preferences and the desire for tailored online experiences.

Moreover, the implications of SOCMINT data extend beyond individual motivations. Businesses can utilize this data for personalized marketing strategies, sentiment analysis, and market research. The ability to segment audiences based on shared characteristics or interests allows for targeted and effective marketing campaigns. SOCMINT also proves valuable in preventing fraud, mitigating disinformation, and monitoring competitors.

The research conducted, as outlined in the provided translations, sheds light on the awareness users have regarding the use of their publicly displayed personal information. Younger individuals exhibit a higher level of awareness compared to their older counterparts. This discrepancy in awareness may be attributed to various factors, including differences in digital literacy, exposure to online privacy discussions, and generational attitudes toward social media.

The quantitative research, conducted through online surveys and data analysis using tools like Excel, provides valuable insights into the public display of personal information on social media. The study aims to determine the degree of awareness among consumers regarding the use of their publicly displayed personal information. Objectives include quantifying the amount of publicly displayed personal information, understanding the motivations behind such displays, and measuring awareness of potential marketing uses.

Analyzing the responses to questions about the reasons for making certain personal information public or not, users express a diverse range of motivations. These motivations align with the identified factors influencing the public display of personal data. Connecting with others, expressing identity, and participating in online communities emerge as recurring themes.

In conclusion, the intersection of SOCMINT and the public display of personal information on social media platforms represents a dynamic and evolving landscape. Users navigate this space with diverse motives, contributing to a rich tapestry of online interactions. Businesses and researchers can harness the power of SOCMINT for targeted strategies and insights, but ethical considerations and privacy concerns must be paramount.

As the digital landscape continues to evolve, understanding user behavior, motivations, and awareness becomes crucial. Businesses must balance the benefits of data-driven insights with respect for user privacy. Moreover, ongoing research and discussions surrounding online behavior and privacy are essential for creating informed policies, ensuring ethical practices, and fostering a digital environment that respects individual choices and preferences.

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The Impact of Online Advertising on the Purchase Decision

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Abstract

The dynamic of the online environment, consumer behavior and marketing practices that came along with the globalization, have created a complex landscape which underlines the importance of adapting marketing approach to the specific local market. The aim of the research is to find which of the online advertising methods has a bigger impact on the customers' final purchase decision. The study wants to be an observation for analyzing the effectiveness and impact of online advertising tools on Romanian market consumers. In terms of research design, we opted for the quantitative method, and we applied a survey on 200 respondents. The quantitative analysis indicated important differences in the way online advertising channels affect respondents' buying decisions. The study reveals insights into how consumers interact with online messages and campaigns. The paper wants to be a tool for future researchers in the field of Romanian consumers' preferences and behavior.

Key words: online advertising, digitalization, purchase decision, social media, digital marketing

J.E.L. classification: A10, B23, M3

1. Introduction

The explosion of the online environment, especially during the last two decades, has been challenging for marketing. This environment has given companies many opportunities to reach their audience, collect and analyze data and customize messages and offers.

This study aims to explore the effectiveness of online and offline advertising on the Romanian market, focusing on the factors that influence purchasing decisions in response to either online or offline advertisements. Additionally, this study aims to identify which of the online advertisement channels has a major impact on the consumers' purchase decision, focusing on the top five online advertising channels: Social Media, Google Ads, You Tube, Websites and E-mail marketing. Therefore, this paper is to explore the related factors and the extent to which online channels impact the customer's purchase intention on Romanian market, during September - October 2023.

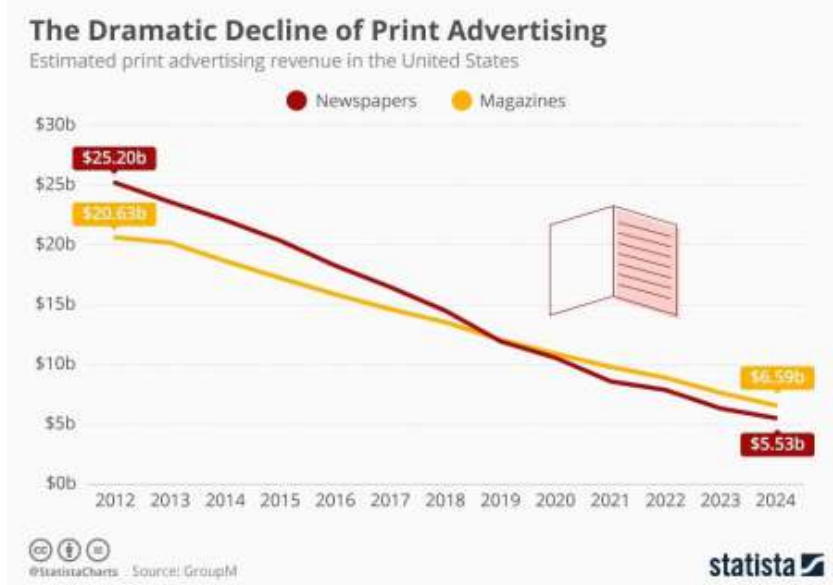
The online presence of a company enables it to communicate more precisely with its customers, as businesses can exert better control over the information they disseminate on the internet. Thanks to the internet, consumers can easily access feedback on the product in real-time.

Statista claims that the last 15 years have been challenging for print publishers all over the world. With the rapid growth of internet and smartphones, the shift towards online news, publicity, advertising and various forms of journalism has outpaced traditional newspapers and magazines. This transformation also led advertisers all over the world to shift their budgets to online platforms, resulting in the closure of numerous print publications (Richter, Statista, 2019).

According to Statista newspapers revenue income in U.S. were expected in 2019 to decline by the end of 2024 to \$5.5 billion from \$25 billion in 2012 and magazines are expected to face the same fate, revenues being expected to drop to \$6.6 billion by 2024, from \$20.6 billion in 2012.

The chart below estimates dramatic decline of print advertising revenue in the United States from 2012 up to 2024, for newspapers and magazines (Richter, Statista, 2019).

Figure no. 1 The print advertising revenue in the United States from 2012 to 2024.



Source: <https://www.statista.com>

2. Literature review

Kotler claims that the online environment has brought a major change in the paradigm of marketing. Instead of exclusivity-based strategies and unidirectional messages, online marketing places particular emphasis on inclusion and interaction (Kotler, 2017, p.7).

In order to better understand the marketing strategy and consumer policy concepts, Robert East et al., suggest we need to understand mechanism behind the decision making process and state that the cognitive model of choice best describes the decision making process when consumers deal with difficult choices. Yet, the above mentioned authors claim that the process of decision making is simplified, even when the decision is hard to make. In order to influence the decision making process of the consumer, the seller must alter the buyer's values and believes or to modify the environment of the consumer there where the context controls the behavior. It is obvious that all along the growth of internet that people are able to make better choices, but the extend to which this happens has not yet been determined (East et al., 2022, p.24).

According to Stafford Global Organization, the evolution of digital marketing has completely transformed the marketing landscape, providing all organizations with the opportunity to promote and advertise their brand on a global scale, significantly expanding their potential target audience. This increased digitization of the marketing landscape has also had an impact on how consumers engage with and relate to the various organizations and brands available (Stafford Global, 2022).

According to Mehralian today's digital era, online advertising has become a cornerstone in the marketing strategies used by companies across the globe (Mehralian, 2022).

Chaffey and Ellis-Chadwick define digital marketing as "achieving marketing objectives through applying digital media, data and technology" (Chaffey, Ellis-Chadwick, 2022). The authors refer to digital marketing as a way to apply digital media, data and technology combined with traditional marketing techniques and communications in order to reach marketing objectives. Digital marketing serves as a method for connecting with potential customers who utilize digital technologies. Its fundamental objective is to draw attention and increase sales for various products and services (Chaffey, Ellis-Chadwick, 2022).

The consumers' behavior in digital era marketing

The increased digitalization of marketing has also influenced how consumers engage and connect with the various organizations and brands they can choose from. When speaking product selection, consumers' choices are significantly influenced by the information they find about the targeted

product during their online research. This emphasizes the vital importance for brands and businesses to build an updated online presence, as it is the primary basis upon which consumers assess them (Stafford Global, 2022).

The virtual environment allows companies to reach global audiences without the geographical limitations of traditional marketing (Ahn et al., 2022).

Digital marketing strategy and the identification of online consumers' needs

The evolution of online technologies, the rising significance of the internet, mobile applications, and social media platforms have transformed the way consumers make purchase decisions and conduct their shopping (Stancu et al., 2023).

Consumers become conscious about their requirements either through marketing efforts or external influences. Comprehending the needs of consumers marks the initial phase of the purchasing process (Shafag, 2021).

In their book on digital marketing, Chaffrey and Chadwick offered a research conducted by GWI in 2020 (GWI is an audience research company founded by Tom Smith in 2009, which provides audience insight to publishers, media agencies and marketers around the world), based on a global panel, showing how much the social networks influence the purchase and found that age a variable which could influence the buyers decision. The GWI research showed that younger generations are more likely to be influenced in their purchase decisions by social media, as compared to older generations:

- Discover brands/product via ads on social media (31 percent of 16–24-year-olds compared to 19 percent of 55–64-year-olds).
- Discover brands/products via recommendations on social media (26 percent compared to 15 per cent).
- Research products online via social networks (50 percent versus 25 percent).
- Lots of likes/good comments would increase chance of purchase (27 percent versus 13 percent).
- A 'buy-button' would increase chance of purchase (14 percent versus 6 percent), (Chaffey, Ellis-Chadwick, 2022, p.14 apud GWI, 2020).

One of the most important trends in marketing in the digital age is the use of data-driven insights. By collecting and analyzing customer information, companies can gain valuable insights into their customers' preferences, behavior and needs. This data can then be used to create more accurate and personalized marketing messages that are more likely to appeal to the target audience. According to a report from McKinsey, companies that base their marketing strategy on data see a 20% increase in customer engagement and a 15-20% increase in return on marketing investment (Ďaďová, Soviar, 2021).

However, emerging trends calling for an end to data transfer to third parties do not meet consumer needs. Kotler et al. (2010), in his book Marketing 3.0, uses the customer-centric approach, where the balance between mind and body plays a role in decision making.

Creating personalized advertising and increasing efficiency are part of an already fundamental strategic marketing approach, namely STP marketing (Hanlon, 2022). Business Research Methodology defines STP as the segmentation, targeting and positioning marketing model which assists classifying population segments according to their needs and common characteristics, selecting specific segments and developing products and services for this particular segment (Business Research Methodology, online).

According to Brand Equity, the best strategy for a business is not to choose between traditional or digital branding but rather to focus on both of them as an integrated approach in order to maximize their impact. They suggest that businesses should use both digital and traditional advertising aiming different outcomes, such as: digital platforms for targeted marketing and data driven insights in order to reinforce digital branding with traditional advertising with the purpose of gaining customers' credibility and trust (Mehta, Brand Equity, 2023).

3. Research methodology

This research was conducted starting from two current topics that are closely linked: digitalization and online advertising, as digitalization has radically transformed the way companies and consumers interact with advertising.

The aim of the research is to find which of the online advertising methods has a bigger impact on the customers' final purchase decision. The survey was based on quantitative method, and it was applied on 200 respondents. The quantitative analysis indicated important differences in the way online advertising channels affect respondents' buying decisions. The study reveals insights into how consumers interact with online messages and campaigns. The paper wants to be a tool for future researchers in the field of Romanian consumers' preferences and behavior.

The study key questions are the following: What are the significant differences in the effectiveness and impact of online and offline advertising in Romania, from the perspective of consumers? And how can this information contribute to the development of a more effective advertising strategy?

The main objective of the research is to find which of the online advertising methods has a bigger impact on the customers' final purchase decision. The paper wants to be of use for future researchers in the field of Romanian consumers' preferences and behavior. We conceived this study as an observation for analyzing the effectiveness and impact of online advertising tools on Romanian market consumers.

In terms of research design, we opted for the quantitative method. The research method used in this study is the investigation positivist, quantitative method based on an online survey with 200 respondents, using the online survey technique. The researchers opted for this method, as the survey offers the benefit of data collecting in a relatively short and efficient time from many consumers in Romania.

Data was collected through the Google Forms platform, and the participation of the subjects in the questionnaire was voluntary. Before applying the questionnaire, the researcher asked respondents for their consent to answer the questions and to take part in the survey. They were informed that their data were confidential, and all of the participants agreed.

Data analysis was performed with SPSS version 26 software. The respondents were persons who have previously had made online purchases, from different regions in Romania, aged between 18 and 55 years old. The questionnaire was applied to 200 consumers from Romania between the 9th and the 30th of October 2023, and was distributed to consumers on LinkedIn, professional WhatsApp groups and e-mail.

The variables used in the study were: Social media advertising (Facebook, Instagram), Search engine advertising (Google Ads), Video advertising on video platforms (YouTube), Web sites advertising, Email marketing, Newspapers and magazines advertising, Radio advertising, TV advertising, Outdoor advertising (advertising panels, buses, etc.).

This study wants to provide a better way of understanding the consumers' online and offline behavior and a deeper understanding of the efficiency when it comes to choosing the proper advertising instruments. Besides that, the study wants to be of use for future researches in the field of Romanian consumers' preferences and behavior.

4. Findings

The quantitative analysis indicated important differences in the way online advertising channels affect respondents' buying decisions. The study reveals insights into how consumers interact with online messages and campaigns.

The results suggest that in this sample, the online advertising, mainly the advertising on social networks, has a significant influence on purchase decisions, while offline advertising, such as newspapers and magazines advertising, has a lower influence. TV advertising also has a significant influence, but lower than online advertising. It is important to mention that these results can vary according to the audience and other demographic and behavioral factors.

We may summarize as it follows:

- Online advertising channels have a major impact on the respondents' purchase decisions as compared to offline advertising.

- Some of the analyzed online advertising channels have a higher impact on buying decisions than others: social media advertising has the highest impact as compared to e-mail marketing which has the lowest impact, as detailed in the table no.1 .
- The quantitative study indicated differences in the way online advertising channels affect respondents' buying decisions, as detailed in the table no. 1, 3 and 4.
- This study investigated the effectiveness of online and offline advertising on the Romanian market, focusing on the factors that influence purchasing decisions in response to either online or offline advertisements. Additionally, this study identified which of the online advertisement channels had a major impact on the consumers' purchase decision, focusing on the top five online advertising channels: Social Media, Google Ads, You Tube, Websites and E-mail marketing.

Table no. 1 Descriptive Statistics

	Mean	Std. Deviation	Analysis N
4. On a scale from 1 (lowest) to 5 (higher), which one of the following advertising channels determined you to make a purchase? Social media advertising (for example: Facebook, Instagram)	3.87	1.245	200
Search engine advertising (for example: Google Ads)	2.90	1.367	200
Video advertising on video platforms (for example, YouTube)	2.52	1.295	200
Web sites advertising	2.70	1.323	200
Email marketing	2.18	1.355	200
5. On a scale from 1 (lowest) to 5 (higher), which one of the following advertising channels determined you to make a purchase? Newspapers and magazines advertising	1.69	1.109	200
Radio advertising	2.05	1.164	200
TV advertising	2.92	1.295	200
Outdoor advertising (advertising panels, buses, etc.)	2.36	1.319	200

Source: Processing in SPSS program

For *online advertising channels* we obtained the following results:

Social media advertising (Facebook, Instagram) has an average of 3.87 on a scale from 1 to 5, with standard deviation of 1.245. This fact suggests that this advertising had, in average, a significant influence on the respondents' purchase decisions.

Search engines advertising (Google Ads) has a smaller average, of 2.90, with a standard deviation higher than 1.367. Despite that, it still situates itself around the average value (3) on a scale from 1 to 5, indicating a moderate influence.

Video advertising in video platforms (YouTube) has an average of 2.52, with standard deviation of 1.295. This suggests that the influence of this advertising is lower as compared to socializing networks and search engines advertising.

Web sites advertising have an average of 2.70 and a standard deviation of 1.323, indicating a moderate influence, close to average value.

Email marketing has the lowest average of all online advertising channels, with 2.18 and a standard deviation of 1.355, indicating a relatively lower influence.

For *offline advertising channels* we obtained the following results:

Newspapers and magazines advertising has the lowest average of 1.69 and the lowest standard deviation of 1.109, which suggests that the influence of this channel is lower amongst the respondents.

Radio advertising has an average of 2.05 and a standard deviation of 1.164, indicating a higher influence as compared to newspapers and magazines, but still relatively low.

TV advertising has the higher average from the offline advertising channels with 2.92, and a standard deviation of 1.295, indicating a significant influence on the purchase decision.

Outdoor advertising (billboards, buses, etc..) has an average of 2.36 and a standard deviation of 1.319, indicating a moderate influence.

Table no. 2 KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.770
Bartlett's Test of Sphericity	Approx. Chi-Square
	df
	Sig.
	330.090
	36
	.000

Source: Processing in SPSS program

We observe that KMO has a value of 0.770 which indicates that our data have an acceptable adequacy in order to be submitted to factorial analysis. In other words, there is a significant correlation between our variables.

The Bartlett's test results indicate the fact that Chi-Square is 330.090, with 36 margins of freedom allowed and a significance value (Sig.) of 0.000. The low significance value is zero, which suggests that the null hypothesis is rejected.

The table below exposes the Extraction Method: Principal Component Analysis with 2 components extracted.

Table no. 3 Component Matrix

	Component	
	1	2
Radio advertising	.720	-.379
TV advertising	.678	
Video advertising on video platforms (for example, YouTube)	.642	.405
Outdoor advertising (advertising panels, buses, etc.)	.623	-.391
Web sites advertising	.618	
5. On a scale from 1 (lowest) to 5 (higher), which one of the following advertising channels determined you to make a purchase?	.559	-.328
Newspapers and magazines advertising		
Email marketing	.519	
4. On a scale from 1 (lowest) to 5 (higher), which one of the following advertising channels determined you to make a purchase?		.663
Social networks advertising (for example: Facebook, Instagram)		
Search engines advertising (for example: Google Ads)	.380	.552

Source: Processing in SPSS program

The first component is strongly associated with all the above-mentioned advertising forms, indicating that they similarly contributed to a general dimension regarding the advertising impact. All the values are positive and high enough (above .5), which suggests a strong association.

The second component presents mixed values. Radio advertising, outdoor advertising and newspapers and magazines advertising have negative values, while video advertising on platforms and search engines advertising have positive values. This can indicate a differentiation between the types of advertising - for example, it may reflect the difference between the advertising which is perceived as being more intrusive (the first three of them) and the advertising perceived as being more oriented and possibly more efficient (the last two of them).

The values for TV advertising, Web sites advertising and e-mail marketing appear under the component 1, which suggests that these advertising forms are not so different, so they do not form a distinct component in this analysis, or the fact that they are unidimensional in their impact.

Social media advertising is strongly associated only to the second component, which suggests that they can have a unique characteristic or a different effect compared to other advertising forms that have been measured.

The table below shows the Rotation Method: Varimax with Kaiser Normalization. Extraction Method used was the Principal Component Analysis.

Table no. 4 Rotated Component Matrix

	Component	
	1	2
Radio advertising	.811	
Outdoor advertising (advertising panels, buses, etc.)	.736	
TV advertising	.667	
5. On a scale from 1 (lowest) to 5 (higher), which one of the following advertising channels determined you to make a purchase?	.648	
Newspapers and magazines advertising		
Email marketing	.396	.346
Video advertising on video platforms (for example, YouTube)	.325	.686
Search engine advertising (for example: Google Ads)		.669
4. On a scale from 1 (lowest) to 5 (higher), which one of the following advertising channels determined you to make a purchase?		.666
Social media advertising (for example: Facebook, Instagram)		
Web sites advertising	.368	.575

Source: Processing in SPSS program

Component 1 is strongly loaded by radio advertising, outdoor advertising (advertising panels, buses etc.), TV, newspapers and magazines advertising. This suggests that this component can represent the impact of traditional or offline advertising forms. High values (above .6) suggest that these variables are well represented by the component 1 and they can be considered as a mutual dimension of traditional/offline advertising.

Component 2 is strongly dominated by video advertising on online platforms (such as YouTube), search engines advertising (such as Google Ads) and web sites advertising. This suggests that this component reflects digital/online advertising. E-mail marketing and social networks advertising have modest loads on each component, suggesting that they may have mutual characteristics both with traditional and online advertising.

On mixed loads, e-mail marketing and web sites advertising indicate loads on both components, although they are weak. This indicated that this kind of advertising can be interpreted as having an intermediary effect, or less distinct effect as compared to other advertising methods.

5. Conclusions

The results of this study can serve as a basis for developing more effective online advertising strategies, targeting channels that have a more significant impact on the target audience. The study indicates that respondents were influenced to varying degrees by online advertising channels in their purchase decision making process.

The study provides information for companies in Romania about the preferences and consumers' behavior and about the way customers respond to online campaigns and messages.

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The Management of Organizational Culture Change in Financial-Banking Institutions in Iași County - Case Study

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Abstract

Rapid changes in the sphere of science, technology or biology are determined by results of research - development and innovation activities. A quick adaptation through a change of vision and orientation of the organizational culture, we believe that it is necessary to implement at the managerial level some changes by applying the soft practices resulting from a hard approach (change of the managerial board and its introduction of one or more women). In this way, a positive influence can be generated on the ability to adapt the organizational culture to market requirements.

The study carried out on a series of financial-banking institutions from Iași county sought to determine the particularities of the applied organizational culture, study them in the context of the national culture, delimit the elements that implemented or developed within the organizations bring a contribution to the specific activities of the culture change process organization of an entity.

Key words: survey methods, banks, corporate culture, organizational behavior, firm organization

J.E.L. classification: C83, G21, M14, D23, L22

1. Introduction

Starting from the premise that the values determined by Hofstede et al. (2012) related to the six dimensions in the case of Romania are applicable in all organizations, as part of the scientific approach we will comparatively analyze several organizations that have a different structure in the board of directors according to gender. This activity has the role of delimiting the common values and to be able to carry out a relevant analysis in order to detect the main differences in the field of female characteristics. We will consider women in the leadership structure as the hard type modality as appreciated in their study by Desvaux et al. (2007), of changing the organizational culture from the average determined by Hofstede et al. (2012).

We will follow the examination of the characteristics of the organizational cultures of the studied entities in order to delimit the differences determined by specific female characteristics and implicitly the level of the masculinity/femininity dimension.

The result of the research aims to determine a standard model of the management structure of an organization, so that it can improve its tracked indicators both internally and externally.

Considering the objectives of the research, in order to establish the impact of female management on organizational culture, it is necessary to analyze the organizational culture of several entities, as well as to establish the characteristics related to female management, namely the "soft" characteristics of managers. In this sense, to collect the data necessary for the study undertaken, we used questionnaires that were distributed to interested entities and that are integrated into the target group of the analysis.

2. Theoretical background

Bakkal et al. (2019) in their study showed that toxic leadership affects the social results of an entity (job satisfaction and desire for change at the management level, etc.). They define toxic leadership as being characterized by self-interest, a lack of appreciation of results, and a negative mindset. Hofstede et al. (2012) characterize femininity through attributes such as cooperation, modesty, quality of life and care for the weakest, this being more strongly oriented towards consensus than competitiveness. So, we can conclude that increased masculinity affects the internal results of an entity.

The studies by Rahman and Bullock (2005), Taylor and Wright (2006), Fotopoulos and Psomas (2009), Bortolotti et al. (2015) analyze the practices of changing the organizational culture, namely hard practices (changing the management board and introducing women within it) and soft practices (the issue of concepts, personnel, relationships, etc.).

Given that Desvaux et al. (2007) addressed the issue from the perspective of the gender of the management board, corroborating the results with the practices of changing the organizational culture, we can conclude that by adopting feminine characteristics in the management of the organization, the increase in the results of an entity can be generated.

So, the basic hypothesis of the study will be: "there is a relationship between the level of masculinity/femininity and the performance (internal and external) of an organization".

3. Research methodology

The OCAI questionnaire is a diagnostic tool for organizational culture composed of 24 elements systematized into 6 categories containing four statements each. The participant is asked to rank the four statements by dividing 100 points according to the importance, truthfulness and applicability of the statement within the organization in the daily activity from which it originates (existing). The classification also develops according to the desire of each participant regarding how the situation (preference) will evolve within the organization. Thus, OCAI makes it possible to study how employees want or feel the need to change the organizational culture, the direction and amplitude of changes.

Sampling was carried out using the formulas proposed by Cochran (1977) for qualitative - nominal data. He admits two main factors namely:

- The error that the researcher is willing to accept is called the marginal error
- Alpha level – the margin between true and marginal errors that the researcher is willing to accept

In Cochran's (1977) theory, the alpha level is integrated into the calculation formulas by using the t-value variable by selecting the margin. Thus, for a margin of .10 the t-value is 1.65, for a margin of .05 the size of the t-value variable is 1.96 and for a margin of .01 the t-value is 2.58. Given that the sample in the study undertaken is expected to be greater than 50, we used the z-score, although in his formulas, Cochran used the t-value.

For the alpha level, a margin of .10 was chosen considering the study undertaken by Bartlett et al. (2001), as well as the fact that the present research aims to determine some differences between the analyzed entities.

Regarding accepted error, the value of 5% is unanimously accepted.

So, for our sample, the value of the variable $t=1.65$; $d=.05$; $p = 0.5$; $q = 0.5$. Thus, the calculated sample is:

$$n_0 = \frac{1,65^2 \times 0,5 \times 0,5}{0,05^2} = \frac{2,72 \times 0,25}{0,0025} = \frac{0,68}{0,0025} = 272$$

We check if the calculated sample exceeds 5% of the targeted population, in our case the number of employees in the financial-banking institutions in Iași county, which is approximately 1100, according to the sustainability reports published by the studied banks for the year 2021.

$$x = 1100 \times 0,05 = 55$$

As the calculated sample exceeds 5% of the target population, Cochran (1977) recommends using the correction formula as follows:

$$n_1 = \frac{n_0}{(1 + \frac{n_0}{population})} = \frac{272}{(1 + \frac{272}{1100})} = \frac{272}{1 + 0,25} = \frac{272}{1,25} = 217,6$$

So the sample used for our research will be 218 questionnaires. Given the fact that survey response rates are quite low, with Cochran (1977) even citing a rate of 10% on the first call and a total of 27% after the second call, we considered it appropriate that the number of questionnaires distributed to be 4 times larger than the calculated sample. Thus, according to the calculations, a number of 872 questionnaires should have been distributed. In the end, it was possible to identify some potential respondents from the financial-banking organizations where we distributed the questionnaires, although the banking system is quite rigid, closed and without any real interest in the studies conducted and the results obtained.

The activity of distributing questionnaires was carried out between 26.01-18.02.2022. The deadline for submitting completed questionnaires was set for 25.03.2022. The questionnaires were distributed in 7 banking institutions in Iași county (BRD, BT, Garanti Bank, BCR, OTP, Raiffaisen and Cooperative Bank "Viitorul" Iași) where we had the opportunity to carry out this research, having contact persons who facilitated the distribution activity, but also receiving the sheets with completed questionnaires. Following the centralization of the data, we determined that a number of 967 leaflets containing the applied questionnaires were distributed, of which 231 leaflets were returned completed.

The 7 banking institutions add up to a number of 89 agencies and a total number of 1065 employees at the level of Iasi County (BT – 15 agencies and 284 employees, BCR – 10 agencies and 132 employees, BRD – 32 agencies and 387 employees, Raiffaisen – 9 agencies and 141 employees, OTP – 3 agencies and 52 employees, Garanti – 2 agencies and 27 employees, Cooperative Bank "Viitorul" Iași – 18 agencies and 42 employees).

Each leaflet was analyzed regarding how to complete it, but also checked so that the respondents understood and applied the instructions of each questionnaire properly.

So, for each dimension provided in the OCAI questionnaire, the sum of the values given (the existing level, but also the desired one) was calculated, so as to verify that their sum is 100. It was also checked whether the respondent filled in each field related to the OCAI questionnaire. As a result of this activity, 16 questionnaires were found that were filled in incorrectly or did not have all the fields filled in, which is why they were removed from the current study.

Therefore, for the study of the characteristics of the perceived organizational culture, as well as for determining the need to change them, a number of 215 questionnaires were accepted for study.

Therefore, the participation rate of the staff within the studied banking institutions was approximately 24% (23.88%), a rate lower than that expected by the sampling calculation by more than one percentage point.

Following the use of this tool, a number of advantages are highlighted such as: anticipating the resistance to change of the organization as a whole, determining the changes necessary to increase efficiency, effectiveness, as well as determining the starting moment of some structural changes in the organization. Moreover, through this tool, employees can understand how they can channel their energy and creativity to generate the results (changes) they want within the entities, thus developing the intrinsic motivation for change.

4. Findings

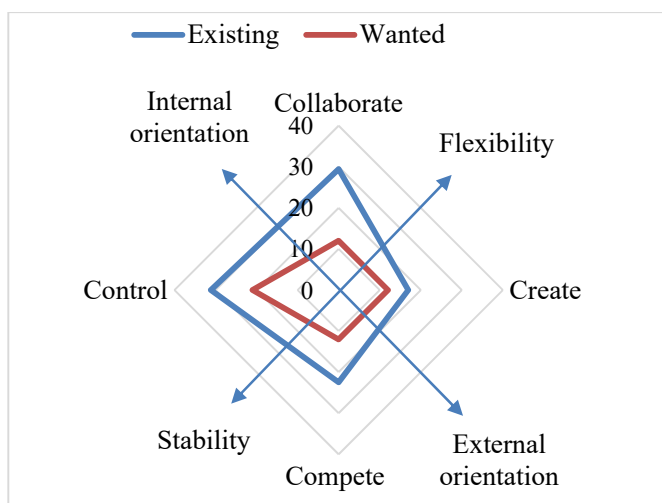
The analysis of the results of the OCAI questionnaire at the level of the existing financial system in Iași county, gives us an overview of the initiated approach and establishes the point from which the research must be started; establishes the main benchmark to which we refer in analyzing the differences between the organizational cultures of established entities. The tabular data resulted from the centralization of the questionnaires are presented in Appendix no. 2.

Therefore, at the level of Iași county, it can be determined that the dominant culture is the hierarchical type, followed by clan culture, the Market type, but the Innovation type culture is also present. In this case, it can be observed that at the entity level, a mix of organizational cultures is promoted where the emphasis is on effectiveness and process control.

Regarding the general profile of financial-banking organizations in Iași County, we do not observe major differences in the predominant style of organization, which is of the hierarchical type (Appendix no. 2). This aspect is understood through the lens of the fact that the financial-banking system is very well regulated, rigorous in all aspects and has a well-established structure so that the activities are carried out in a way that does not disrupt the smooth functioning of the organization.

Regarding the desire to change the organizational culture, the respondents considered it necessary to develop the clan-type culture so that it becomes predominant. In all cases, hierarchical and market-type culture is desired to diminish, and clan-type and adhocratic-type culture is desired to be developed. Therefore, greater attention is required on the working environment, on collaboration and cooperation between employees, an increase in care towards them, as well as the promotion of the spirit of entrepreneurship, creation and innovation at the expense of the continuous pursuit of the exact observance of work procedures, how to approach issues and win the market in which they are. More than that, the reduction of bureaucracy and the way of staff advancement is desired, since they are not promoted according to criteria related to meritocracy, but according to criteria of knowledge of work procedures and how to apply them in different situations.

Figure no. 1 Graphical representation of the general profile of financial-banking institutions in Iași county



Source: own processing

Table no. 1 Numerical representation of the general profile of financial-banking institutions in Iași county

Culture type	Existing	Wanted
Clan	29,43	34,54
Adhocracy	16,97	24,53
Market	22,47	17,85
Hierarchy	31,13	23,08
	100	100

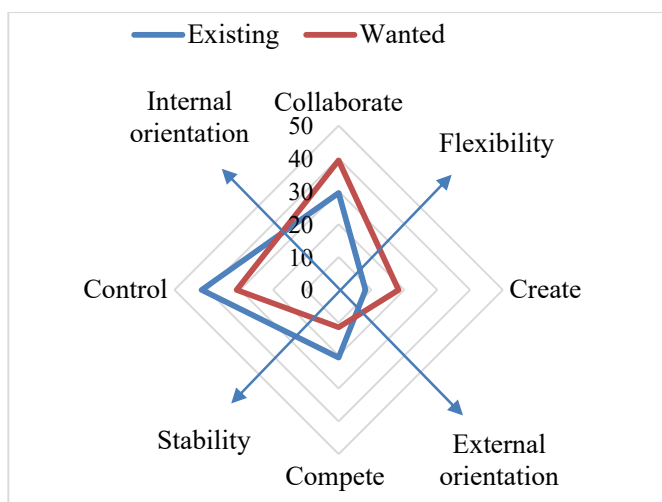
Source: own processing

Dimensions of organizational culture

1. Dominant characteristics

The dominant characteristic is defined as being the result of the symbiosis between the vision, the values, the interpretations that are promoted within the organization with the aim of generating a certain consistency and stability, but at the same time giving the organization the ability to adapt through flexibility to the rapid changes occurring in the context of carrying out the activity.

Figure no. 2 Graphical representation of the dominant characteristic related to financial-banking institutions in Iași County



Source: own processing

Table no. 2 Numerical representation of the dominant characteristic related to financial-banking institutions in Iași County

Culture type	Existing	Wanted
Clan	29,49	39,39
Adhocracy	8,16	18,20
Market	20,61	11,39
Hierarchy	41,74	31,02
	100	100

Source: own processing

From this point of view, the dominant characteristic is that of the hierarchical culture. This characteristic creates a structured organization in which procedures define the way employees act, and attention is directed to the smooth functioning of activities.

Analyzing the values obtained both at the existing and at the desired level, we notice that two of the four types of crops register differences greater than 10 points, and the rest are very close to reaching the level; therefore, there is a clear need to change the culture mix used because these differences can generate emotions and feelings of employees that can lead to affecting organizational results.

It can be observed (Appendix no. 2) that at the macro level this characteristic does not differ from the general profile of the organizations. Although the theory does not propose an eloquent or ideal way of distributing the involvement of the characteristics specific to each type of culture at the organizational level, a dynamic approach to organizational culture is recommended, at least until the organization reaches maturity.

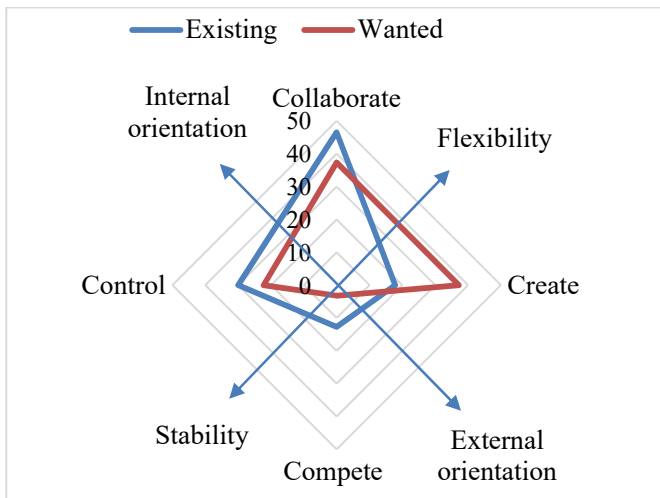
2. Organizational leadership

Based on the answers received to the applied questionnaires, we can conclude that at the level of the financial-banking organizations in Iași county, the leadership practiced at the workplace is perceived as being of a collaborative type, and the leaders are seen as mentors, in some cases being assimilated with parental figures.

They are also considered to have developed qualities of control, monitoring and organization (23), as well as innovative, entrepreneurial and visionary spirit (17,80). However, leaders are considered less focused on competition, only 12.72% of them are characterized by competitiveness, toughness and fierceness in the fight for market dominance.

It can be observed an obvious need to change the characteristics of organizational leadership in terms of the development of those specific to the culture that emphasizes creation and innovation, but also a relaxation of those attributed to the clan and market type culture.

Figure no. 3 Graphical representation of the organizational leadership characteristic related to financial-banking institutions in Iași County



Source: own processing

Table no. 3 Numerical representation of the organizational leadership characteristic related to financial-banking institutions in Iași County

Culture type	Existing	Wanted
Clan	46,48	37,35
Adhocracy	17,80	37,20
Market	12,72	3,20
Hierarchy	23,00	22,25
	100	100

Source: own processing

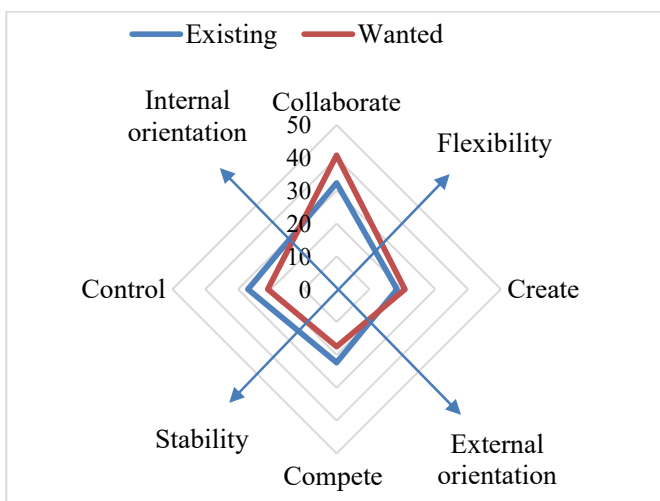
As for the willingness to change, Market-type culture tends to diminish, hierarchical-type culture tends to remain constant, while clan-type culture tends to fade. In some places the clan-type culture loses its dominant characteristic, and the adhocratic-type culture takes its place. Thus, the adhocratic culture based on creation tends to increase significantly.

There is a need to release free spirit and creativity but without affecting coordination and control.

3. Management of employees

Employee management represents the way in which staff are guided to behave by creating the necessary organizational context, but also by promoting communication and collaboration models. Therefore, at the level of the surveyed entities, it is observed that collaboration, consensus and teamwork are promoted. Staff involvement is a role model in every organization, so the results are expected to be among the best.

Figure no. 4 Graphical representation of the employee management characteristic of the financial-banking institutions in Iași County



Source: own processing

Table no. 4 Numerical representation of the employee management characteristic of the financial-banking institutions in Iași County

Culture type	Existing	Wanted
Clan	32,32	40,76
Adhocracy	18,33	20,79
Market	22,35	17,49
Hierarchy	27,00	20,96
	100	100

Source: own processing

Collaboration, cooperation, consensus and participation are just some of the words that would best describe the way employees are organized and work together, at least that's how it appears from the perspective of the points assigned to the clan-type culture in this aspect.

In the second plan, the hierarchical culture characterized by conformity, predictability and stability of relations between employees, as well as job security, can be noted. With slightly different results, but in the same area, market and adhocratic cultures are also distinguished. So, the least promoted from this point of view is employee initiative, risk-taking, uniqueness and freedom, but also innovation. However, in this chapter the respondents did not feel a need for development either, the questionnaire showing a variation of only 2.46 points.

The need for change is also felt at the level of collaboration and cooperation between employees, they consider that this side should be developed even more.

Even for the desired level of employee management aspects, those surveyed even express their desire to deepen these models (Appendix no. 2).

4. Organization glue

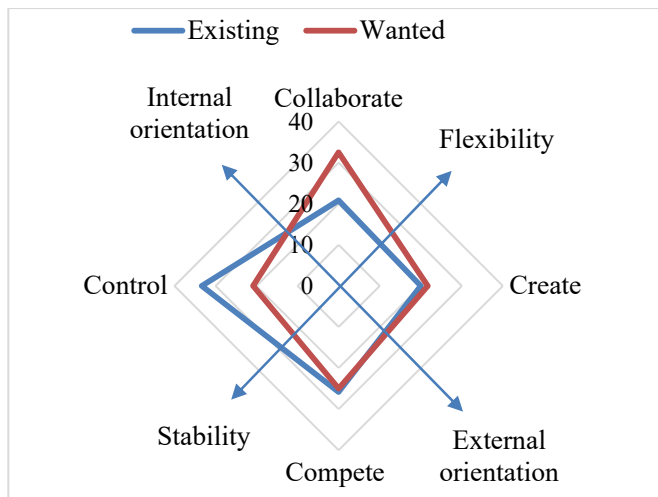
This characteristic can be defined as the main reason why the organization joins forces. In the case of the organizations in our research, it is observed that the most important aspect is determined by maintaining a correct and unimpeded functioning of the organization. So, formal policies and rules rank first in this characteristic, with the hierarchical type culture. In the market culture, the main themes that keep a clear focus on organizational perspectives are aggressiveness and gain, with everyone focused on achieving and meeting set goals.

Clan and adhocratic cultures recorded very close values, which are characterized by loyalty and mutual trust, respectively innovation and development.

Regarding the need for change, attention should be paid to the hierarchical and clan-type culture dimensions, the differences between the perceived and desired values being high and may generate difficulties in terms of management organizational.

The way of mobilizing actions, energy and approaches in terms of achieving established organizational objectives is characterized by efficiency and control for all entities. Future development directions include leaning towards the human side by increasing loyalty, dedication and commitment to the organization and decreasing attention from hierarchical area (Appendix no. 2).

Figure no. 5 Graphical representation of the characteristic organizational binder related to financial-banking institutions in Iași county



Source: own processing

Table no. 5 Numerical representation of the characteristic organizational binder related to financial-banking institutions in Iași county

Culture type	Existing	Wanted
Clan	20,83	32,50
Adhocracy	20	21,67
Market	25,83	25
Hierarchy	33,34	20,83
	100	100

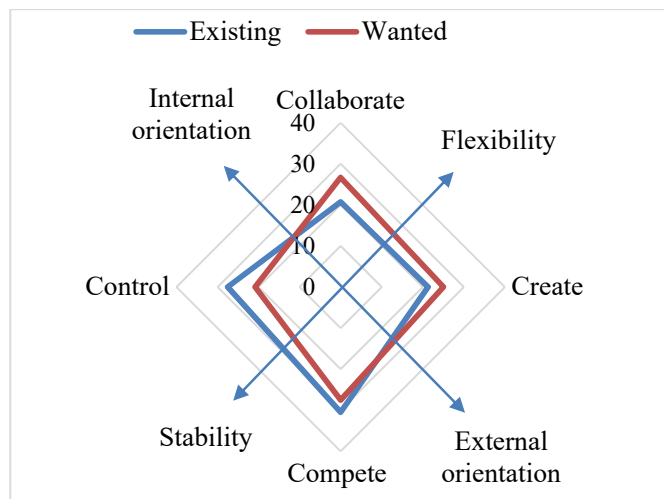
Source: own processing

5. Strategic emphases

Strategic characteristics refer to the area of focus in the organizational strategy. In our case, the market-type culture stands out, the emphasis falling especially on achievements and competitive actions, winning and achieving objectives playing the central role in the organization.

In the background we notice the emphasis on performance and stability, efficiency and control being of major importance. Therefore, the hierarchical culture is on the secondary level, surpassing the adhocratic and the clan-type cultures.

Figure no. 6 Graphical representation of the strategic characteristic related to financial-banking institutions in Iași County



Source: own processing

Table no. 6 Numerical representation of the strategic characteristic related to financial-banking institutions in Iași County

Culture type	Existing	Wanted
Clan	20,73	26,67
Adhocracy	21,28	25
Market	30,49	27,50
Hierarchy	27,5	20,83
	100	100

Source: own processing

Also distinguished is the desire to obtain new resources by addressing novelty issues and pursuing opportunities. In the last place can be observed the desire to develop human resources defined by high trust, communication, openness and collaboration.

With regard to the characteristics of the applied strategy, in 5 of the 7 entities (Appendix no. 2), the fact that most important aspects are achievement of the objectives and capture of the market share, for one entity the most eloquent strategy is leaning on efficiency, control and stability, while for an organization the hierarchical level and the market level reach equal values.

A special approach is observed in the case of the need for change, where we observe the fact that the strategic emphasis is desired to be put in a different way. Thus, for 3 entities, the focus is kept on the specific aspects of the market-type culture, but with the decrease in intensity, for one entity it is desired to increase the intensity of this type of culture, but with a value that does not attract attention from the point of view of research. Also, 2 entities express their desire to change towards a clan/collaborative culture, which is characterized by trust, sincerity and involvement, as well as on the personal and professional development of employees. In the case of these two entities, it can be seen that the specific aspects of market-type culture are very close in terms of values.

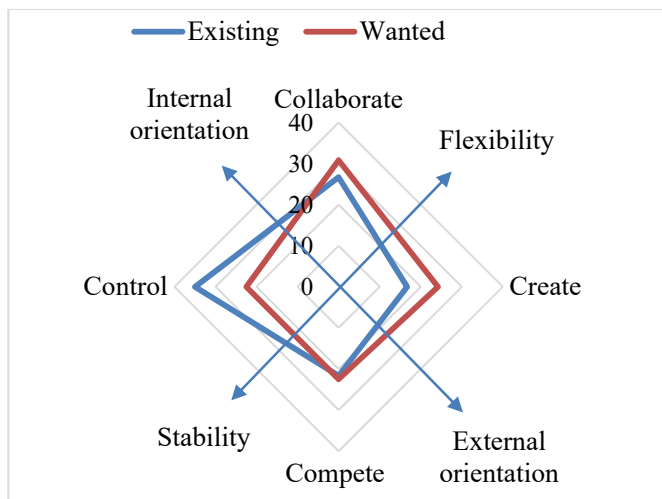
6. Criteria of success

Defining success at the organizational level is defining for staff involvement in achieving goals. Thus, in close connection with the strategic specificities of each organization, they can generate personal and professional satisfaction for employees, create a sense of belonging to the organization and increase commitment to the organization, aspects that are intensively pursued in the modern approach to human resources management.

In the organizations studied, success is defined based on efficiency and effectiveness. Thus, the hierarchical type culture also dominates this characteristic, but the human resource is also promoted through teamwork, the commitment of the workers and the care towards the neighbors (clan culture type).

At the same time, success is determined based on market gains and overcoming competitors, competitive leadership being an element of resistance in the organization (market-type culture). Finally, the adhocratic type culture, where success is determined by the novelty of the products offered and their uniqueness.

Figure no. 7 Graphical representation of the characteristics of evaluation criteria related to financial-banking institutions in Iași County



Source: own processing

Table no. 7 Numerical representation of the characteristics of evaluation criteria related to financial-banking institutions in Iași County

Culture type	Existing	Wanted
Clan	26,67	30,83
Adhocracy	16,67	24,17
Market	21,66	22,50
Hierarchy	35	22,50
	100	100

Source: own processing

An obvious need to diminish the specific aspects of the hierarchical culture can be determined, while the market culture somewhat maintains its level and the clan and adhocratic culture require increased attention.

In the case of the studied entities, a specificity dominated by hierarchical culture is determined (Appendix no. 2). However, there is a trend towards clan culture and a decrease in interest in hierarchical aspects determined by exact scheduling, low cost production, in a word efficiency. In the case of an entity, it is desired to focus attention on the adhocratic aspects characterized by innovation and vision.

5. Conclusions

We carried out a survey-type research on a series of financial-banking institutions from Iași County, for which we aimed to determine the particularities of the applied organizational culture and study them in the context of the national culture.

The need for change is clear for the entire financial-banking system existing at the level of Iași county, especially in the sense of developing the aspects related to clan-type culture. In this sense, according to Prieto et al. (2009) distinguish two situations of change: (1) when the diversity climate is favorable or (2) when it is not favorable. The second situation involved either a hard change by introducing women to the management board and creating the environment and context favorable to gender diversity, or by soft change developing the personal skills of the factors involved in the management of the organization.

As a result of the analysis, there is a clear trend towards future orientation towards cultures with more and more "feminine" traits based on collaboration, cooperation and mutual support at the level of microgroups.

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Appendix no. 1

		Viitorul		Garanti		OTP		Raiffaisen		BRD		BCR		BT	
		E	D	E	D	E	D	E	E	D	E	E	D	E	D
Dominant Characteristic	Collaborate	26	35	33,7	28,9	38,8	29	39	30,1	39,9	43,7	30	40	28,3	38,2
	Create	12	19,5	8,8	8,5	18,5	7,9	18,1	8,3	18,2	18,8	7,5	17,5	8,0	18,0
	Compete	30	24,5	15	20,9	11,2	19,2	10	20	11,7	5,6	19,7	10	22,8	13,2
	Control	32	21	42,5	41,7	31,5	43,9	32,9	41,6	30,2	31,9	42,8	32,5	40,9	30,6
Organizational Leadership	Collaborate	37,5	34	44,4	48,2	37,7	47,6	37,3	45,5	38,3	35	46,2	36,3	47,3	37,1
	Create	17,5	31,4	17,5	16,5	36,6	18,9	39,2	18,5	36,4	36,6	16,9	37,5	18,8	39,7
	Compete	16,5	8	10	12,8	3,5	12,2	2,6	12,1	2,6	1,3	14,1	4,1	12,8	3,0
	Control	28,5	26,6	28,1	22,5	22,2	21,3	20,9	23,9	22,7	27,1	22,8	22,1	21,1	20,2
Leadership	Collaborate	33	42	36,9	32,3	41,5	32,2	39	32,1	41,1	40	31,6	39,1	31,9	41,3
	Create	17,5	23	18,7	17,7	20,5	19	20,3	19,5	20,9	23,1	17,2	19,4	17,4	21,2
	Compete	23	18,5	16,3	22,6	17,1	21,5	18,2	21,8	16,6	16,3	25	20,9	23,8	17,3
	Control	26,5	16,5	28,1	27,4	20,9	27,3	22,5	26,6	21,4	20,6	26,2	20,6	26,9	20,2
Organizational binder	Collaborate	21,5	32	20	20,4	32,1	19,9	30,7	21,5	35,1	33,7	21,6	31,6	21,5	30,9
	Create	21,5	18,5	21,3	20,1	19,9	19,9	22,2	20,1	22,9	23,1	20	21,8	18,9	23,2
	Compete	27,5	23	28,1	24,8	25,3	26,9	23,8	27	27,1	24,4	23,1	21,6	24,6	24,8
	Control	29,5	26,5	30,6	34,7	22,7	33,3	23,3	31,4	14,9	18,8	35,3	25	35	21,1
Strategic Intensity	Collaborate	19	25	21,3	19,6	27	19,3	26,9	23,8	25,9	23,8	19,4	26,9	20,3	26,8
	Create	22	26	23,1	20,4	24,5	23,7	24,6	21	24,8	27,5	20,9	25	20,9	25,9
	Compete	29,5	26,5	26,9	31,9	27,4	31,5	27,6	28	28,5	25,6	32,5	26,2	31,1	27,3
	Control	29,5	22,5	28,7	28,1	20,3	26	20,9	27,2	20,8	23,1	27,2	21,9	27,7	20
Performance Management	Collaborate	26,5	30	26,3	25,9	33,9	23,3	29,9	30,1	30,3	26,9	25,3	34	26,9	25,7
	Create	16	24	12,5	18,2	21,7	17,9	25,4	14,7	25,0	29,4	16,9	23,8	16,8	25,4
	Compete	23	23,5	20,6	21,1	21,9	22	23,3	21,3	21,5	21,9	24,1	21,9	21,6	24,8
	Control	34,5	22,5	40,6	34,8	22,5	36,8	21,4	33,9	23,2	21,8	33,7	20,3	34,7	24,1

The Influence of Social Groups on the Voting Behavior of the Resita Voter

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Abstract

The paper aims to highlight the way in which social groups influence voting behavior. For centuries, the individual's behavior has been influenced by several categories of internal or external factors, one of them being the social groups they belong to. The specialized literature sheds light on the complex mechanisms by which the behavior at the polls is influenced by the group to which it belongs. In order to achieve the purpose of the research, we used a sociological survey based on a questionnaire, which has three identification questions and six content questions. The questionnaire contains three identification questions and six content questions. The collected data were analyzed and interpreted, later, following the application of the research methodology, we formulated the research conclusions.

Key words: elections, social behaviour, exogenous factors
J.E.L. classification: M31

1. Introduction

Ever since the emergence of social groups, man has been in the position to make choices, this being one of the common links between the members of a social group. (Dinu, 2013)

Specialists distinguish between the consumption behavior of individual consumers and the consumption behavior of civil society organizations. They suggest that regardless of the form of organization, various entities such as economic agents, trade unions, professional organizations and others can engage in political activities as long as they do not directly involve themselves in matters of power. Instead, these organizations can participate in politics when they advocate for the interests of the groups they represent, whether these are socio-professional or related to other group interests.

2. Theoretical background

Strictly individual consumption behavior can be influenced by belonging to social groups. The idea is that individual interests can be polarized within the group, and individuals might alter their behavior to align with group interests to avoid exclusion. (Dinu, 2013)

Social groups are the groups of belonging, to which the individual belongs, even if they are not the ones to which he aspires, as well as those with which the individual identifies, even if he has no formal connection with them, respectively the reference groups. (Bornschiefer *et al*, 2021)

Social groups, in any form, whether it is a membership group or a reference group, influence decisions, through the information transmitted and even by exerting pressure, so that the individual conforms to the rules and sets of values. People appeal to the opinions of social groups, especially when they lack information, are unsure of their own decisions, do not take responsibility for personal implications towards the political phenomenon, when they are very attached to the group, when the

political product is discussed in public, but especially when the political products are beneficial for the functions of the group. (Pripp, 2002)

We emphasize the distinction between individual consumption behavior and the consumption behavior of organized entities, pointing out that organizations can engage in political activities when they advocate for the interests of the groups they represent. Organizations are considered apolitical as long as they avoid direct involvement in power issues.

The influence of social groups on voting behavior is a subtle and complex process rooted in social interactions and human group dynamics. Social pressure plays a significant role, with individuals likely to adopt views or behaviors similar to those of the group in order to avoid isolation or social tensions. Conformity to group norms and social identity contribute to the formation of political perceptions and voting choices, often consistent with collective values and identity.

In-group communication is a crucial channel through which individuals can form and consolidate their political beliefs. Arguments and information presented in a social context can shape the understanding and perspective of group members, thereby influencing voting decisions. Social identity, often linked to characteristics such as ethnicity, religion or social class, can serve as a catalyst for political preferences.

However, there are also a variety of factors that can counterbalance group influences. Individuals can add a personal and independent dimension to decision-making by resisting social pressures and considering a wider range of perspectives. Thus, understanding the depth of social group influences on voting behavior requires a holistic approach, integrating individual and collective factors into a larger societal context.

3. Research methodology

First of all, I would like to highlight that the purpose of this study how social groups influence voter behavior in Resita.

In order to complete the study, we chose several objectives in order to understand what the voters from Resita are thinking:

- Studying voting behavior among voters;
- Establishing the influencing factors at the level of behavior;
- Highlighting their implications at the level of voting participation;
- Highlighting their implications at the level of taking the voting decision;

We developed a questionnaire that is composed by 9 questions (6 closed questions with choices and 3 questions of identification), in order to have a better picture of the influence of social groups on voting behavior. the identification questions refer to questions of age, sex and occupation of subjects.

I opted for the survey approach in my study. The essence of this method is to create a reduced representation of the investigated population, taking into account its known characteristics. This type of sampling presupposes the availability of statistical data on the studied population.

We have analyzed the impact of social groups on voter behavior and find that this influence is significant, being shaped by various types of social groups. The constant objective of marketing research is to explore how voter behavior is affected by a variety of factors.

The purpose of the research is to study the influence of social groups on the voting behavior of the the Resita city population.

The aim of this research (Dinu & Dinu, 2020) is to analyze the impact exerted by social groups on the way in which the inhabitants of the city of Resita express their options in terms of voting.

Limiting the risk associated with the relative freedom of the interviewers in the case of the respondents requires the use of quota sampling associated with the survey of the (geographical) areas, thus ensuring representativeness for Resita. The questionnaire was designed exclusively for the population of Resita. (Dinu & Dinu, 2014)

The survey was conducted during November-December 2022.

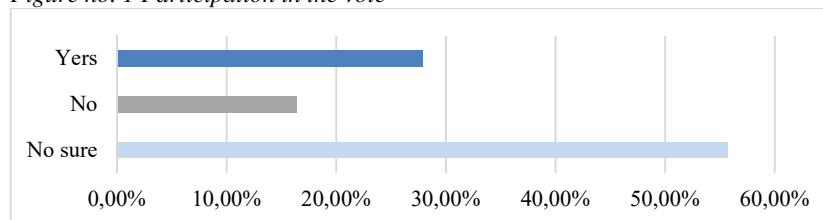
4. Findings

The responses given by 366 participants to questionnaire questions 1-6 will be presented, analyzed, and interpreted in the subsequent discussion. Criteria for result analysis, such as age and gender, pertaining to questions 7-9 will also be addressed, with individual analysis of the study not deemed necessary.

Additionally, we came to understand the interpretation of research findings:

1. Regarding voting participation for question number 1 in the entire sample of 366 individuals surveyed, the majority (54.64%) express a definite intention to participate in the 2024 parliamentary elections. A notable percentage (18.48%) indicates that they will not partake in the parliamentary elections. A significant portion, considering the importance of everyone's future, comprises those who remain undecided (26.88%) and have not yet determined whether they will participate in the parliamentary elections.

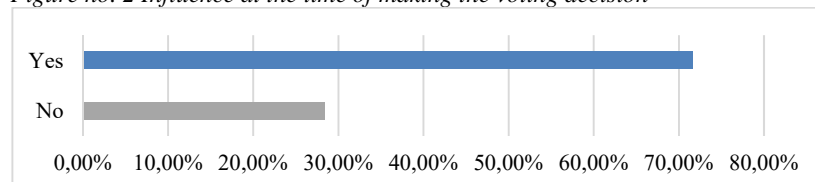
Figure no. 1 Participation in the vote



Source: Authors' contribution

2. Regarding influence at the time of making the voting decision, on the hole sample, most subjects (71.58%) did not receive influences regarding participation in the elections (36.61%, women 34.97%). An important aspect is that 28.42% of those questioned answered affirmatively, saying that they were persuaded to participate in the elections, of which men 11.75%, women 16.67%.

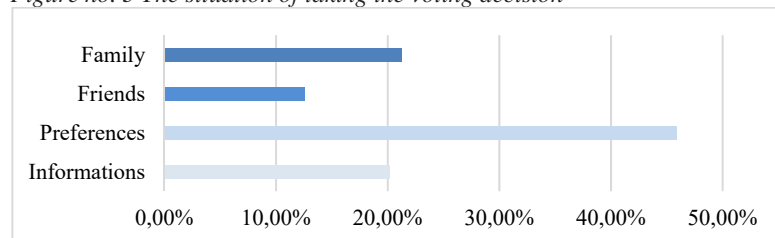
Figure no. 2 Influence at the time of making the voting decision



Source: Authors' contribution

3. Regarding the situation of taking the voting decision, on the total sample, one's own preference is important for 45.9% of voters (22.68% men, 23.22% women). Then, 21.31% consult with their family before voting (8.46% men, 12.84% women). Followed by those who prefer to gather information in the electoral campaign before voting with 20.22% (9, 29% men, 10.93% women). Some of the respondents choose to consult their colleagues or friends, before voting (12.57%, of which 7.93% men, and 4.64% women).

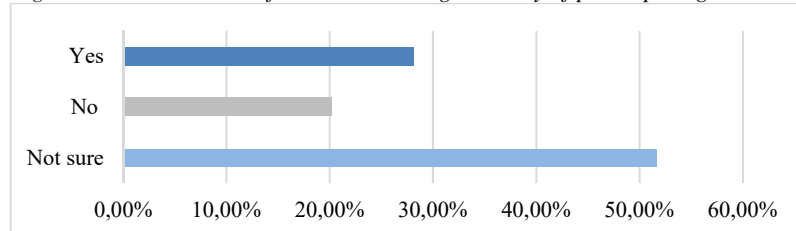
Figure no. 3 The situation of taking the voting decision



Source: Authors' contribution

4. In terms of opting for electronic voting as a means of participating in elections, the majority of participants in the overall sample (53.72%) express uncertainty about whether electronic voting could serve as a viable electoral alternative. Among those who view the implementation of electronic voting positively, the percentage is 27.24%, while those who perceive the use of electronic voting negatively constitute 19.04%.

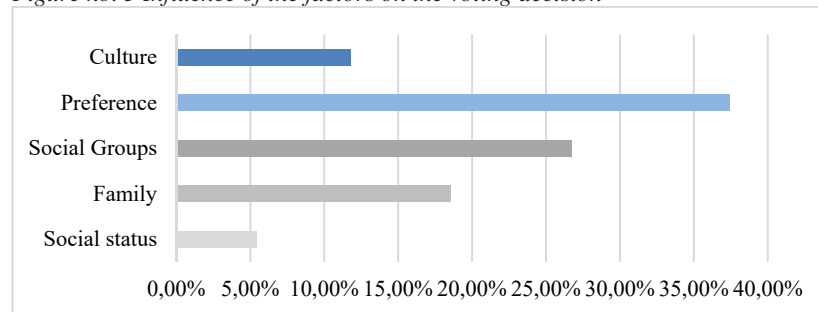
Figure no. 4 The choice of electronic voting as a way of participating in the elections



Source: Authors' contribution

5. Concerning the impact of factors on voting decisions, a majority of respondents, comprising 36.34%, base their votes on personal preferences. Following closely are those who prioritize their group affiliation, accounting for 27.87%. Notably, a minority considers cultural factors in their voting choices, constituting 10.57%. Additionally, 19.47% of participants vote in alignment with their family's decisions, while a smaller percentage, 5.75%, prioritize social status in their voting considerations.

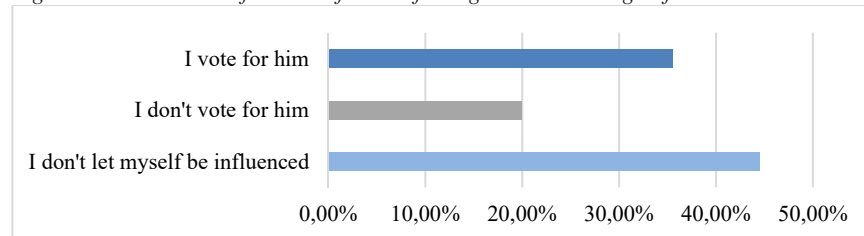
Figure no. 5 Influence of the factors on the voting decision



Source: Authors' contribution

6. Regarding the identification of the self-image with the image of a candidate, on the total sample, most subjects (44.54%) would not be influenced by such a similarity. Also, 35.52% of the respondents state that they would vote for that candidate whose image identifies with their self-image. 19.95% of the respondents say that they would not vote even if there were similarities in terms of image between the voter and the candidate.

Figure no. 6 The identification of the self-image with the image of a candidate



Source: Authors' contribution

5. Conclusions

Many believe that numerous changes have already occurred in our lives. Romanians are still tributary to many mental and behavioral clichés from the totalitarian era. Perhaps the most serious thing is that the communist regime acted in the direction of reducing the personal initiative of the citizens. (Dinu & Dinu, 2014)

Continuous indoctrination and totalitarian control had consequences on two complementary levels: on the behavioral level, it led to passivity, evasion of responsibility, opportunism, obedience, on the mental and attitudinal level, a compensatory model was established, characterized by the adoption of duplicitous standards of speaking. (Gisbert, 2018)

One key observation derived from a basic examination of the study's findings is that the majority of participants were not swayed in their decision to vote. While some sought input from family or friends before casting their votes, a significant number predominantly trusted their personal preferences. When considering a specific political candidate or proposition that left a positive impression, individuals often sought additional information, yet their ultimate voting choice remained largely intact.

The answers to the questions of the questionnaire, it also emerged that the inhabitants of the municipality of Resita vote according to their culture, preference or belonging group.

In conclusion, the structure of this collection of cognitive, attitudinal, or behavioral tools is adaptable and can be described as a dynamic framework. Its transformation is closely linked to the substantial amount of information that Resita voters must comprehend, along with their individual processing and the incorporation or assimilation of this information in alignment with their lifestyle.

6. References

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Analysis of Consumer Perception Regarding the Quality of Services Offered by Casa Ecologica Guesthouse

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Abstract

This paper explores the analysis of consumer perception in the context of services provided by the Casa Ecologica Guesthouse. The study investigates how customers perceive the quality, sustainability, and overall experience offered by this ecologically oriented guesthouse. The obtained results provide a profound understanding of customer expectations and satisfaction, thus offering valuable perspectives for the continuous improvement of services within the ecological hospitality sector.

Key words: consumer perception, service quality, consumer satisfaction

J.E.L. classification: M31, Z32

1. Introduction

In the current era of increasingly fierce competition in the hospitality industry, a deep understanding of consumer perception plays a crucial role in maintaining and developing businesses. This scientific work focuses on the analysis of consumer perception regarding the services offered by the Casa Ecologica Guesthouse.

The context of this research is presented in an environment where accommodation options are growing, and consumers are becoming more demanding. In this context, Casa Ecologica Guesthouse has chosen to carefully examine how its customers perceive the quality of the services offered, with the aim of continuously adapting and improving to meet the changing market expectations.

The goals of this research are multiple and include assessing the level of customer satisfaction, identifying key factors that influence their perception of accommodation services, and developing effective strategies to enhance customer experience. By deepening the understanding of consumer perception, Casa Ecologica Guesthouse aims to create a solid framework for strengthening its reputation and attracting and retaining customers in a competitive environment.

Through this paper, we intend to contribute to the field of tourism and hospitality research, providing relevant data and useful conclusions for industry professionals and researchers interested in the dynamics of consumer perception within guesthouses.

2. Literature review

Understanding consumer decisions is an essential foundation for marketing strategy, especially in the context of consumer behaviour in the tourism industry, which relies on certain assumptions about the decision-making process.

The travel decision-making process involves a series of choices regarding various aspects of the vacation itinerary. Some of these decisions are made before departure, while others are made upon arrival at the destination. The importance of situational factors in shaping tourist decisions is evident, and the travel decision-making process unfolds independently of other consumption decisions.

Tourist decisions can include both planned and unplanned purchases, often being susceptible to impulsive or spontaneous influences. Travel is no longer just a rare purchase but becomes more frequent and integrated into everyday life. Therefore, a closer examination of routine aspects of travel decisions is necessary, especially when new destinations or even previously visited destinations or already consumed travel products are involved. This comprehensive approach contributes to a better understanding of factors influencing tourist decisions and the development of marketing strategies tailored to the specific needs and behaviours of consumers in the tourism industry.

In the context of marketing, values exert a significant influence on consumer behaviour, shaping their choices regarding product categories, brands, and product attributes. These values guide consumers' actions, attitudes, emotions, judgments, and behaviour in an essential manner.

In the specialized literature, particular attention is given to two types of values: instrumental (external) and terminal (internal). Instrumental values focus on objective aspects and rely on a detailed understanding of the object, such as the goal, experience, or situation. In contrast, terminal values are oriented towards categories of objects rather than specific objects themselves.

Motivation plays an essential role in the field of tourism, significantly influencing marketing decisions, including market segmentation, product development, advertising, and positioning. There are four main types of tourist motivations: the search for novelty, the desire for escape/relaxation, relationship enhancement, and self-development. However, it is important to emphasize that tourist motivation cannot be reduced to a single behaviour or a strictly cognitive approach but represents a combination of both aspects.

Tourists are guided in their travels by biological and emotional needs, and certain holiday destinations become attractive to them. This process is moderated by factors such as personal involvement, images associated with the destination, and the emotions generated by it. Motivation exerts a considerable influence on pre-visit factors, such as expectations and attitudes, as well as on post-visit factors, including destination loyalty.

By deeply understanding tourist motivations, the tourism industry can adapt marketing strategies to meet the varied needs and desires of different tourist segments. Thus, a comprehensive understanding of motivation in tourism is essential for developing quality offerings and building lasting customer relationships.

The concept of self or an individual's personal identity represents the set of cognitive beliefs one holds about oneself. In the tourism sphere, the concept of self is understood as a complex construction that integrates personal identity with social and aspirational aspects in an individual's self-description. Therefore, measuring the concept of self is done through four distinct dimensions: real self-image, ideal self-image, social self-image, and social ideal self-image. These dimensions are essential to explain and anticipate consumer behaviour in the tourism industry.

Specifically, tourist behaviour investigates how self-image influences perceptions of destination image, destination selection processes, the choice of tourist services or products, and travel intentions. This multidimensional approach recognizes the complexity of personal and social identity in the context of tourist experiences, highlighting the significant impact of self-perception on individual decisions and preferences in the tourism industry.

Personality manifests through certain individual characteristics and behaviours that influence how a person responds to stimuli in their surrounding environment. In tourism, personality is an essential factor in shaping the motivations, perceptions, and tourist behaviour of an individual.

One of the most studied dimensions of personality is sensation-seeking, especially concerning recreational and adventure experiences. This personality trait influences how people choose and engage in tourist activities, seeking new sensations and stimuli in their experiences.

Personality traits are also investigated as antecedents to tourist choices and emotions. They provide insight into how individuals perceive and respond to different aspects of travel, contributing to understanding the motivations underlying tourist choices and the emotional evaluation of their travel experiences. Thus, personality becomes an essential component in explaining the variety and individuality of tourist behaviour.

Expectations play an essential role in determining the level of satisfaction, loyalty, and other behaviours that consumers exhibit after making a purchase. In perspective, expectations are defined as consumers' desires, reflecting what they want or expect to experience. On the other hand, expectations can also reflect the standards consumers consider norms when evaluating the attributes of a product or service offered.

Expectations can take various forms, including those related to effectiveness and outcomes, those that are predictable and ideal, those desired and based on experience. They can also be met, exceeded, or remain unfulfilled during service delivery (Olteanu, Cetină, 1994).

Therefore, understanding and managing consumer expectations appropriately becomes crucial for service and product providers, directly impacting consumer satisfaction, loyalty, and the overall evaluation of the post-purchase experience. Appreciating the diversity and dynamics of expectations can contribute to a more tailored offering and the improvement of the quality of the relationship between the consumer and the provider.

Attitudes represent an expression of consumers' perceptions and evaluations of tourist services, reflecting their key attributes or beliefs about a particular object or service. This evaluation becomes crucial in attitudinal responses as individuals assess subjects as good or bad based on accessible beliefs, concepts, objects, or behaviours.

Attitudes can be susceptible to change as contextual factors evolve, such as how information is presented or an individual's affective states. In tourism behaviour research, the construction of attitude carries significant weight. Sometimes, attitude is measured towards key attributes of an object (such as destination attributes contributing to destination image formation), while other times, overall attitude is measured (such as the overall image).

Studies on consumer attitudes in the specialized literature address a variety of issues, including post-travel attitude changes toward hosts, attitudinal differences regarding complaints, anti-tourist attitudes, perceptions of the climate impacts of air or sea travel, evaluations of souvenir products, and other attitude-related aspects. This extended perspective on attitudes contributes to a comprehensive understanding of how consumers perceive and respond to different aspects of the tourism industry.

Consumer perceptions are commonly shaped by expectations, based on familiarity, previous experiences, values, and individual motivations. Differences in perception often lead to variations in behavioural intention. In the tourism sphere, perceptions, along with attitudes, are crucial aspects in building visitor engagement, shaping destination image, achieving satisfaction, and providing high-quality services.

Often, there are significant differences between the anticipated and perceived service quality by consumers. Tourists frequently face perceptions related to risks and safety, including aspects such as terrorism and diseases, or concerning sensation-seeking and travel to destinations considered riskier. These perceptions influence tourist decisions, and proper management and understanding are essential to ensure a positive and safe experience for travellers.

Finally, perception is an overall mindpicture of the world, shaped by information that people filter and then retrieve (Ravichandran, 2019).

Satisfaction is seen as a central pillar of consumer behaviour, considering that consumers' satisfaction levels influence their future decisions, impacting profits, market image, and market share of a business.

The level of satisfaction can define holiday experiences in various ways: in line with established expectations, considered satisfactory with high performance in all tourist aspects in the area, highlighting a significant level of fairness.

Therefore, satisfaction is not just a subjective reaction but an essential indicator of a business's success in the tourism industry. High consumer satisfaction can strengthen the image of the destination or services offered, positively influencing consumers' future decisions, and contributing to the growth of business performance.

Trust is the most powerful tool in building and maintaining customer relationships. Long-term consumer loyalty is not possible without a solid foundation of trust. Trust develops through a dynamic process that involves continuously exceeding consumer expectations and providing repeated satisfaction over time. Therefore, it plays a central role in determining the level of loyalty and shaping future behaviour.

Customer buying behaviours are closely associated with the level of trust in a product and service. In this context, trust can be perceived either as an attitude or belief or as a behavioural intention. Travelers become loyal to a single destination, and the clear distinction between genuine and assumed loyalty becomes essential.

Attitudinal loyalty is also seen as a precursor to behavioural loyalty. There are different types of loyalty, including vertical, horizontal, and experiential. Vertical loyalty refers to the fact that tourists can show loyalty at different levels in the tourism system simultaneously (e.g., towards a travel agent and an airline). Horizontal loyalty involves loyalty to multiple providers at the same level of the tourism system (e.g., multiple hotels), while experiential loyalty refers to attachment to certain styles or types of vacations (Tsiotsou, 2012).

3. Research methodology

In this study, the starting point is the idea that in recent times, guesthouses have become a popular option for tourists seeking to escape the hustle and bustle of the city and enjoy a relaxing and authentic experience in a natural environment. Concerns for the environment and sustainability have significantly increased, and such aspects are becoming increasingly important for consumers in choosing their holiday destinations. In this context, the Eco-friendly Guesthouse has emerged as a successful example, offering services oriented towards environmental protection and providing an authentic experience in an ecological setting.

The aim of this study is to explore and understand consumers' perception regarding the quality of services offered by the Eco-friendly Guesthouse. By carefully analysing these perceptions, the study seeks to highlight the strengths and weaknesses of customer experience in this environmentally oriented guesthouse. Thus, it aims to obtain a detailed picture of how the services are perceived, identify customers' ecological preferences, and provide recommendations for improving the quality of services offered.

To analyse consumers' perception of the quality of services offered by the Eco-friendly Guesthouse, a quantitative research approach was chosen, based on a questionnaire distributed at the guesthouse's reception. The questionnaire structure consists of 15 closed-ended questions. Out of the 15 questions, 10 are content-related questions, and 5 questions represent identification criteria, including gender, age, monthly income, occupation, and respondents' place of residence.

The research was conducted from June to August 2023 on a sample of 130 people residing in Romania, ranging in age from under 18 to 55 and above. Of these, 77 respondents are female, and 53 are male. The majority of them hold the status of employees, with incomes ranging from 1,500 lei to 3,500 lei and above. A few respondents are students, homemakers, retirees, and unemployed, including respondents with no income.

4. Findings

The way consumers deal with purchasing decisions is very diverse, because their reactions are mostly determined by the environmental issues in which they live their lives (Dinu, 2018).

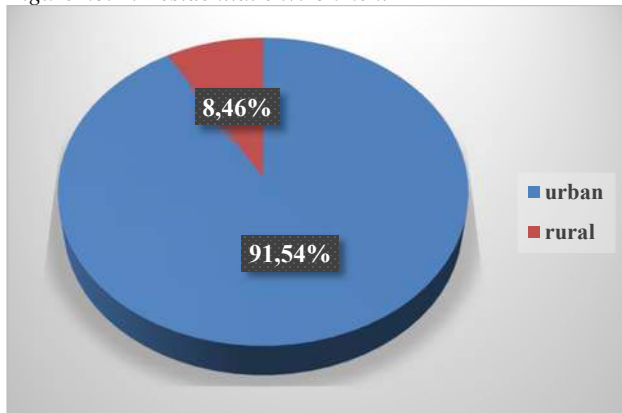
Interestingly, the percentage of women (59.23%) who visited the Eco-friendly Guesthouse is higher than the percentage of men. This might indicate a greater preference among women for this destination or a marketing strategy specifically targeting the female audience. However, it's important to note that these figures only reflect the gender distribution among the guesthouse visitors and do not provide information about other characteristics or preferences.

Noteworthy from data centralization is that the highest percentage of visitors falls within the age range of 36-45 years (36.92%), followed by the age group of 26-35 years (23.85%). This may indicate that the Eco-friendly Guesthouse attracts primarily young adults and middle-aged individuals. However, these figures provide only a general overview and do not offer detailed information about the reasons or preferences of visitors based on age.

The Eco-friendly Guesthouse attracts a diverse spectrum of guests with different income levels. There are visitors with lower incomes, average incomes, and above-average incomes, suggesting that the guesthouse attracts a varied range of clients.

The majority of guests visiting the Eco-friendly Guesthouse (91.54%) come from urban areas, while a smaller proportion (8.46%) comes from rural areas. This may suggest that the guesthouse attracts mainly people living in urban areas who want to enjoy a relaxing experience in a rural environment. The guesthouse might be more well-known and accessible to residents from urban areas but still draws a significant number of guests from rural areas.

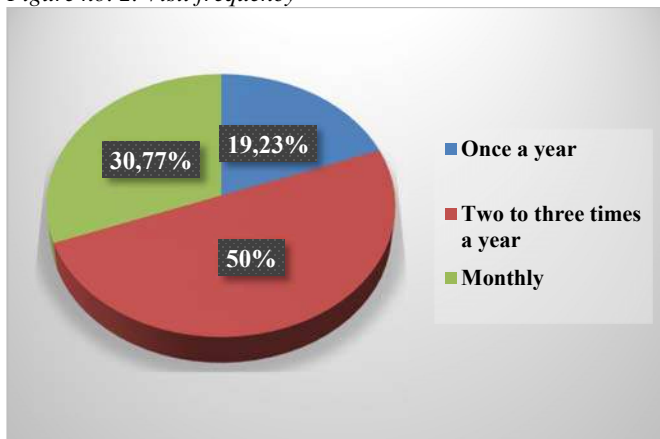
Figure no. 1. Residential environment



Source: Authors' contribution

Regarding the frequency with which respondents visit the Eco-friendly Guesthouse, approximately 19.23% visit the guesthouse once a year. This may indicate that a small but significant segment of respondents choose to stay at this guesthouse only once a year, due to personal preferences or less frequent travel plans.

Figure no. 2. Visit frequency



Source: Authors' contribution

The majority of respondents (50%) visit the guesthouse two to three times a year. This suggests a significant preference for this guesthouse and indicates a moderate frequency of choosing its services.

About 30.77% of the interviewed subjects visit the guesthouse monthly. This group represents a significant segment that frequents the guesthouse regularly, demonstrating high loyalty or a consistent preference for its services, suggesting a stable and trustworthy relationship between them and the guesthouse.

Monthly frequency may suggest that the guesthouse manages to create an attractive environment and a positive experience for guests, encouraging them to return regularly. It is important to analyse and understand the reasons for this monthly visitation frequency to strengthen these positive aspects and address any issues that may contribute to a less frequent experience for other customer segments.

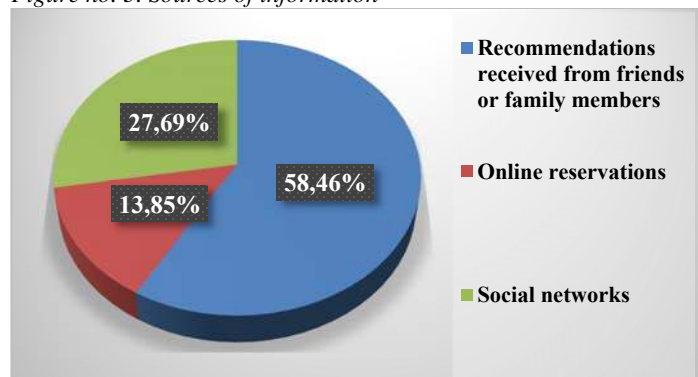
Overall, these results show that the Eco-friendly Guesthouse attracts a significant number of visitors with a variety of frequencies.

The second question explores the sources of information and influence on the decision to choose the Eco-friendly Guesthouse. The results indicate that a significant proportion, 58.46%, comes from recommendations received from friends or family members. This suggests a significant impact of personal recommendations and the previous experiences of others on consumers' decisions.

At the same time, a smaller percentage, 13.85%, indicates that some respondents prefer to make online reservations for the Eco-friendly Guesthouse. This emphasizes the importance of digital channels in the travel decision-making process.

Additionally, 27.69% of respondents state that social networks played a role in influencing their decision to choose this guesthouse. This result suggests that a strong presence and effective promotion on social platforms can have a significant impact on attracting and convincing potential customers.

Figure no. 3. Sources of information

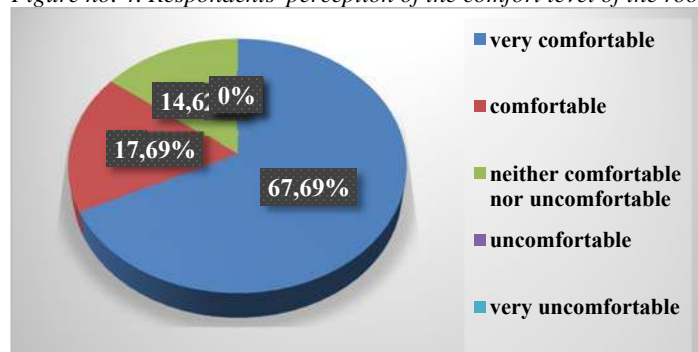


Source: Authors' contribution

Overall, the results indicate a variety of sources of influence, with a significant emphasis on personal recommendations, highlighting the importance of reputation and previous experiences for consumers in the process of choosing this guesthouse.

Regarding respondents' perception of the comfort level of the room they stayed in, the results suggest that a significant proportion, 67.69% of participants, considered the room to be "very comfortable." This high percentage indicates that the majority of respondents experienced a high level of satisfaction regarding the comfort of their rooms.

Figure no. 4. Respondents' perception of the comfort level of the room



Source: Authors' contribution

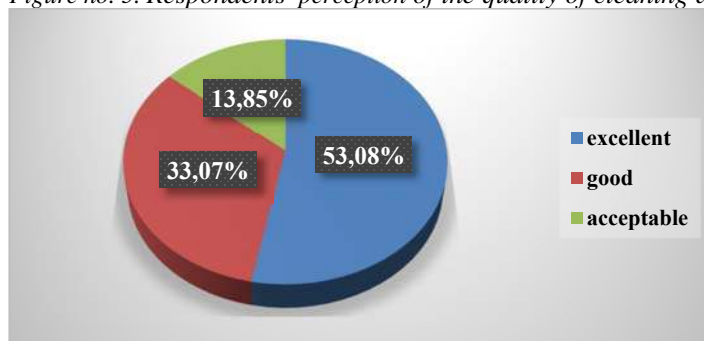
Also, 17.69% indicated that they considered the room "comfortable," emphasizing that they also had a positive experience, although not at an extremely high level.

For 14.62% of respondents, the room was perceived as "neither comfortable nor uncomfortable." This category suggests a diversity of perceptions, with people who had a more neutral or balanced experience regarding comfort or that there were some aspects that did not completely meet their expectations regarding comfort.

It is noteworthy that there are no responses in the categories "uncomfortable" or "very uncomfortable," indicating a relative absence of significant negative experiences among the participants. This provides essential information to guesthouse owners regarding the positive aspects of customer experience but also potential areas for improvement to maintain and enhance the overall comfort level provided by the guesthouse.

Regarding the respondents' perception of the quality of cleaning and maintenance services in the rooms they stayed in, the provided responses offer a detailed overview of the evaluation of these services. For approximately 53.08% of participants, the quality of services was described as "excellent." This significant percentage suggests that a considerable majority of respondents had a positive experience regarding the cleanliness and maintenance of their rooms.

Figure no. 5. Respondents' perception of the quality of cleaning and maintenance services



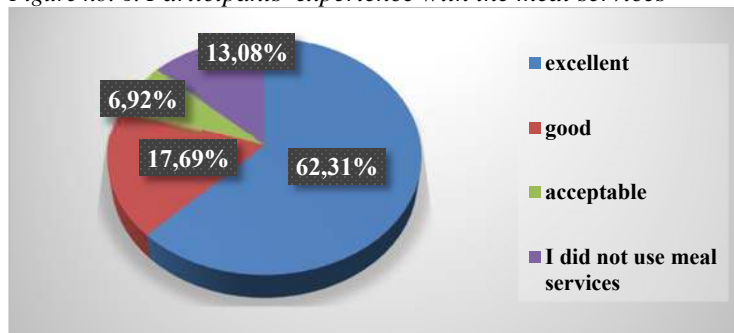
Source: Authors' contribution

For 33.07% of respondents, the quality of services was perceived as "good," indicating solid satisfaction but with minor aspects that could be improved. Additionally, 13.85% of respondents considered the quality of services to be "acceptable." This indicates a range of perceptions, from neutral to experiences that, in some way, could be improved.

In conclusion, the results indicate an overall positive evaluation of the quality of cleaning and maintenance services. However, it is important to analyse specific feedback to identify any areas that require attention and improvements. Appreciating and understanding customer feedback can significantly contribute to maintaining and improving the overall guest experience.

Regarding participants' experience with the meal services provided by the guesthouse, the provided responses offer a perspective on the quality of food and the level of satisfaction with these services. Approximately 62.31% of participants rated the quality of food as "excellent," indicating a significant majority that had an extremely positive experience with the meal services, suggesting a high appreciation for the quality and taste of the food offered by the guesthouse.

Figure no. 6. Participants' experience with the meal services



Source: Authors' contribution

For 17.69% of respondents, the quality of food was perceived as "good," indicating solid satisfaction with areas for improvement or adjustment. There is also a small proportion, 6.92%, who rated the quality of food as "acceptable." This suggests a diversity of perceptions, with some participants considering the food acceptable but with room for improvement.

Additionally, 13.08% of respondents stated that they did not use meal services, which could reflect personal preferences or decisions to eat elsewhere. Overall, the results suggest that the majority of customers had a positive culinary experience, and the guesthouse provides a high standard of quality in terms of food. However, it is important to analyse specific feedback to identify any areas for improvement and to effectively respond to customer needs and preferences.

Next question explores the criteria and factors considered essential by respondents in the process of selecting a guesthouse. It provides a broad framework for understanding the motivations and individual priorities of consumers when choosing accommodation. The results reveal a variety of influences and preferences, thus offering the guesthouse a deeper understanding of customer needs.

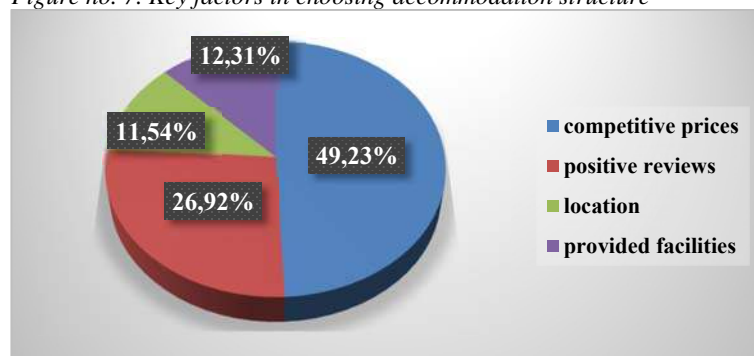
For a significant proportion of respondents (49.23%), the financial aspect is a key factor in decision-making. This suggests that competitive prices are crucial for many people when selecting a guesthouse.

26.92% of respondents consider the previous experiences of other customers, expressed through positive reviews, as an important factor. This highlights the importance of social feedback and reputation in the decision-making process.

For a small proportion of participants (11.54%), the location of the guesthouse is a key criterion. This aspect may reflect a priority for proximity to tourist attractions, transportation, or other facilities.

For another segment of respondents (12.31%), the facilities provided by the guesthouse are an important aspect in the decision-making process. This may include room amenities, additional services, and more.

Figure no. 7. Key factors in choosing accommodation structure

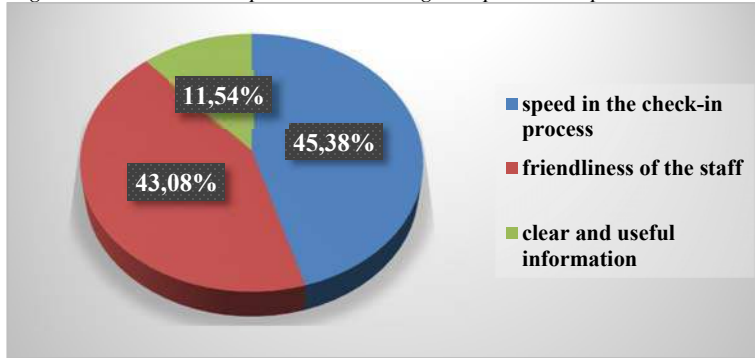


Source: Authors' contribution

Concerning reception and check-in services, emphasis is placed on identifying crucial aspects contributing to a positive experience. The aspect of speed in the check-in process, at 45.38%, represents a significant concern, indicating the importance of efficiency and promptness in providing these services. Additionally, the friendliness of the staff, at 43.08%, is recognized as a determining factor in creating a friendly and welcoming atmosphere for customers.

There is also a highlighted need to provide clear and useful information, evaluated by 11.54% of subjects. This suggests that transparency and relevance of information provided during the check-in process significantly impact the overall perception of the customer experience.

Figure no. 8. Crucial aspects contributing to a positive experience



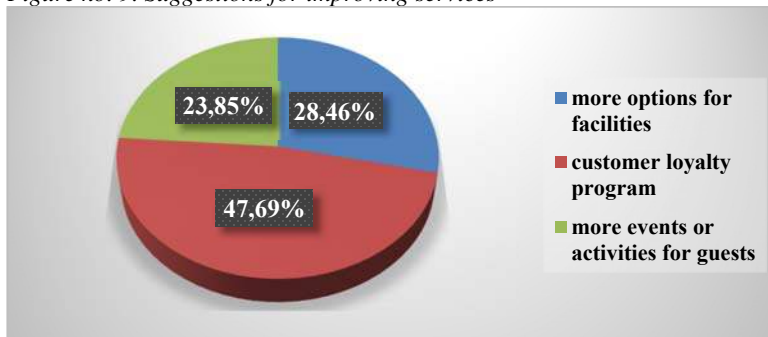
Source: Authors' contribution

The next question aims to evaluate the degree to which respondents appreciate the provider's efforts to personalize services based on individual needs. The results indicate a significant level of satisfaction, as 67.69% of respondents rated the efforts as "excellent." This significant percentage suggests that an overwhelming majority of customers positively appreciate the company's initiatives in personalizing services to match their individual needs and preferences.

In addition, 32.31% of respondents gave a rating of "good," indicating a solid appreciation, although not at the maximum level. The absence of negative ratings, such as "acceptable," "poor," or "very poor," suggests that most customers perceive personalization efforts as satisfactory or better. In conclusion, the results indicate a considerable success in personalized service approaches, generating a positive reaction from customers.

A majority of customers, 47.69%, express interest and desire for a customer loyalty program. This could mean that participants desire rewards or benefits to remain loyal to the guesthouse. 28.46% of respondents believe that having more facility options would be beneficial, indicating a demand for diversification of offered services.

Figure no. 9. Suggestions for improving services

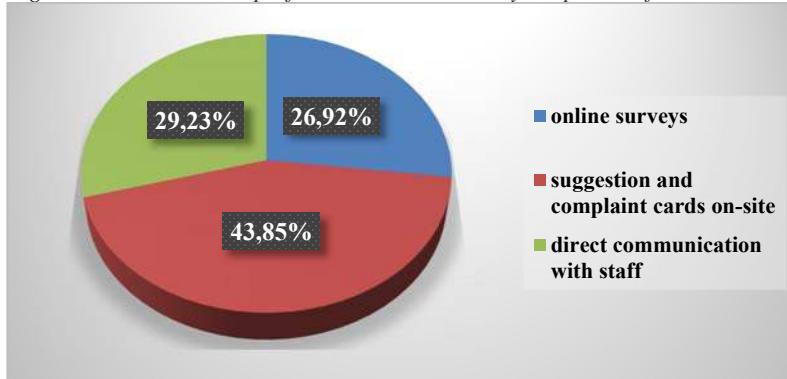


Source: Authors' contribution

Regarding the desire for more events or activities for guests, reflected in the percentage of 23.85%, it suggests that a significant portion of respondents would appreciate a more varied range of experiences and interactions in addition to existing services.

Regarding customer preferences related to ways to provide feedback and express opinions about the services offered by the company, 43.85% of subjects prefer to express their opinions through suggestion and complaint cards available at the company's physical locations. This indicates a desire to provide real-time and direct feedback, within locations where they interact with the offered services.

Figure no.10. Customer preferences related to ways to provide feedback and express opinions



Source: Authors' contribution

On the other hand, 29.23% of the interviewed individuals prefer to communicate directly with staff to express their opinions. This underscores the importance of human interaction and personalized dialogue in the feedback process. A significant percentage of respondents, 26.92%, indicate a preference for using online surveys to provide feedback. This suggests a trend towards the use of the digital environment and online platforms to provide structured opinions and feedback on services.

In conclusion, the question reveals the diversity of customer preferences regarding feedback channels, allowing them the freedom to choose the methods that best suit them to express their opinions about the services offered by the company.

It is suggested to have continuous contact with the tourist customer to determine the level of satisfaction towards the performance of company service (Oraibi, 2020).

5. Conclusions

The study on customer experience at Casa Ecologica Guesthouse generally indicates a positive image of the services provided. Customers seem to appreciate the high level of room comfort, the quality of cleaning and maintenance services, as well as the culinary offerings. Additionally, the results suggest that efforts to personalize services and loyalty strategies have been well-received.

However, there are limitations regarding generalization, as the study is based on the experiences of a specific group of respondents and may not fully reflect the diversity of all customers. Moreover, there is a potential subjectivity in the provided evaluations since they are based on individual perceptions of accommodation and services experiences.

Limitations also include the absence of significant negative evaluations, which could indicate some customers' reluctance to express negative feedback or a possible filtering of information. The interpretation of results could be influenced by certain trends, such as the optimism of the subjects or a hesitation to openly criticize.

In conclusion, the study provides a valuable perspective on customer experiences but should be interpreted with caution within the specific context of this guesthouse. Validity and credibility are supported; however, generalization and objectivity may be affected by the identified limitations.

Overall, the study offers a useful and valuable insight into customer experience, serving as a useful tool for the owners and managers of Casa Ecologica Guesthouse in their efforts to continuously improve offerings and maintain a high level of customer satisfaction.

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The Impact of Social Networks on Buying Decisions

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Abstract

Marketing communication through social networks has become over time a very important and indispensable phenomenon, the life of society and organizations taking a very large scale, thanks to it. Just like society, organizations are in constant communication with the environment in which they operate. Thus, the success of companies, on social, economic and financial level, is due mostly to the way in which managers initiate and carry out the communication process with the society.

Marketing communication has developed both conceptually and practically. The old concept of marketing communication meant a rational communication (that is, a communication fixed on the product and its characteristics), and the new concept of marketing communication prompts companies to expand their communication with society through more extensive advertising (for example, newspapers, magazines, radio, social networks).

Key words: consumption, consumer, purchasing decision, social networks

J.E.L. classification: M 21

1. Introduction

Consumption encompasses (Popescu, 2004) the entire conduct of an end-user of services, material and non-material goods, for example including the behavior of patients of a doctor or parishioners towards a church. This approach is consistent with the meaning of the marketing concept, being the result of the accumulation of information that refers to a good or service meant to satisfy the consumption requirements.

Consumer income and expenditure may influence the demand for the consumption of goods or services, hence resulting in the expansion or restriction of the market (in a particular area, or for a particular product, for example), diversification of consumption requirements and modification of purchases made. Thus, the solvency of consumer demand and the accessibility of shopping are influenced by the size of market prices.

The consumer is the person to whom a wealth of information about goods and services comes, being free in his choices to be able to meet his needs. Through its choices, it manages to shape the producer of goods or services, due to its budget, needs, tastes, preferences or traditions.

The consumer can be considered any economic topic that meets his needs or a micro group of belonging, for example the family, and the factors that determine people to buy are physical (hunger, hunger, thirst, clothing, etc...) and its purchasing power (income, price of products and services).

We, people, are different between us, and the needs, preferences and interactions with those around us can characterize us in a certain category of consumers. Thus there are several behavioral typologies, such as: the sociable consumer, the direct consumer, the brain consumer, the interactive consumer, the silent consumer, the curious consumer

Sociable consumers are lively consumers who like to feel good. Their attention is captured through fun, they are very energetic, enthusiastic and talkative people. They can also be inattentive and very rattling when it comes to shopping, because they mostly choose more expensive things and put a higher price on them.

Interactive consumers: Like brain consumers, they make decisions very slowly, but are always open when it comes to trying new things. They are conformist people, who like to do most of the time what they do everyone, being good listeners, he said, especially when it comes to trying new goods or services.

Silent consumers. They are introverted consumers who like to analyze and observe quietly without asking questions. They are attentive to the actions that those around them do and prefer not to ask for details.

Curious consumers. There are people who like to always try new products and services, not being "loyal" of a particular brand. They like to experience the market a lot, they always get informed and ask a lot of questions before buying anything.

The decision to buy and consume results from the accumulation of information, the perception, attitude, motivation and behavior of the individual.

It is influenced in large part by people's rational behavior, which is defined as a "internal consistency of a" decision and "maximization of own interest".

2. Theoretical background

The decision to buy and consume results from the accumulation of information, the perception, attitude, motivation and behavior of the individual (Pelau, 2012)

It is influenced in large part by the rational behavior of people, this being defined as a "internal consistency of a decision" and "maximizing your own interest" (Badarau Horea, 2011). Some aspects of the purchase decision have lately been neglected, such as emotion in economic theory.

Thus, because technology evolves a lot and the education of the population is higher and higher are removed limitation in the buying process, because people can no longer just buy products at a lower price, it is bound to more complex purchases of products with higher quality and higher personal satisfaction, but this is a little more difficult because the prices of goods and services are rising quite often and a lot, and the budget of most consumers remains the same or is growing very little.

Another aspect would be the social environment of which the consumer belongs, because there is a tendency to imitate the decision to buy others.

In conclusion, a buying decision can be based on emotions, budget, social environment, habits and preferences. The decision-making process of buying a good or service consists of several components: Appearance of an unmet need, Search for information and identification of alternatives, mental evaluation of alternatives (Blithe, 1998).

The socialization movement on the internet has gained a great magnitude lately, and according to statistics, in the coming years, it is estimated that the Internet consumers will grow more and more. Readers become producers in this new public space called social media. Through this process people's perceptions of reality change (for example, I can say that in social media life one can see only what one wants to see), human relationships being transformed into virtual relationships superimposed on real life. So, as examples to understand this evolution I say that in just 30 years, the radio has 50 million listeners in 13 years, television has 50 million viewers, in less than 9 months Facebook has reached a total of 100 million users, although the internet took about 4 years to reach this number (Cebotaru, 2015)

The Internet replaces television, a case studied in the UK in 2006 by the YouGov Survey. He noted that people spend at least 20 hours online a week, with Britons claiming that because of the internet, they no longer watch television so often. Television is gradually losing users, with television using less than an hour a day. This leads to 27 million people watching more than 3.5 billion videos online. Most of them are viewed on Facebook, with the network growing by 387% from 2007 to 2008.

In order to understand how a social network can influence the consumer buying decision, we first need to understand what it is and how it can help us improve our social life.

Marketing communication through social networks has become over time a very important and indispensable phenomenon, the life of society and organizations taking a very large scale, thanks to it. Just like society, organizations are in constant communication with the environment in which they operate. Thus, the success of companies, on social, economic and financial level, is due mostly to the way in which managers initiate and carry out the communication process with the society.

Marketing communication has developed both conceptually and practically.

Thus, the old concept of marketing communication meant a rational communication (that is, a communication fixed on the product and its characteristics), and the new concept of marketing communication prompts companies to expand their communication with society through more extensive advertising (for example, newspapers, magazines, radio, social networks (Grossek, 2006)).

Even though this communication has advanced so much, the techniques by which it is made have more distant origins (there were early forms of advertising, public relations, sponsorship and patronage, and patronage, since antiquity).

As an example, I can give Ancient Greece. When the ships loaded with products and goods arrived, they were announced by singing people, who were called "*messengers*". Like the ancient Greeks, the Romans had their own method of advertising and communication.

For example, signs and drawings engraved on stones and tile were found in the ruins of the city of Pompeii, which represented the goods and products sold in those times (sir of hams - showed people that there was a butcher shop, a pair of boots - showed that there was a shoemaker).

So, earlier, even if people had informal relationships, they were strong and tight, with manufacturers not needing to communicate in a sophisticated manner. This was due to the fact that both customers, suppliers and manufacturers were focused on trust and fidelity, the reputation of a good or product being given its quality.

The evolution of advertising was triggered by the invention of Johannes Gutenberg (Popescu, 2004), namely the printing machine, which appeared in 1455 and the first rotary printing press, designed by the American Richard Hoe, appearing in 1846, this represents the refinement of Gutenberg's invention.

This is how about 10,000 newspapers and about 100 magazines were published by the end of the XIX century. A little later, a promotional technique appears, namely offering promotional premiums. As an example, we have B. T. Babbitt, a soap maker who is thinking of selling soap marketed by the piece. To the detriment of it, out of the habit of society, consumers bought all the soap per kilogram. Thus, Babbitt decides to give consumers promotional premiums, namely: every 25th box of soap purchased, it offered a painting.

The most important feature of the new communication concept is the identification and satisfaction of customer needs and requirements, from this we can deduce that the changes that take place over time are quite complex. If earlier we talked about advertising through "*messengers*", today we are talking about advertising through social networks.

With the advent of the Internet, the online environment helps marketing communication of suppliers and manufacturers with consumers of goods and services.

This form of communication, through the internet, is made up of transmitters and receivers, the exchange of information being made from both sides resulting in high interaction and feedback. Online advertising through social networks is economically, financially and socially useful, as information on services and products can be updated daily, weekly or depending on how an organization decides it is necessary to meet customer needs and requirements (Popescu, 2002).

An important feature of online communication 'in addition to the possibility of constant updating, it's the fact that people can send feedback. They can be negative and positive, so they can help organizations produce and market according to requirements, tastes and pleasures (Russel and Lane, 2003).

The Internet is known as the main tool used in marketing activities on social media, claiming: "marketing communication is intended to support the marketing plan by sending the marketing promise, while helping the target audience to trust the specific advantage of the " advertiser and according to the American teacher, by the name of Terrence A. Shimp "marketing communication represents all the elements included in the marketing mix of a brand, having the role of facilitating transactions by sharing ideas with consumers of the brand or customers ".

Analyzing the above definitions, I can say that the online environment has a great potential to make the brands, products, services, objectives and goals of a known organization, because there is a very advanced technology.

Marketing communication through social networks is done through: videos, photos, websites, e-mails, podcasts, virtual flyers, virtual brochures, presentations, blogs, etc.

3. Research methodology

Based on the arguments, we conducted a questionnaire that highlights the impact of social networks on the purchasing decision.

Objectives of the study, how consumers proceed to the selection of a supplier of such services/beauty salon; identification of the components of the marketing mix and to what extent they influence the purchasing decision (price, product, product, product, promotion); identification of decision-makers; determination of the percentage of users who use social networks for the purpose of buying beauty services; identifying the level of trust that consumers have only by viewing the profiles on the social media of the provider or salon

We conducted a questionnaire that contains questions that are intended for observation, this being the most important element of a research, it is a very used method to be able to directly and efficiently collect all the information I need.

Method of spreading the questionnaire for finding out the necessary information:

This questionnaire was conducted online, being distributed on social media platforms. These are: Facebook, WhatsApp and Instagram.

Target individuals are people with active social media accounts over the age of 14 who are part of different communities, cities, counties or online groups.

Analysis of the data obtained after the study. This study was conducted by 85 people active on social networks, both male and female, over the age of 14. By receiving the answers of these people, I try to test the validity of the initial premise, namely the impact of social networks on the purchasing decision.

The result was that social networks play a very important role on the purchasing decision and influence the consumer a lot, helping him to make the most correct decision for him.

4. Findings

The responses received and gained from the case study help to observe a change in the behavior of online consumers, the decision to buy and the factors that influence the purchasing decision. Promoting on social networks makes visible a connection with consumers, helping them to make the best purchase decision as everyone thinks is best for him, he said, following the documentation and research done by them (see Figure no. 1).

Figure no. 1 Survey regarding the importance of online promotion of beauty services

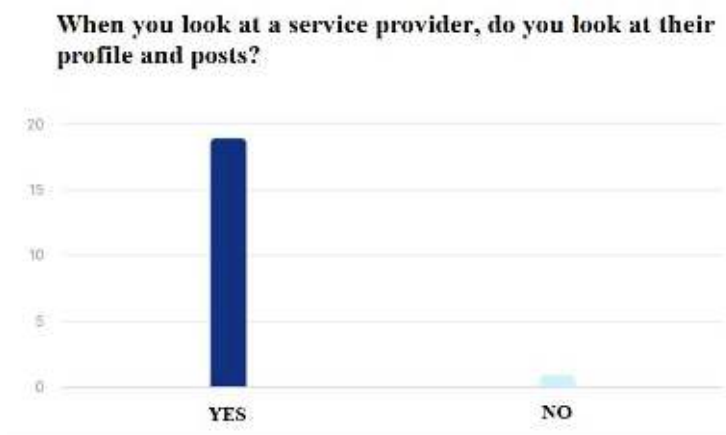


Source: results of own research

It is seen from the responses of the people who completed the opinion poll, online promotion matters a lot.

Following this question, it seems the profile and posts of salons and service providers have an important role, and almost all respondents to my questions look at them before choosing to buy a service (see Figure no. 2).

Figure no. 2 Survey regarding the importance of checking the service provider's profile and posts

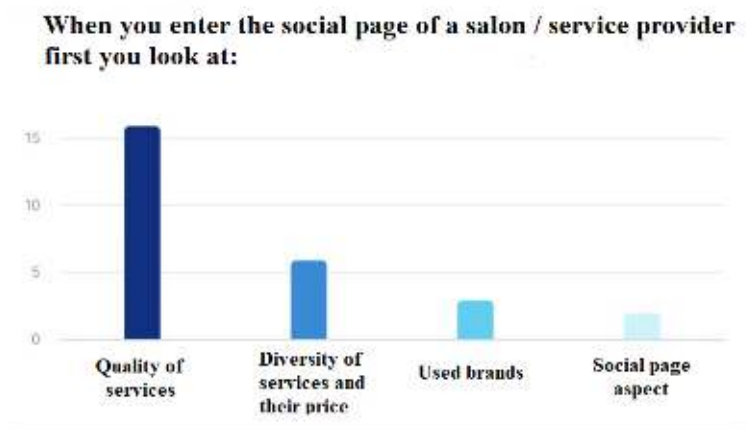


Source: results of own research

It seems that the quality of the services performed by the salons is the most important component when it comes to making a purchase decision. To some extent it also matters that there is a more diverse range of services, in accordance with their price.

In the last places are the brands used by the providers and the appearance of the page, which seems not to be as important as the quality (see Figure no. 3).

Figure no. 3 Survey regarding the importance of visualizing the salon or service provider social page

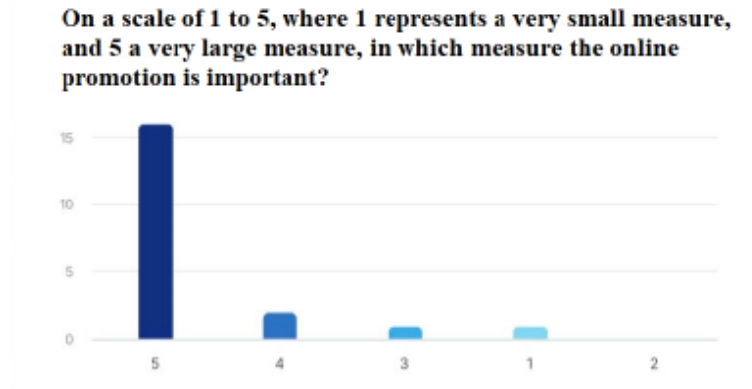


Source: results of own research.

Source: results of own research

On a scale of 1 to 5, most respondents believe that online promotion largely has a huge impact. The rest of the respondents believe that this promotion does not have a great importance on their purchasing decision (see Figure no. 4).

Figure no. 4 Survey regarding the measure in which the online promotion is important



Source: results of own research

5. Conclusions

The paper highlights and shows the role and impact of the online environment on consumers of goods and services.

Thus, I can say that in the last decade technology has advanced more and more, so there are more and more users who prefer to buy using social networks, using the internet. This is an easy way to do your shopping and make a purchase decision as suitable for you as possible, because you find a wealth of information and feedback about a good or service you want to purchase. The networks have quite a big impact and can be considered “mentors” that help make this purchasing decision in accordance with the posts that appear on Facebook, Instagram, WhatsApp, WhatsApp, or others.

The more important networks are to people, the more they can say that consumers also have an impact on them, because online accounts and profiles to be as visible as possible and to reach the highest levels are needed these “internet” consumers.

Each individual profile tries to attract as many online buyers as possible through captivating posts, successful photos, and videos and with a growing impact, consumers have a lot of confidence in what appears or is being discussed on internet platforms.

That is why it is even easier for us to decide if we want to purchase a certain good or service, just by looking at the profiles on social media, they can encourage us about what to do. I think a very well-arranged, structured profile, with positive feedback and as many guides people to try what is promoted and whether the thing promoted is quality or not, it matters a lot what you see online.

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The Identification of the Preference, Motivation, Attitude and Satisfaction of Consumers towards Resorts from the Semenice Tourist Area

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Abstract

The purpose of the research is to identify the preference, motivation, attitude and satisfaction of consumers towards the resorts found in the Semenice Tourist Area.

The paper presents the results obtained through direct research, respectively an occasional survey using the questionnaire, through used to identify if there is tourist demand, what is the frequency of consumption and what budget is reserved for a minimum stay, respectively the attitude of consumers regarding the main sources of information when choosing a tourist accommodation structure, depending on unit type, classification, rates and payment methods.

At the same time, the preference for purchasing tourist services, the motivation, the selection criteria used when choosing a tourist accommodation structure, the degree of satisfaction with the basic and additional services offered, the degree of satisfaction with the natural environment, road transport and cable installations, tourist routes, ski slopes, facilities for entertainment and relaxation were also identified.

Key words: mountain resort, consumers, preference, satisfaction, motivation

J.E.L. classification: M31, L83

1. Introduction

After the economic crisis felt during the last years, a crisis caused by the pandemic caused by the COVID-19 coronavirus, the national economy recovery began in Romania starting with the year 2022. Economic growth was felt in all sectors of activity of the national economy, but especially services domain. In the tourism sector, once restrictions on the free movement of foreign nationals were lifted, as well as the granting of holiday vouchers as an incentive to employees in the public sector, substantial increases have been generated in the field of tourism. Currently, Romania does not have a database at the regional level regarding the tourist demand by types of tourist resorts, which is why, in order to identify the consumer's demand, marketing studies must be carried out. In this sense, the purpose of this paper is to identify the consumers' degree of satisfaction and appreciation regarding the tourist potential, the technical-material base specifically for tourism, respectively the existing tourist services in the resorts of the Semenice tourist area, Caraş-Severin County.

2. Theoretical background

In tourist resorts, the tourist offer is composed of, on the one hand, the structure and value of the natural and anthropic tourist potential with a determining role in the development of tourism, and on the other hand, the specific material basis for accommodation, food, leisure services, the number of professionally trained employees to produce quality services. Minciu (2004, p. 149) claims that "the offer represents the second defining essential category of the market, including the tourist one".

Of course, the tourist offer is designed according to the tourist demand in order to achieve tourist consumption because the tourist offer cannot be stored, and the elements that make it up give it a heterogeneous and complex character, that is precisely why "tourist consumption, as an expression of demand "effective, represents all the expenses made by the subjects of the request for the purchase of goods and services with a touristic motivation" (Ionci  et al, 2005, p. 87)

One can appreciate that the tourist demand can be satisfied if the tourist offer contains the elements of attractiveness, climate conditions that determine seasonality, tourist services that value the elements of attractiveness, as well as an optimal price because "with the price increase, the demand for a good, usually decreases" (Stoica, 2005, p. 122).

The existing tourist offer in a tourist resort is much more complex because in Romania, the attestation of tourist resorts of local and national interest, according to the mandatory criteria provided in Annex 1 of Government Decision no. 852/13.08.2008 for the approval of the norms and criteria for the attestation of tourist resorts, can be achieved if "30% of tourist reception structures with accommodation functions are classified between 3-5 stars/flowers" (<https://turism.gov.ro/web/atestare-statiune-turistica/>), respectively if the following exist "1. The natural setting, natural healing factors and the quality of the environment, 2. Access and roads to or in the resort, 3. Urban-building utilities, 4. Tourist reception and leisure structures, 5. Tourist information and promotion" (<https://legislatie.just.ro/Public/DetaliuDocument/96733>). "Tourist resorts of national and local interest are certified by a Decision of the Government of Romania at the initiative of the Ministry of Tourism (national interest) with the support of the local public administration authorities, or initiated by the local public administration (local interest) which sends the Ministry of Tourism a letter of intent and the opportunity study from which the necessity of the respective tourist certificate can result" (Gherghina, 2007, p.16).

For sustainable tourism, tourist services are designed based on consumer demand, that is why it is very important to study the consumers' behaviour when it comes to tourist services, namely knowing the influencing factors: perception, information, learning, personality, motivation, attitude, preference, image, price, family, membership groups and reference groups.

"Perceptions of sustainable tourism can be strongly influenced by a multitude of factors, and the respondents' domicile is no exception" (Hubel and Condrea, 2023, p. 379).

"The purchase process represents the customer's acts, attitudes and decisions, before and after the actual purchase of a certain economic good" T nase (2013, p. 120). That is precisely why "in order to know the extent to which purchase intentions expressed at a given moment turn into actual purchases, it is necessary to repeat the study of purchase intentions on the same sample of consumers" (C toiu et al., 2004, p. 88). Thus, need satisfaction is achieved through consumption, and the consumer allocates a part of one's income for the purchase of tourist products or services.

3. Research methodology

In order to identify the preference, motivation, attitude and satisfaction of consumers towards the resorts in the Semen c tourist area, respectively with regard to spending their leisure in the mountain tourist resorts of Crivaia, Secu, Semen c and Trei Ape, the tourist demand was first identified, in order to develop proposals that can be used in the improvement of the tourist offer.

"Popovici Gheorghe appreciates that the Banatul Montan tourist destination is divided into five large areas: "Semen c tourist area, Aurora Banatului tourist area, Clisura Dun rii tourist area, Scorilo tourist area, B ile Herculane tourist area" (Popovici, <http://www.banatul-montan.ro/index.html>, cited by Gherghina (2017, p. 79-80).

A survey based on a questionnaire was used to carry out the direct research, which was distributed to the subjects both face to face - 22.86%, and online on Google Forms - 77.14%, between January and June 2023. The respondents were identified according to the criteria of age, gender, occupation, average monthly income, and the sampling method used was simple random sampling, resulting in 140 respondents.

After establishing the research objectives, the questionnaire was designed by types of respondent identification questions and research topic questions. The measurement was realized using the percentage method, the ranking method, the Likert scale, the semantic differential.

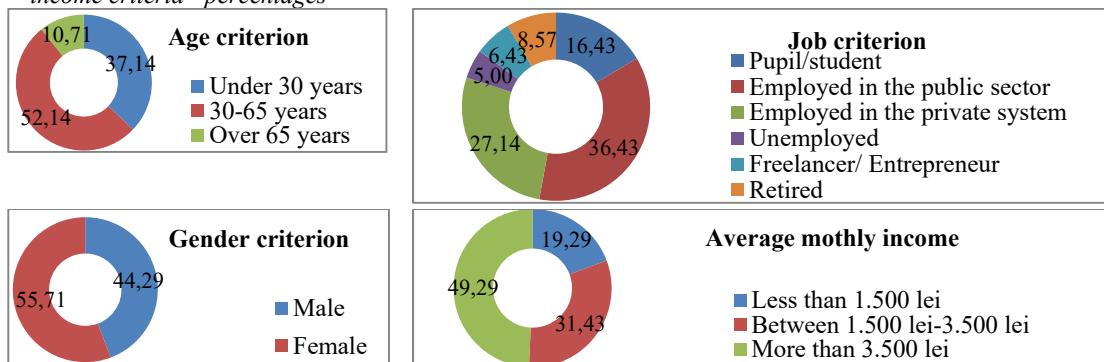
After the pre-testing of the questionnaire, the research hypotheses were developed, which aimed to identify the tourist demand and the frequency of visiting the resorts, respectively the sources of information chosen, the type and category of classification of the tourist accommodation units, how the rates charged in the four resorts are perceived, which is the allocated budget/person for a stay of at least 3 nights, as well as the payment method used with priority when paying for tourist services. At the same time, the preference for purchasing tourist services, the main motivations for traveling and the selection criteria when choosing an accommodation structure, the degree of satisfaction with basic and additional services, as well as respondents' satisfaction with natural tourism potential, road infrastructure, the cable installations, the marking of tourist routes, the arrangement of ski slopes, areas for entertainment and relaxation in the tourist resorts of Crivaia, Secu, Semenici and Trei Ape in the Semenici tourist area were also identified.

4. Findings

The results of the study regarding the identification of consumers' preference, motivation, attitude and satisfaction towards the resorts in the Semenici Tourist Area are presented below. The tourist area analysed is located in Caraş-Severin County, in South-West Romania, and the Secu and Trei Ape climatic tourist resorts are certified as being of local interest, respectively the Crivaia climatic resort and the Semenici balneo-climatic resort are certified as being resorts of national interest.

➤ Identification of respondents according to socio-professional criteria

Figure no. 1., no. 2, no. 3, no. 4. Respondents according to age, gender, occupations and average monthly income criteria - percentages

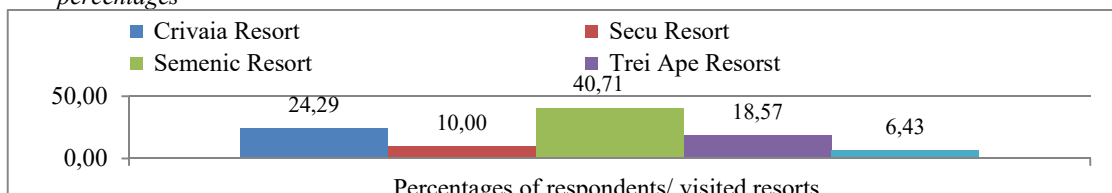


Sources: Made by the author

Following the centralization and processing of the data in the tables and graphs above, the following findings were underlined, namely most respondents are in the age group between 30 - 65 years - 52.14% and under 30 years - 37.14%, women completed the priority questionnaire having a significant percentage of 55.71%, employees in the public system - 36.43%, employees in the private system - 27.14% and Pupils/student s- 16.43%, with average monthly income of family members over 3,500 lei - 49.29% and between 1,500 – 3,500 lei – 31.53%.

➤ *Identification of the tourist demand for priority visits to the resorts in the Semenik tourist area, in the last five years*

Figure no. 5. The share of respondents visiting the resorts of the Semenik tourist area, in the last five years - percentages

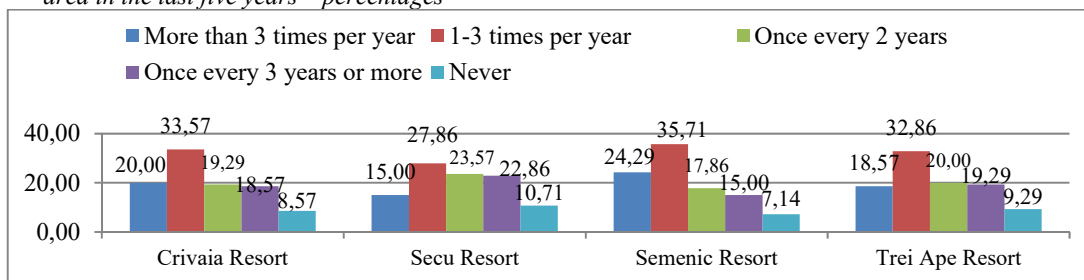


Sources: Made by the author

The results of the research show that in the last five years there has been demand for the resorts in the Semenik tourist area, the Semenik Resort being the most chosen - 40.71%, Crivaia Resort on the second place - 24.29%, Trei Ape resort on the third place - 18.57%, and on the last place Secu resort - 10%. Only 6.43% of respondents do not know or do not remember what was their choice.

➤ *The frequency of visiting tourist resorts in the Semenik Tourist Area in the last five years*

Figure no. 6. The share of respondents regarding the frequency of visiting the resorts in the Semenik tourist area in the last five years - percentages



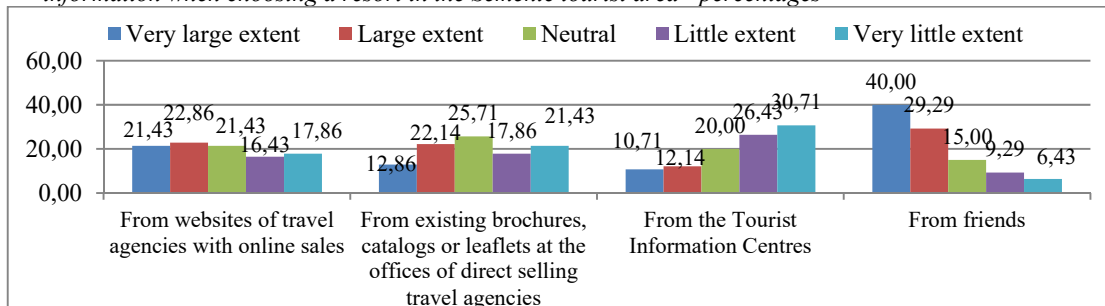
Sources: Made by the author

The research results demonstrate that, in the last 5 years, the highest frequency of visiting the resorts in the Semenik Tourist Area was more than 3 times per year for the Semenik Resort 24.29%, with a score of 3.5500, respectively 1-3 times per year for Crivaia Resort - 33.57%, with a score of 3.3786, once every 2 years for Trei Ape Resort - 20% with a score of 3.3214, once every 3 years and more for Secu Resort - 22.86%, with a score of 3.1357.

Some of the respondents claim that, in the last 5 years, they have never visited 10.71% Secu Resort, 9.29% Trei Ape Resort, 8.57% Crivaia Resort and 7.14% Semenik Resort.

➤ *The extent to which the sources of information were identified when choosing a resort in the Semenik tourist area*

Figure no. 7. The share of respondents regarding the extent to which they identified the sources of information when choosing a resort in the Semenik tourist area - percentages



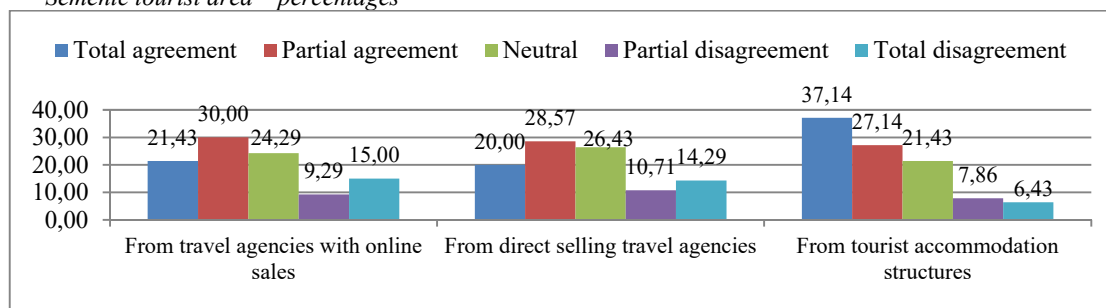
Sources: Made by the author

The results of the research demonstrate the fact that, when choosing a tourist resort in the Semenik Area, most respondents get information from friends - 40% to a very large extent and 29.29% to a large extent, with a score of 3.8714, respectively from the websites of travel agencies tourism with online sales – 22.86%, with a score of 3.1357.

From the brochures, catalogues or leaflets available at the offices of the tourist agencies with direct sales 25.71%, with a score of 2.8714, the respondents get information neither to a large nor to a small extent, and to a very small extent only 30.71% from Tourist Information Centres, with a score of 2.4571.

➤ *Preference for purchasing tourist services in the resorts of the Semenik Tourist Area*

Figure no. 8. The share of respondents regarding the preference for purchasing tourist services from the Semenik tourist area – percentages



Sources: Made by the author

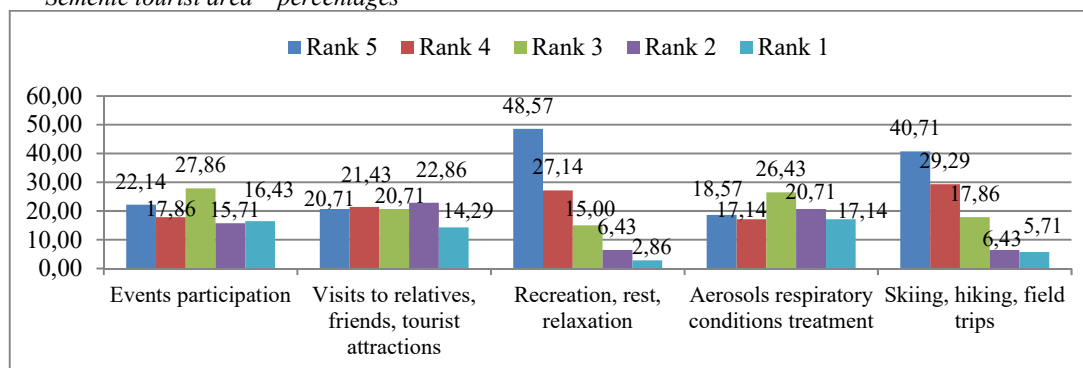
The results of the research show that the respondents prefer to purchase tourist services in the resorts of the Semenik Tourist Area, with total agreement from tourist accommodation structures - 37.14%, with a score of 0.8071, respectively with partial agreement from travel agencies with online sales – 30%, with a score of 0.3357, as well as Neutral from travel agencies with direct sales – 26.43%, with a score of zero 0.2929.

Regarding the disagreement, one can appreciate that only 15% totally disagree and 9.29% partially disagree to buy from travel agencies with online sales, and 14.29% totally disagree and 10.71% partially disagree to buy from travel agencies tourism with direct sales, respectively 7.86% are in total disagreement and 6.43% are in partial disagreement to purchase from the tourist accommodation structure.

The total score of 0.4786 shows that the respondents partially agree with the purchase of tourist services from travel agencies or tourist accommodation structures.

➤ *The main motivations for travelling to a tourist resort in the Semenik tourist area.*

Figure no. 9. The share of respondents regarding the main motivations for traveling to a resort in the Semenik tourist area – percentages

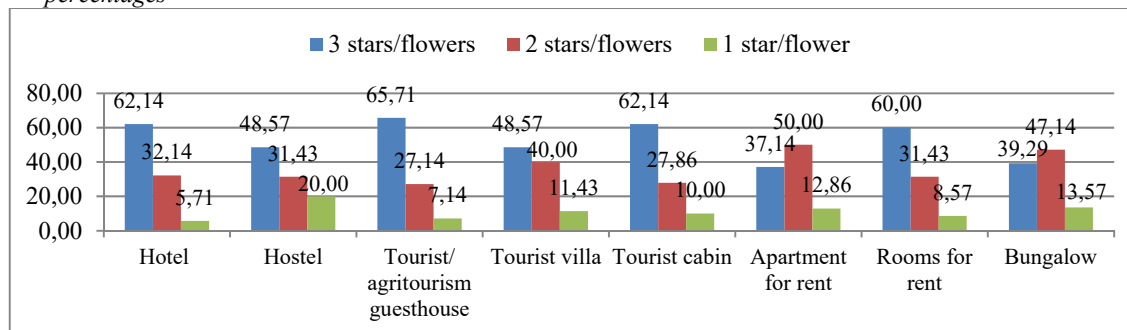


Sources: Made by the author

The results of the research show that the respondents prefer as the main motivations of the trip, in order of percentages and ranks: recreation, rest, relaxation - 48.57%, with a score of 4.1214, skiing, hiking, field trips - 29.29%, with a score of 3.9286, events participation - 27.86%, with a score of 3.1357, visits to relatives, friends, tourist attractions - 22.86%, with a score of 3.1143, aerosol treatment of respiratory ailments - 17.14%, with a score of 2.9929.

➤ *Type of unit and preferred classification category for a tourist accommodation structure, from those existing in the resorts of the Semenic tourist area*

Figure no. 10. The share of respondents regarding the type of unit and the preferred classification category for a tourist accommodation structure, from those existing in the resorts of the Semenic tourist area – percentages



Sources: Made by the author

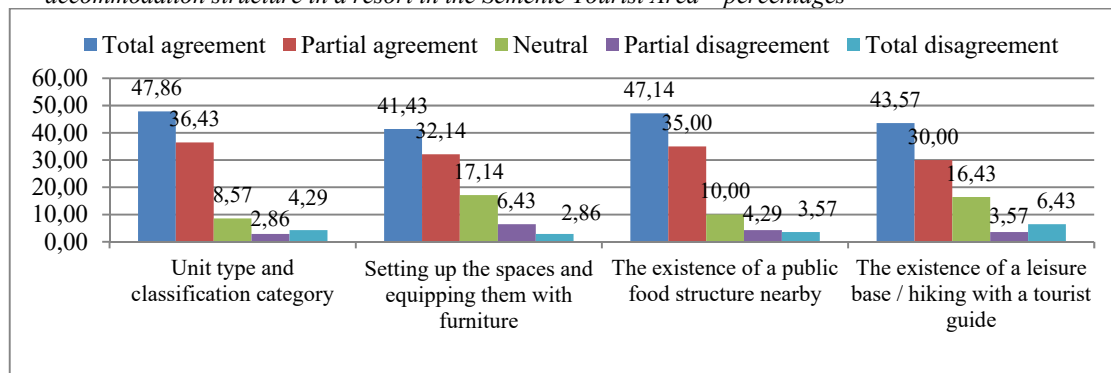
Following the centralization and calculation of the percentages and the average of the assessments, one would find that the majority of respondents prefer that the tourist accommodation structure, depending on the type of unit, be classified in Category 3 stars/flowers for: tourist/agritourism guesthouse - 65.71%, with a score of 2.5857, hotel - 62.14%, with a score of 2.5643, tourist villa - 62.14%, with a score of 2.5214, rooms for rent - 60%, with a score of 2.5143, tourist villa - 48.57%, with a score of 2.3714, hostel - 48.57%, with a score of 2.2857, bungalow - 39.29%, with a score of 2.2571, apartment for rent - 37.14%, with a score of 2.2429.

There is a part of the respondents who prefer tourist accommodation structures classified in the 2 star/flower category for: apartment for rent - 50%, bungalow - 47.14% and tourist villa - 40%.

The smallest share of respondents also prefer tourist accommodation structures classified in the 1 star/flower category for: hostel - 20% and bungalow - 13.57%.

➤ *The main selection criteria when choosing an accommodation structure in a resort in the Semenic tourist area*

Figure no. 11. The share of respondents regarding the main selection criteria when choosing an accommodation structure in a resort in the Semenic Tourist Area – percentages

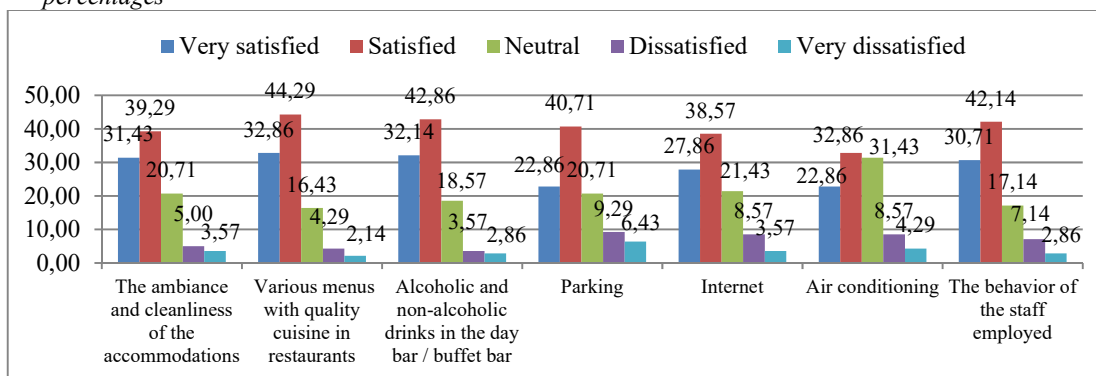


Sources: Made by the author

Following the centralization of the data, the calculation of the average of appreciations and percentages, regarding the main selection criteria for choosing an accommodation structure in a tourist resort in the Semenik Area, the total score resulted was positive 1.1054, and the majority of respondents totally agreed to choose the tourist accommodation structure according to the type of unit and classification category – 47.86%, with a score of 1.2071, as well as according to the existence of a public catering structure nearby – 47.14%, with a score of 1.1786 . 32.14% of the respondents partially agree to choose the tourist accommodation structure depending on the arrangement of the spaces and the furnishing, with a score of 1.0286 and depending on the existence of a leisure base / hiking with a tourist guide 30% of the respondents, with a score of 1.0071. Only 17.14% of the respondents are indifferent to choosing the structure of tourist accommodation according to the layout of the spaces and the furnishing, respectively the existence of a leisure base / hiking with a tourist guide only 16.43%. As for the disagreement, only 6.43% are in partial disagreement for the selection criterion of setting up the spaces and equipping them with furniture, respectively 4.29% for the existence of a public food structure nearby. In total disagreement to choose the tourist accommodation structure according to the existence of a leisure base / hiking with a tourist guide are only 16.43%, and 4.29% according to the type of unit and classification category.

➤ *The respondents' degree of satisfaction regarding the basic or additional tourist services offered in the reception structures in the existing resorts in the Semenik tourist area*

Figure no. 12. The share of respondents regarding the degree of satisfaction with the basic and additional tourist services offered in the reception structures in the existing resorts in the Semenik tourist area – percentages

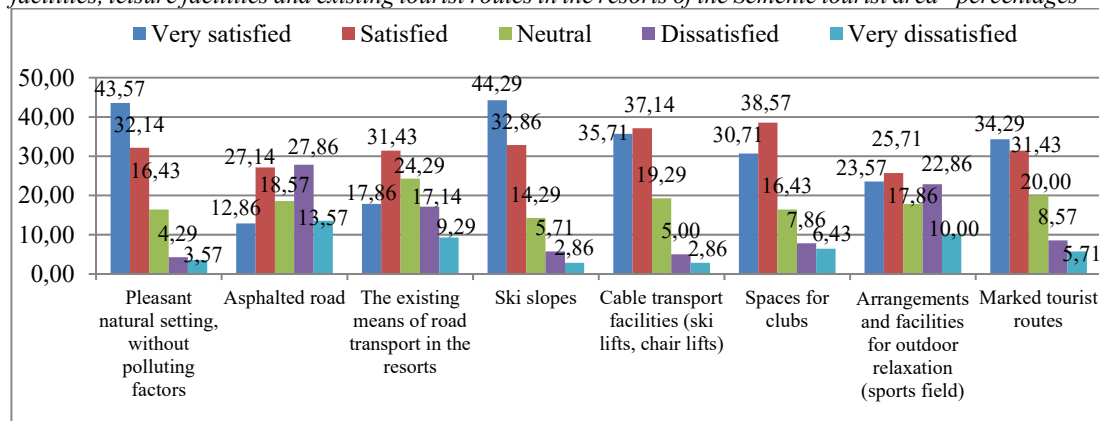


Sources: Made by the author

From the centralization of the data, the calculation of the percentages and the scores regarding the basic or additional tourist services offered by the tourist reception structures in the existing resorts in the Semenik Area, the respondents were: satisfied with a tendency to very satisfied with various menus with quality culinary preparations in restaurants – 32.86%, with a score of 4.0143 and alcoholic and non-alcoholic drinks in day bar/buffet bar – 32.14, with a score of 3.9786; satisfied with the behaviour of the staff employed – 42.14%, with a score of 3.9071 and with the ambience and cleanliness of the accommodation spaces – 39.29%, with a score of 3.9000; neither satisfied – nor dissatisfied with air conditioning – 31.43%, with a score of 3.76143 and with the Internet – 21.43%, with a score of 3.7857; dissatisfied – 9.29% and very dissatisfied – 6.43% parking, with a score of 3.6429.

➤ *The respondents' degree of satisfaction regarding the natural environment, road access, transport means and facilities, leisure facilities and existing tourist routes in the resorts of the Semenik Tourist Area*

Figure no. 13. Respondents' satisfaction with the natural setting, road access, transport means and facilities, leisure facilities and existing tourist routes in the resorts of the Semenik tourist area - percentages

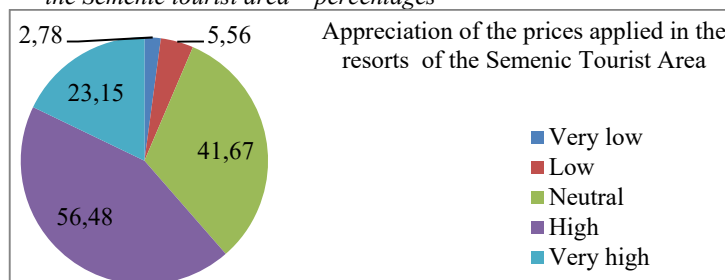


Sources: Made by the author

After the centralization of the data, the calculation of the percentages and the scores, the respondents had the following degree of satisfaction: satisfied with a tendency towards very satisfied with the ski slopes - 44.29%, with a score of 4.1000, as well as with the setting naturally pleasant, without polluting factors – 43.57%, with a score of 4.0786; satisfied with spaces set up for the clubs or discos - 38.57%, with a score of 3.7929, as well as cable transport facilities (ski lifts, chairlift) - 37.14%, with a score of 3.9786; indifferent to the existing means of road transport in the resorts – 24.29%, with a score of 3.3143 and marked tourist routes – 20%, with a score of 3.8000; 27.86% of respondents are dissatisfied and 13.57% are very dissatisfied with the asphalt road, with a score of 2.9786. Also, 22.86% of the respondents are unsatisfied and 10% are very unsatisfied with the arrangements and facilities for outdoor relaxation (sports field) – with a score of 3.3000.

➤ *Respondents' appreciation of the rates charged in the tourist resorts in the Semenik tourist area*

Figure no. 14. The share of respondents regarding the appreciation of the rates applied in the resorts of the Semenik tourist area - percentages

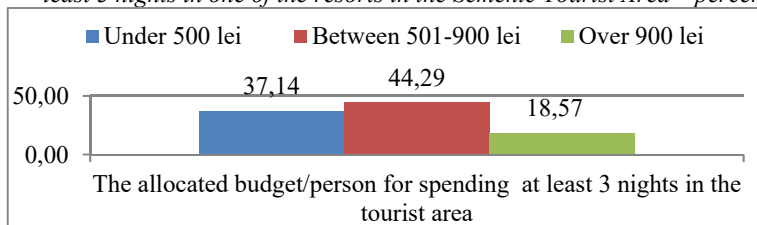


Sources: Made by the author

The respondents appreciate that, in the tourist resorts in the Semenik Area visited by them, the prices charged were: very low - 2.78%, low - 5.56%; neither small nor large – 41.67%, large – 56.48%; very high – 23.15%. The results of the research demonstrate the fact that the rates applied in the resorts of the Semenik Tourist Area are rated as neither low nor high - 41.67% with a tendency towards high - 56.48%, as evidenced by the average rating (score) of 2.2929.

- *The budget allocated/person by the respondents for a stay of at least 3 nights in one of the resorts in the Semenik tourist area*

Figure no. 15. The share of respondents regarding the amount allocated/person for spending a stay of at least 3 nights in one of the resorts in the Semenik Tourist Area – percentages

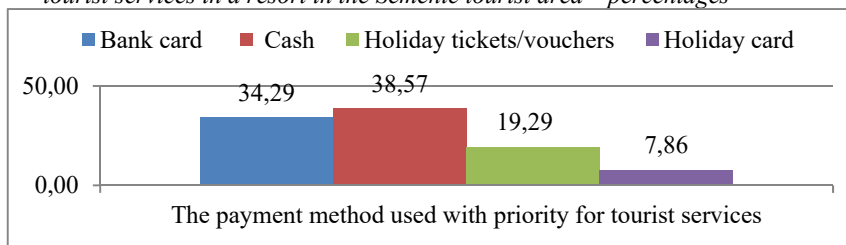


Sources: Made by the author

The results of the research show that in the last 5 years tourist consumption has been registered, respectively for spending at least 3 nights in one of the tourist resorts in the Semenik tourist area, most respondents allocated a budget/person: Under 500 lei - 37.14%, Between 501-900 lei - 44.29%, Over 900 lei - 18.57%.

- *The preferred payment method used by respondents to pay for services in a tourist resort in the Semenik tourist area*

Figure no. 16. The share of respondents regarding the payment method used with priority when paying for tourist services in a resort in the Semenik tourist area – percentages



Sources: Made by the author

The results of the research demonstrate the fact that the payment method used with priority by respondents when paying for tourist services in a resort in the Semenik Tourist Area, respectively the payment of tourist consumption was: cash- 38.57%, bank card - 34.29%, holiday tickets/vouchers - 19.29%, holiday card - 7.86%.

6. Conclusions

The purpose of this research was to identify the preference, motivation, attitude and satisfaction of consumers towards the resorts of the Semenik Tourist Area.

After carrying out the research, the results show that respondents of the study are part of the 30-65 age group, female, employed in the public and private sector, with an average monthly income over 3,500 lei, and that, in the last five years, there has been tourist demand because respondents from all age groups visited the Semenik Resort and the Crivaia Resort with priority. Frequency of visits to the resorts in the Semenik tourist area, in the last five years was more than 3 times a year for the Semenik Resort, 1-3 times a year for the Crivaia Resort, once every 2 years for the Trei Ape Resort, once at 3 years and over for the Secu Resort.

When choosing a resort in the Semenik tourist area, the majority of respondents are informed to a very large extent by friends and from the websites of travel agencies with online sales, neither to a large nor to a small extent, respectively to a small extent from brochures, catalogues or leaflets available at the offices of travel agencies with direct sales and to a very small extent from Tourist Information Centres. At the same time, the respondents prefer to purchase tourist services in the resorts of the Semenik tourist area, with full agreement from tourist accommodation structures,

respectively with partial agreement from travel agencies with online sales, as well as indifferent from travel agencies with direct sales and prefer that main motivations for the trip, in order of rank: recreation, rest, relaxation, skiing, hiking, excursions, participation in events, visits to relatives, friends, tourist attractions, aerosol treatment respiratory ailments,. The majority of respondents prefer the tourist accommodation structure to be a tourist guesthouse/agritourism unit, hotel, tourist cabin, rooms for rent and fewer respondents tourist villa, hostel, bungalow and apartment for rent, all classified in the 3 star/flower category.

Most respondents when choosing an accommodation structure in a resort in the Semenice Tourist Area, are in total agreement to choosing according to the type of unit and the classification category, as well as the existence of a public food structure nearby. Some of the respondents partially agree to choosing the accommodation structure according to the arrangement of the spaces and the furnishing and the existence of a leisure base/hiking with a tourist guide.

The respondents are almost very satisfied with the basic tourist services offered by the tourist reception structures in the existing resorts in the Semenice Tourist Area, respectively with various menus with quality culinary dishes in the restaurants and alcoholic and non-alcoholic drinks in the day bar/buffet bar, satisfied the behaviour of the staff employed and the ambience and cleanliness of the accommodation spaces. For the additional tourist services offered by the tourist reception structures in the existing resorts in the Semenice Tourist Area, there are respondents neither satisfied nor dissatisfied with air conditioning, Internet, and even dissatisfied or very dissatisfied with parking.

The satisfaction degree with the existing tourist offer in the resorts of the Semenice tourist area, shows that the respondents are very satisfied with the ski slopes and the pleasant natural setting, without polluting factors, respectively they are satisfied with the spaces arranged for the discotheque and the cable transport facilities. The respondents are indifferent to the means of road transport existing in the resorts and to marked tourist routes, dissatisfied with the paved road and very dissatisfied with the arrangements and facilities for outdoor relaxation.

Even if the prices charged in the resorts of the Semenice tourist area are considered by most respondents to be high, in recent years tourist consumption has been recorded, for spending a stay of at least 3 nights in one of the resorts, most respondents allocate a budget/person between 501-900 lei, and the preferred method of payment used to pay for tourist services was cash and bank card.

Taking into account the results of the research, in order to develop the Semenice tourist area and to increase the number of tourists in the Crivaia, Secu, Semenice and Trei Ape tourist resorts, economic operators are recommended to promote their tourist offer at national and international level, respectively to participate in the fairs of tourism organized annually, to create a website to promote both the tourist area, including the tourist objectives, as well as each tourist accommodation structure by creating its own website. At the same time, it is recommended to improve one's technical-material basis according to the minimum mandatory criteria in order to be able to apply for a higher classification category of tourist accommodation units at least 4 stars/flowers, respectively to practice differentiated prices according to consumer segments, as well as to set up indoor and outdoor recreation area for the two seasons, summer and winter, considering that mountain tourism has a bi-seasonal activity.

At the same time, the local public administration should support the tourism development in the area by placing free electronic banners and posters in Resita, containing information from the existing resorts in the Semenice tourist area. More events should be organised in the resorts, the ski slopes from Semenice and Văliug should be properly managed, respectively with chair lifts and high-performance ski lifts, create optimal access routes to and in the four resorts, respectively improve the transportation infrastructure road, including means of transport and parking spaces.

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Employees' Perception of Corporate Sustainable Development: A Bibliometric Examination

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Abstract

This research endeavor explores employees' perception of corporate sustainable development across its three fundamental dimensions – economic, social and environmental. To assess the primary research directions linked to the subject, a quantitative bibliometric analysis of the literature was conducted by selecting the key aspects of the topic within a significant body of publications indexed in the Web of Science database, consisting of a total of 1.031 scientific documents. Subsequent data analysis was carried out using the bibliometric networking software VOSviewer version 1.6.19. This was accomplished through the mapping of keyword co-occurrence, co-citation of referenced papers, as well as collaborative authorship, revealing the prominent areas of investigation associated with the topic under examination.

Key words: employees' perception, corporate sustainable development, bibliometric analysis

J.E.L. classification: M12, Q01, Q56

1. Introduction

Corporate sustainable development requires a dynamic balance of economic, social and environmental dimensions within organizations. Consequently, numerous organizations are formulating and implementing initiatives aimed at fulfilling their sustainable objectives, while addressing the needs of various stakeholders. How employees perceive sustainable initiatives implemented at the organizational level can enhance their sense of commitment and contribute to fostering improved behaviour and job performance. In this respect, the perceptions of internal stakeholders, namely the employees, are essential to closely observe internal activities within an organization. The main objective of this research undertaking is to perform a quantitative literature review to identify the predominant research trends concerning employees' perceptions of corporate sustainable development across its three dimensions. The paper is organized into five main sections, with the initial section offering a succinct overview of the topic. The second section entails a critical analysis of the literature regarding bibliometric examination. The third section outlines the quantitative analysis, carried out using advanced research methodology and statistical processing, based on a complex set of indicators. The fourth and fifth section capture the findings and resulting conclusions together with recommendations for future research directions.

2. Literature review

Bibliometric analysis involves a quantitative evaluation method that enables the recognition of prevailing and emerging trends and the conceptual framework within a particular research field in the current literature. Typically, it involves the handling of substantial data volumes and leads to substantial research impact. As emphasized by the authors, the advancement of this method is largely credited to the developments in information technology, the availability of software used for bibliographic data analysis, and the expansion of scientific databases (Mukherjee et al., 2022, p. 865–866; Donthu et al., 2021, p. 285). The methodology employs quantitative techniques and processes

characterized by their objectivity and descriptive quality. It aims to reveal the structural relationships within the research body, enabling the visualization of the collective scientific knowledge and the evaluation of performance metrics. This comprehensive approach allows for a holistic interpretation of the overall landscape. The primary objective of bibliometric research is to retrospectively evaluate the range of knowledge and associated performance within a specific research domain, emphasizing key factors such as research areas, publication output, authorship and collaborative authorship, affiliations, keyword and citation patterns, bibliographic connections, and the network-like structure formed through thematic groupings among these elements (Talan & Demirbilek, 2023, p. 165; van Eck & Waltman, 2023, p. 5).

Items occurrence analysis employs elements derived from the research papers as its measuring unit and investigates the thematic content of publications by assessing the importance of structural associations based on their frequency. Higher frequencies typically indicate thematic relationships. The resulting structural networks are visualized using various available bibliometric software tools. Embedded network metrics assume a crucial role in evaluating these networks by aiding in the ranking of constituent elements' relative significance (Andersen, 2021, p. 4693). An additional technical approach for assessing the obtained results involves grouping items into thematic clusters, which is valuable for discerning trends in the emergence and evolution of a scientific field. The interpretation of results relies on the frequency of elements within a cluster to determine its thematic content and the examination of connections to understand the context of the thematic clustering (van Eck & Waltman, 2023, p. 5).

Bibliometric analysis offers several inherent advantages, including its objective nature and its capacity to enhance the understanding of diverse research domains. However, it is important to note that when assessing emerging trends and their implications, bibliometric analysis can only provide a snapshot of a specific moment in time, limiting its ability to offer long-term insights. Moreover, it focuses on the high-frequency co-occurrence of keywords, highly-cited publications, and noteworthy co-authorship affiliations. This approach may exclude recent or niche publications from its thematic clusters. To address this limitation and to ensure the reliability of the results, it is recommended to complement bibliometric analysis with other types of analyses. This multifaceted approach can provide additional validation and strengthen the overall robustness of the findings obtained in these various analyses.

3. Research methodology

Conforming to a quantitative examination of pertinent publications, we conducted a bibliometric analysis by focusing on a prominent selection of publications listed within the Web of Science (WoS) database. The selection was driven by its comprehensive coverage of high-impact academic publications and its incorporation of relevant scientific citation indices (SCI, SSCI, CPCI, ESCI, etc.). This approach serves the purpose of providing an encompassing view of how employee perception is conceptualized and its pertinence in the context of implementing corporate sustainable development. It also aids in discerning the prevailing theoretical framework and key relationships between employee perception, economic, social and environmental dimensions, all of which are considered antecedents in the current paradigm of corporate sustainable development. The quantitative literature examination additionally serves to mitigate potential interpretational limitations by employing a scientific methodology distinct from traditional qualitative analyses.

To identify research trends, various thematic analyses were conducted by employing the following methods on the selected publications. These analyses were further processed using the bibliometric network software VOSviewer version 1.6.19:

- Authors' keyword co-occurrence mapping: to examine the connections among subjects within the research domain using the written content found in publications
- Co-citation of cited references mapping: to investigate the fundamental subjects in the research domain using referenced publications
- Co-authorship at country level mapping: to explore the influence of authors' affiliations in the research field

The selected methods contribute to the identification of the primary research domains associated with the topic under investigation. They reveal the interconnections between the themes addressed within the relevant research areas by scrutinizing the content of the publications. Moreover, these methods highlight prospective themes and potential research domains, thereby offering insights into future research directions.

To ascertain the number of relevant publications exploring the concept of corporate sustainable development across its three dimensions – economic, social, and environmental – in conjunction with employee perception, we conducted a WoS search using specific keywords, such as “corporate sustainable development”, “triple bottom line” and “employee perception”. The search query was formulated as (((ALL=(corporate sustainable development)) OR ALL=(economic dimension)) OR ALL=(social dimension)) OR ALL=(environmental dimension)) OR ALL=(triple bottom line)) AND ALL=(employee perception), resulting in the identification of 1.031 publications that encapsulate the topics addressed in the current research. The data retrieved from WoS, spanning from 1991 until 2023, comprises detailed information for every publication, encompassing titles, authors, affiliations, keywords, and citation details. Subsequently, this data was transferred and integrated into the Vosviewer software, version 1.6.19/2023.

4. Findings

Table 1 outlines the analysis methods employed in relation to the overall volume of generated publications, the total amount of identified items, the minimum occurrence threshold, and the total amount of filtered items subjected to bibliometric analysis.

Table no. 1 Concise overview of the mapping results based on specific search criteria in WoS

Method of research approach	Publishing timeframe	Publication volume	Number of total items	Minimum occurrence threshold	Number of analysed items
Authors' keyword co-occurrence	1991 – 2023	1.031	2.974	5	113
Co-citation of cited references	1991 – 2023	1.031	51.450	20	112
Co-authorship at the country level	1991 – 2023	1.031	87	5	51

Source: Own processing.

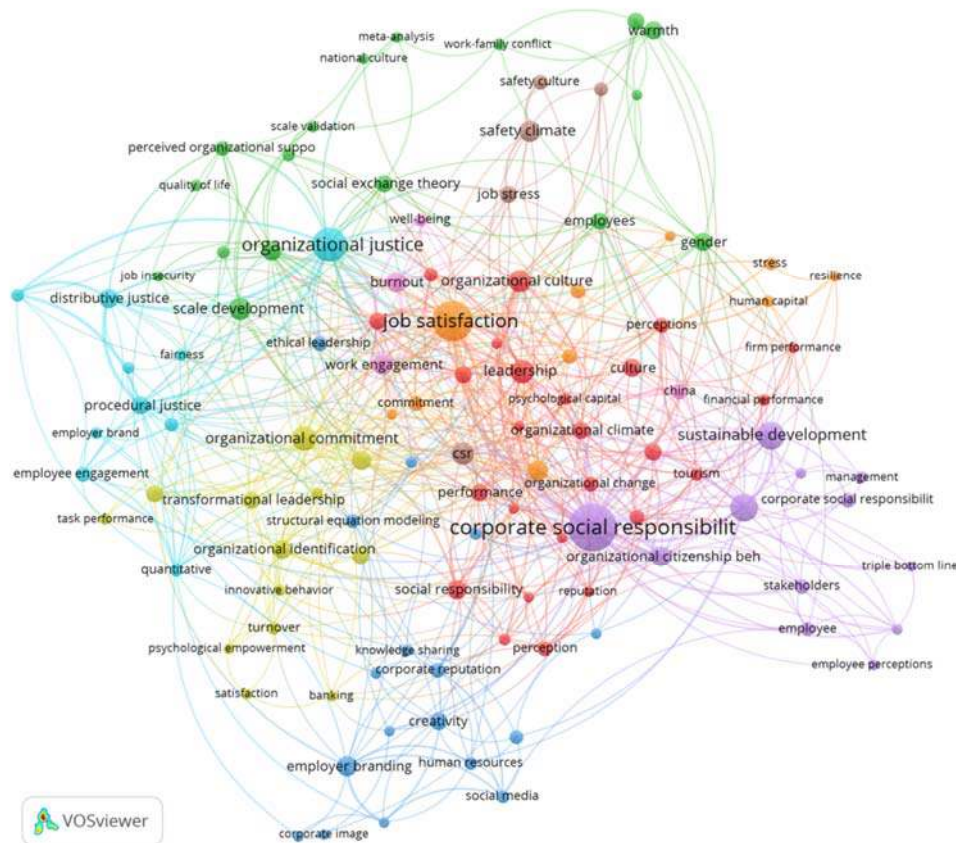
In order to conduct authors' keyword co-occurrence analysis, VOSviewer software was employed. Nodes of the same color in Figure 1 indicate similar thematic approaches in the selected publications, showcasing 9 distinct clusters. Assigning appropriate labels to the main clusters can be achieved by examining the primary nodes within the network. The nodes and arcs within each cluster provide insights into the coverage and relationships of the respective theme. In this network, nodes represent keywords, and the arcs represent the co-occurrence of keywords. Node size is proportional to keyword occurrence frequency, reflecting the frequency of the keyword across the dataset. Similarly, arc size indicates the frequency of associated keyword occurrences, following the predefined model at the start of the analysis. In this context, as per the VOSviewer manual version 1.6.19 (van Eck & Waltman, 2023, p. 6), an arc or a link indicates a co-occurrence connection between two keywords, each with an associated strength represented by a positive numerical value. A greater value indicates a more robust connection between the keywords, and the overall link strength reflects the frequency of two keywords co-occurrence.

The analysis of 1.031 publications, considering a minimum co-occurrence of 5 keywords, identified 9 thematic clusters with a total of 113 characteristic keywords. The co-occurrence connections between these keywords amounted to 613, and the robustness of these connections reached a total value of 833. Figure 1 visually represents the scientific mapping of co-occurring keywords through network analysis.

The results, illustrated in Figure 1 and organized into distinct clusters, offer insights into thematic concentrations within the analyzed literature, with each cluster characterized by a set of keywords reflecting a specific theme:

- Red Cluster (Cluster 1, 25 items): The keywords "Organizational culture" (20 occurrences), "Social responsibility" (14 occurrences), "Organizational climate" and "Performance" (12 occurrences) suggest a strong association with the overarching theme of "Leadership" (21 occurrences) in this cluster. Additionally, the presence of keywords like "Perception" and "Perceptions" with medium occurrence and link strength (9 and 11) suggests a nuanced connection within the red cluster.
- Green Cluster (Cluster 2, 17 items): The presence of keywords like "Scale development" (20 occurrences), "Gender" (13 occurrences), "Employees" (12 occurrences), and "Social exchange theory" (12 occurrences) indicate a significant emphasis on the topics related within the green cluster.

Figure no. 1. Vizualization of author keywords co-occurrence mapping via network analysis using the bibliometric software program VOSviewer version 1.6.19. The analysis encompasses 1.031 publications and considers a minimum co-occurrence of 5 keywords (weights value).



Source: Own processing in VOSviewer version 1.6.19.

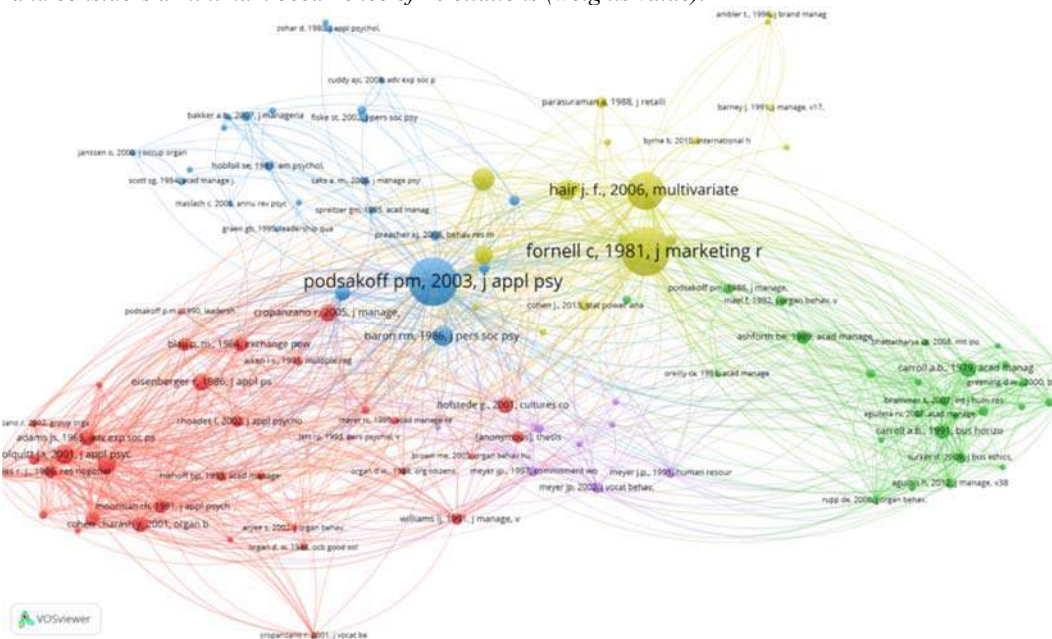
- Blue Cluster (Cluster 3, 17 items): Keywords like "Creativity" (12 occurrences), "Corporate reputation" (9 occurrences), "Ethical leadership" (9 occurrences), and "Knowledge management" (8 occurrences) are more strongly associated with the "Employer branding" (16 occurrences) theme within the blue cluster.
- Yellow Cluster (Cluster 4, 13 items): Within this cluster, keywords such as "Organizational identification" (15 occurrences), "Ethics" (12 occurrences), "Transformational leadership" (12 occurrences), and "Turnover intentions" (12 occurrences) are more strongly tied to the theme of "Organizational commitment" (24 occurrences).

- Purple Cluster (Cluster 5, 12 items): The keywords "Sustainability" (31 occurrences), "Sustainable development" (29 occurrences), and "Organizational citizenship behaviour" (16 occurrences) are prominently linked to the "Corporate social responsibility" (90 occurrences) theme in the purple cluster. The inclusion of the keyword "Employee Perceptions" with a low occurrence and link strength (5) suggests a subtle connection.
- Cyan Cluster (Cluster 6, 10 items): The keywords "Distributive justice" (15 occurrences) and "Procedural justice" (13 occurrences) suggest a stronger association with the theme of "Organizational justice" (46 occurrences) within the cyan cluster.
- Orange Cluster (Cluster 7, 10 items): Keywords such as "Human resource management" (16 occurrences) and "Job satisfaction" (63 occurrences) are more strongly associated.
- Brown Cluster (Cluster 8, 5 items): The association of keywords such as "CSR" (20 occurrences) and "Safety climate" (18 occurrences) is highlighted within the brown cluster.
- Pink Cluster (Cluster 9, 4 items): In the pink cluster, keywords like "Burnout" (17 occurrences) and "Work engagement" (16 occurrences) are more strongly associated.

In summary, the clusters provide a structured framework for understanding the predominant themes in the literature, offering insights into the interconnectedness of topics within the analyzed research. Based on the findings derived from the analysis of keyword co-occurrence mapping, the volume of relevant publications investigating the concept of corporate sustainable development correlated with the level of employee perception, reveals that the overall highest values of co-occurrence frequency are recorded in case of associated keywords like "Corporate social responsibility", "Job satisfaction", "Organizational justice", "Sustainability", "Sustainable development", "Organizational commitment", "Leadership", "Organizational culture", and "Organizational citizenship behaviour".

The analysis of 51.450 distinct citations out of 1.031 publications, considering a minimum occurrence of 20 citations of a cited reference, identified 5 thematic clusters with a total of 112 items. The citation connections amounted to 4.139 with a corresponding robustness reaching a total value of 14.163. Figure 2 visually represents the scientific mapping of co-citation through network analysis, identifying thematic similarities among frequently cited publications.

Figure no. 2. Vizualization of co-citation in cited references mapping via network analysis using the bibliometric software program VOSviewer version 1.6.19. The analysis encompasses 1.031 publications and considers a minimum occurrence of 20 citations (weights value).



Source: Own processing in VOSviewer version 1.6.19.

The findings depicted in Figure 2 provide following insights within the examined literature:

- Red Cluster (Cluster 1, 33 items): Publications with the highest impact pertain to authors such as Colquitt (2001) with 58 citations, Cropanzano (2005) with 54, Eisenberger (1986) with 54, and Cohen-Charash (2001) with 49 citations.
- Green Cluster (Cluster 2, 27 items): The most impactful publications are those associated with authors like Carroll (1979 with 52 citations, 1991 with 48 citations), Ashforth (1989) with 43, Turker (2009) with 35, and Podsakoff (1986) with 34 citations.
- Blue Cluster (Cluster 3, 24 items): Publications with the most significant influence are associated with authors like Podsakoff (2003 with 149 citations, 2012 with 34 citations), Baron (1984) with 63, Blau (1964) with 47, and Preacher (2008) with 31 citations.
- Yellow Cluster (Cluster 4, 18 items): Publications that have the greatest impact are those linked to authors such as Fornell (1981) with 151 citations, Hair (2006) with 115 citations, Hu (1999) with 70 and Nunnally (1994) with 62 citations.
- Purple Cluster (Cluster 5, 10 items): Publications with substantial influence are connected to authors such as Meyer (1991 with 33 citations, 1993 with 20 citations, and 2002 with 33 citations), and Allen (1990) with 31 citations.

In essence, the clusters offer a systematic framework for comprehending the prevailing themes in the literature, providing valuable insights into the interrelated nature of topics with the examined research fields. Based on the findings derived from the citation network analysis in mapping referenced citations and following a concise content analysis it is evident that the majority of identified publications center around the corporate sustainable development concept in relation to the organizational dimension. Within the red cluster the highly cited references delve into topics such as organizational justice including the interplay among various justice dimensions and perceptions of fairness. Distinct associations among organizational justice and diverse outcomes such as job satisfaction, employee loyalty, evaluation of leadership, extra-role behaviour, disengagement and performance are also depicted (Colquitt et al., 2001). Further explored topics pertain to social exchange theory implementation in the context of organizational behavior (Cropanzano and Mitchell, 2005), and the way employees perceive value in relation to performance outcomes, affective engagement, and innovation even in the absence of personal recognition (Eisenberger et al., 1986).

In the green cluster a prominent contribution includes the ethical management towards organizational stakeholders as outlined in the corporate social responsibility pyramid by Carroll (Carroll, 1991). Additional noteworthy contributions are credited to Ashforth and Mael (1989) in relation to social identity theory, and to Turker (2009) concerning the corporate social responsibility impact on commitment within an organization.

The findings within the blue cluster are characterized by a more analytical orientation, addressing method biases in behavioral research results. This includes the description of various procedural and statistical techniques to mitigate these biases (Podsakoff et al., 2003; 2012). Another highly cited contribution within this cluster refers to strategies involving asymptotic and resampling approaches to evaluate indirect effects within multiple mediator models and draw comparisons (Preacher and Hayes, 2008).

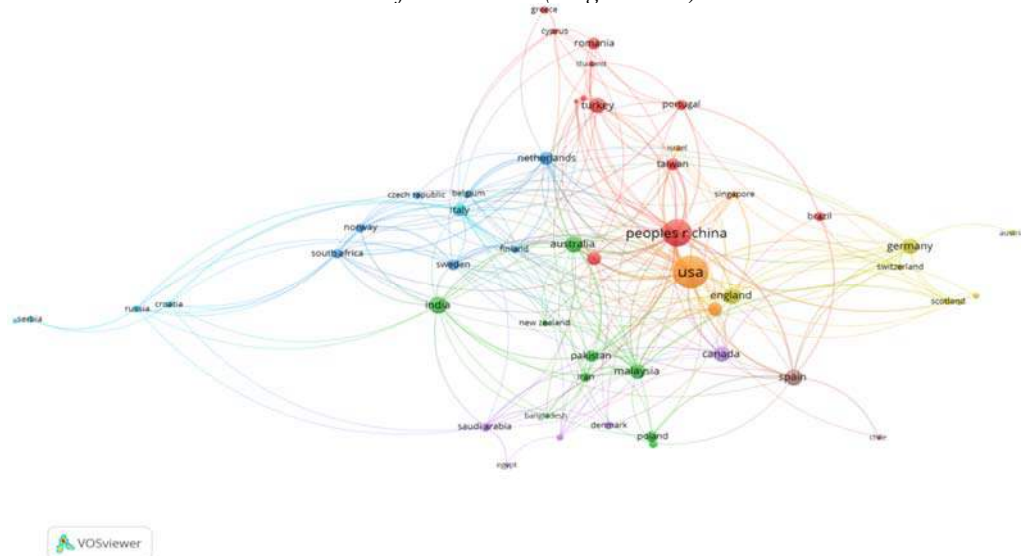
Within the yellow cluster the topics under discussion relate to the statistical tests employed in structural equation models that encompass independent variables and measurement errors. The authors address issues concerning sample size and power, as well as the enhancement of alignment between the specified model and endogenous data. Furthermore, an assessment framework using shared variance measures across various statistical models is employed (Fornell and Larcker, 1981).

A practical introduction to multivariate analysis designed for individuals without a statistical background is further offered by Hair et al. (2006). The authors simplify complex statistical research into basic concepts, enabling a grasp of specific statistical techniques and facilitating their practical application. Another noteworthy contribution comes from Hu and Bentler (1999), who investigate different fit indicators to assess model integration in practical scenarios. The analysis also encompasses models with incorrectly specified factor covariances and factor loadings. The fourth paper is Nunnally's *Psychometric Theory* (1994), a well-regarded and frequently referenced classic text that focuses on the objective measurement of latent constructs not directly observable, with perception being one example of such a construct. This book provides an extensive examination of measurement evaluation for researchers in psychology, education, and business fields like

management and marketing. It aims to address the diverse measurement challenges in these areas by integrating classical procedures that elucidate variance with contemporary inferential methods. The highly cited papers in the purple cluster comprise meta-analyses on the relationships among emotional, continuous, and normative commitment within the organization (Meyer et al., 2002). The results show positive correlations with organization-related outcomes like participation, achievement, and extra-role behaviour, as well as employee-related outcomes, including pressure and work-family imbalance (Allen and Meyer, 1990).

With a threshold set at a minimum of 5 documents per country, the examination of the 87 distinct countries out of 1.031 publications revealed 8 thematic clusters comprising a total of 51 items. The links value totaled 267, demonstrating a robust network with an overall value of 484. Figure 4 visually illustrates the scientific mapping of co-authorship via network analysis.

Figure no. 3. Vizualization of co-authorship among countries mapping via network analysis using the bibliometric software program VOSviewer version 1.6.19. The analysis encompasses 1.031 publications and considers a minimum occurrence of 5 documents (weights value).



Source: Own processing in VOSviewer version 1.6.19.

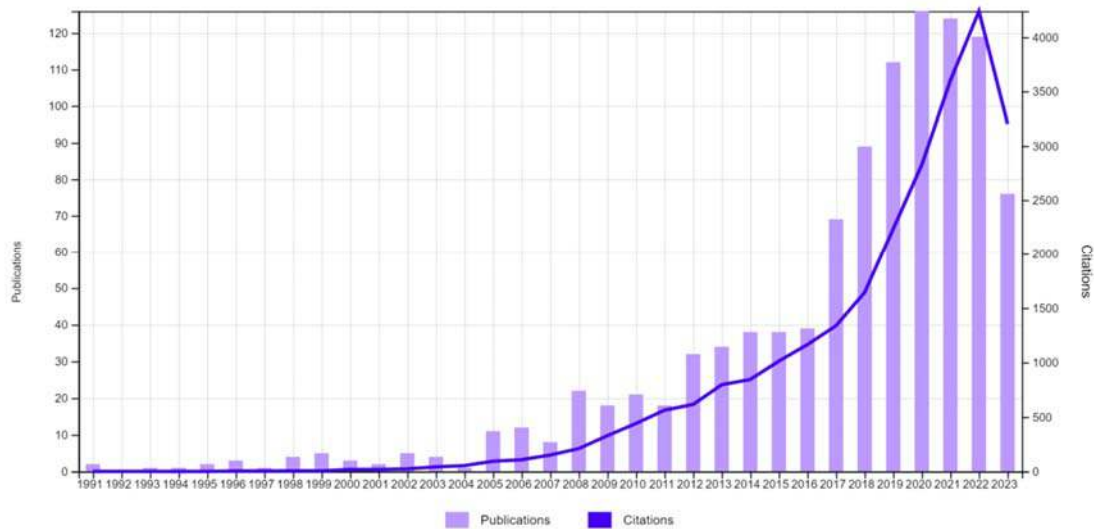
The findings revealed in Figure 3 reflect the following influence of authors' affiliations:

- Red Cluster (Cluster 1, 12 items): Countries such as China (144 documents), Turkey (50 documents), South Korea (34 documents), Taiwan (28 documents), and Portugal (22 documents) exhibit stronger affiliations within this cluster.
- Green Cluster (Cluster 2, 9 items): Countries like India (59 documents), Australia (52 documents), Malaysia (45 documents), Pakistan (27 documents), and Iran (18 documents) demonstrate more pronounced connections within this cluster.
- Blue Cluster (Cluster 3, 7 items): Countries such as Netherlands (35 documents), Sweden (25 documents), South Africa (19 documents), Norway (28 documents), and Finland (12 documents) demonstrate more robust connections within this cluster.
- Yellow Cluster (Cluster 4, 7 items): Countries like England (51 documents), Germany (46 documents), and Switzerland (10 documents) display more accentuated connections.
- Purple Cluster (Cluster 5, 5 items): Countries such as Canada (49 documents), Denmark (14 documents), and Saudi Arabia (15 documents) show more substantial associations.
- Cyan Cluster (Cluster 6, 5 items): Italy holds the greatest volume (33 documents), but Croatia (10 documents) and Russia (9 documents) display more significant linkages.
- Orange Cluster (Cluster 7, 4 items): Countries such as USA (213 documents) and France (34 documents) reveal more notable connections.
- Brown Cluster (Cluster 8, 2 items): Countries like Spain (54 documents) and Chile (5 documents) uncover more noteworthy associations.

The orange and red clusters exhibit the shortest distance between them, suggesting a robust association. Moreover, both clusters are closely linked to segments of the green, blue, yellow, and purple clusters. These associations indicate broad geographical regions that have explored the topics under consideration.

Figures 4 and 5 depict the research trends based on the volume of publications documented from 1991 to 2023, particularly in the domains of "Management", "Business", "Applied Psychology", "Environmental Sciences", and "Environmental Studies", identified through the corresponding citation metric ratios. The blue curve in Figure 5 represents the citation frequency, averaging 24 citations per publication. The outcomes associated with this upward trend, experiencing exponential growth since 2017, might suggest the broadening of addressed topics and the evolution of relevant research areas. Simultaneously, it could indicate an intensified collaboration among authors across diverse interdisciplinary areas.

Figure no. 4. Publication volume along with times cited determined by citation report provided by WoS.



Source: Self-generated analysis via WoS.

Figure no. 5. Publication volume along with the top 10 most pertinent research areas linked to them.



Source: Self-generated analysis via WoS.

5. Conclusions

The current research undertaking investigated the research directions and fundamental connections between employee perception and corporate sustainable development across its three dimensions. The examination of 1.031 publications from 1991 to 2023 unveils a broader research trend on the topic, particularly in the latter half of the analyzed period, with exponential growth since 2017. This aligns with the pressing necessity for implementing sustainable objectives at the organizational level. Furthermore, it expands the interdisciplinary reach of the eloquent research fields linked to the addressed topic. This expansion encompasses areas such as management, environmental economics, communication, and theories related to organizational behavior.

The mapping of author keywords co-occurrence unveiled three main research areas associated with employees' perception and corporate sustainable development across its three dimensions. The keywords "Employee perceptions" and "Sustainable development" exclusively occur together in the purple cluster, being closely connected to other keywords including "Corporate social responsibility", "Sustainability", "Organizational citizenship behaviour", "Stakeholders", "Social identity theory", "Management", "Education" and "Triple Bottom Line". The keyword "Employee perceptions" is further linked to "Social identity theory", "Stakeholders", "Organizational citizenship behaviour" and "Corporate social responsibility". The keyword "Employees" occurs further in the green cluster and is connected to "Stereotype content model", "Social exchange theory", as well as to "Attitudes", "Job satisfaction", "Leadership", "Corporate social responsibility", "Sustainability", "Sustainable development" and "Innovation". The keyword "Employee" occurs in the purple cluster and is related to "Stakeholders", "Social identity theory", "Organizational citizenship behaviour", "Education" and "Corporate social responsibility". Both keywords "Perception" and "Perceptions" in the red cluster are connected as follows to "Social responsibility", "Reputation", "Service quality", "Customer satisfaction", "Corporate social responsibility" and "Stakeholders", "Justice", "Organizational climate", "Organizational change", "Leader-member exchange", "Organizational commitment", "Corporate social responsibility", "Organizational citizenship behaviour", "Sustainability", "Stakeholders" and "Stereotype content model". The keyword "Sustainable development" is further linked to keywords specific to economic and social dimensions, such as "Financial performance", "Customer satisfaction", "Innovation", "Human capital", "Employee satisfaction", and "Affective commitment". Other closely related links refer to "Sustainability", "Corporate social responsibility", "Triple Bottom Line" and "Social identity theory". The environmental dimension is explored to a lesser extent. The analysis confirms the relationship between the two searched topics revealing new areas of research.

The mapping of co-citation uncovers the primary references cited in the analysed publications, predominantly centering on topics such as organizational justice, social exchange theory, ethical management, social identity theory, organizational commitment, various approaches to statistical model examinations employed in social and behavioral sciences, including structural equation models, and organizational citizenship behavior. These findings align, to a certain extent, with the anticipated outcomes. In the organizational context, social exchange theory underscores the interdependence between the organization and its employees. Regarding social identity theory, employees can enhance their perception of self by personally aligning with the internal and external activities of their organization, subsequently influencing their attitudes and level of engagement. Additionally, statistical models are well suited for assessing employees' perception of corporate sustainable development.

The mapping of co-authorship on country level revealed eight distinct regions encompassing a total of 51 countries. These regions are headed by China, India, Netherlands, England, Canada, Italy, USA, and Spain. Additionally, China, USA and England exhibit a significant co-authorship intensity, which demonstrates a more robust co-citation pattern.

The limitations inherent in the conducted bibliometric analysis are associated with the specific utilization of keywords to identify the volume of pertinent publications aligned with the investigated research approach. Despite the careful selection of optimal variants following the exclusion of several deemed non-compliant alternatives, this approach has its constraints. Another limitation pertains to the reliance on the WoS database and its corresponding classifications, even though it stands out as one of the most widely used and robust databases for global scientific publication

analysis. To address these limitations, the exploration of the discussed topic could be broadened by incorporating alternative variants and additional keyword combinations within the chosen search vectors. Additionally, the utilization of various available databases, such as Scopus, could enhance the comprehensiveness of the analysis.

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Trends in the Evolution of the Average Length of Stay in Tourist Destinations on the Romanian Black Sea Coast

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Abstract

In recent decades, although most tourists have made several trips during a year, the average length of their vacations has decreased.

The tendency to reduce the average length of stay of tourists has been evident in many destinations around the world in recent years.

The purpose of this paper is to conduct an analysis of how the average length of stay of tourists in the main categories of destinations in Romania has evolved over the last decade, providing details about the evolution regarding tourist destinations located in the Romanian Black Sea coastal area. Starting from the possible causes identified in this paper, of the almost continuous decrease in the average length of stay in these destinations, we consider it necessary to undertake more in-depth studies, to find out the causes of these developments, which will be the basis of future development and marketing strategies regarding the respective tourist resorts.

Key words: average length of stay, evolution, coastal tourism, Romania, Black Sea

J.E.L. classification: M21, Z31, Z32, Z33, Z38

1. Introduction

The Length of Stay (LOS) is a key parameter in the management of the tourist destination and is the ratio between the number of overnight stays of tourists and the number of their arrivals, having simultaneous repercussions on the income generated by the tourist activity and on other indicators of performance.

Although it is a quantitative indicator, the average length of stay also has important qualitative values, given the fact that it indicates a destination's capacity to be attractive, to keep the tourist longer, in that destination, through its tourist offer.

Vacation length is of vital importance in tourism management. For example, hoteliers are concerned with maximizing their Yield and the Gross Operational Profit, and to do this they make efforts to attract more tourists with longer lengths of stay, including tourists who return to the destination (repeaters), given the fact that LOS is influenced by the previous visits (Barros and Machado, 2010, p. 692).

It is important to investigate the manner in which tourists decide the length of their stay. For example, when they decide to have a short length of stay, they choose to stay in a more central area of the destination, to visit only the most important attractions, while tourists who want longer lengths of stay visit more attractions, including from more peripheral areas, thus generating more diverse economic, social and environmental impacts (Barros and Machado, 2010, p. 693). Moreover, families with children tend to choose longer lengths of stay.

There is an almost consensus in the specialized literature over the fact that LOS is correlated with the expenditure generated by tourists in the destination. For example, when tourists stay for multiple days in the same hotel room, there will be positive implications in terms of reducing the hotel's operational costs.

Tourists' length of stay has been on a downward trend globally in recent decades for a number of reasons, related both to the constraints regarding the duration of paid leave and vacations of tourists and to their desire to take several tourist trips, during a year but with shorter lengths of stay, so as to be able to get to various destinations, for different reasons. For example, in the Balearic Islands there was a 3-day decrease in the average length of stay in the 1989-2003 period, i.e., from 13.1 to 9.9 days (Alegre and Pou, 2006).

We believe that the evolution of the values recorded by the indicator average length of stay in Romania, in the last 3 decades and especially in the last 10 years, should worry, equally, the entrepreneurs and managers of tourist units, the newly established Destination Management Organizations in this area, where they already exist, and also the governmental and regional/local authorities, given the fact that this indicator has recorded almost continuous decreases, both at the national level and in the main categories of tourist destinations in Romania.

In this paper, we have analyzed the evolution of the average length of stay indicator at the national level and by main categories of tourist destinations in the country, with an in-depth analysis regarding the destination Romania's Black Sea coastal area. Based on statistical data processing, as well as on the discussions held with a significant number of entrepreneurs and managers of tourist units from the tourist resorts in Romania's coastal area, the purpose of our research has been to identify a series of explanations for the causes of the almost continuous decrease in the LOS indicator. These results can provide the basis for more in-depth research, which should be carried out in view of the elaboration of strategies for the development and tourism promotion of these destinations.

2. Literature review

The length of stay is one of the most important decisions made by tourists, as it directly influences the level of their vacation expenses. However, the length of stay is also an important factor in terms of the overall impact of tourism on the economy.

A noticeable trend of the last decades is that tourists take more trips, but with a shorter length of stay, during the same year, which has made the tourism industry show greater interest in attracting those segments of tourists who opt for longer lengths of stay, which are more profitable for tourist accommodation units.

LOS represents a major aspect of tourism demand, respectively of tourism demand management. The 3 key variables identified by Gössling *et al* in tourist destination management are: the expenses incurred by tourists, *the average length of stay* and seasonality (Gössling *et al*, 2015, p. 1).

Most of the studies referred to 4 types of variables which determine the length of the tourists' stay at the destination, respectively: socio-demographic variables, those regarding people's life stages (age), travel motivations and those related to the trip itself. (Alen *et al*, 2014, p. 21).

Barros and Correia analyzed the key factors for the length of stay for Portuguese tourists who vacationed in Latin America, based on a questionnaire administered in the aircrafts which were transporting the tourists back to the places from which they came to those destinations. The main conclusion of the study was that the wealthiest tourists, motivated by culture, climate, and security, had the longest length of stay.

According to Barros and Correia's analysis, the length of the tourist stay can be explained by several factors, including: the vacation budget; the destination's features and information regarding the destination; the socio-demographic characteristics of the surveyed individuals (tourists); whether they are revisiting the destination; free time constraints; frequency of travel; previous holiday expectations of tourists. As for the main features of the destination, the following were considered: income, culture, nightlife, climate, gastronomy, ethnic values, and distance. Among the socio-demographic features, characteristics such as: age, level of education, marital status, social category were analyzed.

From this research, it was observed that in terms of information regarding destination, tourist's behavior will be influenced less by the characteristics of the destination and more by other aspects, such as the tourist's perception of the destination, the image he/she has formed, i.e., a combination of cognitive and affective components (Barros and Correia, 2007).

Alen *et al.* carried out a study with the objective of identifying the variables which determine the length of stays of seniors in destinations within Spain. The key factors identified in the respective paper were age, reason for the trip, climate, type of accommodation, group size, type of trip, and activities carried out at the destination (Alen *et al.*, 2014, p. 19).

Thrane published, in the year 2016, a critical article regarding the "statistical mastery" of previous LOS research, which in many studies uses sophisticated statistical/econometric methods to examine how sets of independent variables (such as destination features and characteristics of the trips, socio-demographic variables, etc.) try to explain the variation in LOS in certain destinations. He pleads, in the respective paper, for a return to a 'back-to-basic' approach in LOS modeling studies, in the defense of the old approaches of LOS modeling studies, compared to the newer, more sophisticated analyses ones, given the fact that many studies on tourism use a rather less accessible technical and statistical language, recommending for published articles to be written in a much more "transparent" way (Thrane, 2016).

When deciding the length of his/her stay, the tourist can be influenced by a variety of factors, by both his or her personal characteristics and the characteristics of the destinations. Machado conducted a study in which he examined the relationship between the image of the destination and the length of stay in a destination, with reference to a sample of tourists who were guests of the island of Madeira. The results of the study highlighted, among others, that the socio-demographic variables (age, gender, education) had a positive effect on the length of stay, in the sense that older people, men and more educated tourists tend to have a longer length of stay. On the other hand, tourist spending had a negative impact, meaning that those tourists who spend more tend to have shorter vacations. In addition to this, some destination features, such as the old and good reputation of the region's wines, led to the increase of LOS in Madeira (Machado, 2010, p. 453).

The decrease in LOS trends in recent decades has had adverse consequences for destination marketing, not only in terms of increasing the variable costs of tourist accommodation units, but also in terms of the implications for sustainability. More trips, but shorter, will lead to an increase in greenhouse gas emissions, produced as a result of tourists' transportation. Moreover, in order for a destination to maintain the same number of overnight stays of tourists, respectively to maintain its income, it is necessary to increase the number of tourist arrivals (Gössling *et al.*, 2015, p. 4).

The average length of stay (LOS) varies widely from country to country, ranging from less than two days to more than two weeks. For example, a study carried out regarding 32 tourist destinations around the world which analyzed the evolution of LOS over a period of two decades (1995-2015), by processing UNWTO data, showed considerable differences from one country to another, and also an average decrease in LOS in these countries, by 14.8%, during the analyzed period, from 5.4 days in 1995 to 4.6 days in 2015; however, there were also certain countries where increases in this indicator were recorded. Many of Europe's mature destinations have seen significant decreases in LOS over the analyzed period, for example from 16.7% in The Netherlands to 27.5% in Austria.

According to the results of the respective study, among the analyzed countries, the shortest length of stay was recorded, in the year 2015, in Sweden (1.6 days), followed by Bulgaria (1.9 days), the Czech Republic and Bosnia and Herzegovina (2.1 days), and the longest average stay in Argentina (11.3 days), French Polynesia (13.2 nights) and Martinique (14.2 nights) (Gössling *et al.*, 2019, pp. 7-9).

3. Research methodology

This paper is based on quantitative, longitudinal desk research, using data sources in classic and online format (Jugănar, 1998).

We have processed a statistical database consisting of information published by the National Institute of Statistics in Romania, as well as by the Constanța County Statistical Directorate.

The discussions held (using the focus group method) with a significant number of entrepreneurs and managers of tourist reception units with tourist accommodation functions in the Romanian Black Sea coastal area were used in order to analyze and interpret the results of the quantitative research and contributed to a better understanding of the factors which determined the decrease in LOS.

4. Findings

In our opinion, the decrease in the average length of stay, in Romania, in the last 3 decades and especially in the last 10 years, should worry entrepreneurs and managers of tourist units, as well as governmental and regional/local authorities, given the fact that this indicator has recorded almost continuous decreases and we believe that the causes of these developments should be analyzed, as well as the measures that should be taken to reverse this trend, respectively to increase the LOS.

Both at the level of the entire country, in Romania, and at the level of the main tourist destinations in the country, there has been an almost continuous decrease in the average length of stay of tourists, in the last decade, but also for longer periods, since the beginning of the 1990s.

4.1. The evolution of the average length of stay in Romania, by category of tourist destinations

In the last 10 years (2013-2022), in Romania, the average length of stay of tourists, in total (Romanian and foreign tourists alike), decreased from 4.09 days, in the years 2014 and 2015, to a minimum value of 3.27 days, in 2022. Regarding the average length of stay of foreign tourists, the highest value of this indicator was recorded in the year 2015, i.e., 4.74 days, and the lowest value in the year 2022, i.e., 3.25 days. (Table no. 1, Graph no. 1). If we expand the comparison with the values recorded by this indicator in the years 1995, 2000 and 2005, we can notice even more significant decreases in the average length of stay, in the year 2022, compared to those recorded in those years. Thus, for example, in the year 2000 the average duration was 3.59 days, while in the year 2005 it decreased to 3.16 days and in 2010 to 2.64 days, reaching only 2.15 days in 2022 (INSSE Tempo online, 2023).

According to EUROSTAT data, Romania recorded a lower LOS, of only 2.17 days compared to the average LOS recorded in the EU 27 countries, in the year 2022, i.e., 2.97 days, as well as to the two neighboring EU member countries, Bulgaria (3.17 days) and Hungary (2.34 days) (EUROSTAT, tourism database, 2023).

By analyzing the situation of this indicator by category of destinations in Romania, we can see that the results are different from the average ones, recorded at the national level. As expected, the highest average lengths of stay were recorded, throughout this period, in the balneary resorts, given the fact that doctors recommend balneary treatment durations of 12 days or even more, at least for people with rheumatic diseases, so that the treatments can have the expected effect. Nevertheless, even within the balneary resorts, the largest decreases in the average length of stay were recorded, from 8.37 days in the year 1995 to 7.98 days in 2000 and to 8.16 days in 2005, falling to only 3.68 days in 2022. This means that the number of tourists who benefited from complete balneary treatments has significantly decreased in these destinations compared to the rest of the tourists.

Table no.1. The evolution of the average length of stay in the main tourist destinations in Romania (days)

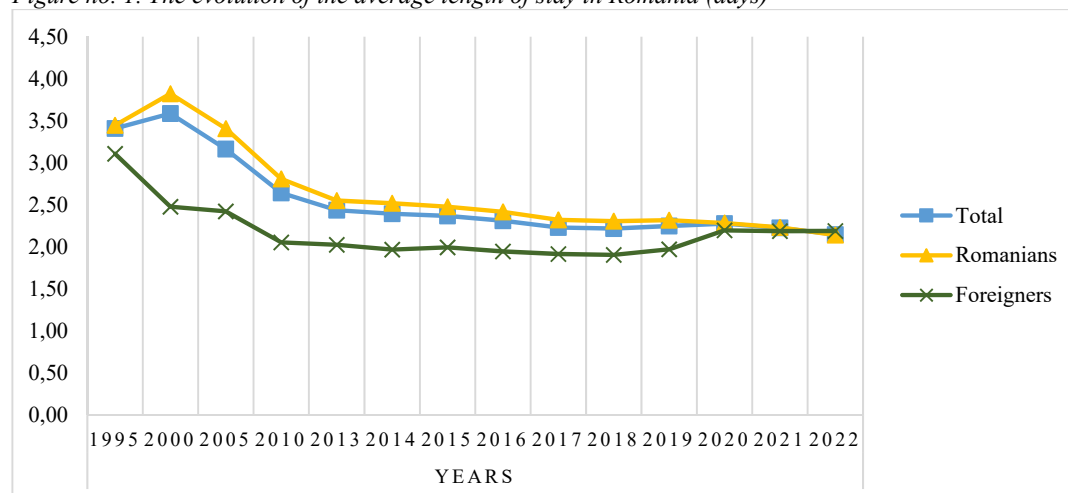
Tourist destinations	Years													
	1995	2000	2005	2010	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Total	3,41	3,59	3,16	2,64	2,44	2,40	2,37	2,31	2,23	2,22	2,25	2,28	2,23	2,15
<i>Romanians</i>	<i>3,45</i>	<i>3,82</i>	<i>3,41</i>	<i>2,81</i>	<i>2,55</i>	<i>2,52</i>	<i>2,48</i>	<i>2,42</i>	<i>2,32</i>	<i>2,31</i>	<i>2,32</i>	<i>2,28</i>	<i>2,23</i>	<i>2,14</i>
<i>Foreigners</i>	<i>3,11</i>	<i>2,48</i>	<i>2,42</i>	<i>2,05</i>	<i>2,03</i>	<i>1,97</i>	<i>2,00</i>	<i>1,95</i>	<i>1,92</i>	<i>1,91</i>	<i>1,97</i>	<i>2,20</i>	<i>2,19</i>	<i>2,19</i>
Balneary resorts	8,37	7,98	8,16	6,88	6,10	5,46	5,03	4,93	4,45	4,32	4,24	3,67	3,60	3,68
<i>Romanians</i>	<i>8,43</i>	<i>8,08</i>	<i>8,40</i>	<i>7,00</i>	<i>6,20</i>	<i>5,54</i>	<i>5,09</i>	<i>5,00</i>	<i>4,50</i>	<i>4,36</i>	<i>4,27</i>	<i>3,67</i>	<i>3,60</i>	<i>3,68</i>
<i>Foreigners</i>	<i>7,37</i>	<i>5,56</i>	<i>4,08</i>	<i>4,04</i>	<i>3,99</i>	<i>3,96</i>	<i>3,91</i>	<i>3,72</i>	<i>3,54</i>	<i>3,53</i>	<i>3,38</i>	<i>3,81</i>	<i>3,57</i>	<i>3,68</i>

Seaside resorts, excluding Constanta city	6,97	6,64	5,64	4,18	4,23	4,35	4,46	4,20	4,11	4,10	4,04	3,61	3,69	3,38
<i>Romanians</i>	6,84	6,56	5,43	4,17	4,22	4,31	4,39	4,19	4,12	4,12	4,05	3,61	3,70	3,38
<i>Foreigners</i>	8,56	8,12	7,19	4,27	4,42	5,20	6,45	4,70	3,95	3,41	3,60	3,35	3,15	3,19
Tourist destinations	Years													
	1995	2000	2005	2010	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Mountain resorts														
<i>Romanians</i>	3,19	2,84	2,45	2,17	2,15	2,14	2,15	2,07	2,07	2,06	2,10	2,01	1,99	1,96
<i>Foreigners</i>	3,86	2,73	2,34	2,24	2,23	2,25	2,01	2,19	2,07	1,99	1,98	2,35	1,87	1,87
Danube Delta area, including Tulcea city	2,05	2,46	1,96	1,59	2,37	1,91	2,00	2,05	2,09	2,25	2,29	2,53	2,06	2,06
<i>Romanians</i>	2,02	2,44	1,95	1,56	2,00	1,87	1,95	1,98	2,06	2,22	2,29	2,53	2,07	2,03
<i>Foreigners</i>	2,20	2,59	2,01	1,68	3,29	2,08	2,15	2,26	2,19	2,42	2,28	3,06	1,87	2,34
Bucharest and the county seats, excluding Tulcea city	1,74	1,87	1,88	1,85	1,78	1,82	1,81	1,78	1,73	1,73	1,76	1,75	1,73	1,78
<i>Romanians</i>	1,68	1,80	1,80	1,81	1,72	1,81	1,78	1,74	1,66	1,67	1,67	1,67	1,64	1,64
<i>Foreigners</i>	2,07	2,05	2,02	1,94	1,91	1,85	1,87	1,84	1,84	1,85	1,95	2,15	2,20	2,23
Other localities and tourist routes	2,39	2,52	2,18	1,92	1,78	1,93	2,04	1,93	1,89	1,83	1,87	1,85	1,81	1,77
<i>Romanians</i>	2,38	2,53	2,20	1,91	1,77	1,96	2,04	1,95	1,90	1,84	1,89	1,84	1,80	1,76
<i>Foreigners</i>	2,46	2,42	2,08	1,99	1,83	1,82	2,02	1,86	1,81	1,80	1,77	2,11	1,88	1,79

Source: processing according to the statistical database TEMPO-Online (National Institute of Statistics)

In the year 2022, in Romania, only in the case of balneary resorts and those in the coastal area, the values of the average length of stay indicator were higher than the average for the country, whereas in the other categories of destinations, lower than average values were recorded. Thus, the lowest average lengths of stay were recorded in Bucharest and the other county seats, excluding the city of Tulcea (1.78 days) and in the other localities in the country (1.77 days). Furthermore, in the Danube Delta destination, including the city of Tulcea, the average duration of tourists' stay was below the average for the whole country, in the year 2022, namely 2.06 days.

Figure no. 1. The evolution of the average length of stay in Romania (days)



Source: processed data from the statistical database TEMPO-Online (National Institute of Statistics)

4.2. The evolution of the average length of stay in the Romanian Black Sea coastal area

The tourist resorts and localities in the coastal area of Romania are concentrated in Constanța County, with the exception of the city of Sulina, located in Tulcea County, where the Danube River flows into the Black Sea, through the Sulina Channel.

Constanța County has the largest tourist accommodation capacity in Romania (over 25% of the total number of bed-places in tourist reception structures with tourist accommodation functions), and over 99% of Constanța County's tourist accommodation capacity is located in the seaside resorts and tourist towns. For this reason, we analyzed the evolution of the tourist indicators regarding the Romanian Black Sea coast using the existing data at the level of Constanța County.

Constanța County had the largest share (25.7%) in the total number of rooms existing in tourist reception structures (excluding the rooms in small houses), followed by Brașov County (7.9%) and the Municipality of Bucharest (6.5%). (INS, 2023)

According to the data of the National Institute of Statistics in Romania, the Constanța County Statistical Directorate, in the year 2022, the number of tourist arrivals in Constanța County decreased by 1.2% compared to the year 2021, reaching 1,253.5 thousand. Out of the total number of arrivals, the overwhelming majority (96.5%) were arrivals of Romanian tourists and only 3.5% were arrivals of foreign tourists. Moreover, the share of foreign tourist arrivals even recorded a decrease, by 0.5%, compared to that of the previous year. (INS-DJSC, 2023)

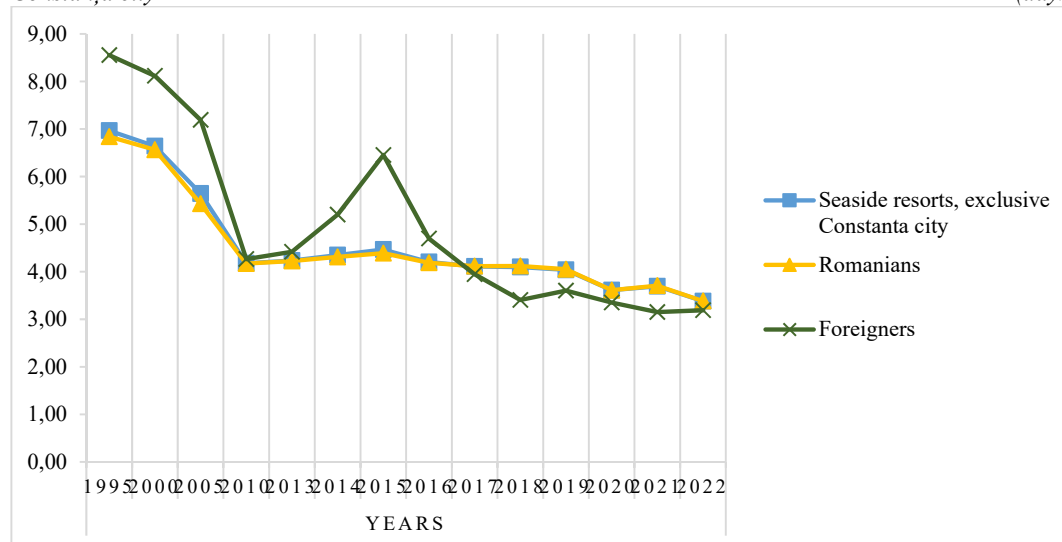
A more severe decrease than that of the number of arrivals was recorded regarding the number of overnight stays, namely a decrease of this indicator by 9.5%, in the year 2022, compared to 2021, reaching 4,106.1 thousand in the year 2022. In terms of structure, the situation of the number of overnight stays was similar to that of the number of tourist arrivals, namely 96.5% of the number of overnight stays belonged to Romanian tourists, whereas the share of the number of overnight stays of foreign tourists recorded a decrease of 0.9 percentage points in the year 2022, compared to the previous year.

The average length of stay in the year 2022, in Constanța County, was 3.8 days for Romanian tourists and 3.25 days for foreign tourists, resulting in a total average value of 3.28 days, lower than the value of 3.58 days, recorded in the year 2021.

Moreover, the index of net use of accommodation places decreased, in Constanța County, in the year 2022, compared to the previous year, by 3.7%, reaching 42.4% in the year 2022.

However, we also note a positive evolution, namely the increase, in the year 2022, by 15.1%, compared to the year 2021, of the number of foreign tourist arrivals in Constanța County, as well as the 19.5% increase in the number of their overnight stays, in the respective period. (INS-DJSC, 2023)

Figure no.2. The evolution of the average length of stay in the seaside resorts of Romania, excluding Constanța city (days)



Source: processed data from the statistical database TEMPO-Online (National Institute of Statistics)

In the last 10 years (2013-2022), the indicator average length of stay for tourists lodged in the Romanian coast has recorded almost continuous decreases, from a maximum value of 4.09 days, in the years 2014 and 2015, to only 3.27 days, in the year 2022. Regarding the average length of stay of foreign tourists, the highest average value was recorded in the year 2015 (4.74 days), and the lowest in the year 2022 (3.25 days).

By analyzing the evolution of this indicator, calculated as a ratio between the number of overnight stays and the number of tourist arrivals, by coastal resorts and localities, we can see that, in the year 2022, the lowest values were recorded in the city of Constanța (2.36), followed by Năvodari (2.59), Vama Veche (2.98), Jupiter (3.08), Cap Aurora (3.11), Mamaia sat (3.13), Olimp (3.19), whereas the highest values were recorded in Techirghiol (5.69), Mangalia (5.39) and Neptun (3.85).

The longest average length of stay for foreign tourists was recorded in Techirghiol (7.71 days), followed by Mangalia (5.39) and Eforie Nord (4.94), while the shortest was recorded in Năvodari (2.15) and Vama Veche (2.22).

Table no. 2. The evolution of the average length of stay in Romanian coastal resorts in the 2013 – 2022 period (average number of days)

City/town/resort	Year									
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Total Constanta County, from wich	3,98	4,09	4,09	3,91	3,83	3,82	3,76	3,48	3,58	3,27
Romanians	3,98	4,06	4,05	3,91	3,85	3,86	3,79	3,48	3,59	3,27
Foreigners	3,99	4,63	4,74	3,85	3,36	3,06	3,19	3,44	3,13	3,25
Constanta	2,43	2,65	2,59	2,38	2,26	2,31	2,35	2,30	2,51	2,36
Romanians	2,30	2,46	2,52	2,31	2,18	2,26	2,29	2,20	2,45	2,22
Foreigners	3,18	3,72	3,00	2,77	2,68	2,62	2,70	3,55	3,10	3,31
Mamaia	3,51	3,68	3,87	3,48	3,38	3,43	3,41	3,45	3,39	3,18
Romanians	3,51	3,58	3,68	3,44	3,38	3,43	3,42	3,45	3,41	3,19
Foreigners	3,60	5,30	7,44	4,23	3,37	3,37	3,24	3,32	2,70	2,97
Eforie Sud	4,41	4,59	4,65	4,67	4,56	4,21	4,72	3,33	3,84	3,58
Romanians	4,28	4,54	4,66	4,66	4,53	4,21	4,72	3,33	3,84	3,58
Foreigners	7,24	6,58	4,29	6,58	7,03	3,84	5,51	3,11	1,98	3,81
Eforie Nord	3,72	3,99	4,27	4,52	4,39	4,32	4,63	3,85	4,01	3,47
Romanians	3,70	3,96	4,22	4,51	4,38	4,38	4,66	3,85	4,01	3,45
Foreigners	4,12	4,50	5,55	4,83	4,84	2,99	3,91	3,61	3,72	4,94
Mangalia	7,99	6,87	6,67	6,78	6,84	6,50	4,81	4,95	5,30	5,39
Romanians	8,03	6,95	6,74	6,85	6,97	6,60	4,85	4,99	5,34	5,44
Foreigners	7,54	5,45	5,89	5,95	4,73	4,63	4,04	3,24	3,75	2,87
Navodari	3,50	2,98	3,77	3,05	3,46	2,62	2,66	2,64	2,89	2,59
Romanians	3,50	2,98	3,77	2,83	3,45	2,62	2,61	2,64	2,87	2,60
Foreigners	3,82	2,79	4,13	5,52	3,94	2,54	3,39	2,62	4,03	2,15
Mamaia Sat	2,93	3,70	3,96	3,42	4,41	3,49	3,73	3,63	3,28	3,13
Romanians	2,95	3,87	3,99	3,50	4,43	3,49	3,72	3,63	3,27	3,13
Foreigners	2,43	2,26	3,42	2,56	4,14	3,26	3,91	3,26	3,36	3,05
Techirghiol	9,80	10,40	9,62	10,48	8,38	8,49	6,90	5,64	6,49	5,69
Romanians	9,83	10,42	9,62	10,52	8,37	8,48	6,88	5,64	6,48	5,68
Foreigners	7,90	8,63	9,21	7,54	8,92	9,18	8,27	6,68	8,37	7,71

City/town/resort	Year									
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Vama Veche	2,51	2,58	3,06	2,47	2,85	3,22	2,90	2,50	3,94	2,98
Romanians	2,48	2,63	3,16	2,48	2,90	3,22	2,90	2,50	3,94	2,98
Foreigners	2,69	2,09	1,89	2,21	2,20	3,33	2,60	2,65	0,00	2,22
2 Mai	3,91	3,30	3,71	3,12	3,70	3,27	3,19	2,38	2,86	3,16
Romanians	3,91	3,30	3,71	3,12	3,70	3,27	3,19	2,38	2,86	3,16
Foreigners	0,00	0,00	0,00	0,00	0,00	0,00	1,67	0,00	0,00	3,00
Costinesti	3,96	4,24	4,05	4,25	4,15	3,80	3,92	3,10	3,42	3,28
Romanians	3,96	4,24	4,06	4,24	4,18	3,82	3,94	3,10	3,42	3,28
Foreigners	3,64	4,63	3,12	5,20	3,10	2,46	2,79	3,03	3,46	3,48
Olimp	4,63	3,69	5,08	4,28	3,80	3,44	3,82	3,30	3,01	3,19
Romanians	4,63	3,68	5,09	4,27	3,80	3,45	3,82	3,30	3,01	3,18
Foreigners	4,25	4,20	4,36	4,78	9,29	1,58	3,53	0,00	3,89	4,41
Neptun	4,73	4,87	4,93	4,52	4,26	4,55	4,40	3,49	3,91	3,85
Romanians	4,61	4,78	4,85	4,47	4,20	4,51	4,35	3,49	3,91	3,85
Foreigners	11,72	11,35	9,91	9,27	11,84	7,72	9,67	5,41	5,55	3,38
Jupiter	4,56	4,55	4,46	4,60	4,26	4,93	4,66	3,96	3,81	3,08
Romanians	4,57	4,58	4,48	4,60	4,26	4,93	4,66	3,96	3,81	3,08
Foreigners	3,71	3,00	3,58	3,93	3,66	3,64	4,72	3,44	3,68	2,71
Cap Aurora	5,01	5,65	5,03	5,10	5,05	3,67	3,51	4,44	4,08	3,11
Romanians	5,00	5,64	5,04	5,10	5,05	3,68	3,51	4,44	4,08	3,12
Foreigners	5,65	6,68	4,50	6,06	5,71	1,89	2,65	3,20	3,86	2,32
Venus	4,31	4,43	4,42	3,66	3,84	4,23	4,00	3,52	3,54	3,39
Romanians	4,35	4,43	4,43	3,66	3,85	4,24	4,01	3,52	3,54	3,39
Foreigners	2,51	4,53	3,87	3,57	2,84	3,25	3,16	3,48	2,99	2,55
Saturn	7,57	7,55	6,98	6,79	6,61	6,16	6,19	4,65	4,58	3,72
Romanians	7,55	7,58	7,01	6,81	6,61	6,17	6,19	4,65	4,58	3,72
Foreigners	8,22	6,92	6,19	5,77	6,54	5,97	8,19	4,73	3,37	3,4

Source: processed data from the statistical database National Institute of Statistics - DJSC, 2023

The difference between the situation regarding the size of the LOS in the year 2013, respectively in the year 2022 is interesting. Thus, whereas in the year 2013 the specificity of each resort in the coastal area of Romania was still quite evident (shorter-stay holidays in the North of the Romanian coast, longer-stay holidays in the South, for long-term treatment in the resorts equipped with balneary treatment bases), and it was reflected in large differences in terms of the durations of the stay, after 10 years, in the year 2022, it was noticed that the average length of the stay tended to even out, to be closer in size in almost all the resorts, with the exception of the Techirghiol and Mangalia resorts, which kept their specific balneary treatment, even though they also had considerably shorter lengths of stay compared to 10 years ago.

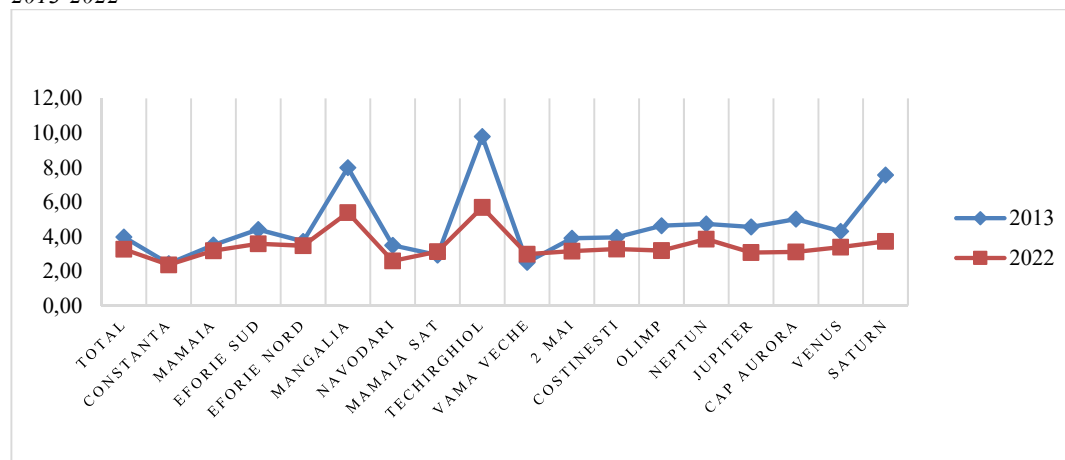
5. Conclusions

The almost generalized worldwide trend of reduction in LOS also manifested in Romania, but with significant differences between the different types of tourist destinations, the decrease occurring at different rates.

Since about a quarter of Romania's tourist accommodation capacity, expressed in the number of bed-places, is located in the Black Sea coastal area of the country, we paid special attention to the analysis of the evolution of the LOS indicator in this tourist area.

As a result of the processing and analysis of statistical data and of the discussions held with entrepreneurs and tourism managers from the majority of tourist resorts located in Romania's coastal area certain causes for these developments emerged, which can form the basis for finding solutions materialized in measures that would lead to the increase, in the following period, of the LOS, both by improving the tourism offer and by better promoting these tourist destinations.

Figure no. 3. The evolution of the average length of stay in the seaside resorts, including Constanța city 2013-2022



Source: processed data from the statistical database National Institute of Statistics - DJSC, 2023

The legislation recently adopted in Romania regarding the establishment of Destination Management Organizations, although considered by many tourism entrepreneurs as not exactly what they had expected (Jugănar, 2022, p. 303), allowed the establishment of several such organizations, at the local, county, and regional level, having the obligation to draw up and adopt, in the following period, development and marketing strategies for the respective destinations. We believe that, within these strategies, it is necessary to include measures which would lead to an increase in LOS.

The analyzed statistical data present some methodological limitations, considering the fact that the National Institute of Statistics in Romania does not collect data from all the operating tourist reception structures, but only those with 5 places or more, as classified by the Ministry of Economy, Entrepreneurship and Tourism, and a significant number of accommodation places are occupied by tourists in unclassified structures (especially in apartments and private rooms for rent), so that there is no information regarding the tourist movement of the people staying in them.

In this paper, we have used the term day/days to express the average duration of the stay, since the overnight stays indicator, which is the basis of the LOS calculation, is more frequently used with the name tourist-days than that of accommodation nights stays.

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A Story of Vision and Leadership: Unveiling the Samsung Electronics Brand's Path to Success

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Abstract

The present study highlights the remarkable journey of the world-famous electronics brand Samsung. Beginning as a small manufacturing entity, the company grows rapidly, resulting in a renowned brand. Competing directly with several innovation-driven companies, such as Apple, Samsung maintains its place in the market and keeps growing. The article discusses in detail some of the fascinating events that became the turning points in Samsung's journey and pushed it to rethink its strategy. The main purpose of this study is to offer a deeper understanding of the business approach and culture of Samsung. Being a Korean company, its brand values also reflect in the company culture. Its strong vision, self-belief, and willingness to grow helped Samsung achieve such great heights and dominate the global tech industry.

Key words: electronics, samsung, innovation, mobile industry, technology

J.E.L. classification: L62, L63, O14, O31, O32

1. Introduction

Samsung Electronics Co., Ltd began its journey as a family business in South Korea; a business which was owned by the Lee family. Starting as a grocery trading store, the company continued to expand till it finally became famous for electronics and South Koreans started referring to their country as "the Republic of Samsung." In the present-day context, Samsung has attained its place in the list of top 10, most valuable brands in 2023. However, when discussing the success story of Samsung, it is crucial to mention that the company has faced several challenges such as intense competition, rapid technological changes, brand image and reputation and changes in consumer preferences. But despite all the hardships, the company has managed to maintain its competitive position in the marketplace and did not lose its vision, which is to inspire the world with its innovative technologies.

The case study discusses in detail the historical events of the company which led it to be an electronic and IT tycoon, while at the same time, analyzing and interpreting the company's current strategy and vision behind key decisions, which made all the difference. For this purpose, an effective literature review is conducted.

This paper can be divided into two different sections. The first part of the study puts an emphasis on the background, historical events of the company and what decisions the Lee family took in response to various external factors such as geopolitical and trade uncertainties. The second half of the paper discusses briefly the technological aspects such as the company's relation to metaverse.

2. Theoretical background

The story of Samsung begins with a Korean man named Lee Byung Chull, the founder of the company, born in 1910, during a period when Korea was finally annexed after war with Japan. While it is crucial to discuss how the business managed to flourish even in such a critical period of the First World War, it is equally significant to also highlight the background at which the story unfolded (Chang, 2006).

It was the period when Japan's economy was booming regardless of the poor financial state of the West European countries due to the First World War. Japan started to monopolize and increase its production. In fact, there came a time when Japan wished to further accelerate its production capacity and as a result, required more capital. For this purpose, in the 1920s, Japan started to invest in capitals and new credit policies further offered the capitalists with the opportunity to take credit. However, eventually due to the overproduction, the prices began to fall down and this was followed by financial instability and ultimately, the Great Depression in 1929. It was during these times that the Japanese colonial policy was finally introduced in Korea, which aimed to promote industrial investments in Korea.

The production and exportation of cheap rice from Korea to Japan used to be particularly encouraged by the state. However, this also generated class struggles as the state supported land ownership and landowners continued to make the rents higher, while the peasants had to work in poor conditions. This traditional landlord class kept becoming richer by buying more lands and eventually turned into the Korean capitalist class. By 1940, one could already notice an uprising of the capital classes from the landlord classes with the help of new credit policies offered by the banks at that time (Chang, 2006).

3. Research methodology

Using the case study methodology, the present article attempts to explain the market dynamics as well as Samsung's business approach throughout its journey. Additionally, the article gives the context to its readers by also offering a historical context of the company.

The main purpose of this case study is to highlight the key turning points for Samsung and answer the following research questions (RQ):

- RQ 1: How did Samsung begin its journey from scratch?
- RQ 2: How did Samsung expand regardless of all the geopolitical uncertainties?
- RQ 3: What are the key contributors for Samsung to maintain its position in the marketplace?
- RQ 4: What were the main turning points in the history of Samsung?
- RQ 5: What are the future plans of Samsung?

In order to answer the questions above:

- ✓ Research data was gathered and analyzed from various sources including books, articles and news.
- ✓ Information from Samsung's website was collected to acknowledge company's takes on various subjects as well as its future plans.
- ✓ Statements of the company's founder and chairmen were gathered and analyzed to better understand the company's approach.

4. Findings

4.1, Lee Byung Chull - the founder

Lee Byung Chull was also a part of one such Korean capitalist family that did not struggle financially (Chang, 2006). In fact, it is considered that he had both financial as well as patriotic reasons for starting his own business. After studying economics for a year in Waseda University, the founder had to drop-out from the college due to some personal reasons (Cain, 2020).

1936 was the year when things changed for Lee. He took his first step towards the business world. His first business based in Gyeongsang province started in 1936. Rice production and exportation to Japan was the principal activity of the company. It is believed that Lee had obtained

the starting investments for his business from a Korean Bank unlike other entrepreneurs who start-up a business from scratch. This suggests his social domination and status during that period (Chang, 2006). However, after his first business failed, he had to shut it in 1937. During this period, he spent some time traveling in China and Korea and learnt to study the marketplace. After a year, Lee attempted to re-enter the business world. and this time, he opened a vegetable and fish shop. Basically, he hired 19 workers to bring fresh produce from the village and used to ship them to China and Manchuria. The name given to the vegetable shop by Lee was "Samsung Sanghoe", which in English means the "Three Stars Shop". Lee mentions in his memoir that this name was chosen by him on purpose and it symbolizes being big, strong and eternal (Cain, 2020).

Since B.C Lee's first business belonged to the trading industry, exporting was the only way to expand for him. Therefore, he began to look for ways to transport rice while his financial condition, as a landlord, was getting smoother with time.

The name "Samsung" first came into the picture when Lee in 1938 decided to name his trading business "Samsung Trading Company". Besides the fact that his business kept expanding the production lines, that is, apart from investing in additional manufacturing rare goods such as dried fish, rice wines, noodle, cider, he also managed to generate profit out of it. Eventually, he began to monopolize the trade industry. This particularly demonstrates that he had excellent managerial skills (Chang, 2006).

Around 1939, he also invested in a new business of beer brewery, which he had to eventually sell in future. During August 1945, things took a completely different turn when the war between America and Japan resulted in American troops occupying Korea and Lee saw it as an opportunity to form relations with the American military (Cain, 2020). In 1947, Lee shifted to Seoul, where his nationwide business "Samsung Corporation" was founded by him (Chang, 2006).

During one of his visits to Tokyo in February 1950, Lee realized that Japan had been experimenting with technology and was extremely impressed by their work ethics. He also noticed that the Japanese business tradition has ceased and that companies have adopted a modern corporate structure named keiretsu (group). After a while, South Korea also embraced the same structure (Cain, 2020).

When Lee returned back the same year in June from his Japan trip, he found out that North Korean communist troops had invaded South Korea and they looted the inventory of his company. After three months, American soldiers recaptured Seoul. This was the time when Lee made the decision to sell off whatever is left of Samsung. When he heard the unfortunate news of North Korean soldiers advancing Seoul once again, with the same money, he bought 5 trucks and helped his company workers and their family members in evacuating from Seoul. This was one of the most significant turning points in his life. By the end of 1950s Lee family was already known as the "wealth clan" of Samsung and had invested in a number of businesses including a bank and a university. Often, the South Koreans had given their country a new name of "the Republic of Samsung" (Cain, 2020).

The Samsung Group during its first few decades was expanding at a fast pace and once it had constructed the world's largest fertilizer plant in Korea, its upcoming endeavor was a lot riskier: electronics. By becoming a partner of a semiconductor industry and highly investing in this business, Samsung had set its foot in a completely different venture. What helps the company in standing out is its initial years is its ability to understand human needs and emotions. It recognized the fact that people want to be a part of something bigger, which is why during its fifty-year anniversary, the company establishes its mission: "To become a leading corporation to the age of humanity" (Cain, 2020).

4.2. Rebuilding the company from ashes and creation of the "Samsung Men"

Lee was keen to learn about the art of reading people and while rebuilding Samsung at Busan, he realized the importance of people management due to the shortage of talented workers. In fact, he used to be always present during all the interviews of potential candidates and had hired professional face readers for helping him in interpreting the facial expressions of the candidates who applied for the job at his company (Cain, 2020).

Chairman Lee Kun-hee, the son of Lee Byung-Chull- the founder, quoted in 1999: "One unsatisfactory point is that we have not invested enough for the future, particularly in terms of developing human capital." According to Tom Michell, author of the book "Samsung Electronics: And the Struggle For Leadership of the Electronics Industry", most probably, the Human Resource Department of Samsung Group as well as his late father would not have agreed with the given statement of Lee Kun-hee (Michell, 2010).

In the 1980s, Samsung employees were instructed to comprehend that they were together constructing a new Korea. Almost all candidates were recent grads, who had been trained to become 'Samsung Men'. Most would remain for their entire lives, while those who left in their 40s would work as suppliers or distributors for Samsung, thus disseminating the company's values. In the late 1990s, Lee and Yun Jong Yong (CEO of Samsung), began to search for outstanding individuals, who were not part of Samsung, for welcoming new perspectives, values and ideas in the company culture. This would imply recruiting non-Koreans as well as those with prior experience (Michell, 2010).

This is how Samsung recognized that it had not invested adequately in developing an excellent workforce. However, the most difficult issue for Samsung represents breaking away from the traditional Korean ideals contained in Confucian messages. Korean principles include peace, unity, and vertical social relationships. Lee called for creative leadership in 2007, and Samsung only recently emphasized the importance of creativity in its induction and training programs. As a result of this realization, foreigners were increasingly being hired by Korean enterprises (Michell, 2010).

4.3. The Galaxy Note Debacle and the long-term outcomes

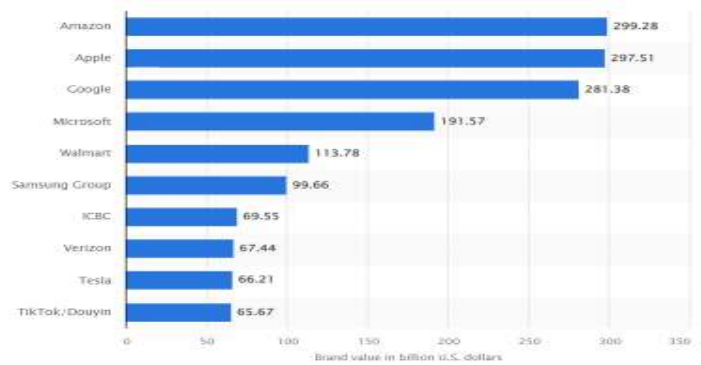
It is fascinating to note that Samsung has managed to maintain its competitive position in the marketplace for so long, regardless of the fluctuating and unprecedented events that came across its path. Galaxy Note Debacle is one such example that must be mentioned when analyzing its evolution.

In 2016, according to many reports as well as the claims made in the "Samsung Rising", a book written by the author/ journalist Geoffrey Cain, the Samsung Group had to face serious issues. In fact, the author mentions in the very first chapter named "Galaxy Death Star", some of the most infamous incidents that affected the image of Samsung severely as well as the company's reaction to the whole ordeal.

Back in August 2016, the company launched its new smartphone named Galaxy Note 7, which eventually proved to be a major fallout. After many customers started reporting the common issue of the phone catching fire, Samsung started to be the main topic of discussion for the news and social media channels. Under such circumstances, the steps taken by the company are often questioned. For instance, in response to the negative publicity on YouTube, Samsung started to make copyright claims on such contents where none existed. Furthermore, the situation grew worse when the company offered replacement phones, which were also faulty and had the same issue.

The company chose, at that time, to not give much reaction and poorly handled public relations and customer care (Cain, 2020). This really affected Samsung's image in a short run, however, on a long run, it still remained in the game. While such a loss would have been enough to bankrupt any other company, Samsung has been lucky enough to bounce back every time and learn its lesson. Yet as of 2023, the Samsung Group has managed to reserve its place as a valuable brand in the list of top 10 most valuable global companies (Figure no. 1).

Figure no. 1. Most valuable brands worldwide in 2023



Source: (Faria, 2023)

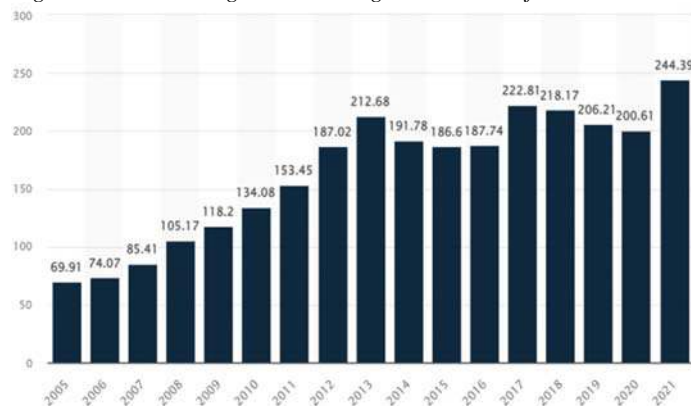
Samsung's strategy is very different today than how it used to be decades ago. At the early stage of the company, that is, between 1970-1980, it was trying to catch-up with the Western and Japanese companies, which were already a lot ahead of Samsung. Therefore, during '70s, it somehow managed to maintain its competitive position in the marketplace using the best strategy, that is by lowering the production cost. In the 1980s, the strategy switched to the best quality, which means that Samsung emphasized on its manufacturing efficiency as well as competence. By the 1990s, it had managed to maintain its position in different marketing segments while currently, it puts more weight on technological leadership (Kim, 2007).

4.4. Samsung Electronics

Samsung Electronics, with a brand value of 99.66 billion US dollars, is a global leader and is currently headquartered in South Korea. Ever since the corporation was founded in the year 1969, it has continued to develop and grow into an IT and electronic tycoon. Although initially, it was known to only deal with grocery and production of some food materials such as noodles, it managed eventually to diversify its portfolio and at one point of time, started to get involved in the insurance and retail sector. In fact, the most interesting element is that the Samsung Group still undertakes a number of subsidiaries besides Samsung Electronics. Furthermore, Samsung Electronics represents the biggest subsidiary of Samsung and it accounts for more than 50% of the total revenue generated by the Samsung Group.

Figure no. 2 is the graphical representation of the global revenue generated by Samsung Electronics between the period 2005-2021. As seen in the figure below, the total revenue of the company has significantly grown over the period analyzed and in 2021, it recorded a revenue of approximately 244.39 billion US dollars, which is known to be the highest value it has ever reached.

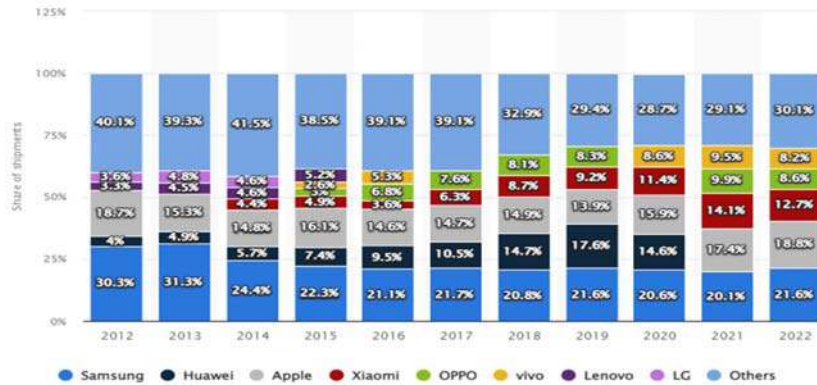
Figure no. 2. Samsung Electronics' global revenue from 2005 to 2021 (in billion U.S. dollars)



Source: (Laricchia, 2022)

As it can be seen in the Figure no. 3, in 2022, Samsung remained the world's smartphone leader in the market, accounting for 21.6% of total shipments. Apple obtained a second place, with 18.8% of the overall market share. Since the beginning of 2010, when it owned only 4.3% of the mobile vendor market, Samsung's popularity has constantly increased. In the past four years, the company's share of the global smartphone market has fluctuated, hitting 19.4% in the fourth quarter of 2022. Despite slipping as low as 13.9% in 2019, Apple maintains the second largest smartphone vendor based on the number of shipments. While Samsung's sales are not seasonal, Apple's smartphone sales are comparatively periodic in nature, peaking each year in the fourth quarter.

Figure no. 3. Share of smartphone shipments worldwide from 2012 to 2022, by vendor



Source: (Laricchia, 2023)

4.5. Samsung's shift of strategy

Electronic companies discovered that they need to tackle the continuously shifting business environment and show the ability to reconfigure operational capability and to develop new ones. One such example is Samsung revolutionizing its business portfolio (Teece et. al, 1997; Kim, 2019).

According to Samsung Electronics' key prospective for growth lies in a long-term plan in connecting their electronics technology to car technologies. A fund was created to invest in a range of technologies needed to allow "autonomous driving and connected cars, converging its electronics to powerhouse with automotive machinery" (Kim et al., 2019).

Since 2014, Samsung has preceded to various step towards transitioning to becoming an automotive provider by "selling Samsung Chemical Co., Samsung Total, Samsung Techwin and Samsung Tales to Hanwha; then Samsung SDI's chemical division to Lotte; the printing business to HP and the PC-making division to Lenovo" (Kim et al., 2019; Cho, 2017).

On March 11th 2017, under the terms of M&A agreement and in attempts integrate and boost competitiveness in the automotive market, Samsung Electronics has made its biggest acquisition and bought Harman International Industries Incorporated for \$8billion giving Harman stakeholders \$112.0 per share in cash (Samsung, 2018; Kim et al., 2019).

4.6. Samsung's innovation through M & A- the rise of new contender

Samsung Electronics Co., Ltd. is best known as a global leader in smartphones, high-tech electronics manufacturing and digital media and Apple's competitor (Kim et al., 2019; Nasdaq, 2017). From 2016, Samsung has focused on emerging and securing automotive industry-related technologies such as autonomous driving, ADAS and ECU (Electronic control Unit) software by considering prospects of innovation, merging and acquiring start-ups.

Amid constant transformation and competition, knowledge is the most important strategic asset. Companies cannot craft solely from within, but they require external influences and need cross-border M&A to gain important knowledge, however this is not always a guaranteed superior

success since 'knowledge is often tacit, specific and complex. Firms must go through a process of acquisition, assimilation, transformation, and exploitation in order to apply newly acquired information to innovation (Zahra et al., 2002). Absorptive capacity is widely recognized as the 'ability to recognize the value of new, external information, assimilate it and apply to commercial ends' (Cohen et al., 1990; Kim et al., 2019). The knowledge stock of the firm becomes important for heightened absorptive capacity as it will be able to understand as much as it knows. It is understood that such absorptive capacity is part of a firm's dynamic capability, allowing the firm to assimilate, learn from and take advantage of knowledge stock newly gained through the M&A.' (Zahra et al., 2002; Kim et al., 2019).

In the end, Samsung will have to adapt the recently learned information to produce knowledge synergy, which is an institutionalized method of producing, disseminating, and reusing information where the latter is formalized and shared internally to produce new value. For instance, car related M&As welcomed 10 start-ups: buying shared worth of \$90million of TT Tech (Austrian start-up in software for connected cars safety and self-driving ones), TetraVue (processor of flash LIDAR technology), Brodman17 (an Israeli based self-driving innovator), Mapillary and Solid Power (start-up providing solid-state batteries to OEMs).

Sensing, seizing, and transformation were identified as the three key components of the dynamic capacities' framework by Teece et al. (1997). As the sixth manufacturer of electric vehicle batteries globally and a member of the Samsung Group, Samsung SDI gave the company the ability to monitor and predict client demographics and the demand for electric vehicles. Samsung possessed extensive electronic understanding, and it was able to swiftly grasp the importance of and absorb many of the technologies needed in the upcoming new era of the automobile industry.

Samsung also held patents that enabled the business to take advantage of prospects in the creation of smart electric vehicles. In order to integrate and accommodate a promising new market area, Samsung had to quickly restructure and transform its business to identify a lucrative new market niche as well as to accept and integrate a new business partner.

4.7. Samsung's innovation through M & A- the rise of new contender

The flagship business of the Samsung Group, Samsung Electronics Co., Ltd., generated more than 70% of the total income for the organization in 2012. Around 308,745 people are employed by Samsung Electronics, which has assembly lines and sales networks in 80 nations. By revenue, it is the biggest chip, consumer electronics, and Technology firm in the world. In October 2017, the market capitalization of Samsung Electronics was \$372.0 billion as of October 2017 (Lee et al., 2007). The top market leader in TV (since 2006) and mobile phones (since 2011), Samsung has become a significant global supplier of consumer electronics, claims a press statement from the company (Samsung, 2018). Samsung Electronics surpassed Intel to become the world's largest manufacturer of semiconductor chips in July 2017.

The company's experience with autos might be linked to Samsung's ambitious present push into the automotive sector. Samsung Motors Incorporated (SMI), a renowned technology hub for the Korean automotive sector, was founded in 1995. The "SM5" project was shortly launched with backing from the Nissan Motor Company, unveiling its first midsize sedan based on Nissan's global hit, "Maxima." Yet, the company received both good and bad news in 1998.

The first SMI factory was finished and prepared for operation. The Asian financial crisis, on the other hand, contributed to a stagnating economy that seriously hurt SMI's sales. Only 45,00 automobiles were sold by SMI. Even worse, the company's earnings rapidly declined because it was primarily sold to employees of the Samsung group (Lee et al., 2007); Kim et al., 2019).

During a brief heyday, Samsung Holding Company was no longer able to support its auto production facility and declared bankruptcy. Soon after, Renault acquired SMI for US\$562 million, and Renault Samsung Motors was founded in 2000 in Busan Samsung's dream came to an end, but the company believed that failure had come from unfavorable external settings rather than from within the company. Samsung had faith in the strength of its brand and its workforce. Additionally, it thought that it could still benefit from and work in concert with Samsung Electronics. So, it came as no surprise that Samsung remained committed to the automobile sector even after its first attempt had failed. The Chairman Lee Gun-Hee was particularly hopeful about the potential for

convergence between the vehicle and electronics sectors since he anticipated it would result in transactional synergy (Lee et al., 2007).

The line between the "automotive" and "electronics" industries was likely to become significantly hazier by 2010 when 30% of all parts in the automotive industry were predicted to be electrical or electronic. When the automobile business started to experience significant changes and growth, opportunity appeared. A strong technology-based portfolio and synergies from all angles were needed because electrification, digitization, and autonomous driving were all happening under the same roof of the automobile (McKinsey, 2015; Kim et al., 2019). Samsung found this to be a compelling opportunity to investigate linked technologies, particularly vehicle electronics. In fact, the business had previously designated this sector as a strategic priority, anticipating that the market would exceed \$100 billion by 2025.

In addition to changes in the external environment, Samsung was simultaneously searching internally for its next-generation growth engine. Samsung would be able to establish a strong foothold in the automotive component market by acquiring Harman because it was already a well-known Tier 1 supplier and had long-standing connections with a variety of clients, including well-known brands like General Motors and fast-growing businesses like Tesla (Harman, 2023). In fact, Harman was a pioneer in linked automotive and infotainment solutions, with its embedded infotainment, telematics, connected safety, and security systems currently installed in more than 30 million vehicles (Forbes, 2016).

The union of two companies with top-tier brand values would foster synergies that would enable the company to benefit from one another's design and marketing strategies, and strong relationships with car OEMs would allow them to seize further chances for innovation and rapid expansion. Samsung's expertise in linked mobility, semiconductors, user experience, displays, and its international distribution networks would also be useful to Harman (Forbes, 2016 ; Kim et al., 2019). In June 2016, Harman has an estimated 24 billion worth of backlog orders from its automotive clients. At the time, Samsung was also an important business partner of Harman, providing DRAMs, flash memory, and screens to meet the rising demand for automotive application components. Samsung would be able to improve its software engineering capabilities to some level if the M&A transaction went through, as Harman has a group of about 8,000 software engineers focusing on cloud-based consumer and enterprise experiences as well as end-to-end services for the automotive industry.

4.8. Samsung and Harman

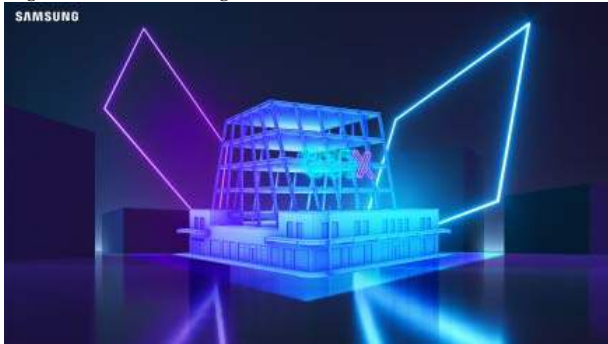
The revelation that Samsung had paid \$8 billion for Harman International Corporation, a world-class supplier of AV (Audio Video) systems and automotive application components, stunned the technology industry in November 2016. Samsung was looking for a way to enter the expanding market for smart cars in addition to upgrading its products with high audio and video equipment. Samsung sought to enter the connected car industry with both hardware and software, in contrast to Apple's CarPlay and Android Auto's software-only strategies. It was anticipated that Harman would complement Samsung's expertise in IT technology and help Samsung further establish itself in the automotive sector. The M&A deal wasn't entirely easy, as there were originally slight objections to Harman's promise to forgo seeking out other prospective purchasers while engaging in negotiations with Samsung. However, the M&A deal was successful thanks to the backing of more than 50% of shareholders at the shareholders meeting held in February 2017 and the approval of antitrust authorities (Samsung, 2022).

Samsung was considering acquiring either Harman or Magneti Marelli until the very last minute. Magneti Marelli produces technology for in-car entertainment, telematics, and lighting, which are used by Fiat-owned brands such as Fiat, Chrysler, Jeep, Maserati, and Alfa Romeo. Samsung's affiliates, such as Samsung Display and Samsung Electro-Mechanics, had already formed partnerships with Fiat for automotive displays and camera sensors. Therefore, it is not surprising that Samsung heir, Lee Jae Yong, has been a board member of Magneti Marelli since 2003. Despite some issues regarding overlapping businesses, Samsung is still interested in Magneti Marelli as a potential future business partner, as demonstrated by their ongoing commitment and confidence in the automotive industry following their acquisition of Harman.

4.9. Samsung and metaverse

Samsung has announced their construction of its own metaverse and virtual reality (VR) by working already in extended reality devices such as, VR headset. "TM Roh, Head of Samsung mobile experiences business, confirmed that such a device is in the works, but did not offer a launch window for the hardware. However, he reported the involvement of Qualcomm, the fabless chip maker, and Google, as partners." On Feb. 1, Roh told The Washington Post: "Many different companies ... have been making these announcements about different realities, so we have also been making similar preparations, no less than any others" (Goschenko, 2023).

Figure no. 4. Samsung's 837X and Decentraland



Source: (Samsung, 2022)

Samsung has partnered with an ethereum-based virtual world platform by opening its own metaverse version of its flagship NYC store in Decentraland called Samsung 837X (Lee, 2022; Samsung, 2022). "Samsung 837X, one of the largest brand land takeovers in Decentraland, will be open only for a limited time."

5. Conclusions

Starting as a small manufacturing unit, the company Samsung widens its portfolio and explores different paths, taking risks that challenge the company.

There were several points in Samsung's journey when they had to rethink its strategy in order to remain relevant and maintain its place in the global market. One such time ultimately led to the creation of "Samsung Men". More precisely, Lee realized the significance of people management and hired and trained only those who would remain loyal to the company.

Samsung's strong vision, leadership style of its chairmen, and determination to grow have contributed to making the company a tech giant. Even though, in the past decade, Samsung took many bad business decisions due to poor management, which led to events such as the Samsung Debacle, the company still managed to bounce back and regain the customers' trust. As a result, the company still manages to be on the list of "the most valuable brands in 2023". Today, the brand continues to innovate and grow while keeping its vision alive.

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Organizational Performance and Corporate Governance from the Inside Out

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Abstract

The research paper aims to bring into discussion the theoretical approaches of corporate governance but also to identify, through specialized literature, the existing relationships between corporate culture and the governance process improvement as well as the effects of management's orientation towards innovation in terms of organizational culture in the development of effective corporate governance systems, based on generally accepted rules or principles.

The study highlights the complexity of governance, as a result of innovative business models capable of integrating economic, social, cultural, ethical pillars and to generate for stakeholders a unitary information systems. The balance mandatory for organizations to optimally fulfill the set objectives can be achieved all the more easily as corporate responsibility becomes part of the thinking of all members of the organization and responsibility and accountability towards all stakeholders is directed from the inside out.

Key words: organizational culture, corporate governance, shareholders, stakeholders, company performance

J.E.L. classification: M12, M14

1. Introduction

In recent years characterized by rapid changes in economic and social life, the role of the "engine" of economic growth has been attributed to emerging economies, so it was necessary to instrument codes of good corporate practice that would offer attractiveness for investors, aligning, at the same time and to the institutional requirements (Gîrbină et al., 2012). As a consequence of the OECD's (2015) governance principles adoption and of the World Bank (2009) addressed recommendations, numerous states have taken over and transposed these principles within national governance codes on which a series of economic, social, ethical, cultural or organizational differences have made their presence felt. New development models based on a series of economic advantages make their presence felt among organizations that have chosen to protect, create and improve relationships with all resources categories - technological, financial and last but not least human capital - in accordance with the requirements of innovation and sustainability (Mansour et al., 2023a).

Thus, at the level of the various emerging states, organizational management on the one hand and the organizational structure and culture within corporate governance on the other hand have been progressively substantiated. The totality of management spheres, from activity plans and projects, to internal control and systems for measuring corporate performance and transparency, are involved in corporate governance. The mechanisms and the decision-making processes, the responsibility, the control and the behaviour of top management were, in turn, influenced by these reforms and turned

into a complex system, becoming the prerogative of distinct activities within organizations (Mansour et. Al, 2023b).

To date, numerous studies have been carried out, aimed to identify the consequences of governance on companies' results, describing, at the same time, a significant relationship between the different culture dimension (environmental, organizational, cultural, social or other) and the governance effectiveness (Liming et al., 2005; Han et al., 2010; Kurt et al., 2011; Doupnik, 2008). These studies have demonstrated the direct reaction that organizational culture has on the design and effectiveness of corporate governance as a mechanism to constrain earnings management, being a crucial factor in designing a stable governance policy.

A solid relationship between the company's management, the community, investors, regulatory authorities, customers, partners and other interested parties is a real challenge for boards in this period of rapid changes. The stake is extremely high and the margin of error can only be very small, so the pressure on management to adopt sound governance practices is very high. Managerial culture exerts its major role within organizational culture all the more as managers become more aware of their role within the company, not only formally but also informally, and allocate a considerable part of their time to employee training and to the communication of the values, symbols, beliefs, attitudes, tolerances in accordance with the company's managerial philosophy and values' sets (Mansour et al., 2022a).

The motivation for choosing this topic is based on the intention to contribute to the expansion of a research area with extremely important implications in economic and corporate life, bearing in mind that, at the time of this study, there are, in the specialized literature, numerous researches that study the impact internal and external organizational influences on governance, aspects that are of increased interest in the practice of organizations (Lungu et al., 2020). It is thus necessary to continue research in this field in accordance with the trends and permanent changes that take place both in academically and in the business environment (Mansour et al., 2022b).

The purpose of this paper is the definition and critical analysis of the concept of corporate governance and the establishment of existing relationships between the organization's culture and the improvement of the governance process with the purpose of identifying points that can be improved in the future in the companies' practice.

In order to achieve this goal, we systematized and analysed relevant works from the specialized literature so that we identified two *objectives* of the work:

Objective no. 1 considers the documentation, based on specialized literature' review, of the evolution and ways of approaching the concept of governance over time;

Objective no. 2 aims to bring to the fore the link between the organizational culture and the mechanisms of the governance process.

In order to achieve this goal, we studied the specialized literature from which the complexity of governance emerged as a result of innovative business models integrating economic, social, environmental, cultural, ethical pillars, presenting a unified information system to interested parties. Finally, we focused our study on the links between governance and organizational culture, defined by Hofstede (2011) being as the nature of a collective programming of the mind that distinguishes the members of an organization from others.

The work is structured in five chapters. The first of these presents a brief introduction as well as the motivation of the chosen theme. The second chapter presents the interest of specialists regarding the corporate governance system and the existing relationships between the organization's culture and the improvement of the governance process. In section number three we described the methodology used but also some of this work' limitation. The fourth section begins with the corporate governance concept presentation at the international level and the different meanings found in the analysed works and continues with an analysis of the existing relationships between it and the organization culture. Finally, section number five summarizes the results and future research opportunities.

2. Literature review

The subject of the mechanisms underlying a transparent and effective corporate governance that influences the organization's results and the decision-making process presents an oscillating interest (Lungu et al., 2020) from the academic community, of the decision-makers but also of the other stakeholder categories, which is why this approach continues to be topical. This trend has led to a focus on the empirical examination of governance diversity, with cultural diversity among the aspects studied.

The spread of corporate governance principles can be attributed to the itself concept evolution, as it developed from a simple set of governance rules to strategic governance, a situation that determined other categories of governance: public and proprietary governance, hierarchical and market governance (Aluchna, 2016), internal and external governance (Daley et al., 2003), organizational and personal governance, entrepreneurial governance (Barns, 2016), internet and IT governance (Grembergen, 2004; Weber, 2010) or academic governance (Hogler et al., 2009), while the foundation of the corporate integrity' is represented by the personal integrity of management members (Rampersad et al., 2014). As companies' interest in social, environmental or ethical responsibilities registers a growing trend (Hemphill, 2010), it is expected that governance systems will also evolve and emerge new guiding directions.

The organization' governing bodies exercise the monitoring, supervision and advisory function over the strategies but, at the same time, can also ensure the necessary conditions for the effective connection for all resources (Endrikat et al., 2021). Finding indicators that determine the strength of corporate governance is one of the key challenges in this field research (Bhagat et al., 2008). Along with classic indicators (composition of the board of directors, frequency of meetings, level of remuneration) of governance quality, there are also informal mechanisms – managerial attitude, organizational culture which, although they cannot be directly quantified, are likely to have a significant influence (Llopis et al., 2007).

The term *corporate culture* is used in the specialty literature as an omnibus term that includes a multitude of organization relevant components: norms, values, knowledge, habits, beliefs, aspects that are quantified through different innovative methods. These empirical measures of corporate culture highlight, among other things, mergers, acquisitions, risk-taking, profiteering, failure, or even unethics observed within corporations. Gorton et al. (2022) argues that the theory of decision-making based on organizational culture is more relevant to the practical realities of companies' internal organization than the prevailing theories based on property rights and costs. The same direct relationship between governance and national culture is also highlighted by (Licht, 2005; Li et al., 2008; Breuer et al., 2012). Hassan and Karim (2022) highlight in their research the culture relevance as a determining factor for the governance' structure and design, also highlighting the possibility of negative influences on the latter.

3. Research methodology

The study brings to professionals and decision-makers' attention new perspectives in the approach and employment of corporate governance policies, taking into account the dominant influences that the national and, implicitly, the organizational culture can have. The theoretical framework of the present research was analysed in two directions - the first followed the evolution of corporate governance concept and the second the implications of organizational culture on governance. To achieve the objectives, we analysed the specialized literature from the Gruyter, Scopus and WoS databases. The results showed the effectiveness of corporate governance, the decision-making process and the perception of management practices are directly influenced by the organizational culture.

Among the limitations of this work, we can mention the general nature of the aspects presented and the limited number of countries to which the analysed studies refer, limits that can be overcome by additional research focused on certain specific geo-political regions or on certain economic sectors.

4. Findings

4.1. Corporate governance

Corporate governance involves a set of relationships between management, shareholders and interested parties (OECD, 2023) and brings together a mechanism of rules and procedures that ensure companies the premises of effective internal management in order to protect all interested parties (Feleagă, 2011), provides the necessary tools for the fair distribution of rights and responsibilities between the organization members and establishes the set of well-defined rules and procedures for making those best decisions, ensures better transparency of financial information (Albu et al., 2012). So, it provides the framework on the basis of which the objectives are found, and, on the other hand, the means necessary to achieve these objectives under conditions of efficiency maximization.

The OECD definition (2023) on governance emphasizes its role in building an environment of trust, transparency and responsibilities that encourage investors, ensure the organization's financial stability, business integrity and support a sustainable development of society, taking into account the principles of sustainability.

The Institute of Internal Auditors (2003) defines governance based on stakeholder theory, so that governance processes bring together all the procedures that stakeholders' representatives use to optimally oversee risk and control processes and to guarantee the mitigation of these risks and contribute to the achievement of the organization's objectives and the maintenance of organizational values. Governance is the key element that mediates the link between the company's ability to attract investors and the increase in performance and competitiveness in the market (Feleagă et al., 2011)

Figure no. 1. Corporate governance definitions

Author	Definition
OECD, 1999	A set of relationships between a company's management, its board, its shareholders and other stakeholders.
Dimsdale, 1997	Is concerned with the way in which corporations are governed the relationship between the management of a company and its shareholders.
(OECD, 2004)	Is the rules and practices that govern the relationship between the managers and shareholders of corporations, as well as stakeholders like employees and creditors.
(DIGNAM, 2005)	A set of processes, customs, policies, laws and institutions affecting the way a corporation is directed, administered or controlled, and its purpose is to influence directly or indirectly the behaviour of the organization towards its stakeholders.
(Handley et al., 2007)	Is concerned with structures and the allocation of responsibilities within companies.
(Berthelot et al., 2010)	The ways in which both fund providers and corporations must ensure their return on investment.
(Haspeslagh, 2010)	The system of rules, regulations and practices by which we hold managers and owners accountable and responsible for whatever performance society expects.
(Talamo, 2011)	The system of monitoring devices, internal and external, specific to each organization, that defines how these mechanisms are set up and how each will fulfil its monitoring role.
(du Plessis et al., 2012)	The system of regulating and overseeing corporate conduct and of balancing the interests of all internal stakeholders and other parties (external stakeholders, governments and local communities).
(Rampersad, 2014)	The systematic process of continuous, gradual, and routine improvement, steering, and learning that lead to sustainable high performance and ethical excellence.
(Honoré et al., 2015)	Refers to the set of internal and external control mechanisms that minimize the conflicts of interest between managers and shareholders arising from the separation of ownership.
(Hong et al., 2016)	Is concerned with the mechanisms through which shareholders ensure a financial return on their investments.
(Hussain et al., 2017)	CG characteristics play an important role in enhancing a firm's environmental

- and social performance, across all industries.
- (Crifo et al., 2019) Corporate governance mechanisms are fundamental to align shareholder (and/or other stakeholders) and manager interests and can be split into several categories: internal, external and intermediate.
- (OECD, 2023) Provides the structure and systems through which the company is directed and its objectives are set, and the means of attaining those objectives and monitoring performance are determined.

Source: made by authors based on studied literature

Analysing these definitions, three directions of theoretical approach can be identified: part of them proceed toward corporate governance as a vast field that covers both internal and external aspects of the company, a way in which all interested parties must ensure the maximum of profitability; the second category is that of narrow definitions that limited the concept only to the organization interest, referring only to structures and responsibilities, or focused on certain theories such as the stakeholder theory, governance referring to the way in which organizations build relationships between management and shareholders; and the third category is the one that details and highlights the extremely complex architecture and with major implications of governance viewed as a system of regulations and supervisions, of conduct and action aimed to ensuring the balancing of the shareholder interests as well as the other participants of social-economic life. It is obvious that there are divergent opinions regarding the involved parties in this process of corporate governance, its success or failure affecting them directly. So, these different approaches have also generated different models of governance, two of which dominate the literature and practice at the international level: the model focused on stakeholders and the model focused on shareholders.

However, if we analyse the issue of the of an efficient governance system' features, we find the convergence of opinions towards a system that allows for the optimization of relations between management, capital holders and the rest of the interested parties, the quality of this system being a mediating variable between the nature of the capital and the transparency of reporting, along with the quality of external auditing (Dobre et al., 2015).

Fahy's study (Fahy et al., 2004) demonstrates the direct support that good governance provides to company strategy, while poor governance results in poor strategy. The company's system of internal and external relations with its environment is built on the basis of corporate governance strategic commitment, in the long-term providing the organization with a sustainable competitive advantage.

With all the benefits that corporate governance presents to organizations and its relevance in designing structures and a system of highly important tasks and responsibilities for senior management and its relationship with different stakeholders, the literature highlights a number of challenges realities that governance continues to face. Shkeifer & Vishny (1997) highlight the existing disagreements about the operation mechanisms. Despite its positive effects on shareholder rights protection and organizational commitment (Purwanto, 2021), organizational performance (Adebayo, 2014), governance continues to be associated with corporate failure (Lakshana et al., 2012, Basco, 2023) - the real estate bubble that hits the USA in 2008, continued to affect financial system for a much longer period (Altug, 2010) - with corporate scandals (Greve et al., 2010; Agrawal et al., 2005), with associated internal financial control systems with underperforming performance (Jensen, 2001), with over-rewarding top management – the “fat cat problem ” (Lin et al., 2013). It is the role of the regulatory authorities to temperate and to ensure compliance with good governance principles (de Villiers et al., 2021).

It can be concluded that the various ways of formulating and adopting the corporate governance definition are due to the differences in environment, experience and, last but not least, to the culture of the researchers but also to the analysed organizational cultures. Along the same lines of the local environment relevance, the studies demonstrate that there is no single formula for building and applying the principles of corporate governance, each company has its own economic, social and cultural particularities and, as a consequence, they will influence the implemented model (Răileanu et al., 2011).

4.2. Corporate governance and cultural values

Organizational culture is a values and concepts system, shared by members of all hierarchical levels within an organization that determines the employees' character and behaviour. The better integrated thinking is embedded in an organization's activities, the more naturally information connectivity will flow in management reporting, analysis, and decision-making processes, and there will be a better information systems integration' that support internal and external reporting and communications.

Corporate governance can be outlook from two perspectives: on the one hand there is a number of organization internal factors and, on the other hand, over it enforces a number of external factors – governance codes, standards, reports and mandatory or voluntary frameworks. Internal governance reflects how external governance is respected and embedded in the organization's culture and values. Implementation, enforcement and compliance with rules, regulations and codes of practice can only be effective to the extent that a climate of compliance designed to support such structures and mechanisms is promoted within the organization. Without these conditions, the governance framework cannot play its role effectively. It is also necessary to have a deep culture able to identify all the management responsibilities and requirements regarding the shareholders rights or other interested parties. The promotion of a transparent and objective climate, the existence of internal systems, procedures and structures designed to comply with external requirements but also to prevent behaviour directed excessively towards stakeholders is the result of effective governance (Mansour et al., 2023c). The gap of expectations between the interests and motivations of the "agent" and the "principal" can be diminished by the "force" of internal corporate governance - corporate culture. Organizational culture has the ability to determine the theoretical paradigm for research in the field of corporate governance (Gorton et al., 2022).

Previous studies have demonstrated the direct link between the organizational culture different dimensions and governance policy (Guan et al., 2005; Han et al., 2010; Kesender et al., 2011; Doupnik, 2008; Kanagaretnam et al., 2011; Purwanto, 2021). In addition, geographic positioning, as a organizational culture factor, influences the organization earnings management policies (Elias, 2004; Geiger et al., 2006; Geiger et al., 2010; Calabrò et al., 2022). When efficiency and effectiveness are promoted at every organizational level and every activity is considered an important link in the final chain, when people are valued and respected and the impact of decisions is anticipated openly, publicly, transparently, will certainly result an organizational culture primarily focused on quality (Mansour et al., 2023).

An innovative climate, open to organization internal members that provides them with the whole set of knowledge necessary to be aware of the economic, social and ethical consequences of their decisions and behaviour (Basco, 2023), ensures an efficient governance functionality and a protection of stakeholder interests (Endrikat et al., 2021). Top managers are the ones responsible for ensuring a transparent framework of responsibility and accountability (Purwanto, 2021), for ensuring efficient structures (Adebayo, 2014) and sustainable development plans (de Villiers et al., 2021). The means by which these mechanisms can be ensured are represented by the appropriate corporate codes of ethics achievement (Bhagal et al., 2008) and by the existence of a system of cultural values intrinsically linked to the assessment of individual performance (Geiger et al., 2010) and the professional development of all members of the organization (Hofstede, 2011). The team spirit in which all members converge towards a common goal can be ensured by a good promotion of consonance between the objectives of employees and those of other interested parties (du Plessis et al., 2012). A clear corporate mission with well-defined strategic goals and objectives (Shleifer et al., 1997), coherent, sustainable, transparent, realistic, which can be divided into measurable departmental objectives (Talamo, 2011) has a positive impact on the achievement of the common goal. Organizational culture has proven to be the lens through which the organization's goals, mission, vision and plans are projected (Acosta et al., 2016). The involvement of authorities, professional organizations, the provision of information and promotion campaigns in the business environment of this behaviour implication type can mediate the access of SMEs to innovative methods inspired by successful business models (Mansour et al., 2023d; A. Kwarteng et al., 2018).

A strong organizational commitment, a recruitment policy that maintains employee commitment and loyalty leads to an effective governance policy (Kamesaka, 2019). Governance does not focus only on control and power (Jarne-Jarne et al., 2022).

5. Conclusions

The sustainable balance between the long-term compatible needs and interests of equity holders, top management, creditors, employees, suppliers, customers, business partners, regulatory bodies can be ensured, maintained, developed and balanced through a corporate culture.

The monolithic lens of performance through which shareholders and boards view governance performance is broadened by the increasing role of corporate culture. Its variables have a positive impact on the quality of the information provided and, implicitly, on the decision-making process.

The triad of effective management - corporate governance - organizational culture works in close connection, ensuring the necessary resources for the decision-making process and effective means of fulfilling the organization's objectives under the influence of cultural dimensions.

This balance can only realistically be achieved if the actual acceptance of corporate social responsibility, rather than compliance only with governance structures, becomes part of the 'thinking' of all those working in business organisations; so that accountability and responsibility to all stakeholders is provided from the inside out.

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Study on Recruiters Opinion Towards AI-Tools to Facilitate the Hiring Process within a Company

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Abstract

The growing popularity of AI application raises questions regarding the role AI should play across all business divisions. This study attempts to explore how resilient are the recruiters to AI at Randstad Sourceright, a global talent solutions leader. According to the Randstad culture, the greatest outcomes come from integrating the power of modern technology with the human component in order to help people and businesses reach their full potential. (Randstad global guidelines, 2019, p.1.). However, the existing debate around AI can discourage recruiters for using AI-Tools. In this research, it was surveyed a number of 100 employees from Randstad Sourceright in order to explore their opinion toward AI-Tools. The paper concludes that employees at Randstad are interested in AI- tools and the benefits they may provide when incorporated into their job, yet they are hesitant to trust AI technologies and are often mindful of the possible issues they may cause.

Key words: AI, AI-tools, recruitment, recruiters

J.E.L. classification: O15, J24, M12, L21, Y10

1. Introduction

Organizations are beginning to adopt and capitalize on the functionality of AI in their recruitment processes (Patrick van Esch *et.al*, 2019). According to an MIT study, productivity can be enhanced by generational AI, and specifically Chat GPT solutions, particularly when it comes to writing and editing duties. People have been concerned for decades that new technical developments might result in widespread automation and job losses (Zach Winn 2023). Study finds ChatGPT boosts worker productivity for some writing tasks. MIT News Office). Since the launch of ChatGPT in November 2022, the societal debate has increased on the advanced artificial intelligence (AI) technologies that are now available to the general public and can be used free of charge by everyone, without any IT expertise being necessary (Randstad position paper, 2023, p.3.). However, what particular advantages may generative AI provide for the hiring team? Labor markets are known for adapting to fundamental change. New technologies can provide new employment, and they can benefit the economy overall if they enhance worker productivity. Although AI is clearly already changing the way we work, it is difficult to predict what its exact impact will be on the labor market (Randstad position paper, 2023, p.3.). We define AI as an assemblage of technological components that collect, process, and act on data in ways that simulate human intelligence. Like humans, AI solutions can apply rules, learn over time through the acquisition of new data and information (i.e., via ML), and adapt to changes in their environment (Ana Isabel Canhoto *et.al*, 2019). AI-Tools use machine learning to generate responses or perform basic tasks based on the criteria you input. Some of the most well-known AI-Tools are: (i) for writing and content creation: ChatGPT, Copy.ai, GrammarlyGO, ClickUp, Google's LaMDA, Meta's LaMDA; (ii) for meetings (transcribe spoken conversations, provide advanced analytics): Spinach, Sembly, tl;dv, Otter.ai; and (iii) for HR and Recruiting (automate tasks in the hiring process,

like screening candidates, scheduling interviews and onboarding): Paradox.ai, Textio, HiredScore, Attract, Effy (Haillie Parker, 2023).

2. Theoretical background

In order to speed up and increase the human connection between job seekers, consultants, and clients, this company has experimented with a variety of cutting-edge technology throughout the years. Randstad is currently implementing modern technologies, including artificial intelligence (AI) tools, and digital strategies, all without compromising human engagement. This company delivers solutions that are more focused on the needs of people by combining technology with the enthusiasm of human resources professionals. According to Randstad, once in place, any AI legislative framework should have a beneficial impact on job, innovation, and entrepreneurial prospects in labor markets worldwide. The first implementations of these regulatory frameworks are presently being developed in China (the AI Regulatory Framework), the US (the AI Law in NYC), and Europe (the AI Act) (Randstad Position Paper 2023. The Labor Market and AI, p.4.)

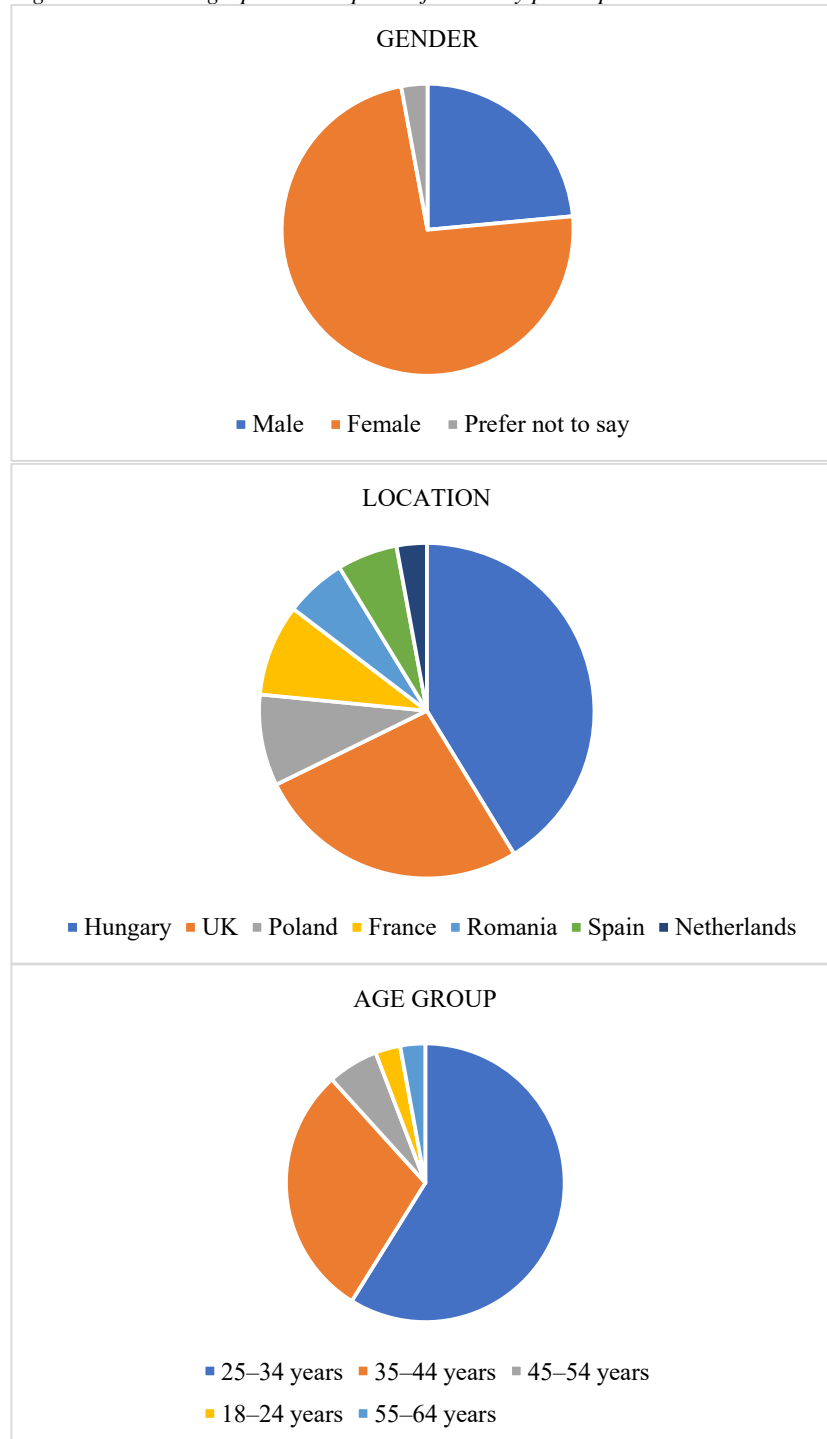
3. Research methodology

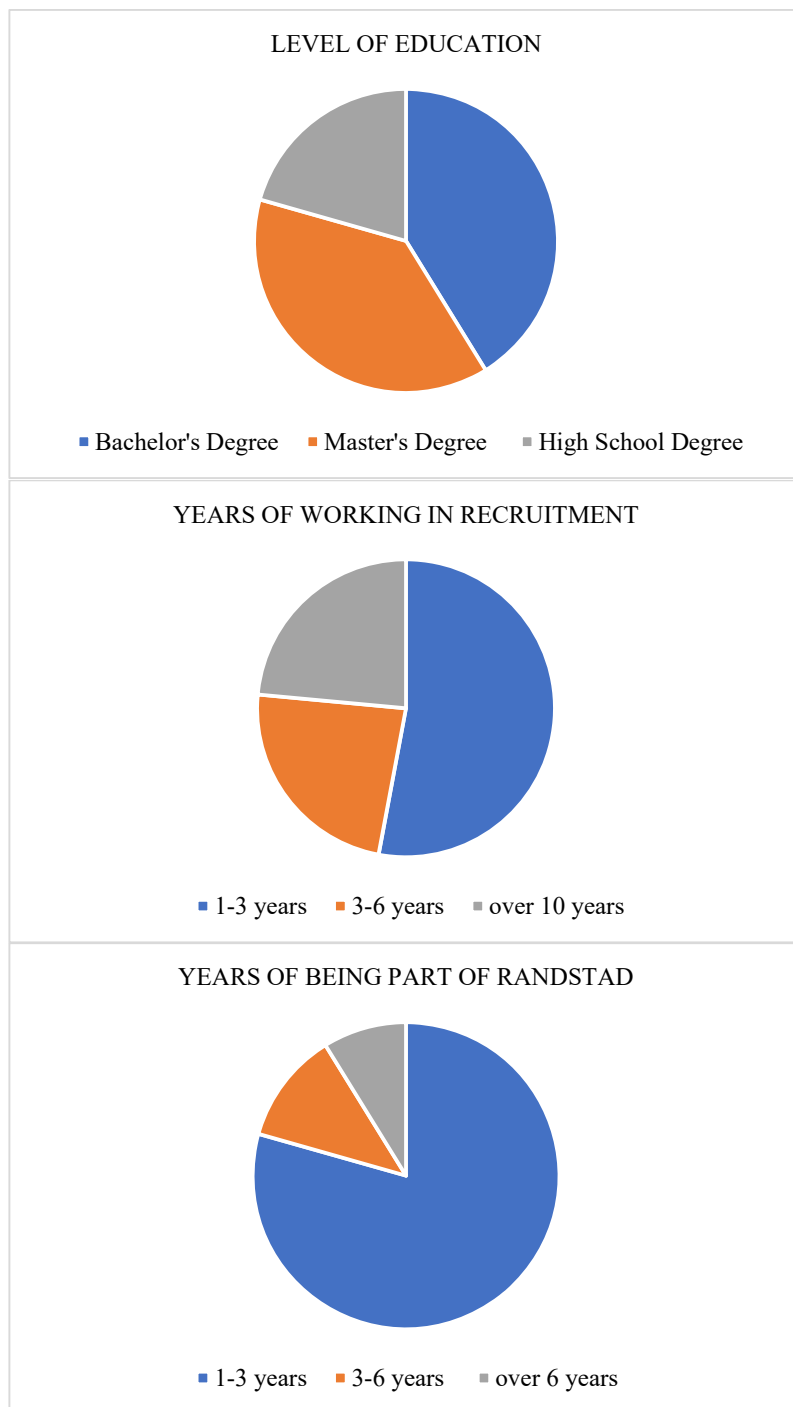
The questionnaire survey is based on one of the well-established Likert Scale Questionnaire. In its final form, the Likert scale is a five (or seven) point scale that is used to allow an individual to express how much they agree or disagree with a particular statement (Saul Mcleod 2023). For data collection for this research, a survey on 100 recruiters was conducted within Europe-based Randstad employees. The anonymity and confidentiality of each participant were assured. The group of respondents was defined by: (i) location (country of residence), (ii) gender (male, female, prefer not to say), (iii) age (18–24 years, 25–34 years, 35–44 years, 45–54 years, 55–64 years, 65+ years), (iv) highest degree or level of education (High School, Bachelor's Degree, Master's Degree, Ph.D. or higher) and (v) number of years they have been working in recruitment (<1 year, 1-5 years, 5-10 years, 10+ years) and (vi) number of years they have been part of Randstad (<1 year, 1-5 years, 5-10 years, 10+ years). The questionnaire has comprised ten items (six items regarding socio-demographic variables and four items that explored the employees' opinion on AI-Tools, based on the Likert Scale *i.e.* AI tools will be very helpful for the recruitment industry in the near future.)

4. Findings

Demographic description of the study participants. The majority of respondents are based in Hungary. In terms of location, 41.2% are based in Hungary, followed by 26.4% based in UK, 8.8% based in Poland, 8.8% based in France, 5.9% based in Romania, 5.8% based in Spain and 2.9% based in the Netherlands. Among the 200 respondents, 73.5% were women, 23% were men and 2.9% preferred not to say. The age range of the participants was 18 to 64 years. In terms of age group, the highest proportion (58.8%) was in the 25–34 years range, followed by 29.4% in the 35–44 years range, 5.9% in the 45–54 years range, 2.9% in the 18–24 years range and also 2.9% in the 55–64 years range. About the highest degree or level of education, the majority of interviewed employees (41.2%) possess a Bachelor's Degree, 38.2% have Master's Degree and 20.6% only have a High School Degree. Regarding the number of years they have been working in recruitment, 52.9% of participants have been in this field for 1-3 years, 23.5% for 3-6 years, and also 23.5% for over 10 years. About the number of years they have been employed in this company, 79.4% are part of Randstad for 1-3 years, 11.8% for 3-6 years and 8.8% for over 6 years (Figure no. 1).

Figure no. 1. Demographic description of the study participants

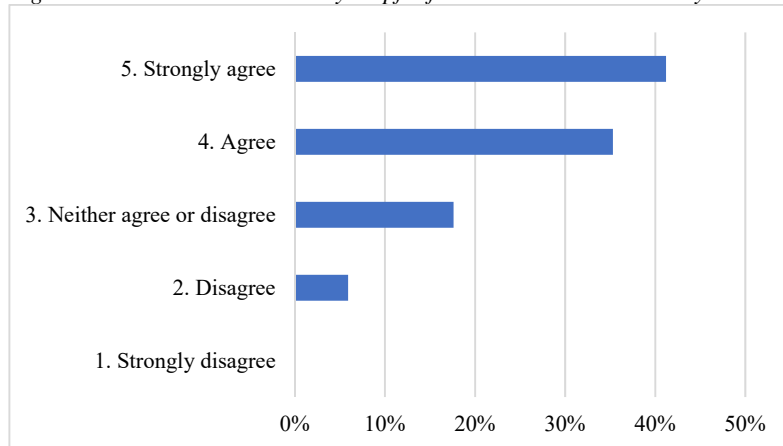




Source: (own creation)

Recruiters' opinion on AI-Tools. The opinion of employees regarding AI-Tools are revealed in the Figures no. 2, 3, 4 and 5. The questionnaire survey is based on one of the well-established Likert Scale Questionnaire. In its final form, the Likert scale is a five (or seven) point scale that is used to allow an individual to express how much they agree or disagree with a particular statement (Saul Mcleod 2023). Therefore, respondents had to choose from a scale from 1 to 5, where 1 means "Strongly disagree", 2 means "Disagree", 3 means "Neither agree or disagree", 4 means "Agree" and 5 means "completely agree".

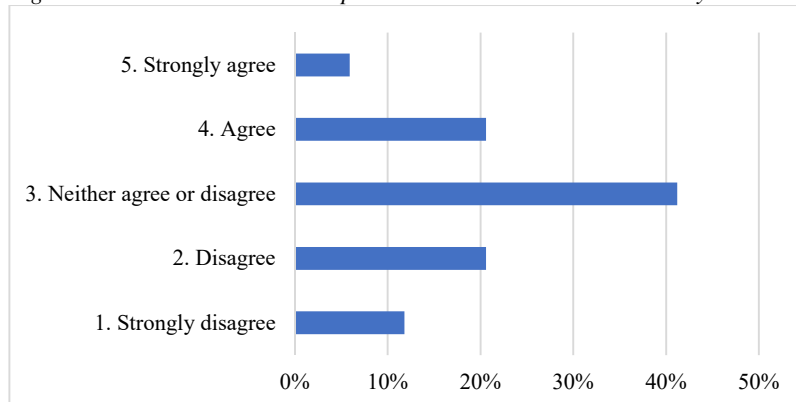
Figure no. 2. AI tools will be very helpful for the recruitment industry in the near future



Source: (own creation)

From the Figure no. 2, it is clear that respondents firmly believe that AI tools will be very helpful for the recruitment industry in the near future, as 41.2% of them chose "strongly agree" with this statement and 35.3% of them chose "agree", whereas only 5.9% disagree with this statement.

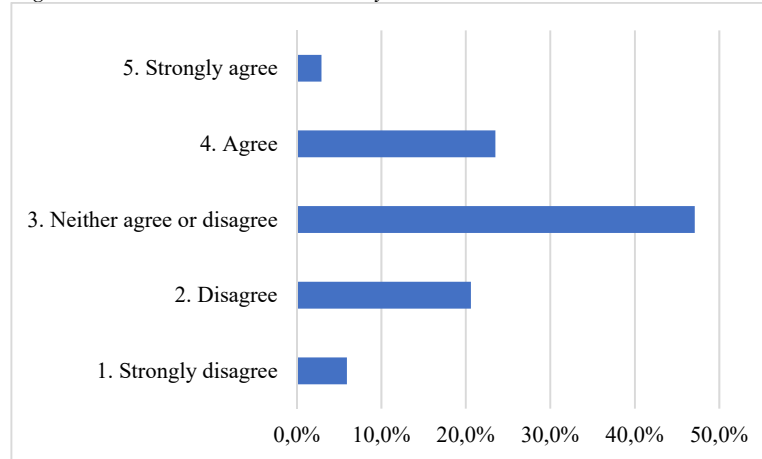
Figure no. 3. AI tools will create problems in the recruitment industry in the near future



Source: (own creation)

41.2% of the study participants remained neutral in regards of this statement. Overall, opinions were divided: 32.4% responded positively (11.8% Strongly Agreed and 20.8% Agreed) and 26.5% negatively (20.6 Disagreed and 5.9% Strongly Disagreed)

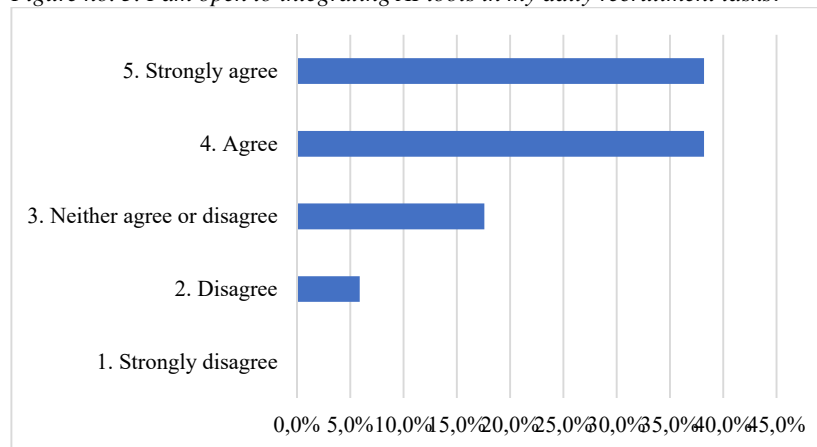
Figure no. 4. AI tools are trustworthy



Source: (own creation)

Trusting AI is still a topic that has not yet been explored by many, as 47.1% of participants chose to remain neutral on this topic. Overall, only 26.4% agreed and 26.5% disagreed.

Figure no. 5. I am open to integrating AI tools in my daily recruitment tasks.



Source: (own creation)

In total, 76.4% of the study participants are open to integrating AI tools in their daily recruitment tasks, and only 5.9% aren't open to integrating AI tools in their daily recruitment tasks, whereas 17.6% remain neutral.

5. Conclusions

The societal debate on AI will evolve over time at the same pace as the development of these technologies. One of the conclusions that can be drawn from this study is that Randstad employees are primarily interested in AI tools and how they may be incorporated into their regular recruitment procedures. However, they tend to display extreme caution when it comes to potential problems that AI tools might bring in the near future. For this reason, an appropriate and balanced regulatory approach is required, taking into account the speed of AI development and adoption, governmental policies and societal responses. AI in the recruitment industry has the ability to enhance employment market results for all stakeholders and raise the efficacy and transparency of this market when applied properly. Furthermore, as AI advances in this market sector, the human element shouldn't be forgotten.

Human interaction is still crucial because, even while decisions made only on the basis of AI output may make sense, they may not always result in the most equitable solution. Since only individuals are capable of making such subtleties, hiring is still a people-to-people practice.

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Tourist Demand for Romania Over the Last Three Decades

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Abstract

This paper shows the fluctuations of tourist demand for the destination Romania over the last three decades (1990-2022) and explains their complex economic, social and political causes. Tourism was probably the economic sector most affected by the COVID-19 pandemic. However, tourism has quickly picked up after lifting the restrictions of the pandemic period.

The significant increase of tourism demand in recent times is the effect of implementing coherent action plans, coordinated nationally and supported by certain government measures to encourage the tourism industry, such as the investments in tourism infrastructure and in Romanian destinations' marketing and promotion.

Tourism will contribute significantly to Romania's economic growth and development. The focus will be on the quality and diversity of tourist offer for the incoming visitors. Given the current conditions, generated by the pandemic and the war in Ukraine, a doubling of foreign tourist arrivals and an increase in the average length of their stay are expected for the next 10 years.

Key words: tourism indicators, tourism demand, destination Romania

J.E.L. classification: Z30, Z32, L83

1. Introduction

Precise and reliable information on demand and supply of tourist destinations is crucial in achieving an effective tourism policy. The decision-makers within a tourist destination must set clear objectives and understand the trends and current situation on a market, identifying the most suitable perspectives and options for its development, respectively recognizing in advance the constraints, challenges and obstacles and taking the most appropriate corrective measures. When the planning of activities within the destination is done rigorously, its appeal increases and the location can offer excellent tourism services. Destination planning and management is the key to sustainable tourism (Godfrey & Clarke, 2000).

This paper analyzes, from a quantitative point of view, the evolution of tourist demand for the destination Romanian over the last three decades, in order to draw apposite conclusions on the future evolution trends. The number of tourists (arrivals) and the number of overnight stays, as important indicators of tourist demand, are analyzed nationally and structured by type of destination. Although their overall evolution is favorable, the problems Romanian tourism is facing with cannot be ignored. Improvement trends may be observed and they are also reflected in the monitored indicators. But efforts in this direction must continue.

The future priorities, able to ensure the growth and competitiveness of the Romanian tourism, refer to a complex tourist offer, making the most of existing natural and human resources, preserving the environment and the heritage, as well as a sustained and efficient tourism promotion, to ensure a distinct identity of the national tourism on the specific European market (Toma, Mihai, 2020).

2. Theoretical background

The current trends in tourism are: the increasing number of tourists; more regions and countries entering the tourist circuit; more holidays and more free time; the decrease of the average duration of stay and several stages of rest leave; the strong increase of tourist demand and supply. The main factors that have led to the increase of tourist demand are: population's income growth; new habits of traveling; changing traditions and preferences. Other reasons that boosted the national tourism were: tourist offer diversification; increasing the role of promotional activity in tourism; improving the national legislation to stimulate tourism; involving central and local political power in developing tourist activities; the national and local strategies and programs in the field of tourism; ensuring the permanent training of the staff employed in tourism; educating the population to consume tourist products and services (Milin et al, 2005).

Tourism was perhaps the economic sector most affected by the COVID-19 pandemic. The period 2020-2021 recorded drastic falls for the entire tourism and hospitality industry. However, this sector of activity quickly picked up after lifting the restrictions from the pandemic period, with the year 2022 registering values of tourist indicators close to 2019.

3. Research methodology

The theoretical research, the analysis and the synthesis were used in drafting this paper. Interesting ideas and practices were extracted from the specialized literature. The statistical data supports the documentation stage of a tourism demand study (Coccean, Dezsi, 2001).

We consulted official documents and statistics compiled by some public authorities in Romania or other European countries. The research methodology was based on the analysis and interpretation of data offered by the National Institute of Statistics (tourism chapters from the Romanian Statistical Yearbooks, 1990-2023; Romanian Tourism Statistical Abstract, 1999-2023), using descriptive statistics.

This study analyzed, processed and interpreted the most significant indicators of tourist demand (the number of tourists/arrivals and their structure, the overnight stays, the average length of stay). The method of graphical modeling using the application Microsoft Office Excel was used to make diagrams for each indicator. The data tables were interpreted to extract conclusions on the evolution and structure of the main indicators of tourism demand for Romania.

4. Findings

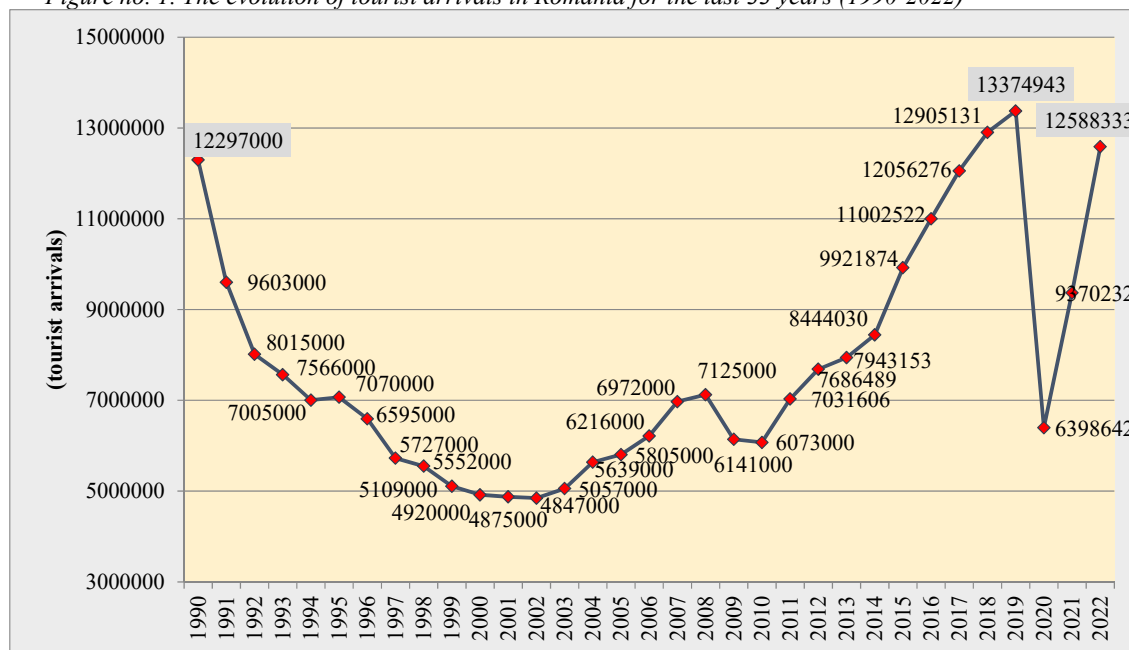
Tourist arrivals represents the most important indicator of tourist demand (Minciu, 2000; Stănculescu et al, 2009). This quantitative indicator was analyzed in evolution (over a period of 33 years), structure, by types of destinations, by the origin of tourists (domestic and international) or by their preference for accommodation.

The number of tourists registered some significant fluctuations in the last 3 decades (Figure no. 1, Table no. 1). It declined drastically in the period 1990-2003: from 12.2 million tourists in 1990, to almost two-thirds less in the following years (1992-1995), followed by another steady decline (1996-2001), and a low of 4.8 million tourists in 2002. The reasons were economic, social and political, connected to the post-December transition period: the decrease in the standard of living of the resident population (unemployment, reduced incomes), the continuous increase in rates for tourist services and their poor quality in many Romanian resorts, the political instability, the insufficient promotion of Romanian tourism on the foreign markets (Țigu, 2001), the inadequate coordination of tourism at the national level (repeated changes within the Ministry of Tourism, deficient tourism legislation).

There was a constant increase in tourist arrivals starting from 2003, exceeding 7 million tourists in 2008. The increase from 2004-2008 was due to the increase in income and living standards of local people. In 2009 and 2010, the values decreased suddenly by 1 million tourists compared to the previous years, due to the effects of the economic crisis.

An important increase in the number of tourists (over 0.5 million tourists annually) was registered since 2011 (a trend also evident globally, except for the year 2009 that recorded a decline in international tourist arrivals). In the period 2009-2012, the Ministry of Regional Development and Tourism carried out significant investments in the tourist infrastructure and in the marketing and promotion of Romanian destinations, both from European and state budget funds - almost 820 million euros were allocated for tourism development, compared to 20 million euros allocated in the period 2006-2008.

Figure no. 1. The evolution of tourist arrivals in Romania for the last 33 years (1990-2022)



Source: data taken and processed using the Microsoft Excel application from the Statistical Yearbooks of Romania 1990-2023 and Romanian Tourism Statistical Abstract, 1999-2023, INS, www.insse.ro

Thus, in 2014 a high of the lastest 23 years was recorded: 8.4 million tourists (a value comparable to the period 1991-1992), a a surprising recovery of the Romanian tourism. High values of the annual growth rate of arrivals were also recorded in 2014: 6.3% in total, with 5.3% for the Romanian tourists and 11.5% for the foreign tourists.

Tourism has developed strategically in recent years, by implementing coherent action plans to coordinate this sector: the Strategic and Operational Plan for Tourism Marketing of Romania 2011-2015, the Strategic and Operational Plan for Tourism Marketing of Bucharest 2011- 2015, the National Tourism Brand Creation and Promotion Strategy, the National Ecotourism Development Strategy, the National Spa Tourism Development Strategy.

There was an unprecedented revival in the number of tourists in the period 2015-2019, so that more than 12 million tourists were recorded in 2017, a value reached only during the communist period (Figure no. 1), then 12.8 million tourists in 2018 and 13 ,2 million tourists in 2019. This was due to a better involvement of the Ministry of Tourism in initiating and applying laws and reforms in the field of tourism, a better promotion of the Romanian tourism, as well as a diversified offer of tourism operators. That was the result of policies and reforms in tourism, and in the case of foreign tourists, some insecurity reasons felt by them in relation to some Western European states (France, U.K., Spain, Belgium) or Turkey - the waves of emigrants and especially the terrorist attacks which started a few years ago led to the reorientation of tourist flows towards destinations considered safer, such as Poland, Hungary, even Romania and Bulgaria (Simoni, Teodoroiu, 2018).

In 2020, as a result of the COVID-19 pandemic, the number of tourists halved (6.4 millions), and that of foreign tourists was reduced to a quarter of the value recorded in the previous year. In 2021, although the restrictive measures were maintained due to the COVID-19 pandemic, the number of tourists recovered, reaching 9.4 million. There was a decline in foreign tourist arrivals, from over 2

million before the pandemic, to below 1 million in 2020 and 2021, due to the restrictions on the international travel during the pandemic.

In 2022, normal values of this indicator were recorded - 12.6 million tourists, as a result of pandemic restriction lifting and the rapid recover of this activity sector.

Table no. 1. The evolution and structure of tourist arrivals in Romania for the last 33 years (1990-2022)

Year	Total tourist arrivals in Romania	Yearly change (%)	Romanian tourist arrivals	Yearly change (%)	Share of total tourists (%)	Foreign tourist arrivals	Yearly change (%)	Share of total tourists (%)
1990	12297000		10865000		88.35	1432000		11.65
1991	9603000	-21.91%	8309000	-23.53%	86.53	1294000	-9.64%	13.47
1992	8015000	-16.54%	6830000	-17.80%	85.22	1185000	-8.42%	14.78
1993	7566000	-5.60%	6718000	-1.64%	88.79	848000	-28.44%	11.21
1994	7005000	-7.41%	6149000	-8.47%	87.78	856000	0.94%	12.22
1995	7070000	0.93%	6310000	2.62%	89.25	760000	-11.21%	10.75
1996	6595000	-6.72%	5833000	-7.56%	88.45	762000	0.26%	11.55
1997	5727000	-13.16%	4894000	-16.10%	85.45	833000	9.32%	14.55
1998	5552000	-3.06%	4742000	-3.11%	85.41	810000	-2.76%	14.59
1999	5109000	-7.98%	4314000	-9.03%	84.44	795000	-1.85%	15.56
2000	4920000	-3.70%	4053000	-6.05%	82.38	867000	9.06%	17.62
2001	4875000	-0.91%	3960000	-2.29%	81.23	915000	5.54%	18.77
2002	4847000	-0.57%	3848000	-2.83%	79.39	999000	9.18%	20.61
2003	5057000	4.33%	3952000	2.70%	78.15	1105000	10.61%	21.85
2004	5639000	11.51%	4280000	8.30%	75.90	1359000	22.99%	24.10
2005	5805000	2.94%	4375000	2.22%	75.37	1430000	5.22%	24.63
2006	6216000	7.08%	4836000	10.54%	77.80	1380000	-3.50%	22.20
2007	6972000	12.16%	5421000	12.10%	77.75	1551000	12.39%	22.25
2008	7125000	2.19%	5659000	4.39%	79.42	1466000	-5.48%	20.58
2009	6141000	-13.81%	4865000	-14.03%	79.22	1276000	-12.96%	20.78
2010	6073000	-1.11%	4727000	-2.84%	77.84	1346000	5.49%	22.16
2011	7031606	15.78%	5514907	16.67%	78.43	1516699	12.68%	21.57
2012	7686489	9.31%	6030053	9.34%	78.45	1656436	9.21%	21.55
2013	7943153	3.34%	6225798	3.25%	78.38	1717355	3.68%	21.62
2014	8444030	6.31%	6532213	4.92%	77.36	1911817	11.32%	22.64
2015	9921874	17.50%	7681896	17.60%	77.42	2239978	17.16%	22.58
2016	11002522	10.89%	8521698	10.93%	77.45	2480824	10.75%	22.55
2017	12056276	9.58%	9307004	9.22%	77.20	2749272	10.82%	22.80
2018	12905131	7.04%	10108509	8.61%	78.33	2796622	1.72%	21.67
2019	13374943	3.64%	10691195	5.76%	79.93	2683748	-4.04%	20.07
2020	6398642	-52.16%	5944775	-44.40%	92.91	453867	-83.09%	7.09
2021	9370232	46.44%	8527409	43.44%	91.01	842823	85.70%	8.99
2022	12588333	34.34%	10914023	27.99%	86.70	1674310	98.65%	13.30

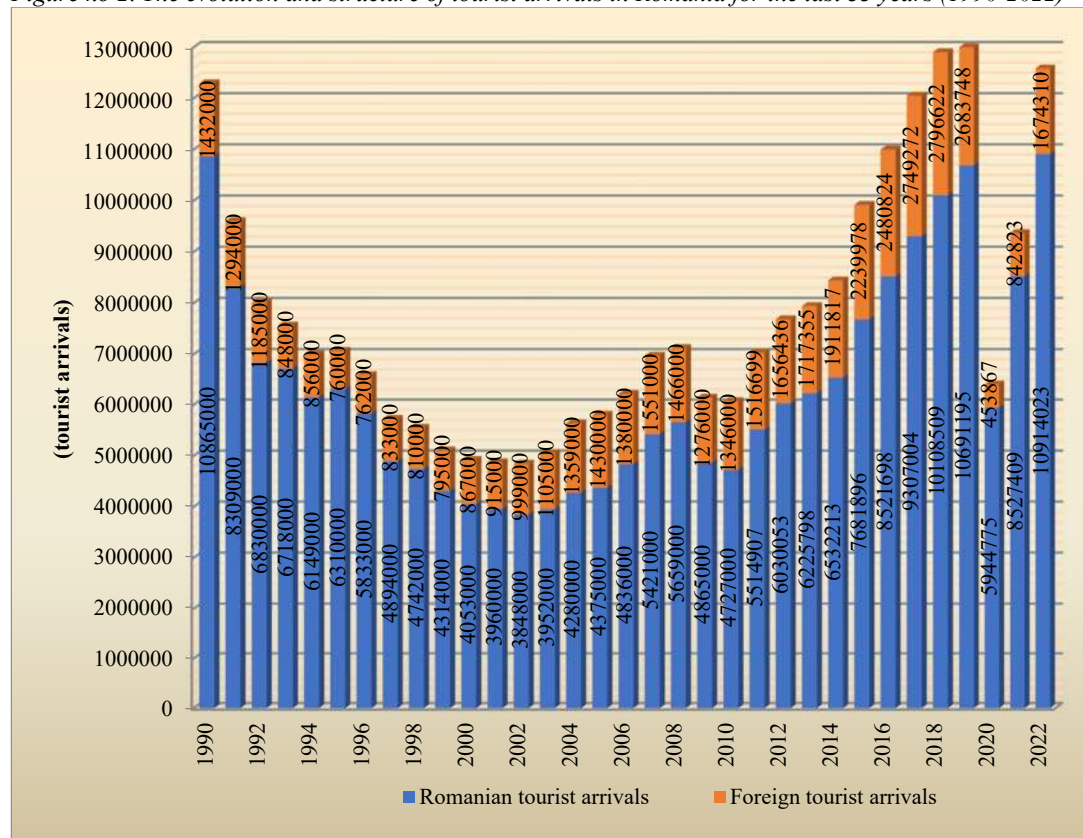
Source: data taken and processed using the Microsoft Excel application from the Statistical Yearbooks of Romania 1990-2023 and Tourism of Romania. Statistical Briefing, 1999-2023, INS, www.insse.ro

The average value of the annual growth rate of tourism in the analyzed period was 1.58% (Table no. 1), with peaks in the periods: 2006-2007 (12.16%), 2010-2011 (15.78%), 2014 -2015 (17.60%), 2020-2021 (46.44%), 2021-2022 (34.34%) and lows in the periods: 1993-1994 (-17.56%) and 1995-1997 (-13%) due to the political instability, the decrease in the quality of tourist services in many resorts and the non-correlation of the offer with the high rates, the insufficient promotion of Romanian tourist destinations on foreign markets; 2010-2009 (-16.73%) due to the financial-economic crisis; 2019-2020, 2021-2022 (-52.17%) due to the travel restrictions during the Covid-19 pandemic.

In case of tourist arrival structure over the last 33 years, we may notice that the Romanian tourists represented 75-90% of the total, and foreign tourists 10-25%, except for the two pandemic years, when due to travel restrictions, the share of foreign tourists dropped below 10%. The average of the analyzed period is 85% for the Romanian tourists and 15% for the foreign tourists. Figure no. 2 shows a doubling of both Romanian and foreign tourists in the period 2009-2019. In 2019, the maximum of the analyzed period was recorded: 13.26 million tourists, of which 10.59 million Romanian tourists (79.93% of the total) and 2.67 million foreign tourists (20.07% of the total). In the post-pandemic period, the number of tourists has recovered, reaching 10.9 million for the Romanian tourists (98% of the total) and 1.6 million for the foreign tourists (13%) in 2022.

Regarding the origin of foreign arrivals in Romania in 2022, the largest share was held by the tourists coming from Europe (75.63% of the total foreign tourists), and of these 73.66% were from the European Union countries. The main issuing countries of tourists for Romania in 2022 were: Germany (183,603 tourists, respectively 11% of the total foreign tourists), Israel, Italy, the USA, France, Hungary (each with 5-10 percentages), the Republic of Moldova, Poland, Ukraine, Spain, Bulgaria, Turkey, the Netherlands, Austria, Greece, Belgium, Serbia, China, Russia (Figure no. 3).

Figure no 2. The evolution and structure of tourist arrivals in Romania for the last 33 years (1990-2022)



Source: data taken and processed using the Microsoft Excel application from the Statistical Yearbooks of Romania 1990-2023 and Romanian Tourism Statistical Abstract, 1999-2023, INS, www.insse.ro

The demand structure by comfort category of the accommodation units (Figure no. 4) in 2022 showed that 51.22% of tourists preferred 3-star accommodation units (6,447,657 tourists), followed by 4-star ones (31.30%, respectively 3,940,077 tourists); the foreign tourists preferred higher degree of comfort (4 and 5 stars) for their accommodation.

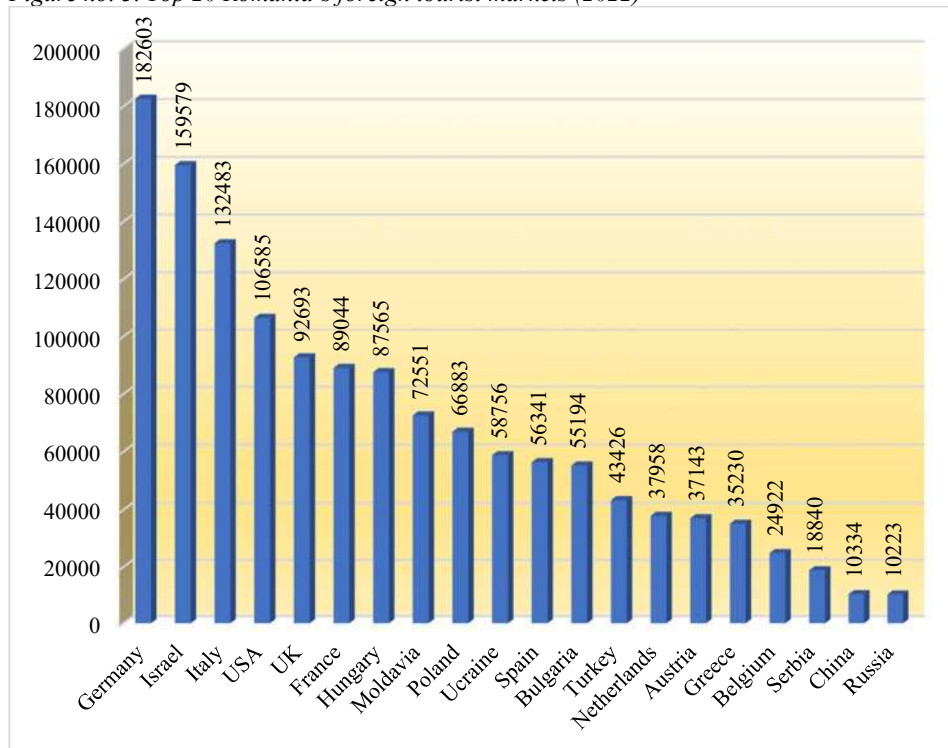
The structure of tourist arrivals by destinations in 2022 showed (Figure no. 5) that most tourists preferred urban (43.29%, respectively 5.4 million tourists) and mountain destinations (19.41%, respectively 2.4 thousand tourists – increasing compared to previous years), followed by the seaside (10.28%, respectively 1.3 million tourists) and the spa resorts (8.88%, respectively 1.1 million tourists).

The overnight stays in the accommodation units in 2022 totaled 27,044,372. Those of Romanian tourists represented 86.44% (23,377,839 overnight stays), while the overnight stays of foreign tourists represented 13.56% (3,666,533 overnight stays) of the total number of overnight stays.

The average length of stay in 2022 was 2.14 days for the Romanian tourists and 2.18 days for the foreign tourists. This indicator remained at values around 2, a maximum of 2.3 days throughout the analyzed period, with higher values for destinations such as the seaside and spa resorts.

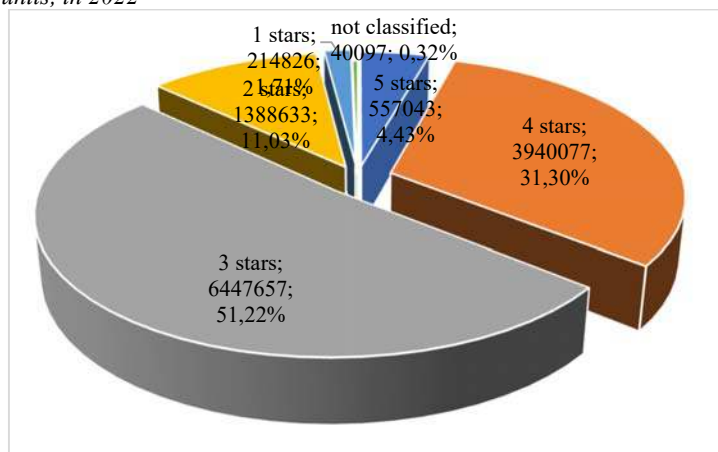
The net use index of the tourist accommodation capacity in use in 2022 accounted for 29.1% on total tourist accommodation units. Higher rates of net use of accommodation were recorded in hotels (37.8%), tourist villas (24.7%), bungalows (21.9%), rental apartments (23.4%), ship accommodation places (20.9%) and tourist guesthouses (19.9%).

Figure no. 3. Top 20 Romania's foreign tourist markets (2022)



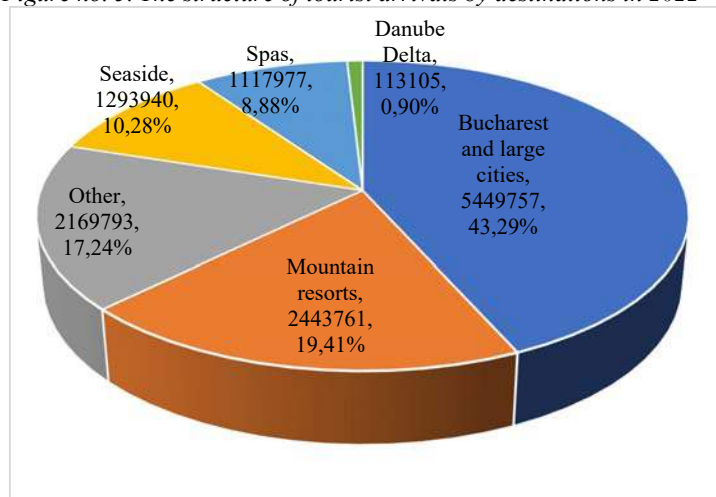
Source: data taken and processed using the Microsoft Excel application from the Statistical Yearbooks of Romania 1990-2023 and Romanian Tourism Statistical Abstract, 1999-2023, INS, www.insse.ro

Figure no. 4. The structure of tourist arrivals in Romania by the comfort category of the accommodation units, in 2022



Source: data taken and processed using the Microsoft Excel application from the Statistical Yearbooks of Romania 1990-2023 and Romanian Tourism Statistical Abstract, 1999-2023, INS, www.insse.ro

Figure no. 5. The structure of tourist arrivals by destinations in 2022



Source: data taken and processed using the Microsoft Excel application from the Statistical Yearbooks of Romania 1990-2023 and Romanian Tourism Statistical Abstract, 1999-2023, INS, www.insse.ro

5. Conclusions

For the tourist destination Romania, the most significant tourist indicator of tourist demand, the number of tourists or arrivals, has registered some significant fluctuations in the last 3 decades. It dropped sharply in the period 1990-2003, from 12.2 million tourists to about 5 million tourists due to intricate economic, social and political reasons. There has been a constant increase in tourist arrivals since 2003, up to over 7 million tourists in 2008, due to the increase in income and living standards of the resident population. In the years 2009 and 2010, tourist arrivals fell significantly by 1 million tourists compared to the previous years, due to the economic crisis. There has been a significant increase in tourist arrivals since 2011, due to the significant investments of the Ministry of Regional Development and Tourism from 2009-2012 in tourist infrastructure and in marketing and promotion of Romanian destinations, from European and state budget funds. In 2014, a peak of 8.4 million tourists was recorded, through the implementation of some coherent action plans for the strategic coordination of tourism.

The period 2015-2019 was one of unprecedented revival in the number of tourists, so that more than 12 million tourists were recorded in 2017, then 12.8 million tourists in 2018 and 13.2 million tourists in 2019. That was the result of a better involvement of the Ministry of Tourism in initiating and applying laws and reforms in the field of tourism, a better promotion of the Romanian tourism, as well as a diversified offer of tourism operators.

In 2020, as a result of the COVID-19 pandemic, the number of tourists halved (6.4 million), and that of foreign tourists was reduced to a quarter of the value recorded in the previous year. In 2021, although the restrictive measures were maintained due to the COVID-19 pandemic, the number of tourists recovered, reaching 9.4 million. There is a decline in foreign tourists, from over 2 million before the pandemic, to below 1 million in 2020 and 2021, due to restrictions on international travel during the pandemic. Normal values of tourist arrivals were recorded in 2002 (12.6 millions), as a result of the pandemic restriction lifting and a rapid return of this activity sector.

In case of tourist arrival structure over the last 33 years, we may notice that the Romanian tourists represented 75-90% of the total, and foreign tourists 10-25%, except for the two pandemic years, when due to travel restrictions, the share of foreign tourists dropped below 10%.

The average value of the annual growth rate of tourism in the analyzed period was 1.58%, with peaks in the periods: 2006-2007 (12.16%), 2010-2011 (15.78%), 2014 -2015 (17.60%), 2020-2021 (46.44%), 2021-2022 (34.34%) and lows in the periods: 1993-1994 (-17.56%) and 1995-1997 (-13%) due to the political instability, the decrease in the quality of tourist services in many resorts and the non-correlation of the offer with the high rates, the insufficient promotion of Romanian tourist

destinations on foreign markets; 2010-2009 (-16.73%) due to the financial-economic crisis; 2019-2020, 2021-2022 (-52.17%) due to the travel restrictions during the Covid-19 pandemic.

Most tourists preferred urban and mountain tourist destinations, followed by the seaside and spa resorts (8.88%, respectively 1.1 million tourists). The majority of tourists preferred 3-star and 4-star accommodations. Romania's foreign tourist markets in 2002 were Germany, Israel, Italy, USA, France, Hungary. The average length of stay in 2022 was 2.14 days for the Romanian tourists and 2.18 days for the foreign tourists. This indicator has settled at values of 2, a maximum of 2.3 days throughout the analyzed period, with higher values for destinations such as the seaside and spa resorts. The net use of accommodation units in 2022 was 29.1% on total tourist accommodation structures, with higher rates for hotels and tourist villas.

According to the Romania's National Strategy for Tourism Development 2023-2035, Romania will become a well-known, high-quality tourist destination throughout the year, focused on the uniqueness of its cultural and natural heritage and offering high quality services. Romania will climb on the top of tourism competitiveness rankings, thanks to strategic investments in infrastructure, training, marketing and promotion, which will result in some unique experiences for the visitors traveling to Romania, making it attractive for the relevant European and world markets.

Tourism will significantly increase its contribution to economic growth and development in Romania. The focus will be on the quality and diversity of tourist offer for the incoming visitors. Given the current conditions, generated by the pandemic and the war in Ukraine, 2.8 million foreign tourists are forecasted in 2025, 4.6 million foreign tourists in 2035 and the increase of their average length of stay to 2.2 days in 2025 and 3,3 days in 2035.

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The Impact of Organisational Communication Quality on Employee Satisfaction

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Abstract

Managers in public institutions are increasingly concerned with achieving high quality and effective communication and raising awareness of its importance among members of the institution, with effects on improving: leadership effectiveness; employee motivation and satisfaction; employee trust in the institution and their commitment to both work and the organisation; improving the relationship between managers and subordinates. This requires managers to continually adapt organisational communication strategies, policies and practices to facilitate the achievement of the institution's mission and objectives. The study aims to analyse organisational communication, from an internal perspective, with a view to improving its quality according to the requirements of external and internal stakeholders. At the same time, we aim to identify management practices and factors that can positively influence the quality of communication and employee involvement in the communication process, with effects on increasing employee satisfaction, based on the example of a public institution within the state administration.

Key words: organizational communication, communication management, communication channel, communication effectiveness

J.E.L. classification: M10, M19

1. Introduction

In recent years, researchers and practitioners have become increasingly concerned with communication in different organisations, seen as a defining tool and element for organisational management, in response to growing concern about the problems it raises as it has become increasingly complex and sophisticated. In the view of modern management, all management activities and processes are initiated and carried out to a large extent through communication, and the ability to communicate is seen as a fundamental management competence. Communication "skills occupy an important place among the significant managerial skills of any organisation" (Armstrong, 2014, p.438).

Even though there is a relatively large body of research in this area, knowledge about management communication is not up to expectations. The literature on communication is focused on theoretical and technical aspects of communication and less concerned with empirical studies. As a consequence, there is a lack of understanding and competence in communication management. There are few empirical studies related to organizational communication from an intentional (intraorganizational) perspective that examine managerial perceptions of communication in organizations (Hargie, & Tourish, 2009). As a consequence, we can say that there is a lack of understanding and concern for addressing communication management in

organisations. In addition, most communication research tends to focus on theoretical issues of organisational communication rather than empirical studies (Kinicki, & Williams, 2016). Therefore, a broader view of organisational communication is needed, which involves addressing its role in ensuring the effectiveness of human resource management practices and employee satisfaction as a measure of organisational performance (Cooper, 2005).

Communication in public institutions plays a major role, given that their activity is based on transparency towards the citizen (taxpayer), as a principle of good governance, who finances their existence and functioning through the tax system. It is precisely for this reason that it is important for the work of public institutions to be known, which is why the study of the quality and effectiveness of organisational communication plays an important role, leading to the awareness of managers and other employees in public institutions to pay due attention to the communication that has its mark on the success of these organisations (Robbins, 2016)

2. Literature review

Increasing the volume of information and making the most effective use of it is leading managers to take an interest in developing communication skills. The ability of managers to shape meaning and social reality through communication processes is fundamental to the success of their organisations. Communication can be considered a basic aspect of human existence; no discipline of study is more important to society than communication (Bell & Martin, 2014). Lack of proper communication within an organization can create confusion and cause processes and programs within the organization to fail. According to the literature many authors have tried to formulate a clear, complex definition of the term communication, but nevertheless we can see a broad conceptualization of this concept.

Communication can be seen as the set of processes through which several people relate to each other in order to achieve goals. Technically communication facilitates the exchange of information within an organisation and communication management ensures effective coordination of all internal and external communication flows with all relevant stakeholders (Cornelissen, 2008).

A proper employee feedback system ensures effective, open communication between the institution's leadership and employees, and if employees feel that they are taken into account, listened to, and acknowledged, they will be more loyal to it and more receptive to providing trust. If we refer to the importance of feedback in organisational communication, we can see that there are approaches in the literature that argue that feedback is effective, primarily in verbal communication, but also in written communication that is well thought out, clear and logical, even if their main disadvantage relates to the greater consumption of time (Robbins, 2016).

Redding (1988), considered the founder of the field of organisational communication, argues that all complex organisations, seen as social structures, are characterised by four essential features: interdependence; differentiation of tasks and functions; goal orientation; control. Even though the author does not include communication among the defining characteristics of organizations, he considers that it is found in all four defining characteristics of organizations (Sinding & Waldstrom, 2014).

In the last two decades, it has been observed that the concept of management is increasingly integrated into the field of communication in more and more organizations (Cornelissen, 2008). Organizational communication can be seen as a management tool through which all forms of internal and external communication, used consciously, are harmonized as effectively as possible to create a favorable basis for the relationships with employees and teams on which the effectiveness of the organization depends (Hargie & Tourish, 2009). Organizational communication should be approached as a strategic action practiced by professionals within an organization to create and maintain strong internal and external relationships with relevant stakeholders (Hynes, 2016)

All these aspects of organisational communication demonstrate that it is not simply a means of transferring information, but needs to be approached from a broader internal and external perspective, as a complex process through which meaning is given to all the actions of organisational members (Robbins & Judge, 2019).

Effective and quality organizational communication has long been credited as a primary factor in achieving high levels of organizational effectiveness (Goodman, 2001). Organizational communication can encompass public relations, citizen relations, employee relations, internal intra-organizational communication (Van Riel & Fombrum, 2007). The proper implementation of organizational communication, from an internal and managerial perspective, can influence an organization's ability to achieve its goals and organizational effectiveness (Young, & Poost, 1993). It can be seen as a key management strategy (Goodman, 2000, p.71). In public institutions, organisational communication management should facilitate the transfer of information and knowledge between relevant stakeholders to ensure organisational quality and effectiveness as a measure of performance.

The success of organisations cannot be conceived without appropriate, realistic and effective strategies and policies, among which those concerning communication play an important role. At the same time, the study of communication in public institutions has focused on organisational communication associated with employee satisfaction, which allows to link the strategies and policies of these organisations and communication management with managerial communication (Armstrong, 2014). More and more experts believe that effective communication is a major success factor in a complex working environment based on trust. Organisational communication from a managerial perspective can be considered a critical core competency critical to organisational success (Bell & Martin, 2014).

3. Research methodology

In order to analyse the quality and effectiveness of communication in the public institution that was the subject of the research (in our case an institution within the Romanian state administration with more than 400 employees), a survey was carried out based on the perception of employees (managers and employees without managerial responsibilities) regarding the effectiveness of communication policies, practices and processes, seen as a management tool, which included the sources of information, the environment and the means of transmitting information. The main objective of the study undertaken was to identify best practices and factors that determine the quality and effectiveness of communication in the public institution, based on a scientific foundation, in order to determine the impact of the quality of organisational communication on employee satisfaction. The research hypothesis aims to test whether there is a significant and positive relationship between the quality of organizational communication and employee satisfaction.

The research carried out is based on a case study, in which the chosen method is the survey with the questionnaire as the main instrument, designed for organizational communication as the main component of the management of the public institution, which is the subject of the research. In order to identify and implement best practices for improving communication effectiveness, we focused on improving organizational communication skills, with reference to the factors that determine the quality of organizational communication, based on the perception of employees who are part of the research sample.

The questionnaire design is focused on the research objectives, and includes items appropriate to the research topic and objectives. Thus, there are dichotomous items with answers of "YES" or "NO" to characterize the general factors that influence the effectiveness of organizational communication in the public institution, to which are added items, which refer to specific factors and practices of communication management, to assess agreement, on a Likert scale from 1 to 5 (where: 1 = total disagreement, 5 = total agreement). STATA 18 software was used to process the data. The distribution of questionnaires and their collection was carried out from 01 September 2023 to 31 October 2023 on a sample of 43 people (8 managers and 35 employees).

In order to highlight the relevant sample characteristics and establish the sample profile, qualitative, structural variables were analysed to determine the extent to which they have statistical association relationships. The highlighting of the association, i.e. the statistical relationships between variables was based on a construct on the association relationships between variables, using the bivariate model, Based on the analysis of variance regarding the association of the

structure variables *Gender, Function, Level of education, Length of service in the institution, Age*, we can see that the individual profile of the respondent includes people: female; with the function of employee without managerial position; with university education; with length of service in the institution between 5-10 years and with age between 30-35 years.

The analysis of the main characteristics of communication, from an internal managerial perspective, in the public institution, and the identification of the main links between its dimensions, is based on a construct comprising items, i.e. primary variables, which compose the aggregate variables that express the characteristics of organizational communication, communication management practices and the factors that determine it. The aggregate variables, which are the basis of the construct, are: "*Quality of organizational communication*" (*Cl.cm*); "*Employee satisfaction*" (*Sf.ag*) in the public institution.

In order to perform the statistical analysis of the variables that are the subject of the construct, i.e. to verify the relevance of the information they contain and the correctness of the construct, the reliability analysis was performed, the results of which are included in Table 1.

Table no. 1 Reliability analysis test scale

Variable	Sign	Number of items in the scale	Average interitem covariance	Cronbach's Alpha
Cl.cm	+	15	.3712136	0.8142
Sf.ag	+	11	.3150214	0.8091

Source: Own research. Results provided by STATA 18

In our case, we can see that all the two aggregate variables have a good internal consistency, given that the *Cronbach's Alpha* coefficients, calculated with the statistical software STATA 18, have values greater than 0.80, values that are within the limit of acceptability.

4. Findings

4.1. Analysis of organisational communication

In order to approach organisational communication at the public institution under analysis from an internal managerial perspective and to identify the factors and best practices that determine it, we first analysed the information from the questionnaire applied to the general factors that determine the quality and effectiveness of organisational communication. Thus, according to the perception of the respondents, after processing the questionnaires the following results:

- All respondents to the questionnaire (100%) highlight the fact that the institution has an internal regulation, which corresponds to its activity profile. It is an important document that guides the members of the institution (managers and non-managerial staff) in the achievement of general and individual specific objectives;
- 93.03% of respondents say that the general and specific objectives of the institution have been communicated to employees. In order to facilitate and monitor their achievement, all managers' decisions are recorded in documents drawn up at the institution level and posted on the internal website for the employees to see;
- in the opinion of 76.75% of the respondents to the questionnaire, the institution has adequate strategies and policies to achieve its objectives, which mainly concern: defining and determining strategic objectives; establishing and reviewing the methods and procedures that are used; establishing how to measure strategic objectives; ensuring sufficient communication channels, etc;
- 69.77% of the respondents to the questionnaire believe that the leadership in the public institution identifies significant risks to the work of the institution and manages them appropriately and effectively;

- 86.05% of the respondents to the questionnaire believe that developing organisational communication skills, primarily in front-line members of the organisation, is a key factor in ensuring the success of the organisation;
- 79.07% of the respondents are of the opinion that the institution monitors and measures organisational performance both at the organisational level and for key processes, including those related to organisational communication, to achieve the overall objectives of the institution;
- in the opinion of 88.38% of the respondents, the public institution has a specialised communication department dealing with the external environment: citizens, media, other institutions and economic and social organisations;
- 69.77% of the respondents to the questionnaire believe that communication strategies and policies are integrated into the institution's strategies and policies, which allows: establishing appropriate sources and types of information; improving the quality of information; optimising information flows at the level of the institution's sub-units;
- the institution, in the opinion of 72.10% of respondents, has sufficient and effective communication channels to ensure that messages are transmitted and received in real time;
- 67.45% of the respondents are of the opinion that the institution pays attention to transparency of information as a basic principle of institutional governance, by posting on the institution's website all information of public interest administered by the institution, in compliance with the law, as well as by posting it on the institution's premises;
- The top 5 common values shared by respondents to the questionnaire, which they consider important for the institution, are: integrity (81.40%); communication (79.07%); citizens first (78.58%); responsibility (74.42%); honesty (72.10%). We note that communication ranks second among the 5 values, which means that 79.07% of respondents consider it very important for the institution's activities.

All these aspects resulting from the public institution in the field of state administration demonstrate that its management has adequate communication management skills and practices that can ensure the quality and effectiveness of organizational communication according to the expectations of relevant internal and external stakeholders.

4.2. Quality of organisational communication

Based on Grunig & Grunig's (1992) assessment that communication is considered the most effective and ethical approach in achieving total quality in organizations, in this study, we aimed to evaluate and analyze the quality of organizational communication, from an internal and managerial perspective, of the public institution, in the field of state administration. For this purpose, primary data were used from the questionnaire used regarding the quality of the communication process represented by the aggregate variable *Cl_cm*. The construct of this variable comprises 15 items/primary variables, and is characterised by a good level of internal consistency and reliability (Cronbach's Alpha 0.8142) Table 1.

Table no. 2 *Cl_cm Sf_ag*, statistics (count mean sd se mean cv)

Variable	N	Mean	sd	se(mean)	cv
Cl_cm	43	3.9475	.6827	.0304	.1512
Sf_ag	43	3.9268	.6711	.0409	.1497

Source: Own research. Results provided by STATA 18

The variable *Cl_cm* according to the data presented in Table 2, records a mean of 3.9475, with "sd" (standard deviation) of .6827, considered good, in relation to the variation of responses from the mean. The standard error, "*se(mean)*" has a value of .0304 and shows a good approximation of the mean of the variable to its true value (relative to the statistical population from which the

sample was drawn), and indicates that the true mean will most likely be between 3.7651 ($3.9475 - 0.0304 \times 2$) and 4.0283 ($3.9475 + 0.0304 \times 2$). The coefficient of variation (*cv*), is .1512, which means that the statistical population, has a good degree of homogeneity.

Next, we will characterize the 15 primary variables that make up the *Cl_cm* variable. A survey was used for the analysis, which facilitated the assessment of respondents' perceptions of communication quality characteristics, given the representativeness of the sample. According to the analysis of the primary variables composing the aggregate variable *Cl_cm*, with the help of the main indicators of descriptive statistics (mean score, mean standard deviation, standard error, coefficient of variation) we can see that the following factors contributed to the quality of communication in the public institution of the state administration, with the mean scores recorded:

- managers of the institution provide employees with genuine communication opportunities and channels appropriate to the content, delivery methods, confidentiality and other institution-specific factors to express their opinions and influence decisions that directly affect them (3.9824);
- communication, in the institution, is an effective tool for informing the manager directly about problems identified in the workplace, (4.0382);
- communication, in the institution, is an important support for ensuring trust in the relationship with the managers of the institution, (4.0533)
- managers and other non-managerial staff facilitate the provision of timely and accurate information to citizens, (4.0805);
- communication with employees of the institution is seen as an important support when there are problems within the institution, (4.0267);
- communication with direct boss/manager creates a sense of security and trust, (4.0114);
- employees, in dealing with managers and other colleagues, provide fair and honest feedback, (3.9608);
- communication in the institution meets the requirements of employees for the effective conduct of work/work, (3.8817);
- communication processes in the institution stimulate the involvement of employees for the smooth running of the institution, (3.9162);
- satisfaction with the quality of communication in the organization is perceived positively (3.9549);
- the managers of the institution are concerned with continuously improving the quality of communication according to the requirements and expectations of its members, (3.9081);
- there is fair and honest communication between managers and employees that goes both ways (manager-employee, employee-manager), (3.8943).
- the information provided corresponds to employees' needs, i.e. their capacity and ability to facilitate the achievement of the institution's general objectives and the employees' individually specific objectives (4.0331);
- information is communicated to the right decision-makers in real time, is correctly understood and has credibility (3.9235);
- The ability to communicate is considered a core management competency (3.8738);

As we can see the means of the 15 primary variables range from 3.8738 to 4.0805 and the mean standard deviation has acceptable values ranging from .5743 to .9774. Also the standard error and the coefficients of variation show acceptable values, which demonstrates the correctness of the construct of this variable, as well as the relevance of the analysis performed.

If we analyse the primary variables that are part of the *Cl_cm* variable, we can see that the effort of the institution's managers to ensure the quality of managerial communication is best perceived in the following directions:

- providing genuine communication opportunities and channels for employees;
- makes it easier for employees to obtain accurate and timely information from citizens;
- communication is considered an effective management tool providing the necessary information to perform the tasks in the workplace;

- communication must effectively contribute to the achievement of organizational objectives;
- developing the knowledge and skills necessary for members of the institution to facilitate effective communication at all levels of the organization in order to achieve the objectives and mission.

4.3. Employee satisfaction

In general, it is approached as a committed attitude towards his workplace, respectively as "a positive feeling towards the job resulting from an evaluation of its characteristics" (Robbins, Judge, 2013:424).

Employees in public institutions interact with citizens. Since managers in these establishments should be concerned with the level of trust and satisfaction of citizens in their organisation, employee satisfaction will be linked to positive employee outcomes, and will be assessed based on the perception of questionnaire respondents. Employee satisfaction, represented by the variable *Sf_ag*, is composed of 11 primary variables. It has a good internal consistency at a Cronbach's Alpha coefficient of 0.8091 (Table 1). According to the data presented in Table 2 the *Sf_ag* variable has a mean of 3.9268, with a standard deviation "sd" of .6711 and a standard error of .1497, which demonstrates the correctness of its construct. At the same time, the analysis of the structure of the variable *Sf_ag*, through the indicators of descriptive statistics shows the relevance of the primary variables that compose it.

The primary variables that make up the aggregate variable *Sf_ag*, with corresponding mean scores based on the perception of the questionnaire respondents are as follows: employee is satisfied with communication in relation to colleagues, (3.9615); communication in the institution meets the requirements of the employees for carrying out the work/job, (3.9042); the granting of rewards in the institution is based on correct criteria, (3.8207); the employee is satisfied with the appreciation of the direct manager, (3.8465); the quality of communication in the institution positively influences the employees' commitment to work and institution, (3.9742); organisational communication in the institution is simple and effective, (3.9674); communication and feedback stimulates the employee in achieving individual specific and overall goals of the institution, (3.9677); rewards for performance are fair and in line with the employee's personal aspirations, (3.8724); practices and procedures regarding the communication process facilitate the accomplishment of work tasks, (3.9958); relationships between functional areas in terms of communication and control are appropriate and effective, (3.9239); communication of managers of the institution with employees is honest and fair, (3.9502).

From the analysis of the primary variables, presented above, it appears that the most important factors that contributed positively to employees' perceptions of job satisfaction relate to: communication in relation to colleagues; communication in the institution meets employees' requirements to perform job tasks; quality of communication influences employees' engagement in work; effective definition and communication of tasks and responsibilities to employees.

The issues that raised problems in ensuring organisational quality and employee satisfaction relate to the following aspects: ensuring alignment between rewards for performance and the employee's personal aspirations; how the direct manager values the employee; ensuring the effectiveness of relationships between functional areas in terms of communication and control, and establishing appropriate and fair criteria for awarding rewards.

4.4. Statistical links between the variables *Sf_ag* and *Cl_cm*

In order to analyze the statistical relationships between the variables *Cl_cm*, the dependent variable *Sf_ag*, we first determine the association relationships (correlations) between these two variables using correlation coefficients. Based on the data provided by STATA 18 software, we can see that the strength of the relationship between these two variables can be characterized as very strong and positive (correlation *Cl_cm Sf_ag* - 0.8279).

To determine the magnitude of the impact between the independent variable *Cl_cm*, and the dependent variable *Sf_ag*, regression analysis *was* performed. The results are summarised in Table

To determine the impact of the independent variable *Cl_cm*, on the dependent variable *Sf_ag*, we performed regression analysis using the econometric model provided by STATA 18.

Table no. 3 Impact of the independent variable *Cl_cm* on the dependent variable *Sf_ag*

Independent variable	N	Prob > F	R-squared	Coef.	Std. Err	t	P> t
<i>Cl_cm</i>	43	0.0000	0.8437	.7926519	.0338595	23.41	0.004

Source: Own research. Results provided by STATA 18

Following the regression analysis we can see from the results provided by the econometric model (Table 3) that the independent variable *Cl_cm* has a significant impact on the dependent variable *Sf_ag*. We can thus see that the variable *Cl_cm* explains 84.37% of the variation in the variable *Sf_ag*, which is supported by the significance value of the "F" statistic, Prob > F = 0.0000<0.05. The regression coefficient of the independent variable *Cl_cm* is non-zero and positive at P>|t|=0.000 (< 0.05), which shows that this variable has a significant and positive impact on the *Sf_ag* variable. It thus follows that for a one unit increase in the *Cl_cm* variable, the *Sf_ag* variable will increase by .7926519 units;

These values provided by the econometric model used for the regression analysis express the fact that the variation of the variable *Cl_cm* largely explains the variation of the variable *Sf_ag* (R-squared is 0.8437). This means that the quality of organisational communication is a good predictor of increased employee job satisfaction.

5. Conclusions

The empirical study provides evidence on the impact of organisational communication on employee satisfaction as a measure of the performance of a public institution in the field of state administration. Although research on the direct influence of communication on organizational performance has focused on a wide range of communication variables, our study focused on assessing the quality of organizational communication from an internal managerial perspective at the public institution under investigation. From this perspective, the results of our study legitimize the opinions of well-known specialists, published in the literature, who identify a positive relationship between organizational communication management and performance, at the individual, group or organizational level (Cornelissen, 2008). This conclusion, is also verified in our study, which demonstrates that communication quality has a significant and positive impact on employee satisfaction.

Managers of the public institution, which is the subject of the study, need to be concerned with both the quality of organisational communication and the effectiveness of communication management, sources of information and ways of transmitting it in order to develop and implement effective organisational communication programmes.

To measure and analyse the quality of organisational communication from an internal organisational perspective and employee satisfaction, based on the perception of the respondents, the questionnaire was used as a basic tool, taking into account both the characteristics of the public institution and those of the human resource management and organisational communication process

Based on the respondents' assessment of the quality of communication, we find that the issues that need to be on managers' attention to ensure the quality of organizational communication and improve employee satisfaction relate to:

- participation of managers and other employees in training programmes to acquire appropriate general and specific organisational communication skills;
- promoting open internal communication to encourage exchange of views and facilitate internal collaboration and dialogue, to which we can add trust, satisfaction and commitment;
- promotion of an appropriate organisational communication policy to improve the psycho-social climate within the institution in order to ensure employee satisfaction; confidence in the future; appropriate stimulation and motivation;
- identification and implementation of appropriate communication management practices, with its organisational communication component, in which an important role is played by communication strategies and policies, organisational culture based on a common value system shared by all members of the organisation, and appropriate human resource management practices;
- conducting an audit of organisational communication, highlighting communication barriers and other issues that may negatively affect its quality, in order to find the most appropriate solutions to improve its quality and effectiveness.

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Human Resources Management in Tourism Industry

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Abstract

The quality of tourism services depends to a very large extent on the work of employees and also on human resource management, which has the role of ensuring that the work is carried out in the best possible conditions for maximum efficiency. The importance of human resource management in this sector lies in the many advantages it offers, particularly in terms of competitiveness. In this respect, human resource management has a responsibility to obtain, select, motivate, educate and develop, reward and retain its employees. The purpose of this paper is to indicate the importance of human resources in modern tourism. In order to carry out the research, official statistical data provided at European level on the development and type of employees in the tourism industry were analysed, as well as the extent to which human resource management strategies can influence these data were analysed.

Key words: tourism, labour, HR, management

J.E.L. classification: Z3

1. Introduction

Socio-economic as well as technological changes influence the development of modern tourism. Today, tourism is of economic importance for many countries and provides employment to an increasing number of people, being a labour-intensive activity that depends heavily on the quality of human resources. This can be achieved and maintained through strategies of human resources management through studying interpersonal relationships within an organisation, and creating a sustainable human resources policy based on motivation, education and evaluation of results and achievements. In order to achieve these objectives, human resource management is the complex and integrated tool that serves to manage all employees within organisations and in the tourism sector.

The role of human resource management is to ensure a structure of employees who are suited to the jobs they fill in terms of skills, knowledge and abilities. HR management also helps to achieve the company's goals by determining the necessary motivation and interest of employees and developing strategies to achieve sustainable competitive advantage and success of the organization (Bahtijarević-Šiber; 2014). The effectiveness of HR management is also determined by the skills and characteristics of each individual employee, and not only by management methods and strategies. Human potential is extremely important for the success of any company. Human potential is one of the elements that determine the value of a hotel company, for example. Thus, in order to increase the value of intellectual capital and the overall quality of tourism products and services, hotel management hires quality staff, invests in education and establishes the system of evaluating staff and business results, constantly rewarding and improving quality staff. All this is reflected, in the tourism sector, by indicators such as the number of employees, the evolution of the number of employees; the length of time they are employed and most importantly, the satisfaction of tourists with the services they receive.

2. Literature review

Modern management emphasises the role and importance of employers, as well as the importance of psychological factors (skills, goals, motives, expectations) for successful business. Human Resource Management (HRM) refers to the practices and policies that are necessary for management operations related to personal questions to be carried out. This issue is particularly concerned with hiring, training, evaluating and rewarding employees within the hotel company, and ensuring a safe, ethically acceptable and fair environment for them (Gary, 2007).

Human resource management has been defined as "a distinct approach to employment management that seeks to achieve competitive advantage through the strategic deployment of a highly engaged and capable workforce using an integrated range of cultural, structural and personnel techniques" (Storey, 1995). In a simpler sense, human resource management is "activities designed to secure and coordinate an organization's human resources". (Lloyd et. al, 2004)

The four key dimensions of human resource management include (1) commitment: employees are expected to identify the interests and goals of the organization and to be aligned and committed to achieving those goals; (2) flexibility: employees are expected to adapt willingly to changes in the organizational structure without conflict or prejudice; (3) quality: high-level achievement of organizational performance depends on the quality of staff members and the leadership of such an organization; (4) integration: this involves matching human resource strategies with the needs of the business strategy. (Omotayo and Adenike, 2012)

The dimensions and characteristics of human resource management also apply to tourism. A company's human assets (its human resources) are the most important component for most hospitality businesses. Human resources are usually the first point of contact between a hospitality establishment and its customers. Effective management of these human resources is therefore vital to the success of the business. Human resource policies are part of an organisation's overall policy, fulfilling several roles. The extent to which they are a sub-policy or an essential component of overall policy can be a key indicator of how an organisation values its human assets and HR or personnel function (Mason, 2003).

Thus, the human component within a tourism establishment can fulfil several roles within the organisation, which depend on the nature and terms of reference provided by the decision-makers, on the one hand, and competences in line with the tasks of those performing the tasks, on the other. For the purpose of delineating human resource goals, Torrington (1992) identified four roles of human resource managers: (1) establishing formal systems of recruitment, selection, evaluation, discipline and grievance management; (2) creating systems of involvement and participation; (3) providing a longer-term plan for job numbers, together with programmes of skills, quality and career development; (4) working strategically with top management to create organisational structures and management development systems. (Torrington et. al, 2002)

For employees to fulfil their strategic role in organisations, they must be ready to contribute to their development and growth. In other words, they should be ready to add tangible value to the effectiveness and efficiency of the organisation. Thus the aim of HR managers is to become strategic contributors to the success of the organisation by managing human resources in a business-like approach. Human resource systems practices and operations have virtually replaced fundamental personnel management in organisations.

In the main, the nature of HRM-specific activities is driven by large-scale organisational change as employers adapt to a more competitive global economic environment. Management functions and principles are applied to the acquisition, development, retention and compensation of employees within the organisation. It is important for management to have an approachable nature and a friendly attitude. In addition, employees should be provided with opportunities that would lead to their well-being and advancement. Compensation should be commensurate with the job duties performed by employees. (Lewin, 2008)

Thus, the role of human resource management in tourism is to plan, develop and administer policies, measures and programmes that are designed to make optimal use of the human resources of organisations. Human resource management is that part of management that deals with the people employed in organisations and their job tasks. Thus the role of HR management is primarily concerned with the implementation of job tasks. The aim of each individual is to develop the link

with the organisation by making a wholehearted contribution to the implementation of the job tasks. (Burloiu, 1997)

As people are the most important in tourism organisations, motivating employees and all staff should be one of the key tasks of managers. Gaffara and Setiyorini (2010) point out that communication skills and interpersonal relationships are essential for human resource development in tourism. For the performance of the organization it is important for a manager to be resourceful, knowledgeable about business processes. He must be responsible and conscientious when making decisions, courageous when taking business risks and must have a strong will and intrusive, professional and capable associates. (Gaffara&Setiyorini, 2010)

The literature specifies some positive and negative sides of human resource management in the tourism industry. Thus, Keep and Mayhew (1999), for example, in their analysis of the skills problem in the tourism and hospitality industry, suggested that the industry has a number of personnel problems, such as low wages, unfriendly work schedules, poor career structures, short-term hiring or difficulties in recruiting and retaining employees (Keep&Mayhew, 1999). These problems constrain managerial actions and managers' behaviour is determined by these factors. This economic imperative creates a short-term perspective on managerial decision making and human resource management strategy and also means that management is more likely to implement a weak internal labour market.

Other authors consider that this cataloguing of human resource dynamism is a little outdated and that the tourism industry is flexible rather than problematic. In some geographical areas and sub-sectors, tourism and hospitality offer an attractive, high-ranking work environment with competitive wages and conditions that is in high demand in the workforce and benefits from low staff turnover. (Nickson, 2007)

However, hotels are experimenting with new approaches to human resource management in order to adapt to factors influencing management decisions that are different in the tourism industry than in other industries. Moreover, it is argued that the performance of human resource management is reflected in the performance of tourism organisations and customer satisfaction (Hoque, 2000). These challenges facing human resource management in the tourism industry, such as recruiting, developing and maintaining an engaged, competent, well-managed and well-motivated workforce, make the work of managers difficult. Human resource management needs to focus on providing high quality service to customers who are increasingly demanding and discerning.

3. Research methodology

The aim of this research focuses on the influence of human resource management on the evolution of the number of employees in the tourism sector, as well as the duration and type of engagement. The development of the tourism sector leads to the creation of more jobs and human resource management helps to recruit and retain employees with the potential to meet the company's objectives indefinitely.

The research methodology is based on EU-wide statistical data on the evolution of the number of employees for the years 2019-2021, as well as existing patterns in the accommodation sector, relating to gender, age of employees, and period/type of employment.

The indicators chosen to analyse the evolution of seasonal tourism during the Covid-19 pandemic in the European Union are the *evolution of the number of employees in the European Union countries*; the *distribution of employees by area of activity, duration and type of employment contract*, during the period 2019-2021. The data processed in the research were taken from official data provided by Eurostat (2023).

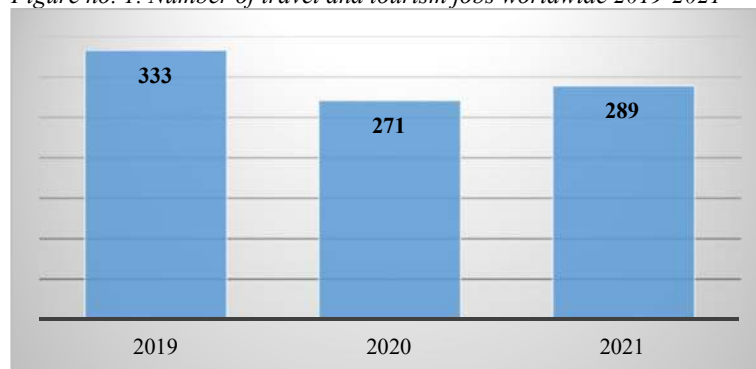
4. Findings

Tourism is an economic activity that generates a huge number of jobs. Since the success and results of work in tourism depend mostly on human resources, it is necessary to take into account the quality workforce, which will be motivated to work and will contribute to the success and competitiveness of the company. However, as stated, optimising the development of tourism will take place in an environment of constant trade-offs between the necessary increase in

competitiveness which, among other things, also means cost reduction, and labour costs, and the expected increase in employment.

The tables and graphics below present the basic indicators of the tourism workforce at global and European level based on official statistical data. Globally, the number of jobs employed in tourism decreased in 2020 and will increase slightly in 2021. This was not caused by poor human resource management necessarily, but by a particular situation that humanity faced during that period, the Covid-19 pandemic. This led to a drastic reduction in tourism activity and thus a reduction in the tourism workforce, among many others. 2020 was a special year because of the outbreak of the COVID-19 pandemic. The measures taken to contain the virus caused a severe economic downturn. There was a hiring freeze in almost all sectors, with tourism being one of the worst hit.

Figure no. 1. Number of travel and tourism jobs worldwide 2019-2021



Source: processed by the authors based on data provided by www.statista.com

The evolution of the number of tourism employees in Europe is shown in figures in Table 1. Each category of employees (employees for their own company, employees for another company, those contributing to their own family business) experienced different dynamics in the years analysed, especially in the years affected by the covid-19 pandemic.

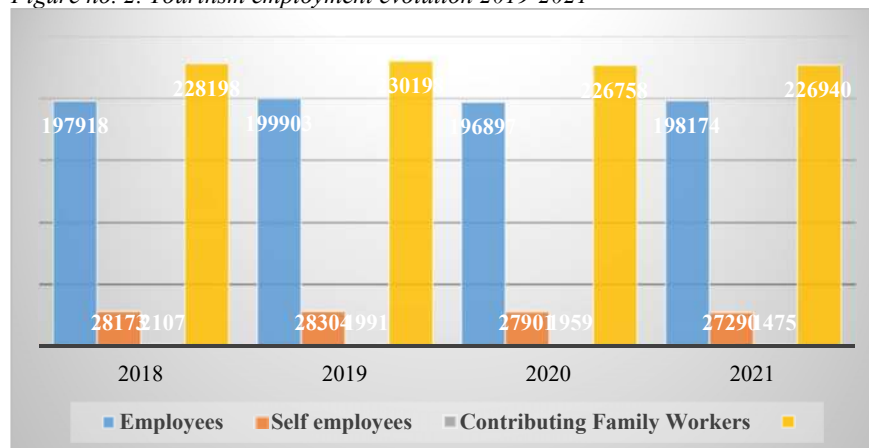
Table no. 1. Evolution of the number of tourism employees in Europe 2018-2021

	2018	2019	2020	2021
Employees	197.918,0	199.903,7	196.897,1	198.174,2
Self employees	28.173,1	28.304,0	27.901,7	27.290,5
Contributing Family Workers	2.107,2	1.991,0	1.959,5	1.475,3
Total	228.198,3	230.198,7	226.758,3	226.940

Source: Processed by the authors based on data provided by www.statista.com

In Europe, the decrease in tourism employment has not been so drastic, with almost the same number of employees in 2020 and 2021. Most of the employees in tourism are those employed for a travel company, while self-employed and contributing family workers account for a very small percentage. This implies a higher degree of human resource management.

Figure no. 2. Tourism employment evolution 2019-2021



Source: Processed by the authors based on data from <https://ec.europa.eu/eurostat> (2023)

The field of tourism is vast and encompasses several interlinked areas of activity. Moreover, as the tourism industry also creates substantial indirect jobs through complementary activities such as retail, food production, services and construction, the total number of jobs in the EU increases to 20 million. The table below shows the distribution of employees in the main tourism industries in Europe over the period analysed.

The “accommodation” sector of the tourism industry includes: hotels and similar accommodation; holiday and other short-stay accommodation; campgrounds, recreational vehicle parks and caravan parks; other accommodation; buying and selling real estate; renting and operating own or leased real estate; real estate agents and managing real estate on a commission or contract basis (Colin&Horodnic, 2020).

Table no. 2. Distribution of employees by area of activity in tourism in Europe 2018-2021

	2018	2019	2020	2021
Air transport	372,6	411,6	389,4	344
Acomodation and food services	9437,8	9515,2	8287,8	7935,5
Accommodation	2393,3	2405,7	1984,2	1877
Travel Agencies	570,3	575,9	485,2	407,4
Total	197918	199903,7	196897,1	198174,2

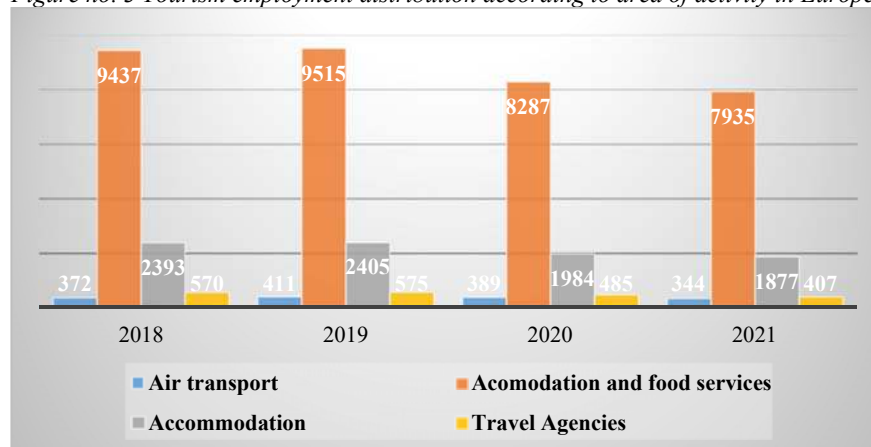
Source: Processed by the authors based on data provided by www.statista.com

Within the selected tourism industries, the share of employees in accommodation and food services was much higher than in travel agencies and air transport. Thus, only 0.2% are employed in the air transport sector and 0.25% in the travel agency sector and 4.5% in the accommodation and food services sector in Europe (mainly accommodation establishments) as can be seen in the graph below. This ranking is driven by the qualifications required for jobs in air transport, and in travel agencies it is the digitalisation of travel agencies, with most bookings now made online. On the other hand, the high number of jobs in the accommodation and tourism services sector is driven by flexibility and acceptability. According to existing European data, a large number of people with a lower level of education (those who have not completed higher education) as well as young people are employed in this sector. (Eurostat, 2023)

Traditionally, tourism industries have a particularly young workforce, as these industries can facilitate entry into the labour market. However, in 2020, the COVID-19 crisis affected the labour market for 15-24 year olds more than other age groups. With a decrease of -25% compared to 2019, the impact on youth employment in selected tourism industries was even heavier than the impact on this age group in the rest of the non-financial business economy, where the decrease was 8%. (Eurostat, 2023).

As tourism tends to attract a young workforce, often at the start of their working lives, some key characteristics of employment in this sector are slightly less advantageous than in other sectors of the economy.

Figure no. 3 Tourism employment distribution according to area of activity in Europe, 2019-2021

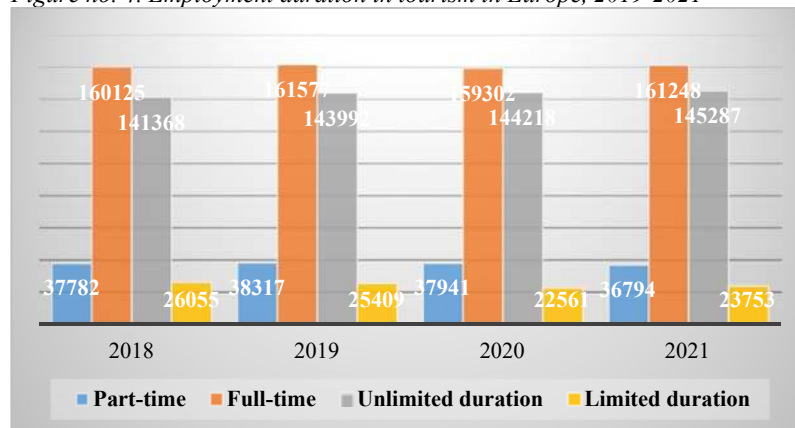


Source: Processed by the authors based on data from <https://ec.europa.eu/eurostat> (2023)

Statistics from the years under review show that full-time tourism jobs and permanent jobs are more common than part-time or fixed-term jobs. If part-time and full-time jobs are analysed separately, there is a major difference between the two. However, human resource management in tourism is blamed for the high number of part-time employees, which is considered to lower the quality of employees at European/global level (Andriotis, Vaughan, 2004). As for short-term jobs, they are determined to a very large extent by the tourism sector.

Although tourism's potential to generate jobs in areas where there are few other employment alternatives has prompted many EU governments to expand their tourism industries, tourism in many EU countries has been criticised for creating seasonal, part-time and low-quality jobs, often filled by migrants and women. The seasonal nature of tourism also creates fluctuations in employment levels and employed workers often have to find other jobs or even remain unemployed in the off-season.

Figure no. 4. Employment duration in tourism in Europe, 2019-2021



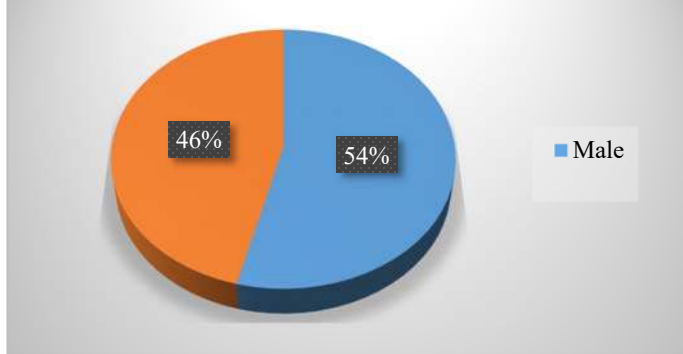
Source: Processed by the authors based on data from <https://ec.europa.eu/eurostat> (2023)

Given that peaks and troughs in labour demand are higher in tourism than in the general labour market, employment characteristics in the tourism industry may differ from the wider EU economy, with fewer permanent or full-time jobs, and therefore so will the socio-demographic characteristics of the workforce.

The tourism industry is known to have a high participation of women. In the hospitality industry, domestic tasks (room organisation, housekeeping and laundry service), food and beverage service,

especially many kitchen tasks, are mostly performed by women. This is also true for reception, cashier jobs, administrative and accounting tasks. Women predominate in travel agency work. However, the number of men employed remains higher than that of women, as shown by statistics from recent years.

Figure no. 5 Distribution of employees in the tourism industry according to gender



Source: Processed by the authors based on data from <https://ec.europa.eu/eurostat> (2023)

Women employed in tourism (in all areas of the tourism industry) account for 46% of jobs and men for 54%. This seems to make the situation rather even. However, the high percentage of women occupying positions in tourism is not determined by comparison with the percentage of men in this industry but by comparison with other industries. Also, jobs in accommodation and tourism services are predominantly occupied by women (Figure 6).

Figure no. 6 Distribution of employees from different industries according to gender



Source: Processed by the authors based on data from <https://ec.europa.eu/eurostat> (2023)

As we can observe, the percentage of men working in industries such as agriculture, construction or transport is significantly higher than for women. The same is not true for the hospitality sector, where the number of women employed (approx. 5,200 thousand on average) is higher than that of men (approx. 4,500 thousand on average).

5. Conclusions

Most employees in the tourism sector are those employed by a company under a contract of employment. The tourism industry sector with the most employees is hospitality. It is characterised by a large number of employees who do not have higher education and young employees aged 15-24. There are also more female than male employees in the hospitality industry, as it is known that female participation in this sector is higher.

The accommodation industry as part of tourism generally includes the hotel sector. Accommodation is the main service provided by the accommodation sector, which is subdivided into resorts, hotels, inns and motels, guesthouses, lodges and other accommodation (Ottenbacher et al., 2009). As specified in the literature and as the analysis in the previous section shows, the hospitality sector generates a higher number of jobs than other areas of tourism. However, this sector is characterised by fluctuations in the labour force, lack of employee qualifications and the predominant presence of women. In this respect, human resource management faces difficulties in creating stable jobs and retaining employees, the main reason being the seasonality of tourism in many countries and regions.

In this sense human resource management can take into account in determining approaches, personalisation despite standardisation. If the service offer can be highly personalised then employees have more discretion and autonomy, leading to a professional or participative approach to HRM. Such a situation exists in luxury hotels, where employees enjoy more discretion or empowerment in the provision of services. Thus, human resource management policy and practice must be compatible with the nature of the service provided to customers.

Given the high number of young and less educated people as well as women employees, one can consider applying a HRM style based on organisational flexibility and the debate between "high road HRM" and "low road HRM". Organisational flexibility can be exercised using two different methods: functional flexibility - emphasising more competencies - and numerical flexibility - emphasising a strict cost control policy (Knox&Walsh, 2005). However, functional flexibility can be achieved through training practices, career development and participative decision-making activities. In the case of short-term or part-time employees, this approach will not be cost-effective, requiring HR management to implement a strategy that involves reducing training and development costs and more characterised by numerical flexibility. Numerical flexibility focuses on outsourced forms of work, such as casual or fixed-term contracts or outsourcing of labour to achieve an optimal cost structure (Kalleberg, 2003).

Numerical and temporal labour strategies are a way to maintain a supply of mobile workers at low cost. However, time-based work strategies can hinder functional flexibility. Compared to permanent employees, casual workers typically receive lower wages and limited training opportunities and career development. At the same time, their commitment to the company is lower, and their lack of training can lead to poorer quality tourism services. Thus, fluctuating demand, the nature of the service offering, organisational flexibility objectives (numerical vs. functional) and the business strategy that the hotel pursues are often seen as decisive factors that determine HRM approaches in the hotel sector.

The presence of more women in the hospitality sector compared to other areas of the tourism industry and to other areas of activity in general is driven by gender dynamics. It is undeniable that women have excelled in the hospitality sector not only in India but across the world. Hospitality businesses predominantly employ women in various positions as it is a core service sector where women are considered as an asset because of their skills. Looking at the current situation, the majority of employees in the industry are women. However, this does not lead to a gap, as there are many industries (agriculture, manufacturing, construction or transport) where the number of male employees is significantly higher.

Therefore, human resource management in tourism and especially in hospitality is in constant motion and needs to be constantly adapted to environmental conditions. Managing human potential includes decisions that have key short and long term effects on the business performance and success of a hospitality company.

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Entrepreneurship Issues in Post Covid Period. Case of Romanian SME's

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Abstract

The post-covid period has meant a challenge for entrepreneurs to adopt strategic decisions. There was the question of returning to the coordinates before the pandemic, a return that proved to be difficult. The aim of this paper is to conduct a bibliometric analysis of the literature on the challenges faced by entrepreneurs as a result of the pandemic. The objective of the research was to delineate the actual situation of small entrepreneurs and, where required, identify solutions to the problems they encountered. To support entrepreneurs, state institutions and representatives of specialized organizations also intervene. Limited financial resources, the insecurity of human resources regarding the continuity of economic activity, as well as the challenges arising from the direction of the international market, combined with the problems of a social and political nature, create situations of uncertainty among entrepreneurs who organize their activity as SMEs.

Key words: crisis, innovation, entrepreneurship

J.E.L. Classification: M21

1. Introduction

Entrepreneurship is the basis of any economy. It has proven its importance and support to the global economy in multiple forms. Entrepreneurial activity has been recognized for decades as an engine of the growth of a country's economy. Entrepreneurial activity has been affected over time by a series of challenges, both from the perspective of the entrepreneur's activity and from the perspective of the way the organizations' economic activity is carried out.

The pandemic context has caused a reversal of the development of economic activity within normal parameters. Specialists in the field approach in their research, the pretense that appeared in economic activity as well as in the perception and motivation of each entrepreneur.

2. Theoretical background

Starting a business among young entrepreneurs is a constantly growing challenge. In the post-pandemic context, both state institutions and professional organizations, together with specialists in the field, are looking for the most viable solutions for the growth of entrepreneurship in space. The problem is not so much the initiation of a business as the continuation of the activity after the first year of activity.

The current legislation (Law 222/2023) draws a series of new rules; from forms of organization of economic activity to subsidies, benefits that can be obtained by those who adhere to certain forms of organization, as well as aspects related to the form of registration at the Trade Registry. At the same time, these legal provisions also refer to the way in which economic entities transact across the country's borders; we can talk about a sustained internationalization of businesses on the national territory.

According to the latest statistical analysis, SMEs are potentiators of economic flows, but one of the major problems found is the limitation of their competitiveness within the same sector of activity. European statistics (European Court of Auditors) quantify several over 25 million SMEs before the Sars Cov virus pandemic. Thus, the EU proposes the Small Business Act strategic program to support these SMEs with directions for sustainability, green investments, and digital transition. The pandemic led to the adoption of the decision to support, at the European level, SMEs with financial resources in the form of non-reimbursable funds, but also the provision of benefits/subsidies from the national authorities at the member state level.

For the post-covid period, the EU proposes a series of programs for SMEs; financial support is given for the continuation of their digital development, but also innovation.

3. Research methodology

The central subject of the research is the identification of the problems created by the SARSCOV19 pandemic among entrepreneurs within Sme's, with the help of internationally published bibliographic sources. The limitation of access to resources, restrictions regarding the initiative of entrepreneurs as well as the response of consumers in precautionary conditions to the changes occurring on the market of goods and services, led to the drawing of new actions to meet the needs of the population.

The research method used is the bibliometric analysis for the preparation of a map intended to capture the interest of specialists in the field regarding the route of entrepreneurial activity in the sectors of national economies, but also at the European and international level. Access to the Vos bibliometric program allows the consultation of the SCOPUS international databases (Spinger, JSTOR, Emerald INSIGHTS, Sage, Google Scholar, Web of Science) and the filtering of results according to the area of interest mentioned above.

The use of the Vos Viewer program allows the graphic representation of cores that bring together the main notions addressed in specialized works. Thus, our research took place in the first half of 2023, by querying the Web of Science database, with entrepreneurship, post-covid and SMEs as basic terms. The analysis period overlaps with the period after the end of the pandemic, namely the last 3 years 2021-2023.

The activity carried out by the entrepreneurs experienced a series of challenges, adaptations to new market conditions and restrictions due to the health sector. Added to them is the perception of consumers regarding the safety of the use/consumption of goods and/or services.

Cluster analysis, also known as segmentation or taxonomy analysis, aims to identify a set of homogeneous groups by grouping elements in such a way as to minimize variation within the group and maximize variation between groups. Cluster analysis is therefore a multivariate analysis technique that includes several algorithms for classifying objects (elements or individuals) into homogeneous groups. The variables or cases are sorted into groups (clusters) so that between the members of the same cluster there are as many similarities as possible, and between the members of different clusters there are as few similarities as possible. For this, first, the choice of the distance between the elements is considered, then the choice of the grouping algorithm and finally the level is decided (Anderberg, 1973).

4. Findings

After querying the database, we obtained 9106 published articles, scientific papers, chapters in specialized books, proceedings of international conferences, etc. Through the Vos Viewer program, these materials were processed and filtered, obtaining 10 clusters as can be seen in fig.1.

A separate nucleus has Innovation as its central point with sub-points: business model innovation, innovation ecosystem, culture, digital entrepreneurship. The specialized literature captures a series of materials for the creation of models in leadership and entrepreneurship, with the aim of providing directions for action in the strategy and activity of entrepreneurs. The need to adopt a model derives from the constantly changing needs of the current market. Shiferaw R. & co (2023) proposes a model that implies that all participants in the activity share roles, attributions, competences and the adoption of decisions. Entrepreneurs adopt management strategies with the behaviour and perception of their consumers as defining factors. The increase in innovation as a result of the analysis of the internal and external environment of the business began to constitute more and more a starting point in the definition of entrepreneurship models (Chaniago H., 2022).

According to the OECD's Oslo Manual (OECD, 2005), product innovation can broadly have defined as the introduction of new or significantly improved or modified existing product concerning its characteristics, capabilities, user-friendliness, and components which include improvements in technical specification and materials or other functional characteristics by a firm.

Regarding the Forms of entrepreneurship, the program captured a series of terms that are repeated quite a lot in the consulted database: rural entrepreneurship, technology entrepreneurship, female entrepreneurship, sustainable entrepreneurship. These represent trends in entrepreneurial activity, as a result of the ended pandemic, but also as a result of the identification by higher authorities of the need to adapt to the new conditions that have appeared on the market.

The woman entrepreneur has become a nucleus for the development of small businesses, the initiation of innovative products, the increase of employability and competitiveness on the market of goods and services. (Aynaddis S., 2023). In the specialized literature, there is a growing attention for entrepreneurial skills among the female gender; both the positive and the negative sides are addressed.

As the last nucleus brought into discussion, hereinafter called Aspects adjacent to entrepreneurship, we identify a series of notions that are the subject of specialized studies: corruption, contribution, economic growth, competitiveness. One of the biggest problems of entrepreneurs in the case of SMEs is financial resources. The increasing competitiveness on the market of consumer goods, also brings with it a series of repercussions in the sphere of attracting financing sources. The financial institutions are reluctant and require the fulfilment of crediting requirements, which have recently become increasingly drastic. State institutions as well as EU bodies come to the support of SMEs by offering long-term support programs.

Also, within this last core we are discussing corruption. The legal framework created at the national level, harmonized with the European requirements, seeks to eliminate situations related to fraud, unfair competition at the level of the single market within the EU, as well as to support all businesses that converge towards a sustainable future activity.

5. Conclusions

SMEs are currently an engine of the economy. The pandemic period was a period of challenges for small entrepreneurs. The lack of financial resources, the lack of provisions, the lack of infrastructure within the business, did not allow a considerable proportion of the total SMEs established at the national level, to continue their activity within the initially established terms. With sustained efforts, it was possible to adapt to the conditions that arose as a result of the cessation of physical activity in a significant proportion in most sectors of activity.

Specialists in the field, together with the business environment, looked for solutions. An attempt was made to propose models for adopting decisions and coordinating the activity depending on the existing factors on the market. Studies have shown that these models do not fully meet the needs of entrepreneurs, in the conditions of a constantly changing market. As such, the analysis of the problems encountered by entrepreneurs, especially in the SME sphere, is far from being completed.

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Quality in Higher Education: A Comparison Between Legal and Academic Approaches

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Abstract

The pursuit of quality in higher education it's always an actual concern, this article aims to point out the multifaceted nature of quality assurance by undertaking a comparison between the legal and academic approaches. Grounded in the understanding that both legal and academic approaches shape educational quality, the research analyzes these two perspectives. The legal framework is explored in terms of performance indicators established by Romanian law, while the academic perspective encompasses the approach of extended research that takes into consideration the organizational elements that play an important role in assuring quality. Through comparative analysis, the article uncovers the intersections between these approaches. By identifying the common areas and identifying opportunities for alignment, this research contributes valuable perspectives for institutions seeking to strike an optimal balance between legal and academic considerations in their pursuit of educational excellence.

Key words: education quality, universities, legal perspective, academic perspectives, continuous improvement

J.E.L. classification: A20, I23, I28

1. Introduction

Beginning with the desire for evolution education has always been a priority for communities that above all wished to ensure the prosperity of the society they are part of. Regardless of religion, nationality and background, all families want to offer their children the best education that they can afford as they start the learning process from day one of children's life.

In 1999 the author Herb Kells published the article "National higher education evaluation systems: Methods for Analysis and some propositions for the research and policy void" where he reviewed the status of national education evaluation systems at that time and highlighted the lack of research into the process of evaluation and policy (Kells, 1999). After 23 years and a lot of research, the process of evaluation changed influenced by the evolution that took place over the years and the pandemic context that led to the sudden introduction of mass online education and brought other challenges than the ones faced before and the evaluation of higher education needs to be adapted again.

Today, in order to develop the best policy and evaluation systems for higher education we try to find answers even to questions like "How should be an ideal student?". A study entitled "Mapping the eight dimensions of the ideal student in higher education" written by Wong, DeWitt and Chiu, opened for everyone the door to finding an answer by building the base and describing the eight dimensions of the ideal student: (1) Diligence and Engagement, (2) Organisation and Discipline, (3) Reflection and Innovation, (4) Positive and Confident Outlook, (5) Supportive of Others, (6) Academic Skills, (7) Employability Skills and (8) Intelligence and Strategic Approach (Wong, et al., 2023). Knowing the perfect student is only a part of the process but we can't cut from the big picture the barriers that students can face in their learning process. Seven barriers were identified in

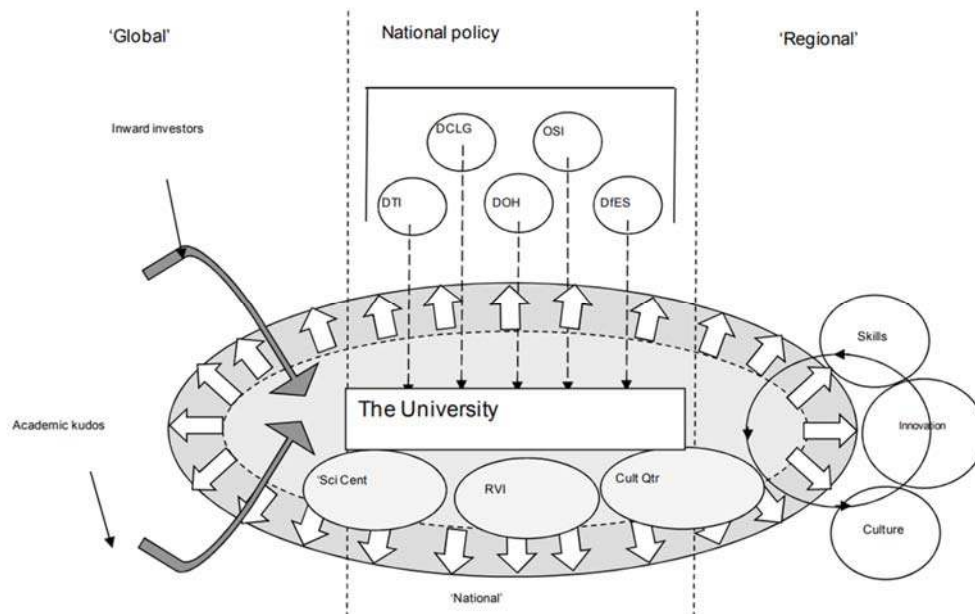
2020 in a study conducted by Børte, Nesje & Lillejord where they identified the following barriers: physical barriers, institutional barriers, pedagogical barriers, teacher-related barriers, technological barriers and teacher support to overcome barriers (Børte, et al., 2020). By mentioning the perfect student and the learning barriers we only covered the tip of the iceberg regarding what should be taken into consideration if we want to offer quality in higher education institutions. Many other factors need to be taken into consideration and in this study, we aim to compare the legal and academic approaches to how should the quality in higher education be planned.

2. Theoretical background. Contextualizing Quality in Higher Education

Higher education is described by the European Commission as having a critical role in achieving European Education and Research Area. These areas will sustain and contribute to a sustainable and resilient economy of European societies that marches towards the green, inclusive, and digital times providing skilled citizens who know what they want and are engaged in participating in democratic life (European Commission, n.d.).

The ideal university incorporates the teaching, research and community but doesn't stop here, it continues to extend and incorporate the resources, systems and processes that are present at global, national and regional levels forming a multi-scalar higher education institution that is presented in a literature review in 2007 and presented in the figure below (Arbo & Benneworth, 2007).

Figure no. 1 Regionally engaged multi-modal, multi-scalar higher education institution



Source: (Arbo & Benneworth, 2007)

Continuing with the idea of ideal university Tsinidou, Gerogiannis and Fitsilis mentioned in their article entitled "Evaluation of the factors that determine quality in higher education: an empirical study" the principles that help the higher education internal quality assurance systems to achieve their purpose as (1) quality policy and procedure should be defined and a culture of quality improvement should be adopted, (2) students assessment should be applied frequently according to published criteria, regulations and procedures, (3) quality assurance regarding the staff, facilities, and resources, (4) to use the data collected through surveys or other sources to constantly improve the institution and the offered services, (5) information transparency regarding degrees, awards, finance and quality assessment (Tsinidou, et al., 2010).

Higher education institutions are meant to offer and "produce" knowledge for the next generation and the quality of the offered services is crucial. Lagrose, Seyyed-Hashemi and Leitner presented a list of 7 criteria for service quality as follows: professionalism and skills, attitudes and behavior,

accessibility and flexibility, reliability and trustworthiness, service recovery, servicecape, reputation and credibility (Lagrosen, et al., 2004).

Taking a step forward and passing the principles and criteria for service quality, we decided to ask Chat GPT why is important to have quality in higher education. The answer provided by the artificial intelligence pointed out several reasons that were connected to the individuals, society and economy. The list of reasons why we should have quality higher education is as follows Individual Development, Employability, Innovation and Research, Economic Development, Social Mobility, Global Competitiveness, Cultural and Social Development, and Public Confidence.











3. Research methodology









This article has a qualitative methodology and aims to analyze and compare the Romanian Governmental Law number 915 from December 14th, 2017 and an extended study coordinated by Panaite Nica in 2002 entitled "Quality and adaptability in the management of faculties with an economic profile". The article will correlate the performance indicators from the law with the components that assure the quality of higher education from the study based on who a book was written. The results are presented in Section 4 of the article in Tables 1, 2, and 3.

4. Findings. The Comparative Analysis

The Romanian DECISION no. 915 of December 14, 2017 is related to the External Evaluation Methodology, the standards, the reference standards and the list of performance indicators of the Romanian Agency for Quality Assurance in Higher Education and is currently used in the evaluation of the higher education institutions. The book "Quality and adaptability in the management of faculties with an economic profile" is based on a large study and was published in 2002 and amongst other interesting information presents the areas that determine the higher education quality of higher education. In the tables below we present the correlation between the legal approach and the academic approach. For a better understanding, the results were divided into 3 tables according to the quality areas organizational quality, process quality, and quality of organizational services.

Table no. 1 Results of the Comparative Analysis part I (Organizational quality)








Quality and adaptability in the management of faculties with an economic profile		DECISION no. 915 of December 14, 2017			
Quality areas	Criteria	Domain	Criteria	Standards	Performance indicator
Organizational quality	Organizational culture	Institutional capacity	Institutional, administrative and managerial structures	Mission, objectives and academic integrity	 Mission and objectives  Academic integrity  Public liability and responsibility
	Structure	Institutional capacity	Institutional, administrative and managerial structures	Leadership and Administration	 The driving system  Strategic management  Effective administration
	Systems	Quality management	Systematically updated database, related to internal quality assurance	Information systems	 Databases and information
	Facilities	Institutional capacity	Material basis	Heritage, endowment, allocated financial resources, support for students	 Spaces for education, research and other activities  Endowment
	Management	Educational	Financial	Budget and	 The income and

		efficiency	activity of the organization	Accounting	 expenditure budget  Accountancy  Auditing and public accountability
	Human resource	Quality management	Procedures for periodic assessment of the quality of the teaching staff	Quality of teaching and research staff	 The competence of teaching staff and the ratio between the number of teaching staff and students  Peer review  Evaluation of teaching staff by students  Evaluation by university management  The conditions for the good performance of the teaching staff's activity

Source: adapted from (Nica, 2002) (Government of Romania, 2018)

In 2018 the authors Anttila and Jussila mentioned in their article that high quality is an important competitive advantage for organizations (Anttila & Jussila, 2018). The first correlation that can be identified is that the organizational quality from the academic approach meets all three domains presented in the law (1) institutional capacity, (2) educational effectiveness and (3) quality management. The performance indicators used for the assessment underline the most important outcomes that a faculty should take into consideration and even if they cover essential parts of the criteria (organizational culture, structure, systems, facilities, management and human resources) they don't cover the organization assessment as a whole. The academic approach suggests that we have to analyze and improve the criteria as much as possible taking into consideration all parts of the organization that generates quality.

Table no. 2 Results of the Comparative Analysis part II (Process quality)

Quality and adaptability in the management of faculties with an economic profile		DECISION no. 915 of December 14, 2017			
Quality areas	Criteria	Domain	Criteria	Standards	Performance indicator
Process quality	Use of resources	Institutional capacity	Material basis	Heritage, endowment, allocated financial resources, support for students	 Adequate financial resources for learning and teaching activities, adequate and easily accessible support services for students  The system of granting scholarships and other forms of material support for students  Student Support Services Administrative Staff
	Procedures	Quality management	 Strategies and procedures for quality	 Structures and policies for quality assurance	 Organization of the quality assurance system  Policies and


















			<ul style="list-style-type: none"> assurance Procedures regarding the initiation, monitoring, and periodic review of the programs and activities carried out Objective and transparent procedures for evaluating learning outcomes 	<ul style="list-style-type: none"> Periodic approval, monitoring, and evaluation of study programs and diplomas corresponding to the qualifications Student evaluation 	<ul style="list-style-type: none"> strategies for quality assurance The existence and application of the regulation regarding the initiation, approval, monitoring, and periodic evaluation of study programs Correspondence between diplomas and qualifications IIS has a regulation on the examination and grading of students, which is rigorously and consistently enforced. Integrating assessment into the design of teaching and learning across courses and curricula
	Information	Quality management	Transparency of information of public interest regarding the study programs and, where applicable, the certificates, diplomas and qualifications offered	Public information	Public information offer
	Process organization	Educational effectiveness	Content of study programs	<ul style="list-style-type: none"> Admission of students Structure and presentation of study programs 	<ul style="list-style-type: none"> Principles of the admission policy to the study programs offered by the institution Admission practices The structure of study programs Differentiation in the realization of study programs The relevance of study programs

Source: adapted from (Nica, 2002) (Government of Romania, 2018)

The process quality importance was underlined by many theoreticians and practitioners over time and researchers proved that this is connected directly with the service quality that leads to customer satisfaction (Oltean & Gabor, 2017). The process quality area is connected with all three domains presented in the law (1) institutional capacity, (2) educational effectiveness and (3) quality management. Similar to the organizational quality area, the academic approach has a deeper understanding of the process quality and highlights all the essential criteria (use of resources, procedures, information, process organization) that will lead to increased quality in the higher

education institutions process. If the desired result is to have process quality it's not enough to focus the efforts on achieving the performance indicators since they are the result of activity carried out over a period of time.

Table no. 3 Results of the Comparative Analysis part III (Quality of organizational services)

Quality and adaptability in the management of faculties with an economic profile		DECISION no. 915 of December 14, 2017			
Quality areas	Criteria	Domain	Criteria	Standards	Performance indicator
Quality of organizational services	Fulfilling internal customer requirements	Educational effectiveness	Scientific research activity	Research programs	 Research programming  Carrying out the research  Valorization of research
	Meeting the requirements of external customers	Educational effectiveness Quality management	 Learning outcomes  Accessibility of resources suitable for learning  The functionality of the education quality assurance structures, according to the law  Periodic external quality assurance	 Learning Resources and Services students  The institutional structure for ensuring the quality of education complies with the legal provisions and carries out its activity permanently.  Institutions periodically undergo external quality assurance, in accordance with ESG.  Capitalizing on the obtained university qualification	 Availability of learning resources  Teaching as a source of learning  Incentive and recovery programs  Student Services  The Commission coordinates the application of procedures and activities of assessment and quality assurance.  Accredited HEIs and/or their structures participate in external quality assurance in a cyclical manner

Source: adapted from (Nica, 2002) (Government of Romania, 2018)

The quality of organizational services is connected with educational effectiveness and quality management. This is the only area where only two of the domains presented in the law are correlated. Just as in the case of the previous quality areas presented the academic approach doesn't take into consideration just some results but the complexity of the criteria. The law approach presents the most important performance indicators based on how the higher education institution is evaluated and can be ranked.

5. Conclusions

The academic approach has a holistic view taking into consideration the organization as a whole and dividing it into three main categories organizational quality, process quality, and service quality. These main categories divide and present important parts of the organizational structure such as the management which is an important factor in obtaining results and assuring quality in any higher

education institution.

The legal approach has a more focused view of the results that a higher education institution should have and is divided into 3 main domains institutional capacity, educational effectiveness, and quality management. After we go through all the criteria, standards, and performance indicators that constitute the 3 main domains we can observe that only some areas of the higher education institutions activity are evaluated and taken into account for the final assessment.

It's normal for the assessment of higher education institutions to be done on key performance indicators but we have to be aware that the quality does not come just from focusing on the matters underlined by the law and it is essential to take into consideration the improvement of entire organizational areas that will lead to achieving the indicators mentioned by law. The correlation presented in this article can be used as a base for increasing the quality of higher education and emphasizes the importance of having organizational quality as a consequence of organizational success and not as a consequence of attempts to meet legal requirements.

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Study on Consumers' Opinion Towards Doggie-to-go-bags in the Context of Food Waste Management

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Abstract

The restaurants are an excessive source of food waste, being critically influenced by the kitchen staff, waiters and consumers. The consumers' plate waste is identified as a critical source of restaurant food waste (RFW). An alternative to minimize this RFW would be for customers to take home extra food in doggie-to-go-bags (takeaway containers). However, the existing social rules in numerous countries discourage consumers for asking for doggie-to-go-bags. In this research, it was surveyed a number of 200 costumers from Republic of Moldova in order to explore their opinion toward doggie-to-go-bags. Although surveyed consumers approve the doggie-to-go-bags, they are resistant to ask for doggie-to-go-bags (80% of them reported that there were not enough leftovers to justify a doggie-to-go-bag, 79% of them said that they usually eat all the food, while 49% were too embarrassed to ask for one).

Key words: restaurant, plate food waste, management, doggie-to-go-bag, takeaway container

J.E.L. classification: E30, J43, L66, M11, N50, O13, O15, Q13, Q17

1. Introduction

Food waste can occur along the entire food supply chain, from farm to final consumption (hospitality level and households level) (Afzal *et al*, 2022, p.1; Lins *et al*, 2021, p.2). The hospitality sector produces a significant quantity of food waste, being the third-largest generator of food waste in Europe, right behind households, primary agricultural and food processing industries (Filimonau *et al*, 2019, p.1; Filimonau *et al*, 2020, p.4; Stoica *et al*, 2022, p.753; Stoica *et al*, 2022, p.754; van Herpen *et al*, 2021, p.1). The hospitality sector includes hotels and restaurants that offer their clients food and drink, or a place to sleep (Stoica *et al*, 2022, p.754).

Restaurants represent an excessive source of food waste, being critically influenced by the kitchen staff, waiters and customers (Schränk *et al*, 2023, p.1; Stoica *et al*, 2022, p.754). Being more specifically, the restaurant food waste (RFW) is frequently categorised as arising from staff and customers' plates (Santos-Peñate *et al*, 2023, p.612; van Herpen *et al*, 2021, p.2). The customers' plate waste (food left on customers' plates when they have finished eating; extra foods) is identified as a critical source of RFW, makes up nearly one-third of all RFW (Dolnicar *et al*, 2020, p.1; Miroso *et al*, 2018, p.563; Stoica *et al*, 2022, p.754; van Herpen *et al*, 2021, p.2). The RFW generation has negative environmental effects (e.g. an excessive contribution to the global carbon footprint, global water usage, and solid waste generation), socio-economic concerns (e.g. global food insecurity) and enormous global food price inflation (Bohdanowicz, 2005, p.192; Chauhan *et al*, 2021, p.1; Demetriou, 2022, p.2; Guțu, 2021, p. 685; Kim *et al*, 2023, p.2; Miroso, 2023, p. 93; Schränk *et al*,

2023, p.1; van Herpen *et al*, 2021, p.2). The restaurants can provide different portion sizes (as a strategy to reduce RFW), but the customers' expectations, socio-demographics, as well as social norms, make it almost impossible for restaurants to provide an ideal portion size for every consumer (which is the key player in reducing RFW) (Kim *et al*, 2023, p.2; van Herpen *et al*, 2021, p.1). Doggie-to-go-bags, a potential solution to deal with RFW, are takeaway containers/bags/boxes in which customers can take the extra foods (uneaten foods) home for later consumption. Unfortunately, in some countries, doggie-to-go-bags are hardly used as the concept goes against the prevalent social rules (van Herpen *et al*, 2021, p.1).

2. Theoretical background

Social norms, typically developed over time, are accepted rules that guide customers' behavior. Even if they are ineffective for society, social norms tend to persist. In the case of extra foods at restaurants, these social rules found in numerous countries suggest customers to leave foods on their plate that end up being thrown away. Consequently, the customers tend not to ask for a doggie-to-go-bag and may experience feelings of shame when they go against this social norm, motivating an unsustainable behavior (van Herpen *et al*, 2021, p.2).

The success of managerial approaches to mitigate RFW will depend on the national hospitality (van Herpen *et al*, 2021, p.3). The hospitality sector in Republic of Moldova is well-set, but seriously underexplored, RFW in Republic of Moldova being evenly understudied (suggesting the need for RFW research). This study aims to identify the reasons why customers from Cahul (Republic of Moldova) ask or not to ask for doggie-to-go-bags. The use of doggie-to-go-bags can considerably reduce plate waste.

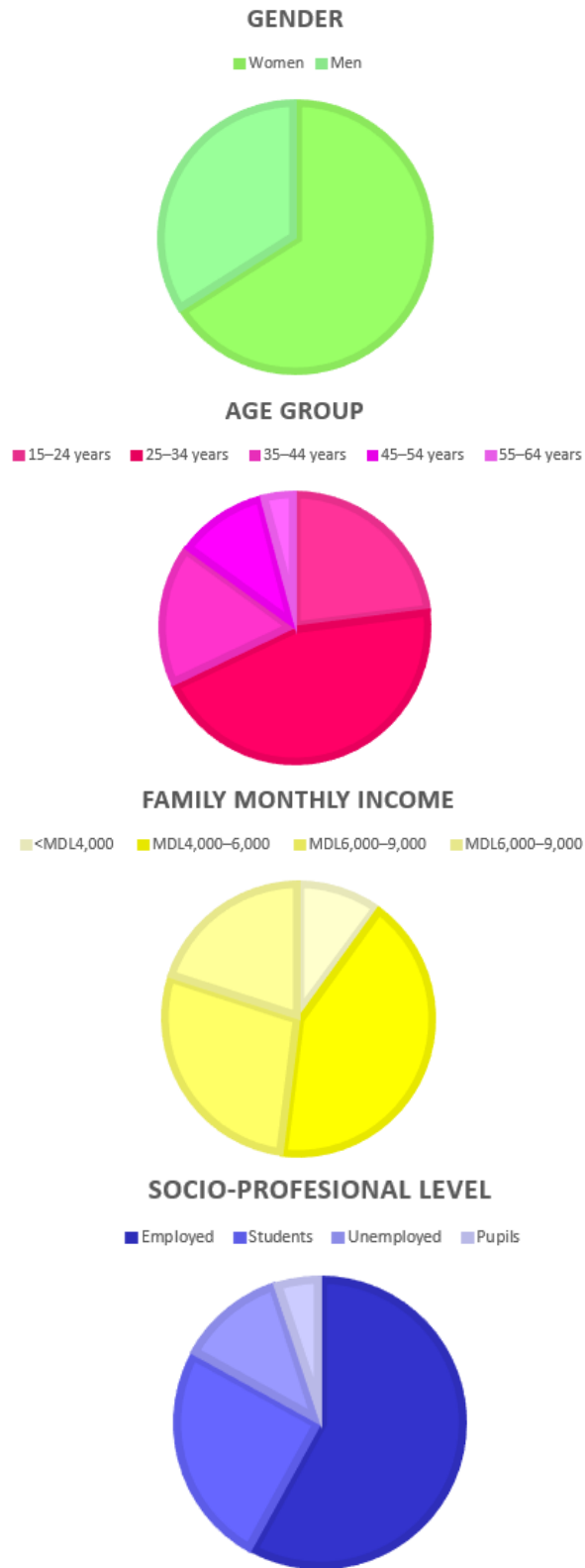
3. Research methodology

The questionnaire survey is one of the well-established approaches in RFW research (Kim *et al*, 2023, p.5). For data collection for this research, a survey on 200 customers was conducted in the representative restaurants from Cahul Municipality, the third largest city in Republic of Moldova (with expenses of over 68 million MDL and 37,217 inhabitants), characterised by a fast development of the foodservice sector. The anonymity and confidentiality of each customer were assured. The group of respondents was defined by: (i) gender (men and women), (ii) age (15–24 years, 25–34 years, 35–44 years, 45–54 years, 55–64 years, 65+ years), (iii) family monthly income (<4,000 MDL; 4,000–6,000 MDL; 6,000–9,000 MDL; >9,000 MDL; MDL – Moldovan Leu) and (iv) socio-professional level (pupils, students, employees, unemployed people). The questionnaire has comprised six items (four items regarding socio-demographic variables and two items that explored the customers' opinion on the ask or not to ask for doggie-to-go-bags, *i.e.* What are the motivations for requesting a doggie-to-go-bag?, What are the reasons for not asking for a doggie-to-go-bag?).

4. Results and discussion

Demographic description of the study participants. Among the 200 respondents, 66% were women customers and 34% were men customers. The age range of the participants was 15 to 64 years. In terms of age group, the highest proportion (45%) was in the 25–34 years range, followed by 23% in the 15–24 years range, 17% in the 35–44 years range, 11% in the 45–54 years range and 4% in the 55–64 years range. About family monthly income, for the majority of interviewed customers (90%), it was above the minimum salary (4,000 MDL); thereby: 42% had a salary between 4,000–6,000 MDL; 28% had a salary between 6,000–9,000 MDL; 20% had a salary more than 9,000 MDL. In terms of socio-professional levels, 58% of participants were employed, 25% were students, 12% were unemployed and 5% were pupils (Figure 1).

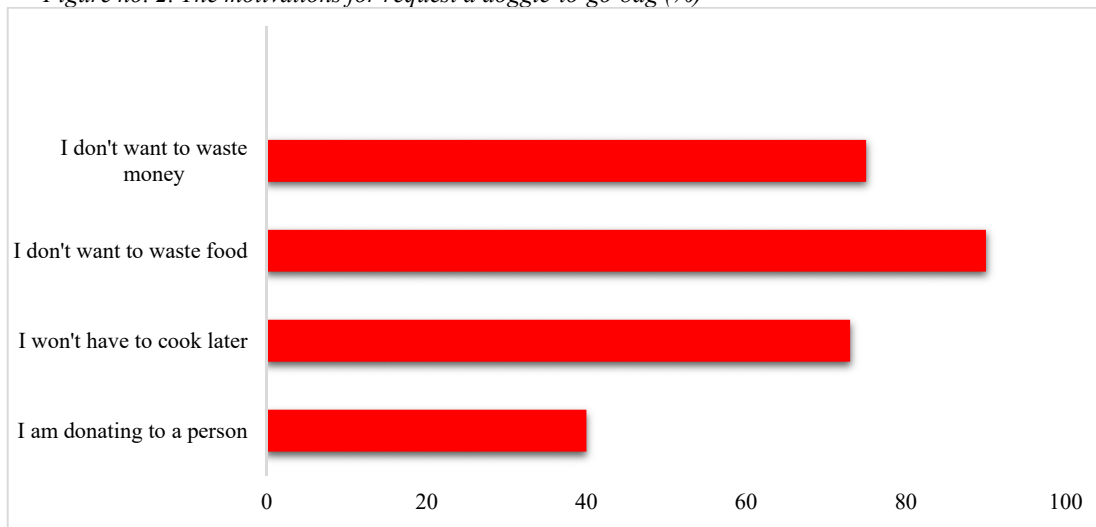
Figure no. 1. Demographic description of the study participants



Source: (own creation)

Customers' opinion on the ask or not to ask for doggie-to-go-bags. The opinion of customers regarding doggie-to-go-bags (request / not ask for) are revealed in the Figures 2 and 3. The reasons why respondents request doggie-to-go-bags are showed in the Figure 2.

Figure no. 2. The motivations for request a doggie-to-go-bag (%)

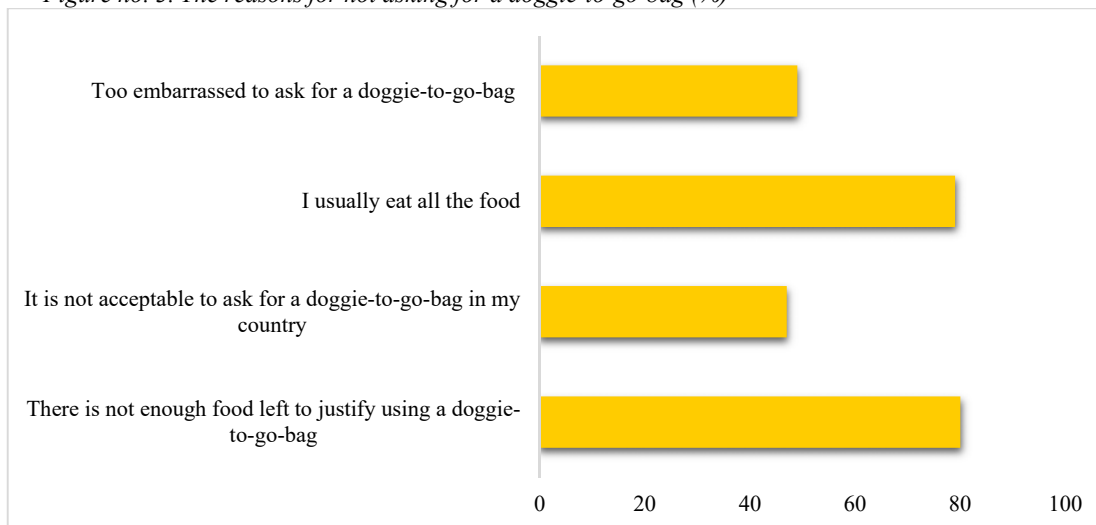


Source: (own creation)

From the Figure 2, it is clear that respondents don't want to waste food (90%), the food saving reason being found to be the most beneficial for requesting a doggie-to-go-bag. 75% of respondents justify that by using a doggie-to-go-bag they are saving money (the second biggest motivation), while 73% of them would take the extra food in a doggie-to-go-bag to avoid cooking later, saving time/effort for the next day spent at home. Some of them (40%) thought they could take a doggie-to-go-bag to donate their extra food to people in need. The socio-demographics variables influence the intention to request a doggie-to-go-bag, therefore women, younger and unemployed people, people with lower income and students were more likely to request a doggie-to-go-bag. Women have been expected to share food inside their family, to be more concerned about protecting the environment, and prefer to reduce their waste more than men) (Kim *et al*, 2023, p.4).

The obstacles/motivations for not asking for a doggie-to-go-bag are depicted in the Figure 3.

Figure no. 3. The reasons for not asking for a doggie-to-go-bag (%)



Source: (own creation)

80% of the study participants thought that there were not enough extra foods on their plates to justify using a doggie-to-go-bag to take home the leftovers (they usually eat all the food – 79%), being the highest chosen reason. Almost half of the respondents who can't finish their meals at restaurants (49%) thought that it would be embarrassing to ask for a doggie-to-go-bag, being not acceptable to ask for a doggie-to-go-bag in their country (47%). It suggests that the social norms in restaurants tend to persist, having a huge effect on customers' desire to ask for a doggie-to-go-bag. It was also found that men, older and employed people, and people with higher incomes were more likely not to ask for a doggie-to-go-bag.

5. Conclusions

Although restaurants generate an excessive amount of food waste, they receive less attention than other food waste contributors (farms, food processing, households). The customers' plate waste is acknowledged as a big food waste generator found in restaurants. In order to reduce the plate food waste, some excellent options to avoid throwing away the leftovers were developed, like doggie-to-go-bags (takeaway containers) in which the customers can take home the unserved food in order to consume it later or to give it to someone else. However, the social norms discourage customers from asking for doggie-to-go-bags, they tend not to ask for doggie-to-go-bag and may experience feelings of shame. This exploratory study aimed to identify the reasons why consumers from Cahul (Republic of Moldova) ask or not ask for doggie-to-go-bags. It was surveyed a number of 200 restaurant customers from Cahul (Republic of Moldova) and it was noticed that although the customers approve the doggie-to-go-bags (save food, money, time/effort), they are resistant to ask for doggie-to-go-bags (they reported that there were not enough leftovers, and surprisingly almost half of them felt too embarrassed to ask the waiters to pack their extra food).

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Google Ads, Meta, TikTok, which Is the Best Way of Paid Promotion?

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Abstract

This paper explores the digital landscape shaped by tech giants Google, Meta (formerly Facebook), and TikTok, emphasizing their influence on information sharing, communication, and entertainment. A case study on Luxury Anis Srl, an e-commerce company, illustrates its strategic use of Google Ads, Meta Ads, and TikTok Ads from 2021 to 2023. The study delves into campaign types and their evolution, focusing on the pivotal Performance Max campaign. Key performance metrics, including Click-Through Rate (CTR), Conversion Rate, Cost Per Click (CPC), and Return on Investment (ROI), are analyzed. The study concludes with insights for future campaigns, emphasizing the importance of continual evaluation, adaptation, and strategic planning in the ever-evolving realm of digital advertising. The Luxury Anis case study showcases the significance of adeptly utilizing specific tools and understanding market dynamics for successful outcomes in digital advertising.

Key words: e-commerce, online shopping, retail, social commerce

J.E.L. Classification: M31

1. Introduction

In the dynamic landscape of the digital age, several tech giants have emerged as influential players, shaping the way individuals connect, share information, and consume content. Among these giants are Google, Meta, and TikTok, each contributing uniquely to the evolving digital ecosystem. Google, Meta, and TikTok stand as prominent entities in the dynamic landscape of technology and social media, each contributing significantly to the way people interact, access information, and entertain themselves in the digital age.

2. Literature review

Google, founded in 1998 by Larry Page and Sergey Brin, initially began as a search engine but has since expanded its reach into various domains, including cloud computing, advertising, and mobile technology (Brin&Page, 1998).

The company's commitment to innovation and its user-centric approach have solidified its position as a leader in the tech industry. (Google Inc., 2022).

Meta, formerly known as Facebook, was established by Mark Zuckerberg in 2004 and rapidly became a social media powerhouse. Meta's diverse portfolio includes platforms such as Facebook, Instagram, WhatsApp, and Oculus, creating a comprehensive social network that connects billions of users globally (Zuckerberg, 2004). The company's evolution into Meta reflects its strategic vision to explore the potential of the metaverse and redefine digital interactions (Meta Platforms, Inc., 2022).

TikTok, a relatively newer entrant to the digital landscape, has gained immense popularity, especially among younger demographics. Launched in 2016 by the Chinese company ByteDance, TikTok is a short-form video platform that allows users to create and share engaging content (ByteDance. 2016). Its unique algorithm-driven content discovery has contributed to its rapid growth, making TikTok a cultural phenomenon in the realm of social media (TikTok, 2022).

As these tech giants continue to shape the digital landscape, understanding their origins, evolution, and impact becomes crucial in navigating the interconnected world of technology and social media.

3. Research methodology

This paper focuses on a marketing research conducted by combining office research with the observation method. 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 last ones being the vast majority.

4. Findings

We have chosen to address this topic in the present article, using a case study of an e-commerce company actively employing the specific tools of Google Ads, Meta Ads, and TikTok Ads. The company is named Luxury Anis Srl and has been operating in the online domain since 2021. The company's brand, registered with OSIM Romania, is called Luxury Anis.

Luxury Anis emerged in the online landscape through the websites www.luxuryanis.ro, www.luxuryanis.com and www.accessoriimatase.ro, as well as through platforms such as Emag, Vivre, and Cel. The primary market focus is Romania, but through Emag and the website www.luxuryanis.ro, the company also targets markets in Hungary and Bulgaria. The company's chosen niche is natural silk accessories (pillowcases, bonnets, scarves, bed linens, etc.) of the highest quality, 19-22 Momme density, carefully selected from manufacturers-suppliers in China. The products are essentially imported from China and then resold through the company's online channels.

Following, we will focus on the types of promotion chosen by the company, namely the well-known Google Ads. Regarding Meta (former Facebook) and TikTok, the Luxury Anis company tried several classic smart campaigns on Meta, at the moment appearing with only one active campaign, which generates somewhere around 25-30 monthly conversions. On TikTok, the company's activity is at the beginning of the road, it has created a page and is trying to increase the number of followers, and later it will aggressively enter ads campaigns.

Regarding Google Ads, between 2021 and 2023, we will observe a rapid increase in the number of conversions, which will be reflected in the company's sales and revenue.

The company has chosen to exclusively promote itself on Google Ads during the period 2021-2023, through paid Ads and Performance, Shopping, Search, etc, campaigns. Additionally, the company's products have been promoted through organic SEO, Google Merchant (organic product feed).

In the following sections, it is provided a brief overview of the main types of campaigns that Google offers to advertisers in the year 2023:

Figure no. 1. Types of Ads campaigns

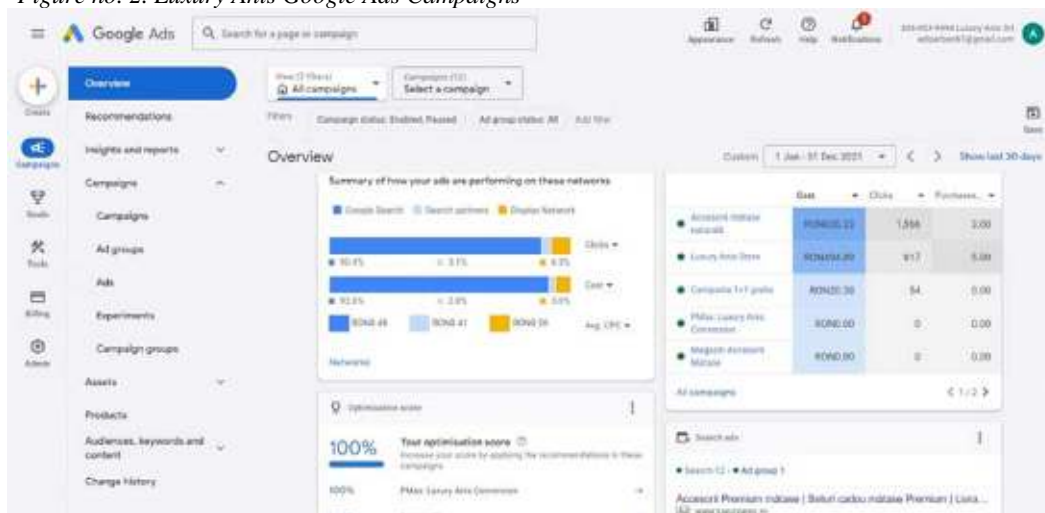


Source: (Emley, 2023)

Luxury Anis initially used the following types of Ads campaigns in its first year of operation:

One Shopping campaign, several Smart campaigns, and one Search campaign. Later, the Shopping campaign was upgraded to the Performance Max type, which currently generates the most conversion results. Additionally, at this moment, the company relies on other types of ads as well: 4 Smart campaigns and 1 Search campaign, all active.

Figure no. 2. Luxury Anis Google Ads Campaigns



Source: Overview - Luxury Anis Srl - Google Ads – View Campaigns

Regarding the best results generated in terms of campaign type, the Performance Max campaign has been and continues to be the most productive, with over 80% of successful conversion results attributed to this type of campaign on the www.luxuryanis.ro website.

In the image below, we will observe a situation from March 2021 to December 15, 2023, concerning various Ads campaign parameters used in the Performance Max campaign. In the following, we will review all these very important indicators used in Google Ads campaigns that measure the profitability of the campaign used.

CTR: 1.37% (the number of clicks that your ad receives divided by the number of times your ad is shown: $\text{clicks} \div \text{impressions} = \text{CTR}$) (*Google Ads Help - Clickthrough rate (CTR): Definition*)

CPC: 1.19 RON (The average amount that you've been charged for a click on your ad) (*Google Ads Help - Average cost-per-click (Avg. CPC): Definition*)

Total Cost: 66806 RON

"Total Cost" typically refers to the overall amount spent on advertising within a specified period or campaign. It encompasses the sum of all expenses associated with running ads, including the actual ad spend (the amount you pay for clicks or impressions) and any additional costs such as fees, taxes, or other related expenses.

Conversion Rate: 7.96%

Conversion rate in the context of Google Ads campaigns refers to the percentage of people who click on your ad and then take the desired action, or "convert." A conversion can be any predefined goal that aligns with your advertising objectives, such as making a purchase, filling out a form, signing up for a newsletter, or downloading an app.

The formula for calculating the conversion rate is:

$\text{Conversion Rate} = \left(\frac{\text{Number of Conversions}}{\text{Number of Clicks}} \right) \times 100$ (*Google Ads Help - Conversion rate: Definition*)

Conversion Value: 338.079.16 RON

Conversion value in Google Ads refers to the monetary value assigned to a specific action or goal completed by a user who clicked on your ad and subsequently took a desired action on your website. It represents the revenue or value generated from a conversion, such as a purchase, sign-up, or other valuable user interactions. Conversion values help you track and optimize your campaigns' (*Google Ads Help - Return on investment (ROI). About conversion values*)

Conversion Value/Cost: 5.06 RON

Conversion value/cost typically refers to the ratio or relationship between the value generated by a certain action or event and the cost associated with that action or event. This concept is often used in marketing and business analytics to evaluate the efficiency and effectiveness of various activities. Conversion Value/Cost estimates your return on investment. It's calculated by dividing your total conversion value by the total cost of all ad interactions. (*Google Ads Help - Understand your conversion tracking data*)

Conversions: 4691.33

In the context of Google Ads, a "conversion" refers to a specific action that you want a user to take after clicking on your ad. Conversions are typically associated with goals that are important to your business, such as making a purchase, filling out a contact form, signing up for a newsletter, or any other desired action. In our case, respectively of the studied Performance Max campaign, we refer to making a purchase.

Cost/Conversion: 14.24 RON

Cost/Conversion in Google Ads refers to the average amount of money spent on advertising for each desired action or conversion achieved. It is a key metric that helps advertisers assess the efficiency and profitability of their advertising campaigns. This metric is crucial for advertisers to understand how much they are spending to acquire each conversion, whether it's a sale, sign-up, download, or any other predefined action that is considered a valuable outcome. A lower Cost/Conversion indicates a more cost-effective campaign, while a higher value may suggest that the advertising efforts need optimization.

"Also, a small final tip for a successful ads campaign: try to use all the tools and extensions provided by Google, you really have a lot to choose from (sitelinks, location, call extensions, reviews, various information). (Daraban, 2022, p. 169)

After finishing a Google Ads campaign, it's important to evaluate its performance and gather insights to inform future strategies. Here are some key considerations to keep in mind:

1. Performance Metrics:

- Click-Through Rate (CTR): Measure the effectiveness of your ad in generating clicks.
 - Conversion Rate: Assess how well your ads are converting clicks into desired actions (e.g., purchases, sign-ups).
 - Cost Per Click (CPC): Evaluate the average cost for each click on your ad.
 - Return on Investment (ROI): Determine the overall profitability of your campaign based on the revenue generated compared to costs.
2. Budget Analysis:
 - Review your budget allocation to different campaigns and ad groups.
 - Assess whether your budget was effectively spent on high-performing keywords or ads.
 3. Keyword Performance:
 - Identify top-performing keywords and those that didn't perform well.
 - Consider adding negative keywords to prevent your ads from showing for irrelevant searches.
 4. Ad Copy and Creatives:
 - Analyze the performance of different ad copies and creative elements.
 - Identify which headlines, descriptions, and images resonated most with your audience.
 5. Targeting and Audience Insights:
 - Evaluate the performance of different targeting options, including demographics, locations, and devices.
 - Use audience insights to refine your targeting strategy for future campaigns.
 6. Ad Extensions:
 - Review the impact of ad extensions on your ad performance.
 - Consider testing different types of extensions to improve ad visibility and engagement.
 7. Quality Score:
 - Assess the Quality Score for your keywords. A higher Quality Score can lead to better ad placements and lower costs.
 8. Competitor Analysis:
 - Research and analyze the strategies of competitors in your industry.
 - Identify opportunities to differentiate your ads and improve your campaign's performance.
 9. Landing Page Experience:
 - Evaluate the relevance and user-friendliness of your landing pages.
 - Ensure that the landing pages align with the ad content and provide a seamless user experience.
 10. Ad Schedule and Timing:
 - Examine the performance of your ads at different times of the day and days of the week.
 - Adjust your ad schedule based on when your target audience is most active.
 11. Seasonal Trends:
 - Consider any seasonal or industry-specific trends that may have influenced your campaign's performance.
 12. Learnings for Future Campaigns:
 - Document key learnings from the campaign to inform future strategies.
 - Implement optimizations and improvements based on the insights gained.

By thoroughly analyzing these aspects, you can gain valuable insights into your Google Ads campaign performance and make informed decisions for future advertising efforts. Regular monitoring and adjustments are crucial for maintaining a successful and cost-effective advertising strategy.

Figure no. 3. Luxury Anis Performance Max Campaign

Campaign	Cost	Ref. value	CPA	Clicks	Cost rate	Conv. value	Conv. rate	Avg. CPC	Cost/1,000
Performance Max	RON6,806.50	138,673.98	138,673.98	56,295	7.36%	338,079.16	5.96	4,681.33	RON14.34
Unknown	---	---	---	---	---	138,673.98	---	2,559.95	---
New customers	---	---	---	---	---	111,368.90	---	745.86	---
Returning customers	---	---	---	---	---	88,076.28	---	1,365.52	---
Conversion	RON2,345.50	18,482.77	18,482.77	3,719	5.55%	18,482.77	7.87	206.48	RON6.63
Unknown	---	---	---	---	---	18,080.73	---	202.01	---
Returning customers	---	---	---	---	---	402.04	---	4.47	---

Source: Campaigns - Luxury Anis Srl - Google Ads

5. Conclusions

When it comes to planning the marketing budget for the next year, it is essential to evaluate the performance of our previous campaigns. A careful analysis of relevant data will provide a solid foundation for making strategic decisions. We will examine consumer trends, the effectiveness of marketing channels, and customer feedback to develop a coherent and efficient strategy.

The conclusion after finishing a Google Ads campaign is a critical assessment of its performance. It involves analyzing key metrics such as click-through rates, conversion rates, cost per click, and return on investment. Additionally, assessing the alignment of the campaign with the set goals and objectives is crucial. Insights gained from the data help refine future strategies and optimize budget allocation. The conclusion may highlight successful aspects, areas for improvement, and overall lessons learned, shaping a roadmap for more effective digital advertising endeavours. The analyzed case study of the Luxury Anis company shows us that good results can be obtained using Google Ads, in the situation where we know how to work very well with the specific tools, but also to choose the niche and the right product for the market, not just the financial investment being enough, but also the skill of the marketer who analyzes and discovers the opportunity.

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The Role of Communication in Managing Resistance to Change

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Abstract

The purpose of this research is to analyze the role of communication in the effective management of resistance to change within IT organizations in Romania. Failures can have multiple causes, including insufficient and incomplete communication, which can lead to resistance. To fulfill the purpose of this research, we applied a questionnaire to a sample of 100 employees. Following the research, we found that face-to-face meetings are the most effective in communicating organizational changes, emphasizing the importance of direct dialogue. Strategies such as recognizing successes, transparent communication, and continuous feedback are critical to managing this resistance. In addition, it emphasizes the importance of clearly communicating the goals and benefits of change, as well as the development and distribution of detailed explanatory materials to facilitate organizational transitions. Communication is not the only key factor in successful organizational change, so the data cannot be generalized.

Key words: communication, resistance to change, effective communication, face-to-face communication, feedback

J.E.L. classification: D83, L21, M15, M51

1. Introduction

Communication plays an essential role in organizations. The organization is like a dynamic system of interactions, which means that communication contributes to the formation and support of organizational goals, with members encouraging and inspiring each other to achieve goals (Guetzkow, 2013). The role of communication in managing resistance to change is a crucial topic within modern organizations. Communication is recognized as a relevant dimension for the success of organizational change, essential in building readiness for change, reducing uncertainty and obtaining commitment (Matos and Esposito, 2014).

At the same time, effective communication is often the key to the success of implementing organizational changes. Effective communication plays a crucial role in the successful implementation of organizational change. This involves much more than simply transmitting information; it is a complex process that influences how changes are perceived, understood and accepted by employees. In addition, effective communication improves organizational relationships and minimizes strikes and lockouts (Musheke and Phiri, 2021). In a digitized and globalized world, organizations must continuously adapt to external changes, and organizational changes such as downsizing, restructuring, mergers and acquisitions are serious challenges (Schulz-Knappe *et al*, 2019).

2. Theoretical background

Continuous change is a constant in organizations, a topic widely addressed in the management and organizational literature (Elving, 2005). Resistance to change in organizations is a common phenomenon and one of the biggest obstacles in the process of implementing change. This can take many forms, from passive resistance, such as delaying or ignoring demands, to active resistance, including vocal opposition or sabotage. Understanding and effectively managing resistance to change is crucial to the success of any organizational transformation initiative (Erwin and Garman, 2010).

Resistance can be caused by fear of the unknown, loss of control, impact on stable routines, or the perception that change is not necessary or beneficial. In some cases, resistance may be related to lack of trust in leadership or previous negative experiences (Bailey and Raelin, 2015). Clear, open and ongoing communication about the nature of the change, the reasons behind it and the expected benefits can help reduce uncertainty. Communication is a reciprocal process that facilitates the exchange of intangible resources and contributes to feelings of satisfaction. This communication operates at the level of the organization, the leader and colleagues, having a direct impact on employee satisfaction (Curado *et al*, 2022). So, the effective management of change processes is vital for the survival of organizations (Schulz-Knappe *et al*, 2019).

3. Research methodology

Failures can have multiple causes, including insufficient and incomplete communication, which can generate resistance (Schulz-Knappe *et al*, 2019). The purpose of this research is to analyze the role of communication in the effective management of resistance to change within IT organizations in Romania. Through this research, it aims to identify ways in which communication strategies can be optimized to facilitate employees' adaptation to organizational changes and to minimize resistance to these changes. To fulfill the purpose of this research, we applied a questionnaire to a sample of 100 employees.

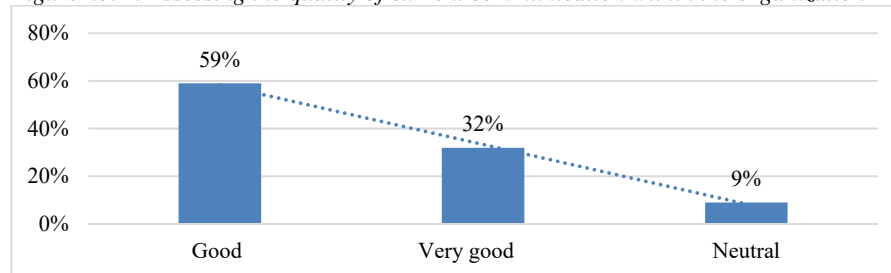
The questionnaire was designed to assess and understand how communication in the context of organizational change is perceived and managed by IT employees. By collecting and analyzing data from these 100 IT employees, the research aims to provide a deep understanding of how communication influences organizational change management and develop recommendations based on proven IT practices. This information will help develop more effective communication strategies tailored to the specific needs and challenges facing business leaders in today's era.

The questionnaire was administered online between October 7 and 19, 2023, being accessible through selected groups on LinkedIn and Facebook. The survey instrument was created using Google Forms, and the processing and analysis of the responses was performed using Microsoft Excel. In the questionnaire, topics such as: evaluation of current communication, experience with organizational changes, the impact of communication on resistance and communication strategies.

4. Findings

To question no. 1, *how do you rate the quality of current communication within your organization*, the majority of respondents (59%) consider the quality of communication in their organization to be "Good". This suggests that, for the most part, communication meets employee expectations by being effective and clear. However, there is room for improvement, as the perception did not reach the "Very Good" level. Also, 32% of the respondents evaluate the communication as "Very good". This indicates a high level of satisfaction with how information is conveyed and interaction within the organization. This positive perception can be an indicator of a strong organizational culture and effective communication leadership. While only 9% of respondents have a "Neutral" perception of the quality of communication. This could suggest that there is a segment of employees who are neither completely satisfied nor dissatisfied with communication in the organization.

Figure no. 1. Assessing the quality of current communication within the organization

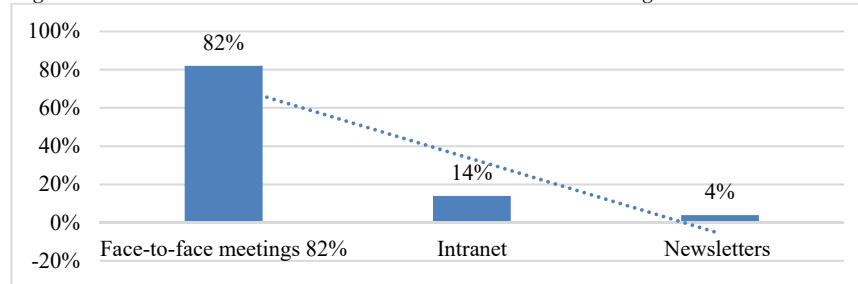


Source: Author's contribution

The results indicate a predominantly positive perception of communication in the organization, with the majority of respondents rating it as "Good" or "Very good". However, there are opportunities for improvement, especially to transform neutral perceptions into more positive ones and to raise the overall level of satisfaction. The organization could benefit from a more detailed analysis of the feedback to specifically identify and address the needs and expectations of its employees.

Regarding question 2, *which are the main communication channels used in your organization to communicate changes*, 82% of respondents suggest that, in the context of communicating changes, face-to-face meetings are considered the most effective. They enable immediate dialogue, clarify questions on the spot and ensure a better understanding of changes. Face-to-face meetings can also be more effective in addressing employee emotions and reactions to change. The intranet was mentioned by 14% of respondents. This method represents a smaller portion of the communication. Although the intranet is useful for quickly and efficiently distributing information throughout the organization, it seems that it is not considered as effective as face-to-face meetings for managing change. This could be due to its more impersonal nature and lack of direct interaction. Newsletters were mentioned by 4% of respondents. This is the least used method. Newsletters, whether digital or printed, are a one-way communication channel and may not be sufficient to convey the complexity or nuance of changes in an organization. They can be useful for general updates, but seem to be less effective for detailed discussions or addressing specific employee concerns.

Figure no. 2. The main communication channels used in the organization

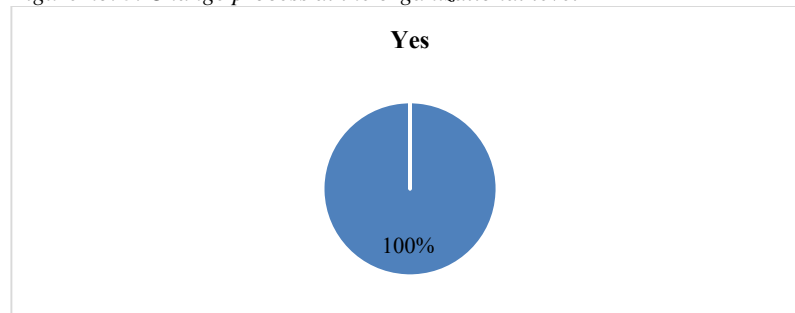


Source: Author's contribution

In the context of conveying change in an organization, direct and personal interaction is by far preferred. This emphasizes the importance of face-to-face communication in managing change and addressing employee concerns, while digital and one-way channels are considered less effective for this purpose. This is also supported by the study by Battiston et al. (2020).

Regarding question no. 3, *in the last 3-5 years have you been involved in an organizational change process*, all respondents indicated that they were involved in an organizational change process in the last 3-5 years.

Figure no. 3. Change process at the organizational level

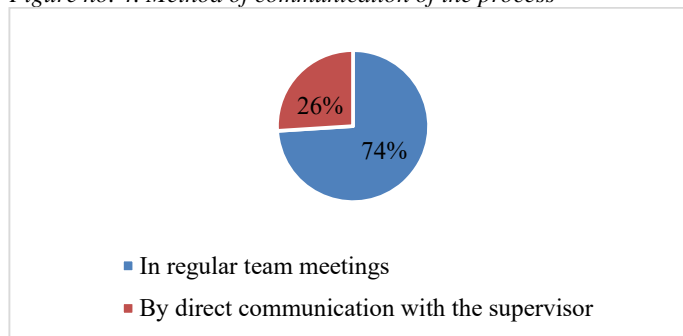


Source: Author's contribution

The types of changes can range from organizational restructuring, changes in leadership, implementation of new systems or technologies, to changes in work processes or strategies. The fact that all respondents were involved in such processes shows the diversity and complexity of the changes. A universal involvement in change processes can have a significant impact on employees. On the one hand, it can mean that the organization encourages the engagement and adaptability of its employees. On the other hand, it can also indicate possible challenges in managing change and employee reactions to it. Participating in change processes gives employees the opportunity to learn and develop professionally. This can be positive for career development, but it can also be challenging, requiring flexibility and adaptability. Given universal involvement, the organization could benefit from obtaining detailed feedback from employees about change processes to improve how they are managed in the future.

For question 4, *if yes, how was this change process communicated to you*, 74% of respondents indicated that they were informed about changes in regular team meetings. This suggests that team meetings are an important channel for communicating information and discussing change. The use of regular team meetings to communicate change shows a preference for structured and collective approaches. These meetings provide the opportunity to discuss changes in a group setting, allowing for dialogue, questions and feedback in a more formalized and organized environment. 26% of respondents indicated that the change process was communicated directly by their supervisors. This means that a significant part of the communication about changes is done through a more personal and direct approach. Direct communication with the supervisor can allow more specific or personal aspects of the change to be addressed, giving employees the opportunity to discuss individual concerns and receive clarification tailored to their needs.

Figure no. 4. Method of communication of the process

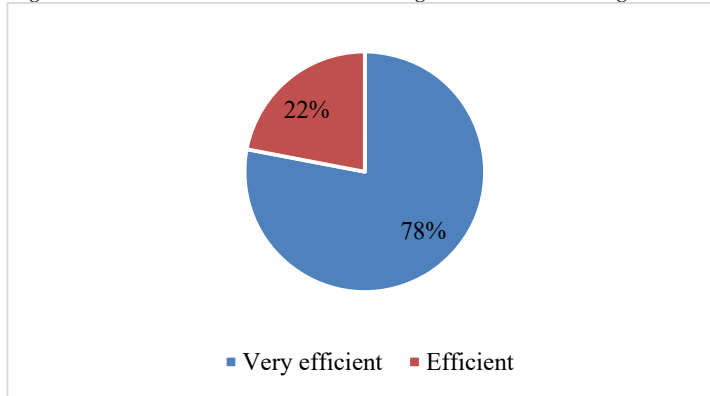


Source: Author's contribution

These results indicate an organizational preference for a structured and collective communication of changes, with an important role also given to individual communication through supervisors. This suggests a balanced approach to managing organizational change communication.

To question no. 5, *in your experience, how effective is communication in reducing resistance to change*, 78% of respondents consider communication to be "very effective" in reducing employee resistance to change. This suggests that, in their experience, the communication strategies implemented by the organization are highly effective in facilitating the transition and acceptance of change. This high level of effectiveness may indicate that the organization places great emphasis on clear, transparent, and timely communication, addressing employee concerns and providing them with the information necessary to understand and adapt to change. 22% of respondents consider communication to be "effective," meaning that they still see a positive impact of communication on reducing resistance to change, but perhaps not at the optimal or ideal level. This may suggest that although communication strategies are generally good, there is still room for improvement in how and effectively changes are communicated.

Figure no. 5. Communication in reducing resistance to change

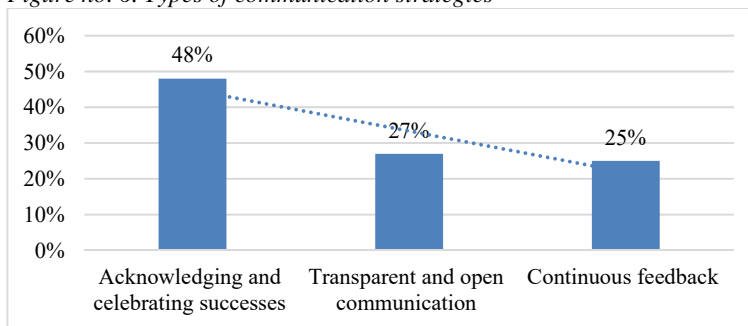


Source: Author's contribution

These data suggest that in this organization, communication is considered a highly effective tool in reducing employee resistance to change, with the recognition of opportunities for continuous improvement.

Regarding question 6, *what types of communication strategies do you think are most effective in managing resistance to change*, the majority of respondents (48%) believe that recognizing and celebrating successes are the most effective strategies in managing resistance to change. This suggests that validating employees' efforts and achievements in the context of change is extremely valuable. Celebrating successes can help boost morale, promote a sense of achievement and build confidence in the change process. This approach can also help create a positive environment and recognize individual and team contributions. 27% of respondents see transparent and open communication as very effective in addressing resistance to change. Transparency and openness in communication are essential to ensure that employees understand the reasons and details of the changes. This can reduce uncertainty and build trust as employees feel informed and involved in the process. 25% of respondents consider continuous feedback to be essential in managing resistance to change. This involves a two-way communication process where employees not only receive information but also provide feedback. The strategy of providing and asking for feedback on a regular basis can help identify and address employee concerns, adjust change strategies based on feedback received, and create a sense of engagement and ownership.

Figure no. 6. Types of communication strategies



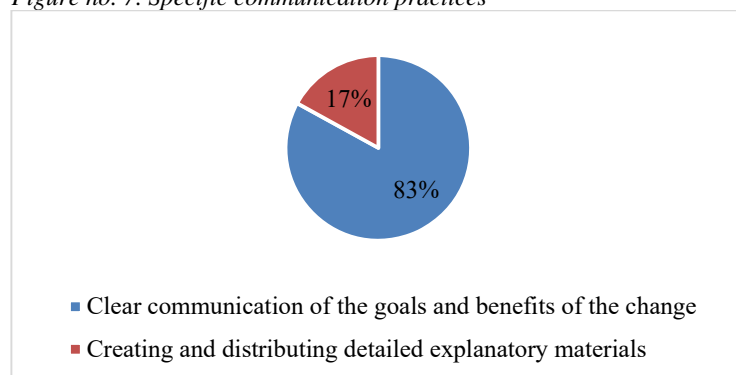
Source: Author's contribution

These results indicate a preference for communication strategies that value engagement, recognition, and transparency. All of these approaches help create an environment where employees feel valued, informed, and engaged, which can significantly reduce resistance to change. These strategies can be particularly effective in an organizational environment experiencing frequent or significant change, as they help create a sense of security and stability in the midst of transformation.

For question 7, *what specific communication practices would you recommend to facilitate organizational transitions*, 83% of respondents recommend clear communication of the goals and benefits of the change. This suggests that employees see significant value in clearly understanding

the reasons behind the changes and how they will improve the organization or their personal situation. Effective communication of goals and benefits can help align employees with the organization's vision and reduce resistance by explaining the purpose and anticipated positive impact of the changes. While 17% of respondents suggest the use of detailed explanatory materials as a communication practice in organizational transitions. This includes creating and distributing documents, presentations or other materials that provide detailed information about the changes that are about to take place. These materials can serve as reference resources for employees, helping them understand and adapt to change in a more autonomous way.

Figure no. 7. Specific communication practices



Source: Author's contribution

Employees highly value clear and transparent communication, as well as access to detailed resources to help them understand and adapt to organizational change. These practices are considered essential for facilitating effective transitions and supporting employees in these processes.

5. Conclusions

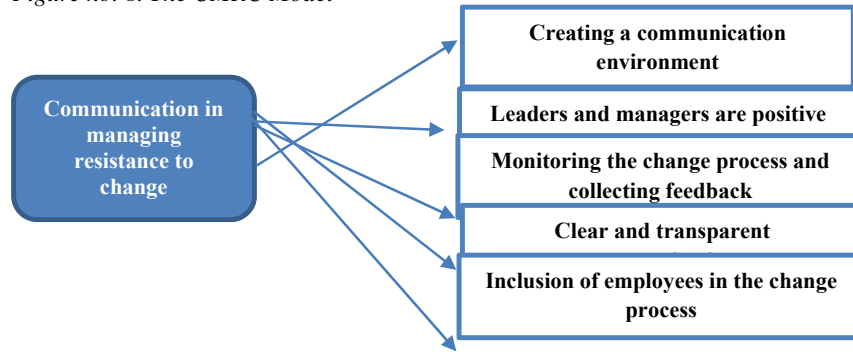
The purpose of this research was to analyze the role of communication in the effective management of resistance to change within IT organizations in Romania. In order to fulfill the purpose of this research, we applied a questionnaire to a sample of 100 IT employees from Romania.

Following the application of the research, we found that a particularly important role of communication in the effective management of resistance to change within IT organizations in Romania is played by face-to-face meetings, they are considered the most effective communication channel for transmitting changes, being preferred by a large majority of employees. This emphasizes the importance of direct interaction and personal dialogue in the change process. The intranet and newsletters play a secondary role in communicating the changes. Although useful for quickly distributing information, they are not as effective as face-to-face meetings.

All respondents were recently involved in organizational change processes, indicating a constant dynamic of change within the organization. Most employees find communication a very effective tool in reducing resistance to change. This highlights the importance of effective communication in managing organizational change. Acknowledging and celebrating successes, transparent and open communication, and continuous feedback are seen as key strategies in managing resistance to change.

Clear communication of the goals and benefits of change, along with the creation and distribution of detailed explanatory materials, are considered essential practices for facilitating organizational transitions. Starting from these conclusions, we formulated the following model for improving communication in the management of resistance to change.

Figure no. 8. The CMRC Model



Source: Author's contribution

In figure 8, I have created the CMRC model (acronym for communication in managing resistance to change). Thus, creating an environment where employees can voice concerns and ask questions about the change is vital. Two-way communication helps identify points of resistance and develop collaborative solutions. It is also important to provide a forum for questions and concerns, allowing employees to express their feelings and concerns. Involving employees in the change process by asking for their opinions and ideas can increase a sense of ownership and buy-in.

Active participation can help identify potential solutions and tailor change to the organization's specific needs. Providing the necessary training and resources can help employees understand how to adapt to change and develop the necessary skills.

Emotional support and acknowledgment of employee concerns are also important. Leaders and managers play a crucial role in shaping attitudes towards change. Leaders must be positive role models, show commitment to change and effectively manage any resistance. Monitoring the change process and collecting regular feedback can help identify problems early and adjust plans as needed. Feedback can provide valuable insights into how change is perceived at different levels of the organization. Clear and transparent communication about the nature of the changes, the reasons behind them and their impact on employees is essential. Transparency reduces uncertainty and anxiety, two elements that often fuel resistance.

Communication must be structured to facilitate employees' understanding of how they will be affected by the changes and what steps are needed to adapt. This includes explaining the benefits of the change to employees and the organization. Organizational leaders must be well trained to effectively communicate change. This includes training them in communication techniques and making sure they have the information they need to answer employee questions. Ongoing communication about the progress and results of changes helps manage expectations and maintain morale.

It is important to recognize achievements and adjust communication based on feedback received. Effective use of digital channels and communication platforms can support the rapid and effective dissemination of information as well as the collection of feedback. Including employees in the change process through open communication increases ownership and reduces resistance because employees feel valued and engaged. Building a positive narrative around the change and emphasizing the long-term benefits can motivate employees and reduce opposition. Communication is not the only key factor in successful organizational change, so the data cannot be generalized.

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The Impact of Management Practices on Organizational Effectiveness in a Transport Company

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Abstract

Freight transport today directly affects major business decisions of customers on market coverage; purchasing; route/itinerary design; quality policy; pricing policy and payment terms, which makes it imperative to develop a system of management practices to improve the efficiency and performance of the road haulage service.

Based on this argument, we set out to analyse the management practices that road transport organisations implement and use to improve efficiency, approached from an internal perspective, in order to cope with major changes in technology, markets and organisational structures, given that the key transport processes, approached in a unitary manner, integrate a series of operations that concern not only transport itself but also storage, handling and transshipment and transport packaging. Ensuring that the transport service meets market standards is a major factor in retaining customers and increasing efficiency and performance.

Key words: effectiveness, management practices, organisational effectiveness, transport management, logistic management

J.E.L. classification: M10, M19

1. Introduction

Road haulage, together with other modes of land and water transport, directly affects the major business decisions of customers on market coverage; buying; route/itinerary design; quality policy; pricing policy, etc. The growing importance of road freight transport is largely due to the advantages of this mode of transport as well as factors such as the development of combined freight transport technologies, in which road transport plays a decisive role, and the outsourcing of freight transport which is growing rapidly, driven by the expansion of increasingly competitive logistics chains for many categories of goods subject to transport (Goodman, 2009; Rushton *et. al*, 2014).

Over the past 20 years, major changes in technology, markets, organisational structures and organisational management practices have led to new ways of conceptualising the transport process, which involves fulfilling orders according to high standards set with customers. Freight transport in general, i.e. road freight transport, which is the subject of the research, is no longer seen individually as a simple movement in space, but as a process that integrates a series of operations concerning: transport itself, storage; handling and transshipment; packaging of goods for transport (Crişan & Ilieş, 2010, p.26).

According to current practice in the field, the transport of goods, regardless of the mode of transport (direct or combined), involves the unified treatment of all the operations of the transport process, namely: transport itself; storage; handling and transshipment of goods, in and from the

means of transport, consisting of groupage means (pallets, large containers); packaging for transport, by coordinating the actions of all partners involved in this process. Because of its undeniable advantages, above all its flexibility, road transport features in almost all combined transport options as an important component of the logistics chain (Stock, & Lambert, 2001, p.313).

In order to understand the concept of transport correctly, we need to look at the transport activity within freight forwarding companies as part of logistics chains, which require high standards of customer service. In this context, the freight transport process requires an important exchange of information to ensure a fast and flexible flow of goods according to customer requirements and expectations (Goodman, 2009)

The outsourcing of the transport function alongside other logistics activities over the last two decades has resulted in the rapid growth of third party 3PL logistics providers taking over the function of shipper, these organisations manage the transport capacity they contract and their warehousing facilities, based on specific expertise in the field. In recent years we have seen the growth of 4PL logistics service providers, which take over the entire transport operation and offer sustainable logistics solutions requested by the customer (Ilies et al, 2011, p.44).

2. Literature review

The ability of transport companies' management to meet customer expectations and needs is an important factor in determining customer satisfaction, ensuring trust and facilitating the achievement of business objectives, and plays a decisive role in ensuring competitiveness in the market. This requires aligning interrelated management processes with the mission of these organisations that gives strategic direction, and facilitates staff awareness of improving effectiveness as a measure of performance (Rushton *et. al*, 2014).

Information technology and the information subsystem is a key success factor in the management of road haulage companies, playing an important role in improving organisational effectiveness from an internal perspective and customer satisfaction from an external perspective. At the same time, it contributes to the integration of the following managerial activities into a unified and effective process, based on a strong customer orientation: order processing; choice of transport route; load consolidation, shipment scheduling, transport scheduling, cargo handling and storage (Christopher, 2005; Murphy & Knemeyer, 2018).

An effective and efficient information system can help managers in the decision-making process in transport companies, with important effects on quality assurance as an important factor of performance. Well-informed and real-time decisions are an effective tool for managers to communicate quickly with other employees. At the same time, the use of information technology facilitates the development of realistic and effective strategies and policies.

In order to ensure the effectiveness of the road haulage service, they must ensure: adequate and specific skills for all employees, primarily front-line employees such as drivers; customisation of the service offered to customers according to their requests; and offer IT-based customer service capabilities; prompt responses to receive and resolve customer complaints.

Organizational effectiveness, "is seen by most researchers as the degree or extent to which the firm/company meets its stated organizational goals" (Kinicki, & Fugate, 2016, p.540).

More and more authors are defining the effectiveness of organisations in different fields of activity on the premise that this concept is multidimensional, which is why there is a wide variety of criteria and approaches when it comes to the needs and expectations of relevant stakeholders. Successful businesses draw on an appropriate mix of effectiveness criteria to suit their objectives (Robbins & Coulter, 2018). Measuring organisational effectiveness, as a multidimensional concept, can encompass several internal performance objectives, associated with those external measures that relate to meeting the requirements of external and internal stakeholders.

Based on the observation that organizational effectiveness is a multidimensional concept, there are many recognized authors (Sinding & Waldstrom, 2014) use four generic approaches to its measurement, which refer to: Goal attainment, by comparing the results for key processes with pre-determined objectives; Resource consumption required to operationalize key processes that

determine market competitiveness; Key processes within the enterprise that determine organizational effectiveness, through an appropriate combination of efficiency, quality, productivity, flexibility and innovation (Kinicki & Fugate, 2018); Relevant stakeholders with their specific objectives, which can facilitate the promotion of a sustainable business model, not only financially but also from a social and environmental point of view. An ongoing challenge for the management of freight haulage companies is to achieve a functional balance between strategic stakeholders (De Waal, & Kourtit, 2013).

An analysis of the objectives of a representative road haulage company, i.e. the empirically studied company "TRANS", showed that it focused its efforts on achieving the highest possible organisational effectiveness through appropriate management practices and policies, focused on: providing transport service according to customers' needs and expectations; efficient use of vehicles and human resources; flexibility. Strong competition and the pace of technological renewal in the construction of goods vehicles are driving road haulage companies to innovate in order to be as competitive and flexible as possible. This makes it easier for them to carry out the necessary organizational changes, which are increasingly frequent and complex (Sighiartău, 2022). In this context it can be noted that more and more studies, in the field of transport and logistics, highlight the fact that business strategies focused on organizational effectiveness, which emphasize the evaluation of employee and customer behaviors has required the development and use of appropriate and effective feedback programs from both employees seen as internal customers and external customers (Ilies et al, 2011).

3. Research methodology

Starting from the main objective of our study, which was to measure the impact of management practices on organisational effectiveness, the "TRANS" road haulage company was chosen for the analysis, which is relevant in terms of activity and results obtained, and which operates in Romania and on international markets, especially European ones. It has a large fleet of vehicles (169 vehicles, of which the largest share is represented by high-capacity vehicles) which meet international standards for circulation on European roads.

The research sample comprises 31 respondents from all organisational sub-units of the company, consisting of 7 managers and 24 employees of the transport company. As a research hypothesis we sought to determine the extent to which "The effectiveness of the transport company's management practices has a significant and positive impact on its organizational effectiveness".

The study was carried out, i.e. the primary data were obtained by means of a survey, using a questionnaire, which includes management practices and factors that determine organizational effectiveness - relevant items that express the respondents' perception of the potential of the enterprise to apply the most appropriate management practices and factors that determine organizational performance. The evaluation of the questionnaire items was done on a scale from 1 to 5 (1 - total disagreement, 5 - total agreement).

In order to obtain in-depth data and information on the management practices used and on the factors that determine the enhancement of the effectiveness of the road haulage enterprise, we also conducted a semi-structured interview with 9 people, including 3 managers and 6 employees. The interviews lasted approximately 40 minutes and were conducted between 01 July 2023 and 31 October 2023. For the analysis of organisational effectiveness and management practices used by transport companies, a series of primary data obtained from the questionnaire and interviews were used, together with a number of documents provided by the transport company and relevant studies published by a number of recognised authors in the field.

The model chosen to measure and analyse the impact of management practices on organisational effectiveness at the company "TRANS" is based on two aggregate variables, which we considered relevant to the objective of the empirical study, namely: "*Organisational effectiveness of the transport company*", represented by the aggregate variable *Efic.org.tr* and "*Effectiveness of management practices in the transport enterprise*" represented by the variable *Efic.mg.tr*. The results of the reliability analysis, are contained in Table 1 and express that the two

variables are representative in terms of the construct, registering acceptable Cronbach's Alpha coefficients, respectively 0.75127 for the aggregate variable *Efic.org.tr* and 0.78362 for the aggregate variable *Efic.mgt.tr*.

Table no. 1 Reliability analysis test scale

Variable	Sign	Number of items in the scale	Cronbach's Alpha	Average interitem covariance
Efic.org.tr.	+	24	0.75127	1138102
Efic.mgt.tr	+	16	0.78362	.1244293

Source: Own research. Results provided by STATA 18

4. Results and discussion

4.1. Analysis of organisational effectiveness

Organisational effectiveness, as a measure of the internal performance of the road haulage company, represented by the variable *Efic_org_tr*, measures employees' perceptions of the ways in which the company's employees meet organisational objectives. The aggregate variable *Efic_org_tr* has a structure consisting of 24 items representing the primary variables of the model. The structure of the variable is characterized by an acceptable degree of internal consistency, expressed using Cronbach's Alpha coefficient of 0.75127 (Table 1), which confirms the representativeness of the variable *Efic_org_tr*, for the study. We can also see that the aggregate variable *Efic_mg_tr*, composed of 16 items or primary variables, has an acceptable internal consistency (Cronbach's Alpha coefficient of 0.78362), which demonstrates its representativeness for the study.

Table no. 2 *Efic_org_tr*, *Efic_mgt_tr*, statistics (count mean sd semean cv)

Variable	N	Mean	sd	se(mean)	cv
Efic_mgt_tr	31	3.8142	.2076	.0397	.0958
Efic_org_tr	31	3.7631	.1645	.0342	.0892

Source: Own research. Results provided by STATA 18

The organisational effectiveness of the road haulage enterprise of goods represented by the variable *Efic_org_tr*, has a good average of 3.7631 (Table 2). The values of this variable are related to the mean of the observed scores, register a standard deviation (*sd*) of 0.1645. At the same time, the standard error is 0.0342, which expresses that the observed mean value, with 95% probability, will be in the range 3.6947 ($3.7631 - 0.0342 \times 2$) and 3.8315 ($3.7631 + 0.0342 \times 2$).

The magnitude of the coefficient of variation (*cv*), is 0.0892, and expresses that the statistical population has a good degree of homogeneity. If we refer to the variable *Efic_mgt_tr*, we can see that it has a good mean score of 3.8142, with a standard deviation (*sd*) of 0.1645 and standard error of 0.0342, which expresses that the observed mean value, with a probability of 95%, will be in the range 3.7348 ($3.8142 - 0.0397 \times 2$) and 3.8936 ($3.8142 + 0.0397 \times 2$). According to the results, presented in Table 2, the descriptive statistics indicators for the two aggregate variables record values that express the relevance and correctness of the construct. The construct validity of the aggregate variables *Efic_org_tr* and *Efic_mgt_tr* is also demonstrated by the item-total correlations, which express the statistical relationships between the scores of the primary variables and the scores of the aggregate variables of which they are part. Thus the coefficients calculated for the item-total correlations express that in the case of the variable:

- *Efic_org_tr*: 8.34% of the total item-total correlations express very strong statistically significant links; 45.84% express strong statistically significant links; 41.36% express moderate statistically significant links; 4.16% express weak statistically significant links, which means that the construct of this variable is valid, providing a good measure of the primary variables;
- *Efic_mgt_tr*: 14.29% of the total item-total correlations express very strong statistically significant links; 35.72% express strong statistically significant links; 42.84% express moderate statistically significant links; 7.15% express weak statistically significant links, which means that the construct of this variable is valid, providing a good measure of the primary variables

At the same time, the examination of the primary variables composing the two aggregate variables *Efic_org_tr* and *Efic_mgt_tr*, from the content point of view, confirms the validity of these variables and expresses that they are representative for their measurement.

The analysis of organisational effectiveness, represented by the variable *Efic_org_tr*, highlights the importance of the factors, represented by the primary variables, that determine it. Thus, according to the perception of the respondents to the questionnaire, the primary variables that made the most important contributions to ensuring the organizational effectiveness of the company "TRANS", i.e. its strengths, in the perception of the employees who are part of the research sample, refer to: analysis of the company's key results and comparison with the objectives set in order to identify problems and make the necessary corrections (4.0251); the organization's management ensures a good relationship between its employees and customers, (4.0134); the organization's management is concerned with ensuring employees' skills and involvement, to achieve the organization's common goals, (3.9824); the transportation organization's management sets clear and realistic goals and responsibilities (3.9213); the management of the transport company ensures effective communication between organisational departments and between employees, (3.9141); there is a strong customer orientation in the transport company, (3.8711); the objectives of the transport company are known and accepted by the employees, (3.8821); the company's strategies and policies are an important support in achieving the set objectives, (3.8666) employees of the transport enterprise ensure that the core values of the organization are promoted and shared, (3.8609); management of the transport enterprise recognizes achievements in individual or team performance of employees and rewards them, (3.8566); managers of the transport enterprise are concerned with identifying and implementing good management practices, (3.8037); managers use a system of appropriate and effective indicators to measure employee performance, (3.8291).

If we consider the lower rated factors, represented by the primary variables with lower scores, we can show that the weak points refer to: ensuring employee skills to help the company achieve its objectives; alignment of organisational objectives both at the level of the organisation's functions and at the different organisational levels; appropriate employee retention policies and practices; managerial expertise of transport company managers; applying a system of incentives to ensure effective motivation; developing effective training programmes for both managers and employees, especially for drivers who are engaged in international traffic.

According to the analyses carried out at management level, some of these problems were caused by certain dysfunctions generated by the labour crisis, with reference primarily to drivers for international traffic. Nevertheless, the company has remained competitive, but the energy crisis exacerbated by the war in Ukraine and the problems it generates may continue to affect its stability, organisational effectiveness and efficiency.

In conclusion, I believe that the company "TRANS" has an organizational structure that ensures good cooperation between organizational departments and the information necessary for the proper functioning of the organization, has proven and proves that it has the potential to remain competitive in an increasingly dynamic and uncertain market.

4.2. Analysis of the effectiveness of management practices

Based on the structure of the aggregate variable *Efic_mgt_tr* the primary variables that compose it, according to the perception of the respondents to the questionnaire, record the following scores:

Transport company management:

- has appropriate and effective structured management systems, policies and procedures in place to achieve organizational objectives, (3.9515);
- has clear and realistic specific objectives in all functional areas, (3.9343);
- adequately and effectively manages "key" business processes, (3.8831);
- has specific and effective operating standards for the key elements that ensure organizational performance, (3.8642);
- has appropriate human resource management policies, practices and procedures (3.9544);
- ensures effective measurement and monitoring of performance in all functional areas of activity, (3.8156);
- assesses operational performance in all areas against specific indicatorsI, (3.9608);
- effectively measure and monitor customer satisfaction whenever necessary, (3.8783);
- effectively measure and monitor employee satisfaction, (3.8578);
- ensures appropriate individual and team responsibilities for the effective operation of work processes, (4.0557);
- provides monitoring and control of processes to facilitate the achievement of overall and individually specific objectives, *Mgt12* (3.8829);
- ensures the evaluation, control and revision of management procedures, when required, to facilitate the achievement of expected performance, (4.0832);
- provides key competencies appropriate to operationalize management policies, practices and procedures to ensure the performance of interrelated processes, (3.8457);
- involves customers in the process of improving the quality of the services provided,

According to these results, it can be observed that the most important factors contributing to the improvement of the effectiveness of management practices in general relate to: Evaluating, controlling and reviewing management procedures; responsible concern for solving environmental problems; ensuring appropriate individual and team responsibilities for effective operationalization of work processes; *evaluating* operational performance in all specific areas; having adequate infrastructure (software and hardware) for computerization of activities and processes; having adequate and effective structured systems, management policies and procedures for achieving organizational objectives; having adequate and effective policies, practices and procedures for ensuring organizational performance.

According to the interview on the appropriate and effective use of management practices, the interview respondents highlight the importance of a number of factors to improve organisational effectiveness, namely: 77.78% of the respondents believe that an effective and transparent motivation system should be ensured; 66.67% want to set clear and realistic organisational objectives; 44.45% believe that employees' skills should be improved in view of the company's opportunities to integrate into competitive supply chains; 55.56% believe that managers need to have relevant information that relates to the customer's experience with the organization; 66.67% believe that there is a need for clearer definition of responsibilities, which ensures a better understanding of the behaviors and results they need to achieve in order to meet the company's goals.

4.3. Statistical relationships between variables *Efic_org_tr*, *Efic_mg_tr*

In order to determine the statistical association relationships between the variables *Eft org tr* and *Efic_mgt_tr*, correlation coefficients were determined, taking into account that the relationship between the two variables is of regression type, in order to express the significance of the statistical relationships between these aggregate variables. Thus based on the correlation coefficients we can

see that between the aggregate variable *Efic_org_tr* and the variable *Efic_mgt_tr* there is a positive and strong correlation (correlation coefficient 0.66).

To determine the impact of the independent variable *Efic_mgt_tr* on the dependent variable *Efic_org_tr*, we performed regression analysis, the results of which are summarised in Table 3.

Table no. 3 Influence of the independent variable *Efic_mgt_tr* on the dependent variable *Efic_org_tr*

Independent variable	N	Prob > F	R-squared	Reg. coef.	Std. Err	t	P> t
Efic_mgt_tr	31	0.0000	0.6324	.6735211	.0913925	7.36	0.000

Source: Own research. Results provided by STATA 18

Based on the data in Table 3 we can say that the econometric model used is correct. The variable *Efic_mgt_tr* has a significant impact on the variable *Efic_org_tr*. In support of this statement comes the "F" test whose Prob > F = 0.0000 (is less than 0.05). The independent variable factor *Efic_mgt_tr* explains 63.24% of the variation of the dependent variable *Efic_org_tr* (R-squared = 0.6324). The impact of the independent variable is significant because P>|t| = 0.000 is less than 0.05. The regression coefficient of the variable *Efic_mgt_tr* is .6735, which means that for a one unit increase in the variable *Efic_mgt_tr* the dependent variable *Efic_org_tr* increases on average by .6735 units.

The results obtained from the analysis of association relationships and regression analysis, express that the effectiveness of management practices (*Efic_mgt_tr*), has a significant and positive impact, on organizational effectiveness (*Efic_org_tr*). This means that the effectiveness of management practices (*Efic_mgt_tr*) is a strong predictor for the increase in organizational effectiveness (*Efic_org_tr*) of the enterprise under study.

5. Conclusions

If we take into account the results of the analysis of the association relationships of the statistical links between the aggregate variables *Efic_org_tr* and *Efic_mgt_tr* we can see that there is a positive and strong association relationship between them. At the same time the regression analysis expresses that the aggregate variable *Efic_mgt_tr* positively and significantly influences the aggregate variable *Efic_org_tr*. Based on the results of the analysis of the two variables and the statistical links between them we believe that managers, road haulage company together with other members of the organization, should focus their efforts to improve organizational effectiveness, on identifying and implementing a set of management practices that take into account the following aspects:

- adapting to the ever more frequent changes in the market, according to customers' needs and expectations;
- ensuring efficiency and flexibility in the operation of the transport organisation as a measure of business performance;
- ensuring flexibility and adaptability to changes in the market to meet customer needs and expectations without neglecting competitors;
- conducting management reviews, translated into appropriate management policies and practices, to facilitate the achievement of organisational objectives in an effective and efficient manner;
- the promotion by the leadership of the transport company of a value system that fosters the commitment of managers and other employees at work and to the company;
- aligning the objectives of the different functions with the overall business objectives;
- alignment of responsibilities and authority, both managerial and cross-functional, to facilitate improved organisational effectiveness through the development of systems and competencies;

- ensuring appropriate and effective programmes to develop managers and other employees;
- implementing and developing an appropriate and effective system of human resource management practices;
- using feedback programs from both employees seen as internal customers and external customers to assess their behaviors and implement business strategies focused on organizational effectiveness;
- ensuring effective and sufficient communication channels both within the organisation and externally with customers;
- developing and implementing company strategy and policies based on necessary and relevant information;
- reviewing and updating strategy, policies and practices to enable effective and efficient operationalization of programs to improve organizational effectiveness through appropriate actions;
- ensuring and continuously updating the customer database in line with changes in the market and in customer relations;
- implementing effective customer experience management;
- ensuring the effectiveness of the management system of transport undertakings by computerisation of transport processes in their entirety, not just in order processing and monitoring;
- development of an adequate information system to ensure the effectiveness of decisions at the strategic and operational level of transport companies and the ability to process information and generate real-time management reports;
- auditing the management system in road haulage, covering actual transport, transport scheduling, marketing and sales, financial and organisational management, in order to identify best practices in planning, organising, motivating and coordinating and controlling activities, with a view to developing and implementing a sustainable business strategy;
- developing active partnerships with customers, sales agents, distributors in the logistics channels to eliminate malfunctions that may occur during the transport process and to ensure better cooperation in order to exploit the opportunities on the transport market.

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Exploring Perceptions and Practices in Organizing University Scientific Research

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Abstract

Universities are considered the main centers for the national research base, paving the way for the development of transdisciplinary projects, crucial in the context of the complex challenges facing society. The organization of scientific research must prioritize the human factor and involve establishing the departments involved in university scientific research and the connections between them. This paper presents the perceptions of academic staff at a medical university regarding the organization and implementation of research within the university and the sources of research funding.

The results highlight a clear orientation towards interdisciplinary research, albeit conducted within the organization itself, and a weak prioritization of fundamental research. Additionally, funding through international grants is seen as less accessible than national funding, despite the medical field being considered a priority in the funding programs. The research findings are relevant for decision-makers in the field of research funding at both the national and organizational levels.

Key words: research and development; grants; research funding; collaborative environment

J.E.L. classification: I23, O32

1. Introduction

Worldwide, knowledge is recognized as a critical factor for global competitiveness in the 21st century. According to this perspective, successful societies are those most capable of leveraging knowledge for performance and competitive advantage, as well as attracting international talents, new businesses, and investments. The imperative for a society grounded in knowledge is crucial in the context of the European Union and national government agendas aimed at fostering sustainable economic and social development. This becomes particularly significant as a proactive response to the challenges posed by the global economic crisis. (European Commission, 2010, p.17). The evolution of society into a knowledge society has positioned universities at the center of creativity and human learning, crucial for the survival of our planet. The forces influencing the activities of universities have grown in complexity and are continuously accelerating (EUA, 2021, p.3).

In many countries, universities have become the primary centers for the national research base, paving the way for the development of transdisciplinary concepts increasingly seen as crucial in the face of the complex challenges confronting both national and global societies. Universities function on a multifaceted and interdependent spectrum: delving into the most theoretical and intricate realms of knowledge, concurrently pursuing the practical implementation of discoveries; examining, revitalizing, and progressing inherited knowledge from preceding generations; and endeavoring to

establish robust principles of reasoning and action that they impart to successive generations of students (Boulton *et al.*, 2008, p.4). Thus, universities operate both in the short term and on a longer horizon.

Universities differ from enterprises in that they lack a clearly defined product and standardized processes designed for cost-effective production. Instead, universities produce a broad range of outcomes (Boulton *et al.*, 2008, p.4): through research, they introduce new possibilities, and in the realm of teaching, they mold individuals. These two dimensions synergize, giving rise to emergent capacities that align with the demands of the era. They assimilate and generate the potential for advancement through ideas and individuals poised to influence an as-yet-unknown future. Objectives in a fragile balance - excellence, innovation, sustainability, community orientation—must be incorporated into research activities to access limited and highly competitive funding (Percic *et al.*, 2021, p.229; Talmaciu *et al.*, p.353).

The enduring factors contributing to the success of universities elucidate why, in the age of globalization, these institutions are regarded as significant national assets on a global scale. Governments across the world recognize them as crucial fountains of new knowledge and inventive ideas, sources of skilled personnel and reputable accreditation, catalysts for innovation, magnets for talent and international investments in a region, advocates for social justice and mobility, and contributors to social and cultural vibrancy. Thus, in recent decades, the opinion has firmly been established among governments worldwide that higher education and high-quality, internationally competitive research are essential conditions for long-term success in the globalized knowledge economies (Boulton *et al.*, 2008, p.5).

2. Theoretical background - university scientific research

Like in any field of activity, organizing scientific research conducted at universities involves the human factor and entails determining the positions and departments involved in university research and the connections between them. Scientific research activity carried out in universities is conducted in accordance with the regulations of the respective universities and current legislation, either individually or in research collectives operating within various types of research structures. Although the external environment that stimulates research is essential, the internal mechanisms of universities become decisive in the success of research projects (Battaglia *et al.*, 2021, p.13).

Scientific research is a necessity for knowledge and can be achieved through innovation, thus becoming the engine for increasing economic competitiveness and human well-being (Gâlea, 2021, p.14). In the current period, unfortunately, we increasingly face unforeseen situations: exceptional health situations, a reduction in resource levels, and an aging population. In this context, scientific research becomes a necessary and important resource for addressing or improving these challenges. Scientific research is a creative activity undertaken systematically with the aim of expanding the volume of knowledge, including knowledge about humans, society, and culture, and using them to conceive new applications (Gâlea, 2021, p. 22).

The umbrella term Research and Development (R&D) encompasses three distinct categories of activities: basic research, applied research, and experimental development. Basic research involves both experimental and theoretical work primarily focused on gaining new insights into the fundamentals of observable phenomena. This type of research is conducted without specific consideration for any immediate application or practical use (OECD, 2015). Basic research analyzes properties, structures, and relationships based on which hypotheses, theories, or laws are formulated and tested. The results of basic research are not generally sold; they are published in scientific journals or disseminated to interested parties. Experimental development involves creative and systematic work aimed at increasing the body of knowledge, including knowledge about humans, culture, and society, and using this knowledge to create new applications (OECD, 2015). Applied research involves conducting original investigations with the goal of acquiring new knowledge. Nevertheless, this form of research is primarily oriented toward addressing a specific practical purpose or objective. Experimental development, on the other hand, entails systematic work built upon existing knowledge garnered from research or practical experience. It aims to generate additional knowledge directed at creating new materials, products, or devices, developing innovative processes, systems, or services, or significantly enhancing those already in existence or implemented

(OECD, 2015).

Scientific research conducted by universities, influencing knowledge development and human resources, stands as a fundamental pillar of socio-economic advancement. A key determinant in the socio-economic role of universities is the enhancement of innovative capacity, leveraging the creative potential of both faculty and students through the application of knowledge, products, and technologies in the economic sphere. Given their specific societal functions, universities are tasked with formulating scientific research programs oriented towards new directions and priorities in science, overseeing research teams and fostering centers of excellence. The formulation of managerial solutions is challenging and marked by significant dynamism (Toma, 2010, p.405). Society should acknowledge the pivotal role of universities as vital entrepreneurial institutions, possessing unparalleled capacity and adaptable responsiveness to a multitude of contemporary, often interdisciplinary challenges, while also serving as compelling attractors for top-tier talents. (LERU, 2012, p.4).

It has been demonstrated that there is a strong correlation between direct financial stimulation of universities and their performance (Medeleanu *et al.*, 2020, p.69). The possibility of accessing external funding sources through specific instruments - research projects - can induce other positive effects at the organizational level (Manolescu, 2005, p.9), such as gender equality (Apostoaie *et al.*, 2019, p.215). Funding systems and specific instruments are important in all spheres of society (Ozili, 2021, p.457), but for research - a field that requires significant sums, especially during critical moments and without a clear promise of remuneration for capital contributors - they become vital. The clearer the criteria for evaluating and selecting research projects are for the researchers involved, the more accessible funding through external programs becomes (Toma *et al.*, 2013, p.306; Toma *et al.*, 2016, p.418).

3. Research methodology

We will now present the perceptions of academic staff from "Grigore T. Popa" University of Medicine and Pharmacy in Iași regarding university scientific research as a general approach, information about the organization and implementation of research within the University, and the funding sources for university research. The primary instrument used is a questionnaire with predefined and open-ended responses, completed by 74 faculty members conducting research within the university.

In the university environment, the realization of scientific research and, implicitly, its performance and efficiency, are conditioned by the academic staff's own conception of research and their perceptions of how and where it is carried out. These opinions and perceptions can be more or less different from the ideas, principles, and objectives proposed and assumed by the university through its framework documents regulating scientific research activity (University Charter, Strategic Plan, regulations, reports). This implies that the potential benefits for the university arising from scientific research depend on how academic staff actually approach scientific research when they believe they are pursuing the university's research objectives.

According to the Rector's Report for the academic year 2021-2022 (UMF, 2022, p.138), scientific research activity constitutes a fundamental component of the mission of "Grigore T Popa" University of Medicine and Pharmacy in Iași, as outlined in the strategic plan and the university's charter. The academic community at the university consistently supports the essential principle that a higher education institution must be a significant producer of scientific novelty, both fundamental and applied, within the specific context of its educational role and the formation of elites. Research and development activities are carried out in accordance with the University Charter of Medicine and Pharmacy "Grigore T. Popa" in Iași and are based on the strategy of promoting multidisciplinary research and the priorities of new technologies. University scientific research is conducted either individually or in research collectives within faculties, interdisciplinary research platforms, and scientific research and excellence centers (UMF, 2022, p.138).

University scientific research is perceived in various ways by those involved in research at "Grigore T. Popa" University of Medicine and Pharmacy in Iași. Thus, depending on the perspective from which respondents approach this concept, they view university scientific research as representing: an activity or a set of activities, a component, a process, a method, a tool, a mode of

expression, a vocation, an evaluation criterion.

4. Findings and discussion

The first set of questions aimed to capture respondents' perceptions regarding the general characteristics of research processes conducted at the university.

In response to the question "What do you believe can be considered university scientific research?" respondents defined university scientific research by referring to various aspects related to this concept: organization and functioning, realization, features, forms, functions, effects, or results.

Fourteen out of the 74 respondents defined university scientific research from the perspective of organization and functioning. Summarizing the opinions of the respondents, viewed from this perspective, university scientific research represents the totality of contracted or non-contracted research activities conducted under the auspices of a university and utilizing the research infrastructure (laboratories, research centers, etc.) provided by the respective university or other partnering institutions.

From the perspective of those who conduct it, university scientific research, in the respondents' vision, represents the totality of research activities carried out by university faculty, researchers, doctoral students, and students.

Some respondents defined university scientific research from the perspective of how it is conducted, mentioning: rigorous and meticulous investigation based on scientific principles; consulting the bibliography; developing research projects; creating scientific papers; filing invention patents.

The definitions provided by the respondents highlighted the following characteristics of university scientific research activity: complex, highly specialized, and professional, carried out in teams, generative and transmitter of novelty, with a mandatory character for academic staff.

In terms of the functions it fulfills, according to the academic staff engaged in research at UMF Iași, university scientific research serves the following functions:

- General: observation of phenomena, validation of the descriptive conceptual framework of various study disciplines, creation or generation of new knowledge, and transfer of this knowledge to society to address current societal needs.
- Specific to medical sciences: a source of scientific evidence for medical practice and health policies.
- Related to human resources: development of research skills and abilities; training of future researchers; fostering creativity; promotion of interdisciplinary and teamwork; criterion for evaluation or component of performance evaluation in academic activities; complementing or supplementing teaching activities.
- Organizational: promotion of excellence and competence; criterion for university evaluation; indicator of national and international visibility; instrument for continuous institutional adaptation to socio-economic challenges.

Five respondents view university scientific research as a component of higher education with the aim of educating students to acquire the necessary skills for scientific research, involving faculty in generating innovative ideas and contributions, and creating or generating and transferring new knowledge to society.

In terms of expected effects or results, the most important ones emerged as follows:

- General: generating novelty in any field of knowledge; accumulating new knowledge through the observation of new phenomena and obtaining new results; achieving results with an impact on scientific and technological progress and practical relevance; achieving results with economic, social, cultural impact, in health and environmental protection; identifying new areas with potential applications in everyday life.
- Specific to teaching: obtaining results that can be used in teaching activities; for teaching – more effective and attractive teaching methods; leveraging the creative capacity of faculty.
- Specific to medicine: optimizing diagnosis and patient therapy; obtaining knowledge that can be useful for the development of prevention, diagnosis, and treatment possibilities.

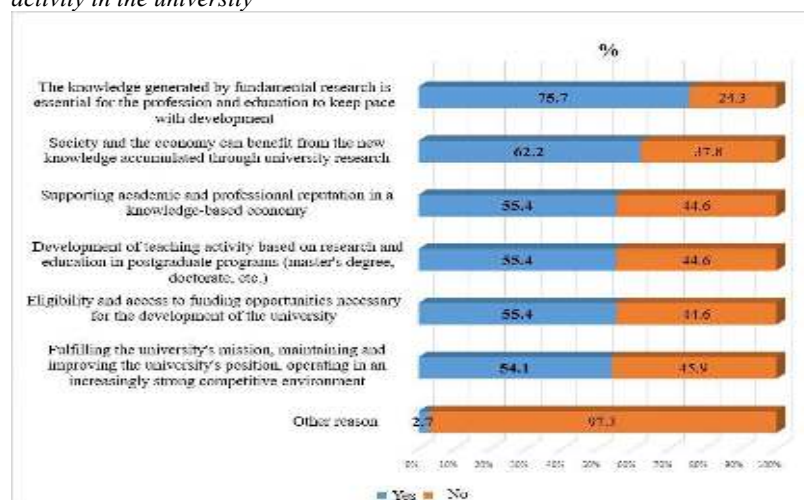
- Organizational: increasing innovative capacity; increasing competitiveness of universities; developing research infrastructure; supplementing financial resources; producing articles, books, manuals.

In response to the question "Why do you consider research activity necessary in the university?" the responding researchers argued for the necessity of research activity in their university based on the provided response options (6 predefined arguments), with the possibility of offering an option not listed (figure no.1).

The main argument justifying the necessity of research activity, in the researchers' opinion, is the generation of knowledge perceived as essential for the profession and education to keep pace with development. 75.7% of the total 74 respondents chose the response option "Knowledge generated by fundamental research is essential for the profession and education to keep pace with development," recording the highest number of responses. The second argument in justifying the necessity of research activity is the benefit brought to society in general and the economy in particular through the accumulation of new knowledge. Among all researchers, 62.2% of respondents chose the option "Society and the economy can benefit from new knowledge accumulated through university research." The other arguments have slightly similar weights, therefore, in the respondents' opinion, they are perceived as having equal importance.

A proportion of 2.7% of respondents provided new arguments for justifying the necessity of research activity in the university, namely: establishing collaborative relationships with other institutions, obtaining funds necessary for university activities, and promoting excellence within the university.

Figure no. 1. Distribution of responses regarding the arguments motivating the necessity of research activity in the university



Source: authors' contribution

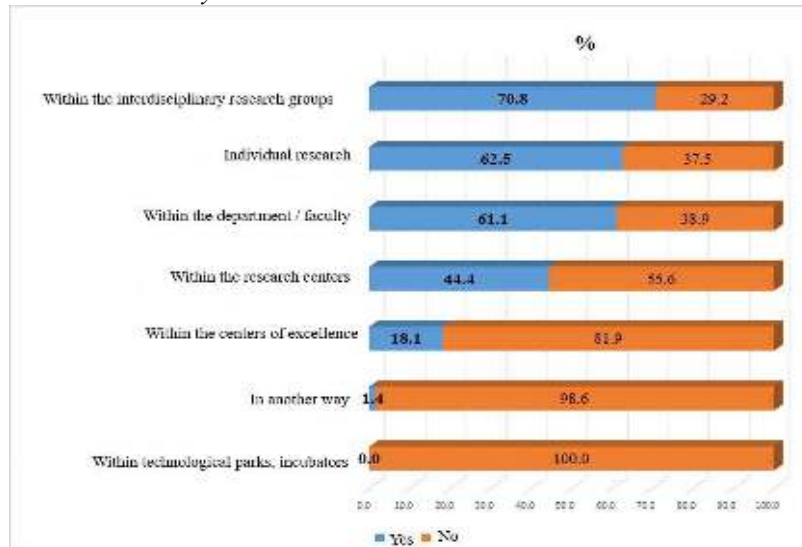
The organization of research within the university takes place in various forms (individual research, department/faculty research, interdisciplinary research group research, etc.). Out of the total 74 respondents, 2 respondents either did not know or did not want to answer the question "How is research organized in the university where you carry out your activities?". Therefore, the number of respondents with valid responses is 72 (figure no.2).

The majority of respondents believe that, in the university where they carry out their activities, research is organized within interdisciplinary research groups (70.8% of respondents with valid responses chose this option). Other forms of research organization at UMF Iași are individual research (62.5% of respondents) and research within the department/faculty (61.1% of respondents).

Research within centers of excellence involves a limited number of researchers. This situation is reflected in the evaluation, with a small proportion of respondents choosing this option (18.1% of the total 72 valid respondents).

None of the surveyed individuals chose the option of organizing research within technology parks or within incubators, given the profile of the university considered in the study. This result can be argued by the fact that complex projects often require partnerships with organizations outside the academic sphere, leading to the possibility of cultural barriers in collaboration (Manolescu *et al.*, 2014, p.335). Additionally, barriers to knowledge transfer outside the academic environment (Belitski *et al.*, 2019, p. 613) guide researchers towards interdepartmental and interuniversity networks. For university-industry collaboration, government incentives are considered vital (van Rijnsoever *et al.*, 2021, p.1942).

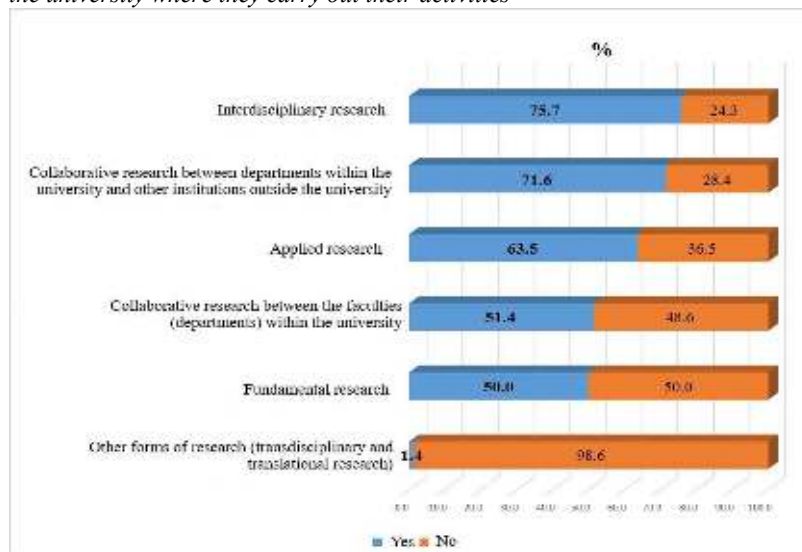
Figure no. 2. Distribution of respondents based on their opinion on the forms of research organization within the university



Source: authors' contribution

The distribution of Yes/No responses for each response option to the question "Which forms of research do you consider to be priorities for the university where you carry out your activities?" is presented in Figure no. 3.

Figure no. 3. Distribution of respondents based on their opinion on the prioritized forms of research for the university where they carry out their activities



Source: authors' contribution

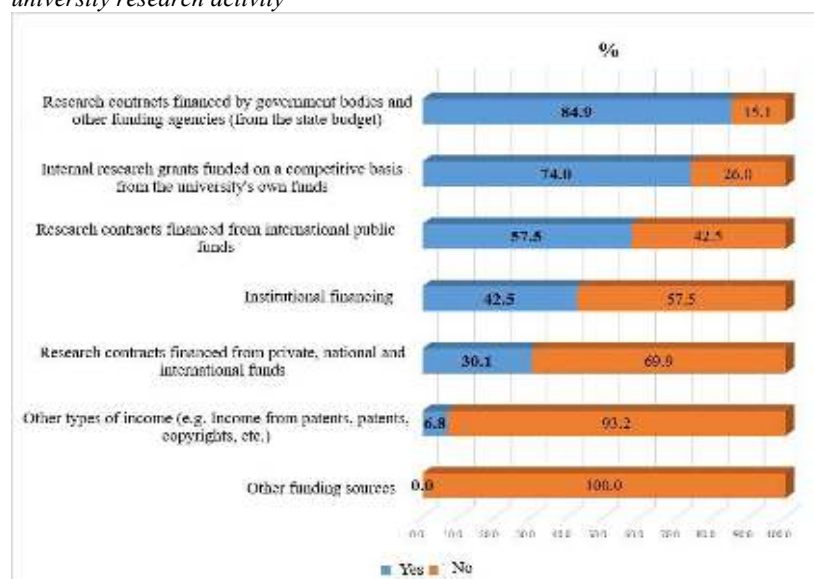
Respondents have indicated that, for the university where they carry out their activities, scientific research is a priority under all forms of research (out of all researchers, 73 respondents chose at least one of the predefined response options). However, one researcher provided a response other than those offered in the questionnaire, considering transdisciplinary and translational research as a priority for the university where they carry out their activities.

The largest proportion of respondents (75.7% of the total interviewed researchers) considered Interdisciplinary Research as a priority. According to the researchers, another high-priority area is research involving collaboration between universities (with 71.6% of total respondents perceiving Collaborative Research between university departments and other institutions outside the university as a priority). Among the five forms of research indicated in the questionnaire, Fundamental Research ranks last in priority according to respondents' opinions.

UMF Iași was among the first universities in Romania to organize an internal competition for research projects. The first competition took place in 2009, and it has been held annually, with 15 competitions organized so far (the latest in 2023, with projects currently under evaluation). This internal research grant competition was intended to serve as an incentive for university faculty.

The evaluation criteria for projects submitted to the internal competition are similar to those used in national-level research project competitions. Minimum performance criteria, such as publishing scientific articles in WoS-rated journals and submitting research projects to national and international competitions, were imposed in the execution of internal research projects.

Figure no. 4. Distribution of respondents based on opinions regarding the main sources of funding for university research activity



Source: authors' contribution

Figure 4 provides a graphical representation of respondents' perceptions on this aspect, presenting the distribution of respondents based on their opinions regarding the main sources of funding for research activity. For the question "What are the main sources of funding for research activity in the university where you work?" from the survey questionnaire, 73 valid responses were recorded out of a total of 74 interviewees.

From the perspective of the majority (84.9% of respondents) of individuals involved in research at UMF Iași, it is observed that, in the case of this university, the main financial support for research activity comes from research contracts funded by government agencies and other funding agencies (from the state budget). At the same time, 74% of those interviewed believe that research activity is supported by internal research grants funded through competition from the university's own funds. A significant proportion of those surveyed (57.5% of respondents) believe that funding for research activity is based on research contracts funded from international public funds. This result aligns with findings from other studies (Guțu *et al.*, 2018, p.112; Toma *et al.*, 2011, p.2136), indicating that

universities do not efficiently leverage external funding resources through community programs.

5. Conclusions

This study aimed to illustrate important characteristics of the research system as perceived by relevant actors, those who initiate and carry out specific activities. Consulting researchers is an underutilized approach in shaping national and international strategies in the field.

Regarding the perception of academic staff at UMF Iași regarding university scientific research, it is perceived in various ways by those involved in research at UMF Iași. Depending on the perspective from which they approach this concept, respondents view university scientific research as representing: an activity or a set of activities, a component, a process, a method, a tool, a mode of expression, a vocation, an evaluation criterion. Respondents defined university scientific research in relation to various aspects of this concept: organization and functioning, realization, features, forms, functions, effects, or results.

The academic staff of UMF "Grigore T. Popa" in Iași captured the following features of university scientific research activity: complex, highly specialized, and professional, carried out in teams, generating and transmitting novelty, with a mandatory character for academic staff.

The main argument justifying the necessity of research activity, according to researchers (75.7% of them), is the generation of knowledge perceived as essential for the profession and education to keep pace with development. The second most mentioned argument (by 62.2% of respondents) in justifying the need for research activity is the benefit to society in general and the economy in particular through the accumulation of new knowledge.

The majority of respondents believe that, in the university where they carry out their activities, research is organized within interdisciplinary research groups (70.8% of respondents with valid answers chose this option). Other forms of research organization at UMF Iași include individual research (62.5% of respondents) and research within the department/faculty (61.1% of respondents).

The largest proportion of respondents (75.7% of all interviewed researchers) considered Interdisciplinary Research as a priority. According to researchers, a priority is also given to research involving collaboration between universities (71.6% of total respondents perceiving Collaborative Research between departments within the university and other institutions outside the university as a priority). Of the five forms of research indicated in the questionnaire, Fundamental Research ranks last in the respondents' opinion as a priority.

From the perspective of the majority of staff involved in research at UMF Iași, the main sources of financial support for research activities in this university are: research contracts funded by government agencies and other funding agencies (from the state budget) (84.9% of respondents); internal research grants funded through competition from the university's own funds (74% of interviewees); research contracts funded from international public funds (57.5% of respondents). The results obtained show that researchers are aware of the main sources of funding for scientific research activities in the university.

The complexity of the field, inherent uncertainty, and heightened dynamics, with the evident influence of disruptive factors, justify additional efforts in consulting and analyzing the perceptions and interests of all relevant stakeholders in university research. This is necessary to find long-term solutions with net positive effects on society as a whole.

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Workaholism: A Modern Epidemic in Professional Environments

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Abstract

This paper investigates workaholism, initially identified as an uncontrollable urge to work incessantly, evolving from a positive work ethic to a recognized psychological and behavioral disorder. It explores the nuanced development of workaholism, examining its transition within professional and psychological contexts. The paper delves into the psychological factors contributing to workaholism, such as inherent personality traits and examines the role of organizational environments and societal norms in fostering workaholic behaviors. It highlights how specific workplace cultures and societal attitudes towards productivity and achievement can exacerbate workaholic tendencies. The article aims to provide a comprehensive analysis of workaholism's psychological, behavioral, and socio-cultural dimensions, emphasizing the need for a shift towards balanced and sustainable work practices in modern professional environments to address workaholism and enhance overall workforce well-being and productivity.

Key words: workaholism, organizational culture, psychological factors, work environment

J.E.L. classification: M12, O15

1. Introduction

The concept of workaholism, a term that emerged in the 1970s, has increasingly become a focal point of discussion and research in the realm of organizational behavior and psychology. Characterized by an uncontrollable need to work incessantly, workaholism transcends the boundaries of a strong work ethic, presenting itself as a persistent preoccupation with work-related activities at the expense of personal and social life. This phenomenon has evolved into a topic of substantial research interest, shedding light on its multifaceted nature and far-reaching implications.

This article aims to explore the intricate dynamics of workaholism, examining its definition, evolution, and the theoretical frameworks that have been developed to understand it. By delving into the psychological and social perspectives that underpin workaholic behaviors, and the role organizational factors play in fostering such tendencies, the article seeks to provide a comprehensive overview of workaholism as it stands in modern professional environments. From individual compulsions and personality traits to broader societal norms and workplace cultures, this exploration endeavors to unravel the complex tapestry of influences that give rise to workaholic behaviors and their consequences on individuals and organizations alike.

In doing so, the article will navigate through the pioneering models of workaholism, including the influential perspectives of Bryan E. Robinson and the critical insights from Harpaz and Snir's 2003 study, to present a nuanced understanding of this modern epidemic. The goal is not only to delineate the contours of workaholism as a psychological and organizational phenomenon but also to highlight the significance of addressing this growing issue in the context of enhancing overall well-being and productivity in professional environments.

As we dig deeper into the complexities of workaholism, it becomes apparent that this condition is not merely a matter of working long hours but involves a deeper psychological engagement with work that often has detrimental effects. The pioneering work by Oates laid the groundwork for understanding workaholism as an addiction, drawing parallels with other compulsive behaviors and shifting the narrative from one of commendable dedication to a concerning obsession. This

perspective opened a new avenue for research, leading to a more nuanced understanding of the causes, manifestations, and impacts of workaholism.

In conclusion, the objective of this article is to offer a comprehensive perspective on workaholism, delving into its psychological underpinnings, behavioral expressions, and the social and organizational environments that cultivate it.

2. Theoretical background

2.1. Definition and evolution of workaholism

Workaholism, a term first coined in the 1970s, is characterized by an uncontrollable need to work incessantly. This behavioral pattern goes well beyond a strong work ethic; it is marked by a persistent preoccupation with work and an inability to disengage from work-related activities, leading to a significant imbalance between professional and personal life.

Oates (1971), who initially introduced the concept, likened workaholism to an addiction, similar to alcoholism, with the primary focus being work activities. He observed that just as alcoholics are obsessively concerned with alcohol, workaholics are engrossed in their work to the point where it adversely affects other aspects of their life. This comparison to addiction was groundbreaking, as it shifted the perspective from viewing excessive work as a commendable trait to recognizing it as a potentially harmful obsession.

The roots of workaholism can be traced to both individual and environmental factors. On an individual level, it may stem from internal compulsions, such as perfectionism, an intense desire for approval, or deep-seated insecurities. These psychological drivers push individuals to work excessively, often at the cost of their health and personal relationships.

From an environmental standpoint, certain workplace cultures inadvertently foster workaholic behaviors. In sectors where long hours and constant availability are the norms, or where there is intense competition and a high value placed on achievement, employees may feel compelled to work excessively to meet these expectations or to advance in their careers.

Oates' initial characterization of workaholism opened the door for subsequent research to explore the multifaceted nature of this phenomenon. Studies have since delved into the psychological profiles of workaholics, the impact of organizational culture on workaholic behaviors, and the broader social and economic implications of this condition. His comparison to addiction set a precedent for examining the compulsive aspects of workaholism, framing it not just as a work-related issue but as a complex psychological condition that requires a deeper understanding and more nuanced approach to address effectively.

2.2. Theoretical frameworks

Several theoretical frameworks have been employed to understand workaholism, each offering unique insights into its complex nature. Central among these is the Behavioral Addiction Model, which posits that workaholism shares significant characteristics with traditional addictions. This model identifies key features such as an overwhelming compulsion to engage in work, a loss of control over work behaviors, and a persistent continuation of excessive work despite knowledge of negative consequences. This perspective is crucial as it underscores the addictive quality of workaholism, where work becomes an all-consuming pursuit much like substance dependencies.

Robinson's (1999) model of workaholism builds upon this understanding by highlighting specific components that characterize this condition. According to this model, workaholism involves compulsive tendencies where individuals feel an uncontrollable urge to work incessantly. This compulsion is often coupled with persistent thoughts about work, which dominate an individual's mind even during non-working hours. Importantly, Robinson's model also emphasizes a lack of enjoyment in work. Unlike individuals who are deeply passionate and engaged in their work, workaholics often do not derive satisfaction from their labor; instead, their engagement in work is driven by an internal pressure and a sense of obligation rather than pleasure or fulfillment.

These models underscore the multidimensional nature of workaholism, integrating psychological, behavioral, and affective components. From a psychological standpoint, workaholism is often linked to underlying personality traits such as perfectionism, a high need for achievement, and even anxiety. Behaviorally, it manifests in the form of long working hours, a blurring of work-life boundaries, and a prioritization of work over other important life activities. Affectively, workaholism is associated with negative emotions, including feelings of guilt when not working, and a general sense of dissatisfaction with one's work-life balance.

Further, workaholism can be understood within a broader socio-cultural context. Societal norms and cultural values that emphasize productivity, success, and constant availability can inadvertently foster workaholic behaviors. In such cultures, being busy is often equated with being important and successful, thereby reinforcing the compulsive work patterns characteristic of workaholism.

Additionally, the role of the workplace environment cannot be overlooked. Organizational cultures that reward long hours and perpetuate a 'more is better' ethos regarding work effort can contribute significantly to the development and maintenance of workaholic behaviors among employees. This is particularly evident in industries where long working hours are normalized and even glamorized, further entrenching the belief that excessive work is a prerequisite for success.

By examining these various theoretical frameworks and contextual factors, a more comprehensive understanding of workaholism emerges. It becomes evident that workaholism is not merely a personal issue but is deeply rooted in a complex interplay of individual characteristics, workplace dynamics, and broader societal attitudes towards work and productivity.

2.3. Psychological and social perspectives

From a psychological perspective, workaholism is intricately linked to certain personality traits, with research highlighting connections to perfectionism, neuroticism, and a high need for achievement. Perfectionists, who are relentlessly driven by a fear of failure and a desire for flawlessness, often find themselves trapped in a cycle of overworking as they strive to meet unattainably high standards. Similarly, individuals with neurotic tendencies may turn to excessive work as a means to cope with or escape from inner emotional turmoil, such as anxiety or low self-esteem. The high need for achievement, a trait characterized by an enduring pursuit of success and recognition, further propels individuals into workaholic behaviors, often at the expense of other life domains.

Psychodynamic theories offer additional insights, suggesting that workaholism may serve as a coping mechanism for emotional stress or unresolved psychological issues. According to this view, obsessive working can be an unconscious attempt to fill emotional voids, manage feelings of inadequacy, or gain control in one's life. The work environment thus becomes a platform for individuals to seek validation and self-worth, albeit in a manner that may ultimately prove detrimental to their mental health and interpersonal relationships.

On a social level, cultural norms and societal values play a significant role in the prevalence and acceptance of workaholism. In many societies, especially those driven by capitalist ideals, overworking and productivity are not only glorified but often seen as indicators of a person's value and success. Burke (2000) compellingly argues that societal shifts towards valuing visible success and achievement have contributed to normalizing, and even idealizing, workaholic behaviors. In such contexts, long hours and constant engagement with work are perceived as virtues, signaling dedication and ambition.

This glorification of overwork is further amplified by the media and popular culture, where successful figures are often portrayed as relentless in their work ethic, implicitly suggesting that such behavior is a prerequisite for success. This cultural narrative overlooks the potential harmful effects of workaholism, instead framing it as a commendable trait.

Additionally, the impact of technological advancements in the workplace cannot be ignored. The rise of digital connectivity has led to an "always-on" work culture, where individuals are expected to be perpetually available, further blurring the lines between work and personal life. This environment fosters a sense of urgency and constant engagement with work-related tasks, exacerbating workaholic tendencies.

In summary, the psychological and social dimensions of workaholism are deeply intertwined. While individual personality traits may predispose certain individuals to workaholic behaviors, these tendencies are often reinforced and perpetuated by societal values and workplace cultures that prize overworking and productivity. Understanding these multifaceted influences is crucial for addressing the growing epidemic of workaholism in modern professional environments.

2.4. Organizational factors

Research in the field of organizational behavior has increasingly focused on how the culture within companies can foster workaholism. Organizational culture, the shared values, beliefs, and practices within a company, plays a pivotal role in shaping employee behavior and attitudes towards work. In environments where excessive working hours are not only rewarded but expected, and where job performance is valued above all else, the seeds of workaholism are often sown.

Companies that operate in highly competitive markets may inadvertently encourage workaholic behaviors by establishing a culture where long hours are synonymous with commitment and effectiveness. In such settings, employees might feel pressured to work excessively to meet the demands of their roles or to advance their careers. This pressure is particularly acute in industries where there is a thin line between job commitment and workaholism, such as in finance, technology, and law.

Harpaz and Snir (2003) have highlighted the substantial impact that organizational expectations and norms can have on employees' work attitudes and behaviors. When companies set high performance benchmarks, often coupled with implicit or explicit expectations of constant availability and prolonged working hours, they may inadvertently cultivate a work environment where workaholism thrives. This situation can be exacerbated in cultures where there is a lack of clear boundaries between work and personal life, leading employees to prioritize work at the expense of their health and personal relationships.

The influence of leadership within organizations is also critical in this context. Leaders who model workaholic behavior, either by working long hours themselves or by consistently demanding the same from their team, can create a work culture where such behavior becomes the norm. Employees in these environments often believe that the only way to succeed or to be recognized is through excessive work, perpetuating a cycle of workaholism.

Furthermore, the lack of supportive structures and policies within organizations can contribute to the prevalence of workaholism. Workplaces that fail to provide adequate resources for managing workload, lack flexibility, or do not support work-life balance can push employees towards unhealthy work habits. This is particularly true in organizations where there is a mismatch between the demands placed on employees and the resources provided to meet these demands, a situation known as job strain.

In addition to these factors, the modern trend towards leaner staffing models can also contribute to workaholic behaviors. With fewer employees expected to handle increased responsibilities, the pressure to work longer and harder becomes a survival strategy for many.

In summary, organizational culture is a powerful force in shaping work behaviors and attitudes. Companies that foster a culture of high expectations, competition, and reward for overwork, without providing adequate support and balance, can create environments where workaholism is not just common, but expected. Recognizing and addressing these cultural factors is crucial for organizations aiming to promote a healthier, more balanced approach to work.

3. Research methodology

This chapter outlines the methodological approach adopted in the study "Workaholism: A Modern Epidemic in Professional Environments." The research is grounded in a comprehensive literature review, aiming to consolidate findings from existing scientific literature to understand the multifaceted phenomenon of workaholism in professional settings.

The study employs a systematic literature review approach. This method involves an exhaustive and structured analysis of published academic papers, focusing on workaholism, its psychological underpinnings, impacts on individuals and organizations, and the role of organizational culture. The

aim is to synthesize existing research to provide a consolidated view of workaholism in contemporary professional environments.

The primary sources of data were peer-reviewed journal articles, conference proceedings, and academic books. Key databases searched included PubMed, PsycINFO, JSTOR, and Google Scholar.

Articles were selected based on relevance to the study's focus areas: definitions and evolution of workaholism, psychological and social perspectives, and organizational factors influencing workaholism. Both empirical studies and theoretical papers were included. The time frame for the literature was primarily from the early 2000s to the present, to capture the most recent developments in the field.

A structured search strategy was employed using specific keywords and phrases such as "workaholism," "organizational culture and workaholism," "psychological factors in workaholism," and "work addiction." Boolean operators (AND, OR) were used to refine the search. The initial search was followed by a snowballing technique, where references of the selected articles were reviewed for additional relevant publications.

Key information extracted from the articles included authors, year of publication, study objectives, methodology, key findings, and conclusions. This information was tabulated to facilitate comparative analysis.

A thematic analysis was conducted to identify common themes, trends, and patterns across the literature. The analysis aimed to discern consensus and discrepancies in the findings, theoretical frameworks employed, and the evolution of the understanding of workaholism over time.

The study acknowledges limitations inherent in literature review methodologies, such as the potential for publication bias and the variability in the quality and methodologies of the reviewed articles. Additionally, the focus on English language publications may have excluded relevant findings published in other languages

4. Results of the studies

4.1. The study conducted by Bryan E. Robinson's – the model of workaholism

Bryan E. Robinson's model of workaholism, introduced in 1999, is one of the significant contributions to the study of workaholism. This model is particularly noteworthy because it goes beyond simply defining workaholism as excessive working hours, delving into the psychological and behavioral aspects of the condition.

Robinson's model emphasizes the psychological roots of the compulsive nature of workaholism. This compulsivity is often a manifestation of deeper psychological issues such as low self-esteem, perfectionism, or a need for control. The compulsive work behaviors serve as a coping mechanism or a way for individuals to seek validation and worth from external achievements.

This aspect of the model suggests that workaholism may be linked to other psychological conditions or disorders. Therefore, treatment or intervention strategies might involve addressing these underlying psychological issues.

The model's focus on uncontrollable work thoughts highlights the intrusive nature of workaholism. These thoughts often disrupt an individual's ability to engage in non-work-related activities or to relax. They can also lead to anxiety and stress, as the mind is constantly preoccupied with work, even during supposed downtime.

This cognitive aspect of workaholism can be particularly challenging to address, as it requires individuals to learn new ways of managing their thoughts and redirecting their focus.

Robinson's distinction between lack of enjoyment in work and the satisfaction derived by high performers is crucial. It helps differentiate workaholism from healthy work engagement. This distinction is important for organizations and mental health professionals in identifying workaholism and differentiating it from a strong work ethic or high job involvement.

The model suggests that interventions for workaholism must go beyond encouraging breaks or reducing work hours. Instead, they should focus on fostering a healthier relationship with work, where productivity is balanced with satisfaction and well-being.

The model comprehensively covers the broad spectrum of consequences stemming from workaholism. These include not only the immediate effects on personal health and relationships but also long-term impacts such as chronic health issues, emotional detachment, and life dissatisfaction.

Understanding these consequences is vital for organizations in creating policies and work cultures that discourage workaholic tendencies and promote a healthier work-life balance.

Robinson's model implies that treating workaholism requires an integrative approach. Psychological interventions might include cognitive-behavioral therapy to address compulsive thought patterns, alongside strategies to build self-esteem and manage perfectionism.

Additionally, the model suggests the need for holistic lifestyle changes, including establishing boundaries between work and personal life, engaging in stress-reducing activities, and fostering meaningful personal relationships.

Robinson's model has significantly influenced subsequent research in the field of occupational health psychology. It has also impacted workplace practices, encouraging organizations to recognize the signs of workaholism and to implement measures that promote mental health and work-life balance. The model's comprehensive nature makes it a valuable framework for understanding and addressing the multifaceted issue of workaholism in modern professional environments.

Bryan E. Robinson's model of workaholism provided some key findings for understanding workaholism, focusing on its psychological aspects.

Robinson's model emphasizes that workaholism is characterized by compulsive work habits. This means that workaholics feel an uncontrollable urge to work, often driven by internal pressures rather than external demands or enjoyment of the work itself.

A crucial aspect of Robinson's model is the presence of persistent and uncontrollable thoughts about work. Workaholics often find themselves preoccupied with work-related matters, even during off-hours, which can intrude on their personal life and leisure activities.

Contrary to the popular belief that workaholics love their work, Robinson's model suggests that workaholics often do not derive enjoyment from their work. The drive to work is more about an inner compulsion rather than pleasure or satisfaction from the work.

Robinson's model highlights the adverse effects of workaholism on personal health and relationships. Workaholics often experience health issues related to stress and burnout and have strained personal relationships due to their excessive focus on work.

The model explores the psychological roots of workaholism, suggesting that it may be tied to deeper psychological issues such as perfectionism, a need for control, or low self-esteem. Workaholism is seen as a coping mechanism or a way to find validation.

An important contribution of Robinson's model is distinguishing workaholism from high work engagement. Unlike engaged workers who are productive, satisfied, and able to maintain a healthy work-life balance, workaholics are driven by compulsion, do not enjoy their work, and often have an unhealthy work-life balance.

The model implies that addressing workaholism effectively requires a holistic approach, tackling not just the behavioral aspect but also the underlying psychological patterns and issues.

Robinson's model of workaholism is significant as it provides a multi-dimensional understanding of the condition, highlighting its psychological aspects and distinguishing it from positive work engagement. It has been influential in shaping subsequent research and approaches to managing workaholism.

4.2. The study conducted by Harpaz and Snir

Harpaz and Snir's research in 2003 brought to light the significant role of organizational expectations and norms in shaping the work attitudes and behaviors of employees. Their study emphasized that the values and practices upheld within an organization can profoundly influence how employees perceive and engage with their work. This influence is particularly evident in the formation of workaholic behaviors.

The researchers observed that in organizations where overwork is not just normalized but rewarded, employees are likely to develop tendencies towards workaholism. This is especially true in highly competitive environments where going above and beyond the expected work norms is often viewed as the key to career progression and recognition. In such settings, employees may start to

equate professional success with the sheer volume of work they do, neglecting other aspects of performance such as quality, creativity, and overall impact.

Another critical aspect highlighted by Harpaz and Snir was the impact of these organizational norms on employee well-being. Work environments that consistently encourage and even glorify overworking can put employees at a higher risk of various health issues, including stress and burnout. The researchers pointed out that while such environments might boost productivity in the short term, they could lead to significant physical and mental health problems for employees in the long run.

This research has broader implications for understanding and shaping organizational culture. It underscores the importance of considering the workplace environment's role in fostering work habits, including workaholism. The findings are particularly relevant for organizational leaders and human resources professionals responsible for developing workplace policies and practices. These policies should aim to promote a healthy balance between work and life, rather than just focusing on maximizing output.

The study by Harpaz and Snir also calls for a reevaluation of how performance and commitment are measured within organizations. It suggests a shift away from metrics that solely focus on the quantity of work towards more holistic measures that consider the efficiency and overall well-being of employees. Such a shift would not only help mitigate workaholic behaviors but also promote a more sustainable and healthy work environment.

Furthermore, the research sheds light on the crucial role of leadership in establishing and maintaining organizational norms. Leaders who exemplify balanced work habits and who prioritize the well-being of their team members can have a significant positive influence on the overall work culture. Similarly, management practices that reward efficiency and effectiveness, rather than just the volume of work, can help prevent the development of workaholic behaviors among employees.

The study by Harpaz and Snir provided important insights into the relationship between organizational culture and employee work behaviors, with a particular focus on workaholism. There are some key findings from their study, that helped over time with understanding the concept of workaholism.

Harpaz and Snir found that the culture of an organization - its values, norms, and expectations - significantly influences the work behavior of its employees. This includes the extent to which employees engage in workaholic behaviors.

The study indicated that in environments where excessive working is normalized and even rewarded, employees are more likely to exhibit workaholic behaviors. This is especially true in highly competitive settings, where surpassing standard work expectations is often seen as necessary for career advancement and recognition.

Their research also showed that organizational expectations, which encourage constant overworking, can lead to increased stress and burnout among employees. This finding was significant in demonstrating the potential negative impact of organizational culture on employee health and well-being.

Additionally, Harpaz and Snir explored how the alignment or misalignment of personal values with organizational values can affect job satisfaction. They found that when there is a mismatch, it can lead to decreased job satisfaction and increased workplace stress.

The study highlighted the role of management and leadership styles in shaping the work culture within organizations. Leadership practices that implicitly or explicitly encourage overworking can perpetuate a cycle of workaholism among employees.

Harpaz and Snir suggested that while a workaholic culture might boost short-term productivity, it could be detrimental in the long term, leading to issues like high employee turnover, decreased job satisfaction, and a decline in overall employee health.

The research also touched on the implications of workaholic behaviors for work-life balance, indicating that organizational norms that favor excessive working hours can severely disrupt employees' ability to maintain a healthy balance between their professional and personal lives.

5. Conclusions

Workaholism is a condition that extends far beyond mere dedication to one's job. It is characterized by compulsive work behaviors, a preoccupation with work that supersedes other aspects of life, and often, a significant lack of enjoyment in the work itself. This compulsivity, as elucidated in the relevant studies, is not merely a behavioral pattern but is deeply rooted in psychological factors such as perfectionism, neuroticism, and a high need for achievement.

The societal and organizational contexts play a crucial role in either fostering or mitigating workaholic tendencies. Societal norms that glorify overworking and equate busyness with success have contributed to normalizing workaholic behaviors. Furthermore, organizational cultures that reward long hours and prioritize job performance above personal well-being have created environments where workaholism can thrive. The findings from Harpaz and Snir's study underscore the profound impact of these environmental factors on employee behavior.

It is evident that workaholism has significant implications, not just for individuals but also for organizations. For individuals, the consequences range from health issues like stress and burnout to strained personal relationships and a decreased quality of life. For organizations, the repercussions include reduced employee satisfaction, potential burnout, and a culture that may inhibit creativity and long-term productivity.

These conclusions highlight the need for a shift in how work and productivity are approached and valued in professional settings. There is a growing need for organizational policies and leadership styles that promote a healthy work-life balance and recognize the importance of employee well-being. Creating an environment where productivity is balanced with well-being can help mitigate the adverse effects of workaholism.

Additionally, these insights call for a more nuanced approach to addressing workaholism, one that goes beyond reducing work hours to tackling the underlying psychological aspects. Interventions such as cognitive-behavioral therapy, lifestyle changes, and organizational strategies aimed at promoting a healthier work culture can be effective in addressing the root causes of workaholism.

In conclusion, the paper paints a picture of a complex condition that is deeply embedded in both individual psychology and broader societal and organizational structures. Addressing this issue requires a multifaceted approach that considers the intricate interplay of these various factors. By fostering environments that value balance and well-being, both individuals and organizations can work towards mitigating the impacts of workaholism, paving the way for a healthier and more sustainable professional environment.

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Section V

Finance and Accounting

Poverty as a Determinant of Corruption – A Parametric Approach

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Abstract

The aim of this study is to evaluate the impact of poverty rates upon corruption phenomena. Reducing poverty and social exclusion has become crucial nowadays, bringing along positive effects upon the perceived cleanliness from corruption. Our paper evaluates various poverty proxies as subjectively assessed corruption determinants through linear and parametric approaches, for the sample of EU-27 member states and for the 2015-2022 time span. We determine threshold values for the at risk of poverty rates on genders and age groups, as inflection points for the second degree polynomial function of poverty's impact upon the Corruption Perception Index. Policy implications emerge, in order to maximize the beneficial effects of poverty reduction upon corruption.

Key words: poverty rates, at risk of poverty, corruption, panel data, parametric approach

J.E.L. classification: I32, D73

1. Introduction

Poverty has always been a major social problem. It intersects itself with corruption phenomena, and they both go hand-in-hand and create a vicious cycle that can be detrimental to the well-being of individuals and societies. The poverty-corruption nexus springs from the negative effects of poverty upon individuals, determining their engagement into corrupt behaviors, in order to escape from poverty.

Poverty has been defined as a condition characterized by a lack of money for satisfying a person's needs (Mabughi and Selim, 2006). A higher level of poverty in a country may deteriorate economic and social development. Thus, the very first sustainable development goal of the 2030 United Nation's Agenda is to "end poverty in all its forms everywhere".

A major determinant of poverty is corruption. Corruption represents the misuse of public power for personal gain (Oliveira da Silva *et al*, 2022). It reunites several immoral and illegal activities carried out by individuals in positions of authority or by various groups, with the ultimate purpose to obtain material or moral benefits. The used means are those of blackmail, deception, bribery, intimidation and or nepotism. Moreover, corruption phenomena directly affect macroeconomic monetary and fiscal policies, causing slow economic growth, unemployment and income inequality (Înam *et al*, 2019).

As such, corruption finds itself like a barrier that hinders the successful eradication of poverty. Moreover, combating corruption is a crucial part of the poverty reduction process (Negin *et al*, 2010).

Our paper aims to examine the effect poverty has upon corruption, using a panel data analysis for the EU-27 member states, from 2015 to 2022. The originality of our study resides in the fact that it uses a parametric approach, which is proven to be better than the classic linear approach found in the present specialized literature. The remaining sections of this research paper are organized as follows: theoretical background, research methodology, the empirical findings with discussions and robustness checks, ending with conclusions.

2. Theoretical background

The state of the art in this field has identified many critical links between corruption and poverty ever since the 1970s. Jeng (2018) affirms that corruption and poverty have bi-directional relationship, suggesting that corruption tends to cause poverty and vice versa. In addition, he explains that poor people are those who are more likely to break the rules in order to get to have a better life, through any means, due to the lack of necessary financial resources for covering their basic needs and buying essentials goods.

Furthermore, the positive impact of poverty on corruption is empirically demonstrated by Mustafa and Julide (2016). A higher level of poverty leads to a higher level of corruption. Corruption may ruin the process of poverty eradication and it may even deepen poverty levels. According to Jeng (2018) the reason behind this would be the distortion of the decision-making process related to public sector programs and policies.

Our study positions itself in this literature strand of direct impact of poverty upon corruption. Dincer and Gunalp (2008) also support this, their findings concluding that corruption, proxied by the Corruption Perceptions Index (CPI), clearly leads to a high level of income inequality and poverty.

Then, the study of Domashova and Politova (2021) emphasizes the idea that corruption levels increase along with poverty levels, because poorer countries are less likely to allocate the necessary resources that are required for developing an effective legal system.

3. Research methodology

The dependent variable (corruption) is here represented by subjectively assessed corruption, as provided by Transparency International (2023), through scores. The Corruption Perceptions Index (CPI), a measure of corruption, is an index of worldwide countries spanning from the lowest corruption level (100 – very clean from corruption) to the highest corruption level (0 – the highest corruption), used to measure the perceived levels of public sector corruption.

The independent variable (poverty) is represented by the percentage of total population living in households, where the equalized disposable income (after the social transfer) is below the poverty threshold (60% of the national median equivalised income), i.e. the so called At risk of poverty incidence rate (AROP). Our dataset includes subcategories of AROP, like the incidence of AROP for the male and female population (AROPmale and AROPfemale) and the incidence of AROP within various age groups, as follows: the 0-17 age interval (AROPunder), the 18-24 age interval (AROPover), the 25-49 age interval (AROPadult), the 50-64 age interval (AROPmidAge) and over the age of 65 (AROPsenior). These data are provided by Eurostat (2023). For our robustness checks subsection, we have used the poverty rate at national lines (PovN), as provided by World Data Bank (2023).

Our unbalanced panel dataset includes the 27 EU member states and the analyzed period covers the 2015-2022 time span. The summary statistics are presented in Table no. 1.

Table no. 1 Summary statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
CPI	216	64.0185	14.1019	41	91
AROP	216	16.6166	3.9082	8.7	25.4
AROPmale	216	15.7384	3.6289	7.2	25.1
AROPfemale	216	17.4384	4.2586	10.1	26.3
AROPunder	216	18.6967	5.8265	9.1	38.1
AROPover	216	20.9754	6.7964	8.1	39.4
AROPadult	216	14.0944	3.6668	6.6	23.9
AROPmidAge	216	14.9611	4.1979	5.3	24.6
AROPsenior	216	18.8745	9.6734	4.6	52.3
PovN	141	16.7985	4.1352	8.6	25.3

Source: Authors' processings in Stata

According to the summary statistics listed above, the highest level of the CPI is recorded in Denmark, which scores 91 in its CPI, being the least corrupt EU country during the analyzed period, while the lowest level of CPI is found in Bulgaria, i.e. 41, which proves to be the most corrupt EU country. For the entire time span of this study, the average level of CPI is of approximately 64.02 in the EU. Moreover, we may notice that the CPI values tend to fluctuate depending on the country, which means that during the analyzed period some EU countries increased their levels of corruption and others did not. For instance, Bulgaria, which is the only developing country in EU, registers an increasing trend in its CPI, becoming less clean from corruption over the years. Other countries that have strong economies and high levels of their CPI, such as Finland, Germany, Sweden and Netherlands, recorded a decreasing trend of their CPI, thus becoming cleaner from corruption.

Regarding the level of poverty measured by AROP, the highest level is scored in Romania, at a level of 25.4%, being the poorest EU country in 2015, while the lowest level is scored in the Czech Republic (8.7%). The mean value of EU-27 AROP is at a level of 16.62%, with an oscillating trend over the years.

When it comes to the first subcategory of AROP, by gender, the poorest men seem to be recorded in Romania (25.1%) and the least poor men are in the Czech Republic (7.2%), while the average value of AROPmale is at a level of 15.74% in the EU. Then, the poorest women are those from Latvia (26.3%) and the least poor women are, again, in Czech Republic (10.1%). Over the years, EU scored an average value of AROPfemale at level of 17.44% which leads to the conclusion that EU women are poorer than EU men.

In the second subcategory of at risk of poverty levels, by the age intervals, the poorest individuals under the age of 18 (AROPunder) are found in Romania (38.1%), while the least poor ones are found in Finland at a level of 9.1%. People aged over 18 years old, but under 24 years old who live in miserable conditions (AROPover) are those from Denmark, at a level of 39.4%. Conversely, the lowest level is reached by Ireland, at a level of 8.1%. The highest level of poverty among the adults aged between 25 and 49 years old (AROPadult) is scored by Romania (23.9%) and the lowest is the one in the Czech Republic (6.6%). Middle-aged people (50-64 years old, AROPmidAge) are the poorest in Latvia, at a level of 24.6%, while the least poor people for this age subgroup are in Denmark (5.3%). The poorest retirees (AROPsenior) are recorded in Estonia with a level of 52.3%, while the lowest level is scored in Hungary (4.6%). As a conclusion, it is noticeable that the poorest people in EU are those aged between 18 and 24 years old, at an average level of 20.97%, while the least poor EU people are between 25-49 years old, who might be considered as the most stable age segment when it comes to employment, which brings them a consistent income, justifying the minimum poverty rate levels.

Another way of measuring poverty is the poverty ratio at national poverty lines (PovN) indicator, provided by World Data Bank (2023). PovN reaches its highest level in Romania (25.3%) and its lowest level in the Czech Republic (8.6%), while the average level is around 16.79% when it comes to the EU-27 as a whole. This poverty proxy is used for the robustness checks of our findings.

Table no. 2 Correlation matrix

n=216 obs	CPI	AROP	AROP male	AROP female	AROP under	AROP over	AROP adult	AROP midAge	AROP senior
CPI	1								
AROP	-0.3929	1							
AROPmale	-0.3742	0.9803	1						
AROPfemale	-0.3989	0.9882	0.9388	1					
AROPunder	-0.4607	0.7636	0.814	0.7085	1				
AROPover	0.3405	0.3235	0.41	0.247	0.291	1			
AROPadult	-0.3315	0.811	0.8738	0.7428	0.8733	0.5226	1		
AROPmidAge	-0.4778	0.8286	0.8046	0.8229	0.5287	0.018	0.5913	1	
AROPsenior	-0.2578	0.6537	0.5286	0.7303	0.1297	-0.1617	0.1274	0.5955	1

Source: Authors' processings in Stata

Regarding the correlation matrix between our variables of interest, we may observe that the great majority of poverty proxies are indirectly correlated with the CPI (second column in Table no. 2), thus the cleaner from corruption an EU member state is, the lower its poverty rates are. Indeed, with the exception of AROPOver, we expect higher poverty rates to determine a higher corruption development.

Our study uses a linear approach based on the method of ordinary least squares (OLS) for panel data. The baseline model uses the simple regression method, and a parametric approach as well.

$$\begin{aligned} \text{CPI}_{it} &= \beta_0 + \beta_1 \text{POV}_{it} + \varepsilon_{it} && \text{Equation (1), linear regression} \\ \text{CPI}_{it} &= \beta_0 + \beta_1 \text{POV}_{it} + \beta_2 \text{POV}_{it}^2 + \varepsilon_{it} && \text{Equation (2), parametric regression} \end{aligned}$$

Equation (1) estimates the effects of poverty rates upon the cleanliness from corruption scores of European nations, while Equation (2) uses a parametric approach, modelling the effects of poverty upon corruption with the help of a second degree polynomial function, using the notations below:

CPI_{it} – corruption perceptions index score of EU-27 country i in year t ;
 β_0 – constant terms;
 β_1 - linear effects' parameters;
 β_2 – quadratic effect parameter;
 POV_{it} – various poverty proxies of EU-27 country i , year t ;
 ε_{it} - the residual.

4. Findings

Our main results are synthesized in Tables no. 3 and 4 respectively. Table no. 3. estimates Equations (1) and (2) for the impact of AROP (model (1)), AROPmale (model (2)) and AROPfemale (model (3)) upon CPI. The first set of estimations belongs to the linear fit (Equation (1)) while the second set of estimations in each model belongs to the quadratic fit (Equation (2)).

Table no. 3 Corruption (CPI), EU-27, as a function of poverty (by total and gender substructures)

CPI	(1)		(2)		(3)	
	Simple regression	Parametric regression	Simple regression	Parametric regression	Simple regression	Parametric regression
constant	87.575***	24.9997	86.9016***	18.2775***	87.0521***	56.5971***
AROP	-1.4176***	6.2933***				
AROP ²		-0.225***				
AROPmale			-1.4539***	7.5820***		
AROPmale ²				-0.2821***		
AROPfemale					-1.3208***	2.2168
AROPfemale ²						-0.0969*
Poverty Threshold value	n/a	13.98%	n/a	13.43%	n/a	11.43%
R ²	0.1544	0.2110	0.1400	0.2413	0.1591	0.1724
Adjusted R ²	0.1504	0.2036	0.1360	0.2342	0.1552	0.1646
Observations	216	216	216	216	216	216

Source: Authors' processings in Stata

The linear fit is reflected through Equation (1). As such, for a 1 unit increase in AROP (poverty proxy), the corruption measured by CPI will decrease with 1.4176 units, ceteris paribus (model 1). For a 1 unit increase in AROPmale (poverty measurement of total male population), the corruption measured by CPI will decrease with 1.4539 units, ceteris paribus (model 2). For a 1 unit increase in AROPfemale (poverty measurement of total female population), the corruption measured by CPI will decrease with 1.3208 units, ceteris paribus (model 3). Furthermore, all coefficients are significant below the 1% level.

When it comes to the parametric regression (Equation (2), second set of estimations in models (1-3)), we validate 3 poverty threshold values. For model (1), CPI and AROP increases to a threshold of 13.98%, then the higher the level of AROP, the lower the level of CPI. Beyond this threshold, the values tend to decrease abruptly to the maximum level of AROP (25.4%). In model (2), CPI and AROPmale increase to a threshold of 13.43%, then the higher the level of AROPmale, the lower the level of CPI. Once the threshold is reached, the values decrease rapidly, reaching the maximum AROPmale level of 25.1%. And for model (3), CPI and AROPfemale increase to a threshold of 11.43%, then the higher the level of AROPfemale, the lower the level of CPI. Beyond this threshold, the values tend to decrease abruptly to the maximum level of AROPfemale (26.3%) (see Figure no. 1 for graphical representations).

According to the results presented in Table no. 3, all models improve their coefficient of determination when the parametric fit is used, which increases the explanatory power of the models. In other words, the Adjusted R^2 of estimating CPI is improved from 15.04% to 20.36% in model (1), from 13.6% to 23.42% in model (2) and from 15.52% to 16.46% in model (3).

To continue, Table no. 4 estimates the effect of poverty rates by age substructures upon CPI scores of EU-27 member states, using the linear fit (Equation (1), the first set of estimations) and the parametric fit (Equation (2), the second set of estimations). According to the estimations from model (4), for a 1 unit increase in AROPunder (poverty measurement of population aged under 18 years old), the corruption measured by CPI will decrease with 1.1151 units, ceteris paribus. In model (5), for a 1 unit increase in AROPover (poverty measurement of population aged between 18 and 24 years old), the corruption measured by CPI will increase with 0.7065 units, ceteris paribus. Further, in model (6), for a 1 unit increase in AROPadult (poverty measurement of population aged between 25 and 49 years old), the corruption measured by CPI will decrease with 1.2748 units, ceteris paribus. In model (7), for a 1 unit increase in AROPmidAge (poverty measurement of population aged between 50 and 64 years old), the corruption measured by CPI will decrease with 1.6051 units, ceteris paribus. Lastly, for a 1 unit increase in AROPsenior (poverty measurement of population aged over 64 years old), the corruption measured by CPI will decrease with 0.3758 units, ceteris paribus (model (8)). Moreover, all coefficients are significant below the 1% level.

When it comes to the parametric regression estimates in models (4-8), using Equation (2), we find 5 poverty threshold values, but only 3 of them have significant coefficients. The sixth model has its all coefficients significant below the level of 1%, where CPI and AROPadult increases to a threshold of 11.67% and, after that threshold, the higher the level of AROPadult, the lower the level of CPI, until AROPadult reaches abruptly its maximum level of 23.9%. For the seventh model, the graph represents a line rather than a U-shaped curve, the variables' values decreasing to a threshold of 25.65%, even though the maximum level of AROPmidAge is at 24.6%. For the eighth model, CPI and AROPsenior decrease to a threshold of 33.26%, then the higher the level of AROPsenior, the higher the level of CPI. Beyond this threshold, the values increase to a maximum level of 52.3%.

Table no. 4 Corruption (CPI), EU-27, as a function of poverty (by age substructures)

	(4)		(5)		(6)		(7)		(8)	
CPI	Simple regression	Parametric regression	Simple regression	Parametric regression	Simple regression	Parametric regression	Simple regression	Parametric regression	Simple regression	Parametric regression
constant	84.8669 ***	81.813 ***	49.1973 ***	56.3456 ***	81.9874 ***	42.3987 ***	88.0329 ***	102.2732 ***	71.1131 ***	82.1201 ***
AROPunder	-1.1151 ***	-0.7853								
AROPunder ²		-0.0081								
AROPover			0.7065 ***	-0.0216						
AROPover ²				0.0167						
AROPadult					-1.2748 ***	4.3154 ***				
AROPadult ²						-0.1848 ***				
AROPmidAge							-1.6051 ***	-3.7299 ***		

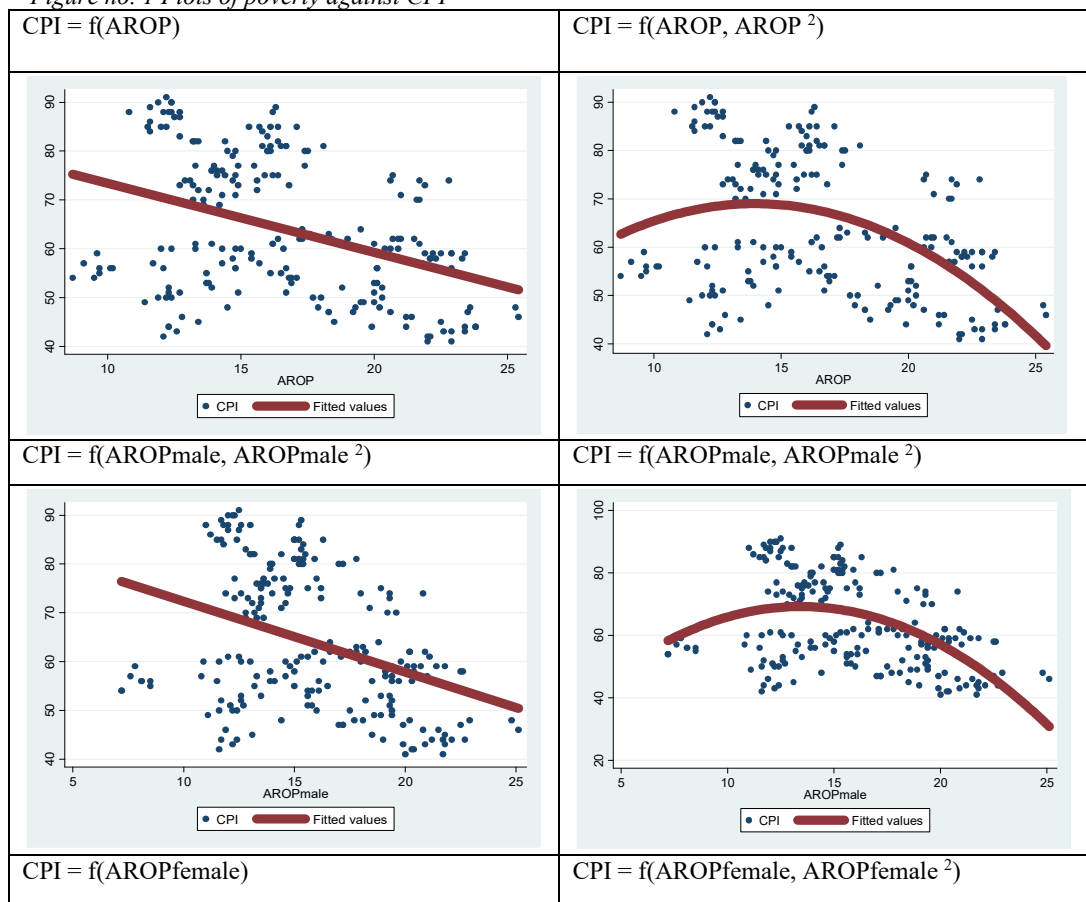
AROPmidAge ₂								0.0727*		
AROPsenior								-0.3758 ***	-1.497 ***	
AROPsenior ²									0.0225 ***	
Poverty Threshold value	n/a	-48.47%	n/a	0.64%	n/a	11.67%	n/a	25.65%	n/a	33.26%
R ²	0.2123	0.2129	0.116	0.1204	0.1099	0.1631	0.2283	0.2387	0.0665	0.0990
Adjusted R ²	0.2086	0.2055	0.1118	0.1122	0.1057	0.1553	0.2247	0.2316	0.0621	0.0905
Observations	216	216	216	216	216	216	216	216	216	216

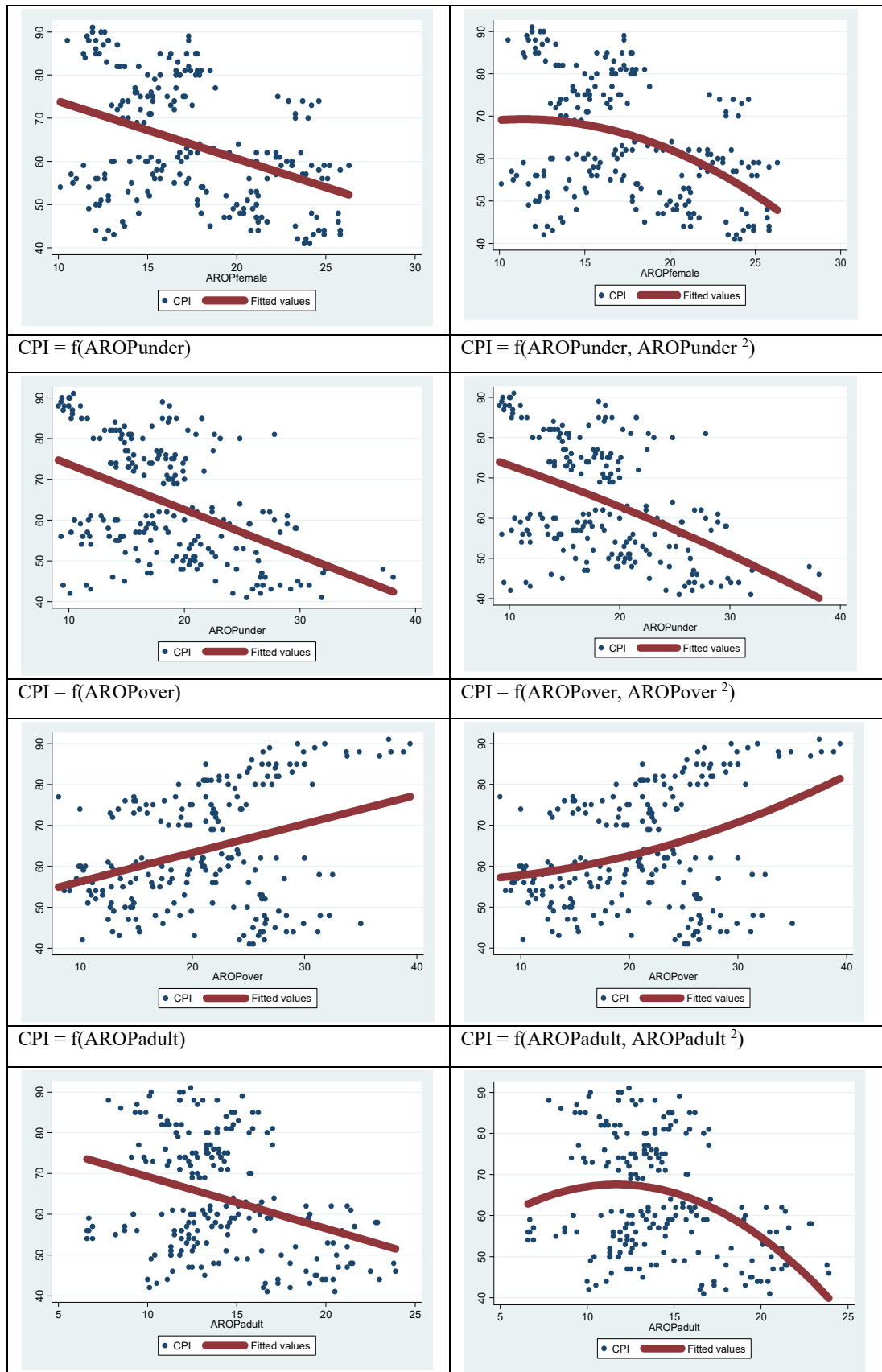
Source: Authors' processings in Stata

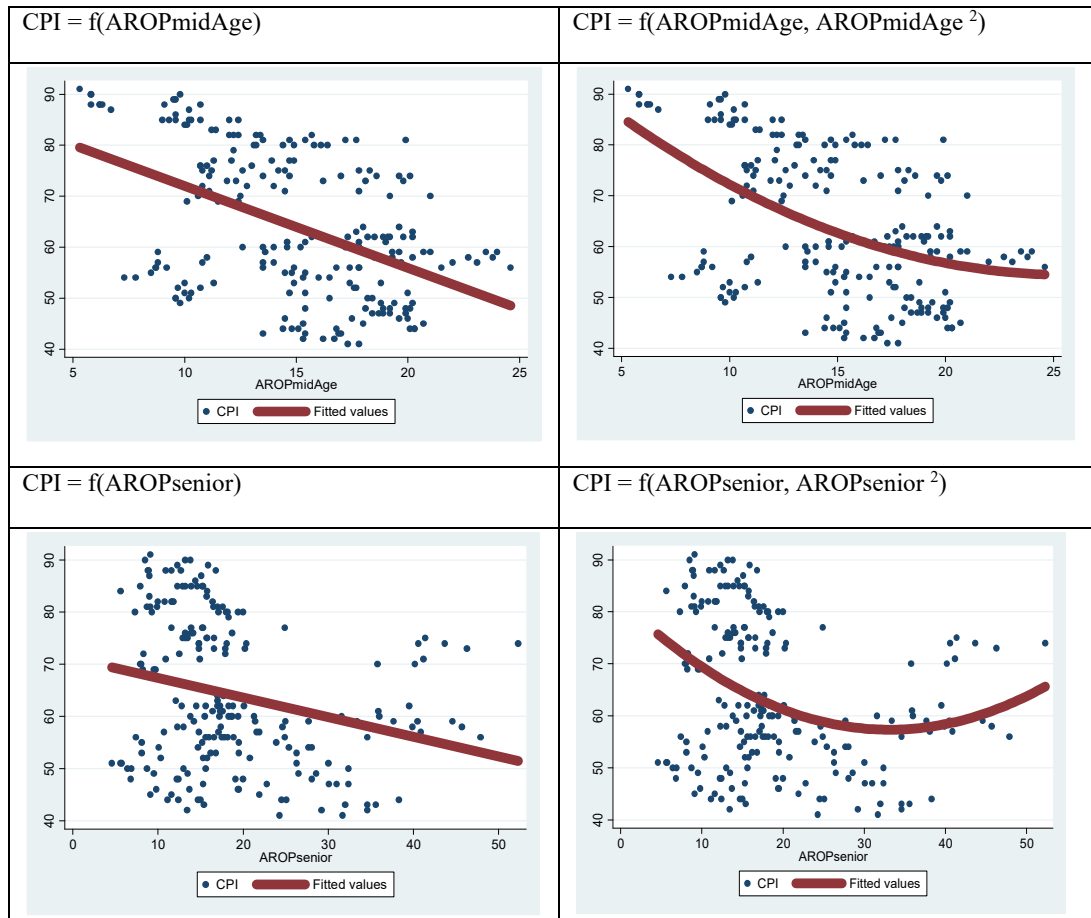
Additionally, one favorable aspect is the fact that almost every coefficient of determination improves their explanatory power in models (5)-(8). The Adjusted R² when estimating the impact of poverty upon CPI has increased from 11.18% to 11.22% (5th model), from 10.57% to 15.53% (6th model), from 22.47% to 23.16% (7th model) and from 6.21% to 9.05% (8th model). Thus, the parametric approach in Equation (2) brings a better fit to the data.

The linear fit of Equation (1) and the parametric approach of Equation (2) is graphically represented in Figure no. 1, as depicted in Stata linear fit models (on the left side of Figure no. 1) versus quadratic models (on the right side of Figure no. 1).

Figure no. 1 Plots of poverty against CPI







Source: Authors' processings in Stata

To support the validity of the previously obtained main results, we perform some robustness checks by verifying another variable, denoted PovN, which acts as another proxy for poverty and estimating Equations (1) and (2) in Table no. 5, model (9). PovN is found to be indirectly correlated with the CPI, for a simple regression, meaning that for a 1 unit increase in PovN, the variable CPI will decrease with 1.2285 units, ceteris paribus. Another observation is the coefficients of determination in model (9) improve their explanatory power, increasing from 13.24% to 18.09%, when the parametric approach to data is used. We estimate a poverty threshold at the level of 14.03%, and the model has significant coefficients. Thus CPI and PovN increase to that threshold and, after that, the higher the level of PovN, the lower the level of CPI, until PovN reaches abruptly its maximum level of 25.3%.

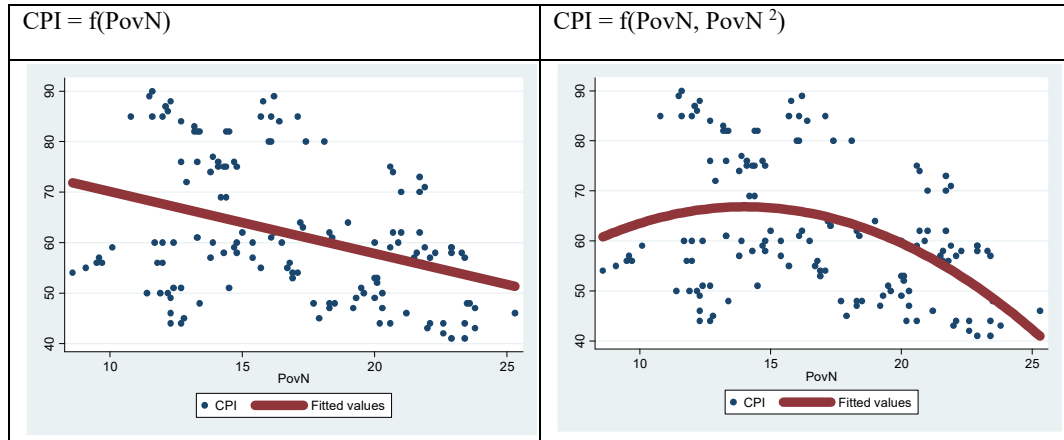
Table no. 5 Corruption (CPI), EU-27, as a function of national poverty rates

CPI	(9)	
	Simple regression OLS	Parametric regression OLS
constant	82.4325 ***	26.6753
PovN	-1.2285 ***	5.7205 **
PovN ²		-0.2038 ***
Poverty Threshold value	n/a	14.03%
R ²	0.1388	0.1926
Adjusted R ²	0.1324	0.1809
Observations	141	141

Source: Authors' processings in Stata

Looking at the values obtained in Table no. 5, we may notice that the signs of the coefficients are the same as for AROP, AROPmale, AROPfemale and AROPadult (both simple and parametric regression), confirming that our estimations are robust. Figure no. 2 graphically represents the linear fit through Equation (1) on its left and the parametric fit through Equation (2) on its right.

Figure no. 2 Plot of corruption as a function of nationally reported poverty rates



Source: Authors' processings in Stata

5. Conclusions

Summing up, our results support the idea that increased cleanliness from corruption is related to decreased poverty rates. We find a U-shaped relationship only between 3 variables that measure the poverty (AROPover, AROPmidAge, AROPsenior) and corruption (CPI). For the rest of the variables, an inverted U-shape relationship is validated. According to our findings, we notice that poor people aged over 50 years old and between 18-24 years old, who are considered unexperienced employees, are likely to be more corrupt, if their poorness levels tend to increase.

We highlight different values of the poverty thresholds for subcategories of poverty rates of EU-27 member states. The parametric approach to our dataset, through a second degree polynomial, proves itself to bring a better fit to our dataset. This approach is original in itself, being the first of its kind, to our knowledge.

Our findings are important for policy-makers from different countries, in order to evaluate how poverty reduction could act as a corruption contraction tool as well, besides the positive economic and social effects the reduction of poverty would bring. These findings are important in the international context as well, because worldwide nations target the reduction to eradication of poverty levels.

The limits of our paper refer to the simplicity of the methodological approach, although for the future we intend to contract this by including supplementary control variables. Nonetheless, we intend to extend the sample.

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Updating and Developing the Normative Framework for Strengthening the Internal Public Audit Function in State Institutions and Companies

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Abstract

In Romania, nearly 14,000 institutions and various state entities are subject to internal public audit. Among these, about 90% belong to local public administration. A recent report by the Romanian Ministry of Finance categorizes the auditable entities as follows: 21 ministries; 1,456 units subordinate to the ministries; 45 autonomous administrative authorities (including those with special reporting formats); 173 units subordinate to autonomous administrative authorities; 982 local administrative units and 5,713 entities subordinate to local administrative units. The legislation required internal public audit departments to carry out specific missions on the entity's activities at least once every three years; subsequently, a new amendment extends this period to four years. Our approach focuses not only on the findings of the internal public audit structures within the institutions and state-owned companies in Romania, reported on established objectives, but also on some legislative changes reflecting the updating and development of the regulatory framework to strengthen the internal public audit function.

Key words: normative framework, internal public audit, public authorities, audit structures

J.E.L. classification: D73, H83, H89, M42, M48

1. Introduction

Establishing the activity of public audit within the entities of the Romanian state, through Law no. 672 from 2002, aimed for better management of the formation and use of public funds, as well as optimal administration of public assets. Today, after more than two decades since its legislation, we observe that the situation is far from being considered as evolving strictly based on the mentioned norm. Even though internal public audit (IPA) has been assigned the purpose of „assisting the public entity in achieving its objectives (...), assessing and improving the efficiency and effectiveness of risk management, control, and governance processes.” (RP, 2002), in a considerable number of institutions, the audit function hasn't even been established (Bostan, 2022).

Overall, the results are not as expected, even though, in accordance with Order no. 600 dated April 20, 2018, regarding the approval of the Internal Managerial Control Code for public entities (SGG, 2018), these entities are required to establish internal public audit departments (or ensure access to competent audit capacity) with the aim of improving management through assurance and advisory activities (Standard 16). The major requirements in this context stipulate that (SGG, 2018): „The internal auditor concludes their actions through internal audit reports, which encompass the general framework, objectives, findings, conclusions, and recommendations.” Simultaneously, „The head of the public entity takes necessary measures considering the recommendations presented in the internal audit reports.” Additionally, auditors in this category, among other obligations they have, „must enhance their knowledge, skills, and values through continuous professional development and ensure the compatibility of their training with the type and nature of internal audit missions that need to be conducted.”

Obviously, in this regard, there are other requirements as well (Figure 1).

Figure no. 1. General requirements of Standard 16 - Internal Audit



Source: Authors' elaboration based on (SGG, 2018)

Against this backdrop, our work addresses the issue of internal public audit in terms of its exercise, existing challenges, and legislative perspective - emphasizing the latest adopted norms. We observe that, through proper implementation, these norms can lead to strengthening the function of internal audit in both central and local public entities and to better monitoring of the establishment and use of public resources.

Simultaneously, we pay attention, in connection with the aforementioned aspects, to the findings derived from the most recent report by the Romanian Ministry of Finance (2022) regarding internal public audit missions within the authorities of central and local public administration.

In this context, we articulate specific criticisms, draw certain conclusions, but most importantly, endeavor to suggest proposals to improve the situation in the analyzed field.

2. Theoretical background

Over time, it has been demonstrated that internal public audit is a vital function in ensuring transparency, control, and efficiency within organizations, significantly contributing to their success and sustainability. Several works on the exercise of public audit in Romania adequately address the issue at hand (Bostan & Radu, 2003; Dascălu & Nicolae, 2006; Munteanu, 2010; Trincu-Drăgușin & Ștefănescu, 2020; Ionescu & Nica, 2021), covering aspects related to history, norms, institutions, standards, or techniques/procedures for conducting specific missions.

Based on the literature, we note that this type of audit holds particular importance in ensuring healthy and efficient corporate governance (Costea, 2005; Calotă & Vânătoru, 2009; Dascălu et al., 2016; Ștefănescu & Trincu-Drăgușin, 2020), its significance being evident in several ways. Thus, internal public audit helps organizations comply with legal norms and current regulations, evaluating and monitoring whether activities align with established policies, regulations, and procedures.

By continuously evaluating and monitoring processes and internal controls, internal audit contributes to preventing and detecting fraud or errors in a timely manner. Additionally, by identifying deficiencies or inefficiencies in processes, it aids in improving operational efficiency and optimizing resources and processes. Moreover, internal audit evaluates operational, financial, and compliance risks, recommending and implementing management measures to minimize their negative impact on the organization.

Providing objective information and assessments of the organization's processes and activities enables managers to make optimal decisions, making internal public audit an important support in achieving organizational objectives. On the other hand, it provides a framework for evaluating how

the organization achieves its established objectives and recommends ways to improve performance and strategic direction. Equally important is the considerable increase in stakeholders' trust, as internal public audit provides assurances to shareholders, investors, or the general public that the organization effectively manages risks and adheres to established standards and regulations.

3. Research methodology

Our investigation into this topic ('Updating and developing the normative framework for strengthening the internal public audit function in state institutions and companies') is based on researching various works in the field of internal public audit, the current normative framework applicable to internal public audit within state institutions and companies (laws and general/specific regulations regarding the exercise of internal public audit activities).

We delve into reports from specific institutions (Ministry of Finance (UCAAPI/ Central Harmonization Unit for Internal Public Audit), documents related to the development/implementation of policies/programs/strategies for government sector audits, as well as official statistics, etc.

In our endeavor, we found useful the explanatory notes and justifications of certain normative acts relevant to the addressed field, available on the websites of the Romanian Government and Parliament.

4. Findings

4.1. Internal Public Audit in Romania: From Specific Norms to Effective Implementation

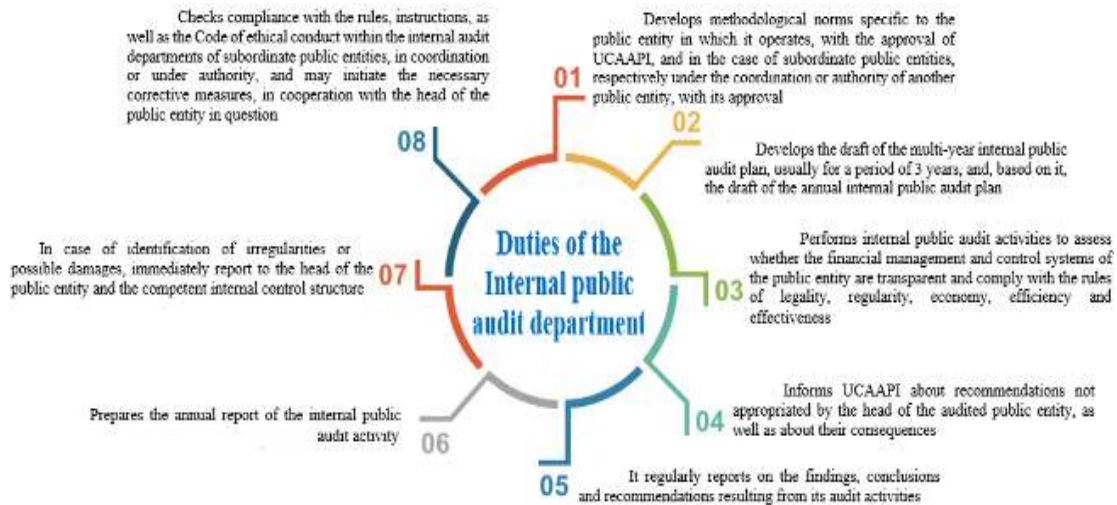
In the case of all public entities in Romania, their leaders have a legal obligation to ensure the organizational and functional framework necessary for conducting internal public audit activities. Regarding the creation of functional departments for internal public audit within state institutions and companies, specifically under the direct subordination of the leader/manager or the collective/cooperative management body, legal norms are imperative. In terms of size, „The Internal Public Audit Department is sized, in terms of the number of internal auditors, based on the volume of activity, the size and complexity of the entity and the entities under the authority, coordination, or supervision of the public entity, taking into account the duties and competencies provided in its establishment, organization, and operation acts, considering the risks associated with the activities carried out by the public entity.” (RP, 2002).

Internal public audit - manifested as system audit, performance audit, regularity audit, or information technology audit – „is conducted on all activities carried out in a public entity, at least once every 4 years, including activities of entities under its authority, coordination, or supervision, and the prioritization of internal audit missions is based on risk analysis and requests from the Court of Accounts.” (RP, 2002). The regulated duties of the internal public audit department are depicted using Figure 2.

For a minimal understanding of how internal public audit is conducted in Romania, we introduce certain data and information contained in the Report on the Activity of Internal Public Audit in the public sector in Romania in 2022 (MF, 2023). According to this report, within the central and local public administrations, regardless of the type of credit ordinator (primary, secondary, or tertiary), there were reported to be 13,802 institutions obligated to maintain a functional internal public audit structure.

Concerning the functioning of internal public audit structures, they are categorized as follows: 10,784 entities have established internal public audit, and it is operational, representing an operational rate of internal audit of approximately 78%. Among 3,018 entities, internal public audit is not operational (about 22%): 1,630 entities have established internal public audit but it is not operational; 1,388 entities have not established internal public audit, thus, it is not operational.

Figure no. 2. Duties of the internal public audit department



Source: Author's elaboration based on (SGG, 2018)

Internal public audit faces multiple issues that hinder its proper functioning. These include limited resources, both human and financial, which are insufficient to ensure an efficient internal public audit structure. Additionally, there is a lack of interest from some entities/managers in organizing competitions for filling vacant positions of internal public auditors, and when such competitions were organized, they did not result in filling the positions.

According to the previously mentioned source, in public administration, although approximately 90% of entities have established an internal public audit structure, only 78% of these are effectively operational. In 2022, the reporting of internal public audit activities had significant deficiencies, as 3,034 entities did not compile appropriate annual reports. Specifically, 16 entities did not compile annual reports even though the internal public audit structure was functional; 1,630 entities did not provide reports because the internal public audit structure was not functional, and 1,388 entities did not prepare reports because internal audit was not established. Furthermore, the independence of internal audit was compromised in numerous situations. In central and local public administration, 32 cases were identified that could affect the independence of internal public audit structures. These include one case where internal public audit was not subordinate to the entity's management, 27 cases where approval was missing in the appointment or dismissal of internal auditors, and 4 cases where approval was missing in the appointment or dismissal of internal public audit structure management.

Additionally, in assessing the objectivity of internal public auditors, 44 cases were found where internal public audit was involved in auditing activities, but there were also 6 cases where the independence statement was not properly completed in the same reporting period.

Recently, internal public audit structures in public administration have established the necessary human resources for sizing the internal public audit function in accordance with applicable legal frameworks (Table 1).

Table no. 1. The need for human resources to size the internal public audit function in accordance with the applicable legal framework

Year 2022	Filled positions exercising internal audit duties	Positions needed to perform internal audit duties	Deficit (-) / Surplus (+)
Ministries and Autonomous Administrative Authorities	431	587	- 156
Units subordinate to ministries and autonomous administrative authorities	1,054	1,764	- 710
Local Administrative Units through Associative Structures	405	561	- 156
Local Administrative Units through Regional Directorates of Public Finance	552	1,084	- 482
Units Subordinate to Local Administrative Units through Regional Directorates of Public Finance	343	552	- 209
Total	2,785	4,498	- 1,713

Source: (MF, 2023)

Studying the data presented in Table 1, we can conclude that the 2,785 filled positions as of December 31, 2022, are not sufficient for the proper conduct of internal public audit activities, with the total number of necessary filled positions to perform internal public audit activities being 4,498.

Despite the existing difficulties, in 2022, within public administration, a total of 237 irregularities were identified and reported (Table 2), most of which were in the financial accounting and public procurement domains.

Table no. 2. Trends regarding irregularities in public administration

Years	2019	2020	2021	2022
Number of identified irregularities	201	316	527	237
Budgetary domain	7	24	39	13
Financial accounting domain	63	80	116	40
Public procurement domain	39	29	48	13
Human resources domain	7	28	20	40
IT domain	2	7	4	8
Legal domain	2	7	23	11
European funds domain	33	4	1	0
Specific functions domain	17	78	155	85
SCIM domain	14	7	29	11
Other domains	17	52	92	16

Source: (MF, 2023)

To address the identified and reported irregularities, recommendations were formulated, most of which were adopted by the audited entities (with few exceptions), some of these recommendations have already been implemented, while others partially implemented.

Beyond what's presented here, in our opinion, the most serious issue is the non-establishment of this function. It is true, the situation stems from various quite real causes that have led to the absence of internal public audit activity in hundreds of institutions to this day. Among these: insufficient financial resources, existing service provision contracts (for internal public audit activities) in progress, abolishment of specific departments during institutional restructuring, followed by the redistribution of positions to other structures within the entity. Notably, there have been instances where internal auditor positions were taken over and transformed into advisor positions by the main credit ordinator.

4.2. Recent legislative changes aimed at strengthening the internal public audit function

As mentioned in the preceding section, after more than two decades since its legislation, we observe that the internal public audit activity is far from strictly evolving based on existing legal norms. In our view, the most significant factor has been the lack of enforcement of penalties for not organizing internal audits, although this situation falls under the scope of Article 23(a) of Law 672/2002, constituting an offense. The level of the fine is not negligible, ranging from 3,000 to 5,000 lei.

The explanation for not applying sanctions can be linked to the disregard for Article 24 of the same law, which obliges the main budgetary credit ordainers (ministers, other heads of central institutions, etc.) to empower their representatives to ascertain and impose sanctions. Even the Ministry of Finance only issued an order in this regard in 2020 (OMFP no. 7/2020). Therefore, it can be argued that overall, the difficulties we mentioned are also due to the legal framework. Although Law no. 672/2002 on internal public audit has been amended several times since its inception, it was unable - for a long period - to strengthen the regulatory system. A major text revision, considering best practices from other countries, only occurred in the latter part of 2022, but its effects could not be reflected in the results of the respective year's internal public audit activity (due to the delayed entry into force).

This concerns Government Ordinance no. 29 of August 26, 2022, amending and supplementing Law no. 672/2002 on internal public audit (RG, 2022), which brings 22 amendments and additions to the basic law. The initiator (Ministry of Finance) describes the anticipated benefits and costs following the enactment of this normative act as follows: „The implementation of the provisions of the draft normative act leads to: (i) consolidating the internal audit function in public entities and better tracking the formation and use of public resources; (ii) improving the quality in its exercise; (iii) strengthening the internal public audit departments within the associative structures of local public administration, which ensure the internal audit function in a cooperative system.” (MF, 2022).

The amendments and completions of the law cover various aspects ranging from defining certain terms (the organizational and functional framework of internal public audit activities, certification, unimplemented recommendations) to certifying the associative structures of local public administration to ensure the internal public audit function in a cooperative system, etc. Presently, the organizational and functional framework of internal public audit activities has the following significance: „The organization and ensuring the functioning of internal public audit through the approval in the organizational chart of an internal public audit department with at least two full-time internal auditors and providing the necessary financial resources for operation or ensuring the internal public audit function by the higher hierarchical body or adhering to the cooperation system for the internal public audit function.” (RG, 2022; MF, 2022).

This definition is important primarily because, for a long time, due to uncertainties surrounding this concept, the normative act (Law no. 672/2002) couldn't fulfill its coercive function. Article 23(a) of Law no. 672/2002 stipulates that „violation of the obligation to ensure the organizational and functional framework necessary for the conduct of internal public audit activities, according to the provisions of Article 11(a) of the law”, constitutes an offense (fines range from 3,000 to 5,000 lei). The obligation to ensure this framework lies with the head of the public institution or, in the case of a public entity, the collective governing body. However, due to the lack of an exact definition of the term „organizational and functional framework of internal public audit activities”, significant difficulties arose in applying the offense prescribed in Article 23, item a) of Law no. 672/2002, risking annulment of sanctions due to potential challenges.

Precisely, the major ambiguity in determining the offense (according to the initiator) was whether „the organizational and functional framework involves establishing a department with a minimum of two approved and budgeted full-time internal auditor positions (Article 2, item f) or if this also includes sizing the internal public audit department based on the volume of activities and associated risks (Article 12, paragraph (4)).” (RG, 2022; MF, 2022). Furthermore, explanations from public entities indicated difficulties in organizing internal public audit, often attributed to the insufficiently defined and explained notion in the legal norms.

Now, it is very explicitly stated (RG, 2022): (i) „The internal public audit department consists of a minimum of two full-time internal auditor positions, with the necessary financial resources for occupying the prescribed positions and operating the department.” (if „the higher hierarchical body does not ensure the internal public audit function or through adherence to the cooperative system for ensuring the internal public audit function.”); (ii) „Internal public audit is conducted on all activities carried out within a public entity, at least once every 4 years, including the activities of entities subordinate, coordinated, or under its authority, as applicable, and the prioritization of internal audit missions is based on risk analysis and requests from the Romanian Court of Accounts.” (Exception: „when developing the multiannual plan, the head of the entity or the collective governing body can approve an extension beyond the 4-year term, by a maximum of one year, upon the reasoned proposal of the head of the internal public audit department.”).

The text of the normative framework regarding Offenses and Sanctions has a new content, reflected in Figure 3.

Figure no. 3. Contraventions and sanctions for violating the internal public audit regime

<p>It constitutes a misdeemeanor and is punishable by a fine from 3,000 lei to 5,000 lei:</p> <ul style="list-style-type: none"> a) violation of the obligation to ensure the organizational and functional framework necessary for carrying out the internal public audit activity, according to the provisions of art. 11 lit. a); b) violation of the obligation to develop internal public audit rules specific to the public entity, as well as not presenting them for approval, according to the provisions of art. 13 lit. a); c) violation of the obligation to prepare the draft internal public audit plan, according to the provisions of art. 13 lit. b); d) the refusal of the executive or management staff, involved in the audited activity, to present the requested documents during the performance of internal public audit missions, in accordance with the provisions of art. 18 para. (3); e) non-compliance with the provisions regarding the appointment/dismissal of the head of the internal public audit department, respectively the appointment/revocation of internal auditors, in accordance with the provisions of art. 12 para. (2), respectively of art. 20 para. (2); f) non-elaboration by the head of the internal public audit department of the annual report of the internal public audit activity, by March 15 of the following year for the completed year; g) non-approval by the persons mentioned in art. 19 para. (4), within 45 working days, of the internal public audit report, according to art. 19 para. (4¹). 	<p>Contraventions and sanctions for violating the internal public audit regime</p>	<p>Finding contraventions and applying sanctions are done as follows:</p> <ul style="list-style-type: none"> a) by the authorized representatives of the Ministry of Finance, for the contraventions provided for in art. 23 lit. b), c) and e), found in public entities where the manager exercises the capacity of principal credit orderer; b) by the authorized representatives of the higher hierarchical body, at the level of subordinate public entities, in coordination or under authority, for the contraventions provided for in art. 23 lit. b), c) and e); c) by the representatives authorized by the head of the public entity, for the contraventions provided for in art. 23 lit. d); d) by representatives of the Court of Accounts for the contraventions provided for in art. 23 lit. a), f) and g).
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Source: Articles 23 and 24 of Law no. 672/2002, republished, following the entry into force of Government Ordinance no. 29/2022

In our opinion, once Government Ordinance no. 29 of August 26, 2022, amending and completing Law no. 672/2002 on internal public audit (RG, 2022) has been adopted, it visibly sets the groundwork for changes aimed at ensuring better management of public funds. By properly implementing the new regulations regarding internal public audit, managers could become more accountable, and the activities of the local administrative units could become more transparent - both concerning the establishment, collection, and utilization of budgetary resources, as well as the management of public assets.

5. Conclusions

The paper provides a concise overview of the public audit activity within the entities of the Romanian state and finds that overall, the results are not as expected, even though, in accordance with national standards, these entities are required to establish internal public audit departments (or ensure access to competent audit capacities) aimed at improving management through assurance and advisory activities. Difficulties are also attributed to the legal framework, with Law no. 672/2002 on internal public audit being incapable of consolidating the regulatory system. A major text revision, considering best practices from other states, only occurred in the latter part of 2022.

The implementation of the new provisions, while aiming to improve the functioning of internal audits in public institutions and enhance their quality, acts in a manner emphasizing coercive measures. These changes introduced new contraventions according to Law no. 672/2002, reissued, and amended with fines ranging from 3,000 to 5,000 lei. Among the established contraventions are failure to review internal public audit reports within 45 days of receipt by the public entity's management and the non-preparation of the annual report on the entity's internal public audit activity.

We believe that in the long term, approaches based on coercive measures are not the most effective, and greater attention should be given to adequate motivation and enhancing the professional training of all personnel involved in public audit activities.

Nevertheless, we believe that recent legislative changes aimed at strengthening the internal public audit function can generate significant social impact. These contribute to increasing transparency in the use of public funds and in managing public assets. Moreover, they are expected to improve the quality of evaluating and monitoring the establishment and utilization of public resources by the local administrative units.

Regarding the research limitations, beyond the descriptive nature of our work, it is important to note that the recent legislative changes aimed at consolidating the internal public audit function, to which we refer, only occurred in the latter part of 2022. Consequently, the effects of these changes could not be reflected in the results of the respective year's internal public audit activity (due to the delayed implementation), necessitating updated analyses on the internal public audit activity in the Romanian public sector in the following years.

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Aspects of Accounting Cost for Development of Customized Software Products

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Abstract

In today's context, marked by digitization and the development of information technology, one of the topics that needs to be addressed is the "costs of software development". This study investigates the evolution of scientific production related to the research topic based on descriptive and bibliometric analysis of selected articles on Web of Science and EBSCO, thus continuing existing research in the field. The importance of this theme is due to the increasing interest of entities to use customized software products that help them to achieve the desired results. The scientific approach is based on information from national and international literature and practice and various electronic sources. It has been shown that the development costs of custom software depend largely on the number of technical resources, the number and complexity of software product features and design patterns. Therefore, accurate estimation is impossible without prior analysis of the software design, business objectives and cost factors.

Key words: accounting cost, customized software products, IT sector

J.E.L. classification: M41, L86

1. Introduction

Today's economic activities are characterised by extensive processes of reform, digitalisation and globalisation. The development of information technology is becoming increasingly sophisticated and widespread in the activities of entities. The adoption of new technologies can be a turning point for entities. They must therefore continue to modernise their IT infrastructure to remain competitive and relevant. In this context, the success of entities depends to a large extent on the coordination of the work of its subdivisions, on the competence and professionalism of the collaborators, on the quality of the means and tools for automation and management of the entity's resources. Entities can therefore rely on various standard or customised solutions, so that they can be easily integrated into their work.

The literature and business practice point to the application of various automated solutions for managing entity resources: soft Business - on demand (Wren and Storey, 2002), Customer Relationship Management (Kyrylieva et al., 2023), Enterprise Resource Planning (Brueninghaus and Redeker, 2023), (Butarbutar et al., 2023), (Barna and Ionescu, 2023), custom intranet system, custom management solutions (Driessen et al., 2023), etc. Therefore, custom software development requires an individual approach (Turevska and Shubin, 2015), and the issues presented involve reflection on IT research and business practice.

From this point of view, custom software development costs depend largely on a large number of technical resources, the number and complexity of software product features and design patterns. This contributes significantly to how custom software is recognised, valued and accounted for. Therefore, correct estimation is impossible without a prior analysis of the software project, business objectives and cost factors such as the type of development (custom, low-code or platform-based) and the software development team, which contribute to the quality of the software developed. We note that workers in this field have to consume certain intellectual resources, which in practice are based on creativity, a mental and social process involving the generation of new ideas or concepts, or new associations of the creative mind between existing ideas or concepts. At the same time, professional skills are required with reference to those who design and develop software, databases, system engineers and system administrators, network engineers, web designers, graphic designers, design engineers etc.

Respectively, the generated changes are not sufficiently addressed from an accounting point of view, as there are issues related to the recognition and valuation of IT products and services, the selection of a relevant costing method, the correlation of cost of sales with related revenue in the context of research, development, experimentation, delivery and consumption processes, etc. (Cojocaru et al., 2023).

Since software products are the result of a research and development process, the need to determine the cost of production arises, at which point several questions arise: how the cost of software products is formed, what calculation method is relevant to use, what is the composition of the costs, what are the most relevant bases for allocating indirect costs relating to software development, etc. Economic practice in the IT field shows that the cost of software products is predominantly due to salary costs, which represent the remuneration of each employee involved in several contracts for research, development and development of software products in one and the same management period. In this context, arising from the concurrent participation of employees in various research and development projects for software products, the problem of the distribution of personnel costs arises.

The importance of this topic is driven by the growing interest of entities in all business areas to use customised software products to help them achieve the desired results. Therefore, the above circumstances confirm the topicality of the investigated topic and impose the necessity of examining the issues of software product accounting and its improvement in accordance with the current development trends of entities in the field, since there is currently no exhaustive research on the research topic.

The scientific approach is based on information from the literature and practice of the field, for the realization of the work, reference books in the field and other related disciplines, articles and studies published in specialized journals and volumes of scientific conferences, specific legislative regulations, specialized dictionaries, as well as various electronic resources. Elements of comparison, analysis and inference were applied to the exposition of the material. In order to identify the degree of international scientific research in the field of software development costs, the Web of Science and EBSCO search engines were used.

The purpose of this paper is to highlight the theoretical and practical aspects of software development costs and to emphasize their relevance in determining the cost of developing a software package. The objective of this research is to analyse the current situation regarding the composition of production costs in the IT field, their description, how they are allocated and included in the cost, as well as a practical aspect regarding the accounting of costs related to the development of custom software based on various contracts concluded with beneficiaries.

In the following sections of the paper we will present the main ideas from the literature on custom software devolution costs, the research methodology, data processing and analysis, and the final conclusions of the study, limitations and future research directions.

2. Literature review

In a concise, selective way, the current state of knowledge at international as well as national level will be highlighted below. In the context of the evolutionary aspects, software production faces a number of specific challenges, generated by changing technologies and the central role of information technology support to any economic activity. The term software is used generically for any computer program in any field in order to define the computer applications used to command and control any electronic system [5]. Therefore, addressing software development costs and accounting issues requires studying the technological process of software product development and its peculiarities.

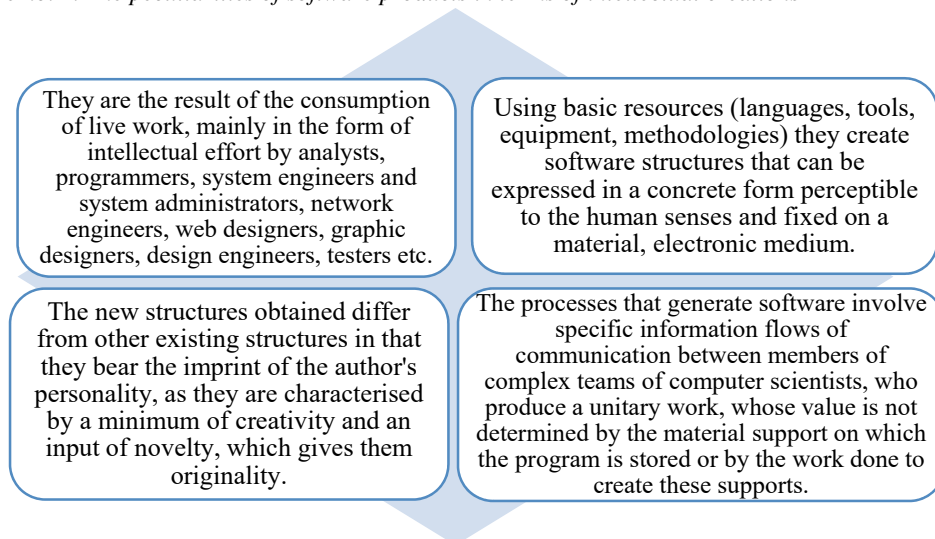
We note that studying the cost of software development is an important issue for both academic and commercial circles, "software production has a relatively short history, dating back to the 1970s and 1980s, since manufacturers of hardware products realised that they had relatively lower costs in producing software compared to producing computers and circuits. Initially software production came as a necessity to ensure the functionality of hard products, later they were separated as an independent activity" (Țurcanu, 2018).

According to Majid Aramand (2008), "high-tech products are characterized as having short life cycles and being state-of-the-art because they are affected by changes in the software industry and the requirements of software users in various industries".

The literature indicates that "conventional estimates could significantly increase the development costs of software products. Therefore, the evolution of automated analysis techniques allows requirements modelling and analysis to be done formally, quickly and automatically, avoiding the mistakes made by animosity between developers and users, thus saving a lot of time and manpower. Thus, experiments have shown that the algorithm called Intelligent Planning based Requirement Analysis (IPRA) can obtain a complete planning domain and convert it into the requirements specification of each developed software product" (Zhang, 2016). At the same time, there are software applications that manage and keep track of the tasks performed by the employees of IT entities, generate reports and evaluate what work was done by it on each particular order, what is the budgeted time to perform it, how much time was actually used (Cojocaru and Bădicu, 2022).

Studies in the literature approach software products in terms of the requirements of an intellectual creation, as shown in Figure no. 1, which is the subject of copyright.

Figure no. 1. The peculiarities of software products in terms of intellectual creations



Source: Own interpretation after (Norris et al., 1993)

In this context, we note that for the development of a computer application, materialised by a software product and a database, the social relations created in relation to software products and databases, as results of individual or collective creative work carried out by individuals or in processes developed by legal entities, are governed by the legal rules in the field of intellectual property, more specifically in the field of copyright.

Some authors (Phongpaibul and Aroonvatanaporn, 2015) treat "software development characteristics and costs as unquantifiable due to the abstract nature of software. Therefore, current software estimation methodologies may open up areas for corruption because estimated budgets and costs are difficult to verify and validate".

Beydeda (2005) is of the opinion that optimizing software development costs is to reuse existing software products. In his view, reuse has the potential to reduce costs, but this reduction must be set against the risks inherent in third-party software, such as complexity, which can complicate testing or the unavailability of information needed for testing.

Another topic covered in the literature is the quality of software products. "Marking duplicate errors in bug report data has the significance of reducing software development effort and costs. To remedy this situation, the authors discovered some elements in bug report data that lead to high quality services" (Chen et al., 2016.).

The studies show that "the methods proposed by theorists for assessing software development costs are not applicable in practice due to various unpredictable factors such as depression, which can affect the software development budget, changes in computer technology, which can affect the cost of software development, and software adoption, which is a different concept from management, which can affect an entity's willingness to invest in software development. On the other hand, it is hoped that the cost of software development can be properly controlled by considering several requirements" (Huang et al., 2005).

In this context, Liu (2009) considers that the Earned Value Method is an internationally recognized project management tool for tracking software progress. A method to track the software development progress based on the earned value analysis and use case point was proposed, and an experiment had been undertaken, which proved the effectiveness of this method to monitor and control the areas of schedule and costs of software development (Liu, 2009).

Software development and development is characterised by a pronounced immateriality of the products produced, which leads to major difficulties in estimating development costs, the degree of completion of an intermediate or final product. The assessment risks in this respect have consequences for the timeliness of software completion and the quality of the software product.

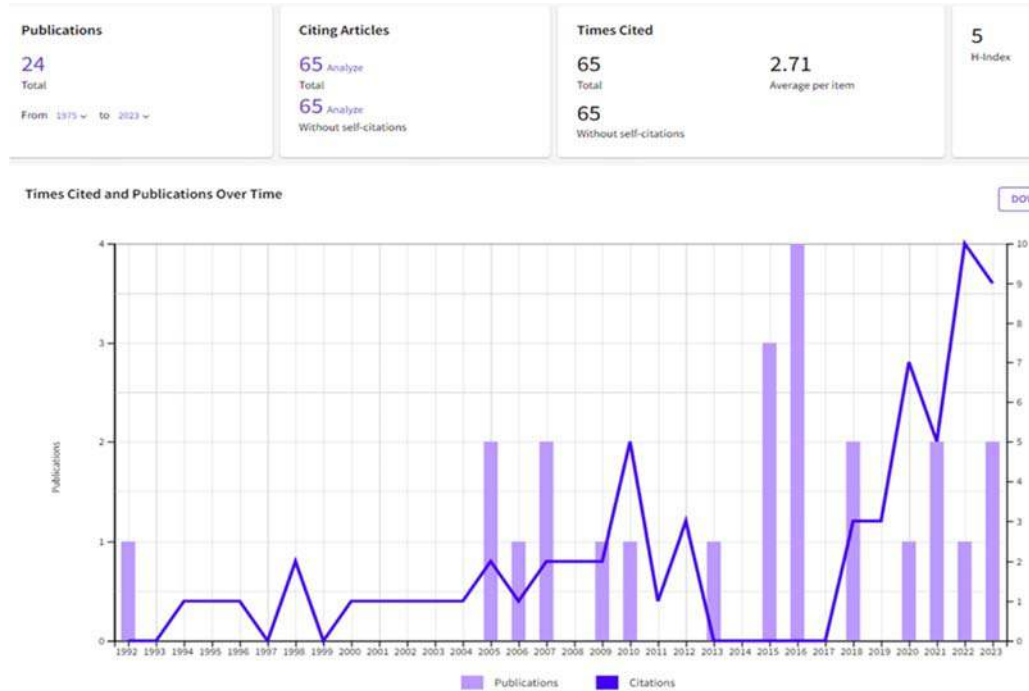
3. Research methodology

Our goal is to identify the extent of international scientific research in the area of software development costs using scientific articles dealing with this topic. In order to quantify the results, the authors used a bibliometric analysis of selected articles from the Web of Science and EBSCO platform, using the keyword "costs of software development" requesting that this phrase be included in All Fields. The selection of the reference period was based on the availability of research data at the time of the study.

Descriptive analysis was used to analyse the information extracted from the Web of Science database: main topics; years of publication; countries of publication; citations. The sample consisted of 24 articles relevant on the Web of Science platform for the subject of the paper, published between 1992-2023. Most articles were produced in 2015 - 3 articles and 2016 - 4 articles. The most citations were in the year 2022 in the number of 10. We mention that the first scientific paper addressing in its subject "costs of software development" is published in the year 1992, and in the year 2023, there are 2 scientific papers published in WoS on this topic. Following the analysis of the variation in the number of publications, it is appropriate to investigate the geographical location of their authors. Thus, the most productive countries in terms of publication rate on the topic "costs of software

development" are China (6), the United States of America (3), whose authors published articles, and Germany, Italy and Taiwan (2 scientific papers each). The general results generated by the analysis of the Web of Science data are shown in Figure no. 2.

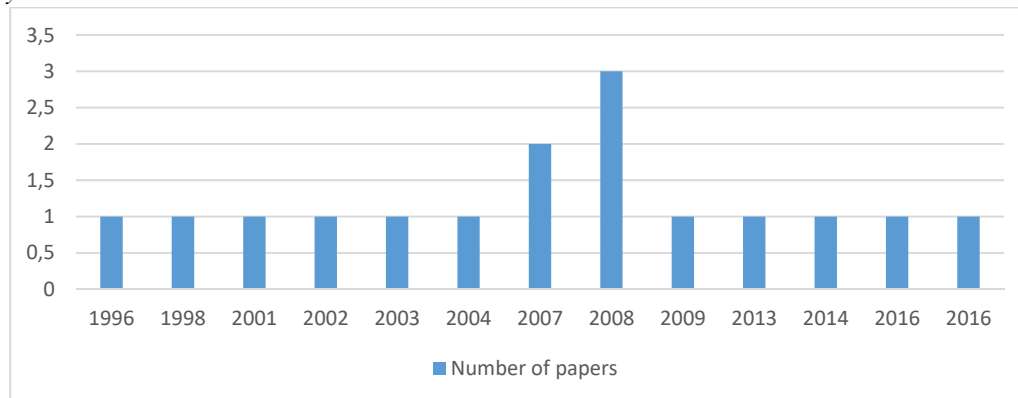
Figure no. 2. Evolution of publications with the topic "costs of software development" in the years 1992-2023



Source: Data processing from Web of Science

Our research carried out on the EBSCO platform consist on 16 scientific papers published between 1996 and 2019 in 5 sources. The first scientific paper that addresses in its subject "costs of software development" is published in 1996, and in 2023, there is no scientific paper published in EBSCO on this subject.

Figure no. 2. Evolution of publications in EBSCO with the topic "costs of software development" in the years 1996-2019



Source: EBSCO data processing

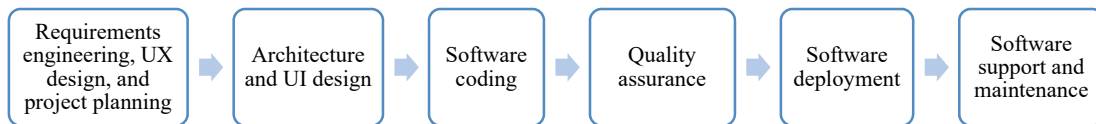
Considering the articles selected to substantiate the theoretical basis of the present article, the authors concluded that the year-on-year evolution on both platforms is slow and uneven, and the number of papers indicates the interest of international researchers, as there is a positive upward trend.

4. Findings

As mentioned, the costs of custom software development depend largely on a large number of technical resources, the number and complexity of software product features and design patterns, as they require an individual approach.

Thus, the software development process, referred to as the "software development lifecycle", can be separated into several different stages that support the design of software to meet business requirements. Before the software engineering team can come up with the general idea for any software, it is essential that they gather the business requirements and write down the exact requirements needed for any software. Figure no. 3 shows the stages of software product development.

Figure no. 3. Steps in software development



Source: based on data [15]

So, in the first stage, the project team will analyse the consumer entity's requirements, existing processes and software and plan the software features. Then it will prepare the design, create the project roadmap, develop the budget and potential project risks. In the design phase, the team transforms the requirements specification into a specific technology stack, which contains the technical design and UI software design. Back-end developers write server-side code and APIs and conduct unit tests. Front-end developers turn static user interface mockups provided by UI designers into fully functional GUIs. In the quality check phase, the team checks whether the software meets the specified functional and non-functional requirements and reports defects found, if any. In the implementation phase, the team makes the software available for use, which may include installation, customisation, user acceptance testing, creation of user guides and user training. Software support and maintenance includes fixing errors that occur after the software is delivered to end users.

Custom software development requires the application of cost accounting and job costing. If the contract term does not exceed 12 months, the parties may negotiate the payment of the R&D work related to the software development on a full (one-off) or instalment basis, or with advance payment. Where the time limit for execution of the work exceeds 12 months, the parties may negotiate payment for the work in stages. After completion of the development work, testing and trial of the software in progress, the parties shall draw up a Receipt and Delivery Certificate for the work carried out. The beneficiary of the order on the basis of this document becomes the exclusive owner of the software developed. A problem inherent in the development of software products is that the development process can take from a few months to two years or more. In some cases the initial contract period may be extended. In this context, it is necessary to determine and present information on costs accrued at the time of the milestone reporting.

The composition of IT cost items is shown in Figure no. 4.

Figure no. 4. Description of software development costs

Cost of materials	<ul style="list-style-type: none"> •represents the book value of inventories or other tangible resources used directly in the development of software products. Note that material costs have a very low weight, except for the type of activity of manufacturing electronic components, such as microprocessors.
Personnel costs	<ul style="list-style-type: none"> •represents remuneration, contributions and other payments related to staff directly involved in the software product development process. Economic practice shows that the cost of software products is dominated by labour costs, which represent the salaries of each employee involved in several research, development and software product development contracts in one and the same management period. In this context, the need arises to determine a reasonable basis for allocating the salaries of staff involved in the development of several software products.
Indirect production costs	<ul style="list-style-type: none"> •are related to the management of the software development process. Indirect costs in the IT area refer to various services and licenses purchased from other IT service providers, such as Google mail services, Soft Plugin services for websites, portal reservation services, data storage services, website monitoring services, maintenance services, depreciation of computing technology, salaries of IT entity network administrators, office rent for IT engineers etc.

Source: Own interpretation

In the following, we aim to exemplify the software product development process from an accounting point of view, taking into account the stages of the software process and the problematic aspects.

Case study 1.

IT entity develops two software product "001" and "002". According to the contracts concluded with the beneficiaries the income from the development of the software "001" will be 450,000 monetary units and of the software "002" - 95,000 monetary units. At the beginning of December 202x the cost of the development in progress for software "001" was 125,000 monetary units. In December 202x the entity incurred indirect software development costs totalling 63,990 monetary units, of which:

- amortisation of fixed assets - 29,700 monetary units;
- utilities - 13,650 monetary units,
- office rent - 10,500 monetary units,
- other costs - 10,140 monetary units.

Personnel costs involved in software development in December 202x totalled 112,300 monetary units, of which:

- employee 1 - 33,800 monetary units,
- employee 2 - 45,600 monetary units,
- employee 3 - 32,900 monetary units.

On 31.12.202x the development work on the "002" software was completed and handed over to the beneficiary. The coefficients of participation of each employee in the development of software "001" and "002" determined on the basis of the software application that manages the record of tasks performed by employees, is shown in Table no. 1.

Table no. 1. Breakdown of salary according to the degree of involvement of each employee in software development

Employees	Salary, monetary units	Software 001		Software 002	
		Participation quota, %	Sum, monetary units	Participation quota, %	Sum, monetary units
1	2	3	$4 = 2 \times 3 / 100$	5	$6 = 2 \times 5 / 100$
Employee 1	33,800	45	15,210	55	18,590
Employee 2	45,600	30	13,680	70	31,920
Employee 3	32,900	60	19,740	40	13,160
Total	112,300	X	48 630	X	63,670

Source: Own interpretation

In accordance with accounting policies, the basis for allocating indirect production costs has been determined on the basis of sales income for each individual contract. On the basis of the data presented it is necessary to make the following calculations (Table no. 2).

Table no. 2. Breakdown of indirect costs by sales revenue per contract, monetary units

Indicators	Distribution coefficient	Software 001	Software 002	Total
1	2	$3 = 2 \times 450,000$	$4 = 2 \times 95,000$	5
Income from sales	X	450,000	95,000	545,000
Amortisation of fixed assets	$29700 \div 545000 = 0,05449541284$	24,523	5,177	29,700
Communal services	$13\ 650 \div 545000 = 0,02504587155$	11,271	2,379	13,650
Location of the office	$10\ 500 \div 545000 = 0,01926605504$	8,670	1,830	10,500
Other costs	$10\ 140 \div 545000 = 0,01860550458$	8,372	1,768	10,140
Total indirect costs	X	52,836	11,154	63,990

Source: Own interpretation

On the basis of the data in Table no. 2 for each component of indirect production costs, the respective allocation coefficient was determined. On the basis of the above calculations in the entity's accounts, the actual calculation of the software, Table no. 3, will be prepared.

Table no. 3. Effective calculation of software developed, monetary units

Nr.crt.	Elements of cost	Software 001	Software 002
1.	Cost of work in progress of software 001 at the beginning of the period	125,000	x
2.	Salaries calculated for software development	48,630	63,670
3.	Calculated social security contributions (24%)	11,671	15,281
4.	Share of indirect software development costs:	52,836	11,154
	a) Amortisation of fixed assets	24,523	5,177
	b) Communal services	11,271	2,379
	c) Location of the office	8,670	1,830
	d) Other costs	8,372	1,768
5.	Actual cost of the finished software (2+3+4)	x	74,842
6.	Actual cost of software in progress (1+2+3+4)	226,466	x
7.	Income from software delivery	x	95,000
8.	Profitability of sales, %	x	21,22

Source: Own calculation

Based on the data in Table 3, it appears that the software "002" was completed during the reporting period and its cost was charged to the period expenses (cost of sales), while the software "001" will be reflected in the balance sheet at the cumulative cost of 226 466 lei as work in progress. Once the work related to the development of the software products has been completed, the IT entity draws up the invoice and the minutes of receipt-delivery of the work carried out. Payment for development work is usually made by applying an advance payment in advance or full payment after completion of the software development work.

5. Conclusions

This research confirms the low level of research in the field of "costs of software development", but with a positive trend of growth from year to year, demonstrated by discrete and bibliometric analysis of selected articles from the Web of Science and EBSCO platform. The studies carried out in the literature approach software products through the prism of the requirements of an intellectual creation, including professional skills with reference to those who design and develop software, databases, system engineers and system administrators, network engineers, web designers, graphic designers, design engineers, etc.

At the same time, it has been shown that custom software development costs depend largely on a large number of technical resources, the number and complexity of software product features and design patterns. This contributes significantly to how custom software is recognised, valued and accounted for. Therefore, correct estimation is impossible without prior analysis of the software design, business objectives and cost factors.

A limitation of this work is the small number of papers in this area, although the extent of use of software products has grown rapidly. Also, this paper leaves much room for further research in the area of software product development costs, focusing on other aspects than just the costs of custom software development under various contracts, which could have a significant impact.

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Critical Analysis of the Sharpe Ratio: Assessing Performance and Risk in Financial Portfolio Management

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Abstract

The Sharpe Ratio, serves as a crucial tool in assessing the relationship between return and risk. This study proposes a critical analysis of the Sharpe Ratio, addressing not only its practical applicability but also its involvement in the decision-making process for investors and portfolio managers.

The aim of this research is to uncover the depth of interpretation of the Ratio, surpassing its simple use as an efficiency indicator. A detailed evaluation of the factors influencing the outcome of this ratio is proposed, along with an analysis of its impact on investment decisions. The primary objective of the study is to investigate thoroughly the components of the Sharpe Ratio and how they can provide a more nuanced perspective on performance.

This critical analysis makes significant contributions to understanding and applying the Sharpe Ratio in the complex context of financial markets, offering crucial insights for those involved in the investment decision-making process.

Key words: Risk-return, interest rate, performance, profit distribution, yield

J.E.L. Classification: A00

1. Introduction

The Sharpe Ratio (Basno C., Dardac N., 2000), also known as the reward-to-variability ratio, is a widely used metric in portfolio management. It is calculated by standardizing the portfolio's excess yield over the risk-free rate by its standard deviation.

Hypothetically, investors could always choose to invest in government bonds to obtain a risk-free rate of return. The Sharpe Ratio measures the expected return above this minimum. Within the framework of portfolio theory, which explores the relationship between reward and risk, it is anticipated that investments with higher risk should yield higher returns. Therefore, a high Sharpe Ratio indicates superior performance adjusted for the level of assumed risk.

According to the Sharpe Ratio, the performance measure represents the compensation per unit of risk. Quantified by the rate of excess return compared to the level of risk-free return. The higher this rate (s), the higher the portfolio performance is considered.

2. Theoretical background

In 1962, Markowitz presented his research on portfolio theory and the need for Sharpe's covariance calculations. Afterward, Sharpe published the work "A Simplified Model of Portfolio Analysis." Inspired by Markowitz's ideas, Sharpe proposed a more accessible mathematical method, thus avoiding the complexity of numerous specific covariance calculations.

Sharpe argued that all securities are correlated with a certain underlying factor, such as the stock market index, gross national product, or another relevant indicator for the evolution of security prices. In applying Sharpe's theory, an analyst only needs to assess the relationship between the security value and the predominant underlying factor, thereby simplifying the mathematical approach of Markowitz. According to Sharpe's theory, the underlying factor for stock prices that significantly influences their behavior is the stock market itself. Additionally, the industrial sector and specific characteristics of the respective stock are important but with a lesser influence.

The Sharpe Ratio is an indicator of the efficiency of a trading strategy or financial instrument, expressed through its numerical value. The higher this value, the more efficient the evaluated object is considered.

This measure provides information on how previous evaluations of returns with risk can influence and predict the level of potential profit stability. Frequently used by financial analysts, the Sharpe Ratio provides a comprehensive perspective in summary tables that offer an evaluation of financial assets. It is an essential tool for understanding the efficiency and stability of performance in the context of the relationship between yield and risk.

Calculating the coefficient provides the investor with a clear indication of the level of risk associated with a specific financial asset. The Sharpe Ratio calculation is performed using formula (1).

$$Sp = \frac{Rp - Rf}{\sigma}; \quad (1)$$

- Sp = Sharpe ratio;
- Rp = the past portfolio return excess;
- Rf = risk-free rate of return on a financial investment;
- σ = standard deviation of the excess return concerning the risk-free rate.

In the process of calculating the Sharpe Ratio, the numerator uses mathematical expectations. As with any other coefficient, this indicator is dimensionless. In most cases, its data is compared with a benchmark, representing the risk-free interest rate of the asset's yield.

The Sharpe method measures the gain relative to volatility (Anghelache G., 2009). Using the Sharpe ratio, diversified structured portfolios can be classified, including the benchmark.

3. Research methodology

In the process of constructing an investment portfolio, it is imperative to perform a comparative analysis of different portfolios, requiring detailed knowledge of the quotations of all included securities (W.Sharpe, 1963). We have elaborated an example of the calculation of the Sharpe Ratio based on virtual companies.

Assume our portfolio includes three stocks represented by companies A, B, and C, with weights of 30%, 25%, and 40%, respectively. Although the data was extracted for one month, we recommend evaluating it over a more extended period for a comprehensive analysis.

Our goal is to highlight the components of the Sharpe Ratio and how it is constructed to later demonstrate our improvement methods. For calculating the Sharpe Ratio, the first step involves determining the returns over sub-periods of the investments, comparing them with a benchmark in the same sub-period, and then calculating the differences. Subsequently, the average of these differences is divided by the standard deviation. It is an essential process for evaluating portfolio performance and identifying potential improvements.

Table no. 1 Sharpe Ratio Calculation

No. Corp.	Companies/Probabilities			Return			Portfolio Profit	Risk
	A – 0,3	B – 0,25	C – 0,4	A	B	C		
1	245,28	3012,15	125,41					
2	243,25	3017,24	123,12	-0,9125	0,1688	-1,8428		
3	248,73	3007,88	128,27	2,2278	-0,3107	4,0977	-0,2909667	2,10836
4	241,12	3009,85	125,46	-3,1073	0,0654	-2,215		
5	238,16	3016,24	128,93	-1,2353	0,2120	2,7282		
6	244,37	2021,64	122,21	2,5740	-40,01	-5,3528		

7	245,11	3014,16	120,14	0,3023	39,941	-1,7083		
8	COEFFICIENT							-3,9324
9	RISK-FREE ASSET RETURN							8

Source: Compiled by the author based on information published on <https://www.crystalbull.com/sharpe-ratio-better-with-log-returns/> [accessed on November 22, 2023]

As a result, the Sharpe Ratio is in negative territory, signifying that the portfolio is associated with a high level of risk and requires careful evaluation (Basno and Dardac, 1999). The return of a risk-free asset exceeds the portfolio's return, suggesting that it would be more advantageous for an investor to place funds in a bank with an 8% annual yield than to invest them in this portfolio.

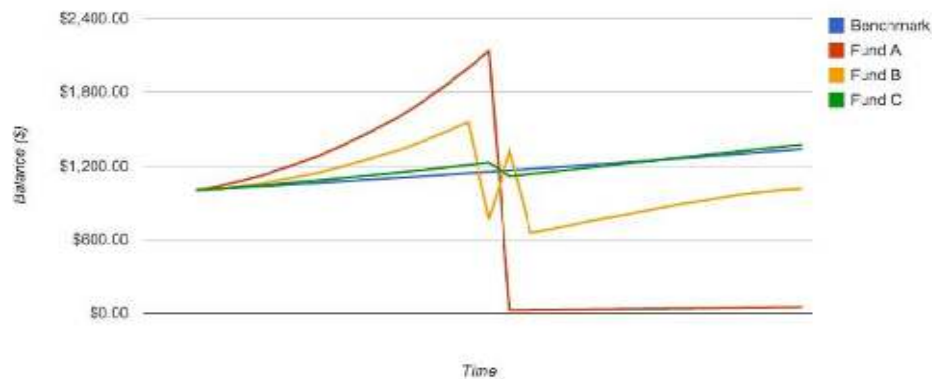
Why is this a potential issue?

Primarily because the use of a simple arithmetic mean (average) of return percentages can be misleading. Yield percentages are not additive. To illustrate, consider the following funds.

Fund 1	Periodic yields: 10%, 5%, -5%, -10%.	Average return: 0%
Fund 2	Periodic yields: 90%, 50%, -50%, -90%.	Average return: 0%

These two funds would be extremely challenging to differentiate based only on the average yields. However, the actual yields are significantly different. At the end of the four periods, the total yield of Fund 1 is -1.25%, while the total yield of Fund 2 is -85.75%. In any case, the average yield does not reflect an investment in loss, and it fails to make any distinction between these two quite different funds. The calculation of simple arithmetic mean, in the context of percentage returns, can be highly inaccurate.

Figure no. 1. Percentage returns of companies A, B, and C



Source: Compiled by the author based on information published in Table no. 1

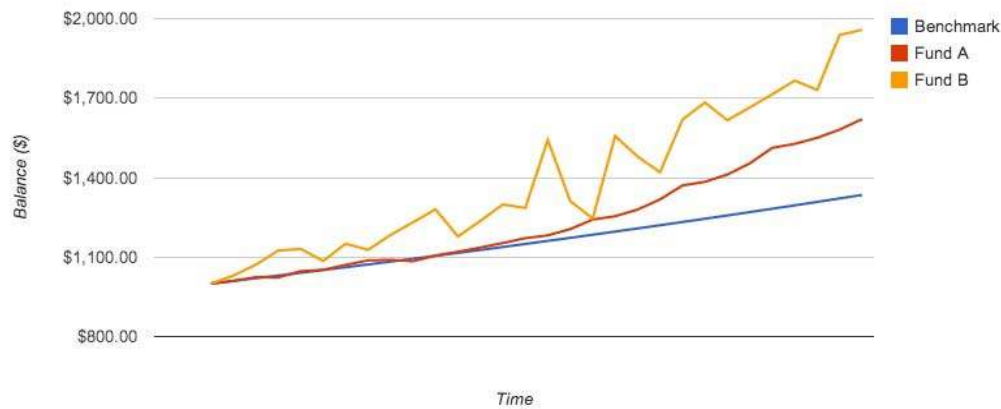
All three funds exhibit the same Sharpe ratios. Funds A and B show identical average differential yields, along with identical standard deviations. In the case of Fund C, we observe an average yield and standard deviation that are only 1/10th of the values of the other two funds. Unfortunately (Dănilă, 2000), as Sharpe arithmetic uses simple arithmetic means, we cannot highlight the distinction between these vastly different performances of the funds.

4. Findings

Next, we will present solutions to reduce the level of risk. In this respect, the question is which fund would you choose between these two funds?

Certainly, Fund A has never outperformed Fund B, but the Sharpe Ratio of Fund A is three times higher than that of Fund B. A fund manager who uses the Sharpe Ratio as the sole selection criterion would opt for Fund B. However, while limiting variability in a portfolio can be beneficial, this example underlines the challenge associated with using a single ratio as a measure.

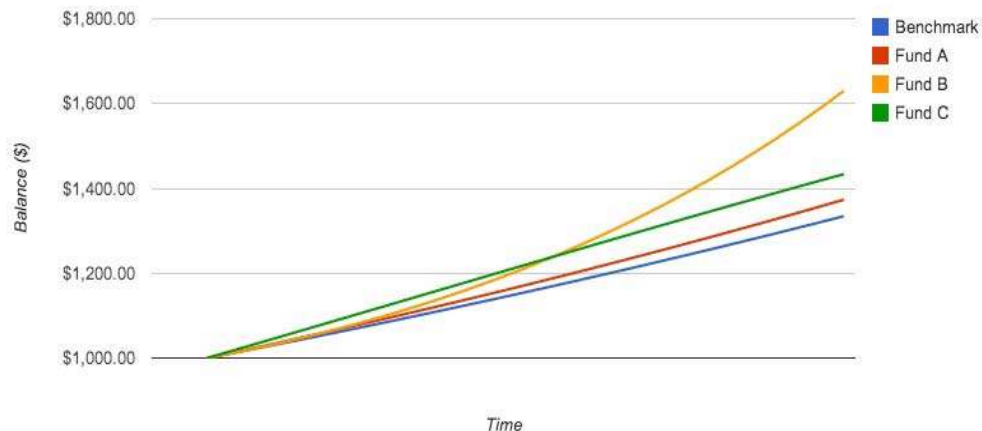
Figure no. 2 Portfolio Variability of Funds A and B



Source: Compiled by the author based on information published in Table no. 1

Changes at the numerator (yield) affect the ratio linearly, while changes at the denominator (standard deviation) impact it hyperbolically. This places greater emphasis on lower variability than on higher yields, which may not be in the investor's best interest. Additionally, an investor might choose two funds with high yields and significant variability but negatively correlated. This could add portfolio returns while simultaneously offsetting variability. Using exclusively the Sharpe Ratio does not facilitate the selection of such funds.

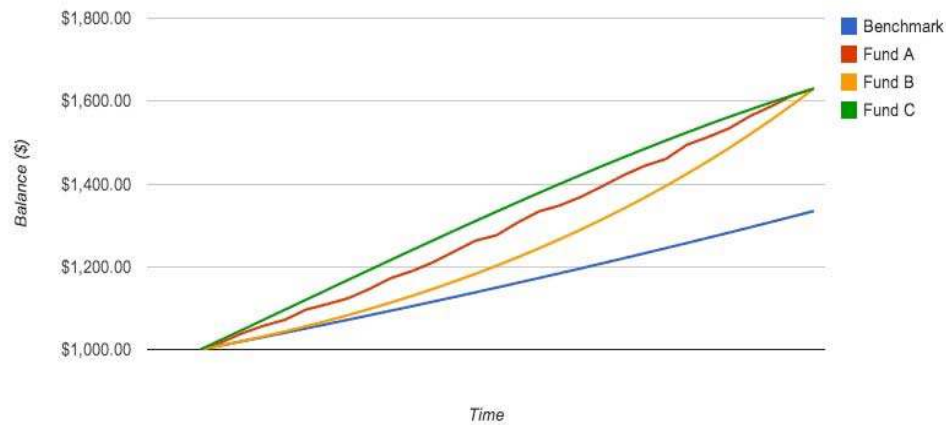
Figure no. 3 Variation of Funds A, B, and C. Solution for Risk Reduction



Source: Compiled by the author based on information published in Table no. 1

Fund A is characterized by extremely lower variability, generating a significantly higher Sharpe Ratio, approximately 33 times higher than that of Funds B and C. In contrast, Funds B and C exhibit identical Sharpe Ratios (Cetină I., Odobescu E, 2007). The key question here is why Funds B and C would present lower Sharpe Ratios compared to Fund A.

Figure no. 4 Funds A, B, and C - Identical Distribution of Returns



Source: Compiled by the author based on information published in Table no. 1

All three funds exhibit an identical distribution of yields. The periodic yields of Fund A are random, while Fund B displays identical periodic yields but arranged in an accelerated order. Fund C, on the other hand, adopts a decelerated order. Certainly, all of them have the same Sharpe Ratio because variability and standard deviation do not consider order.

The important question is: which of these funds might be more favorable in the future, and which is considered the riskiest? Many investors believe that in short sampling periods, yields are random, and prices move in a Brownian manner. Therefore, each of the presented yields would have equally likely alternative histories, with the same probability of occurrence. However, is it so?

Over the long term, prices and yields are not random; they are intentional. Countless hours of work are invested daily in efforts to increase capital prices, asset values, and securities. Without the correlation of results, humanity would have ceased to produce long ago. Although the yields of Fund A seem healthy, its variability could be explained by seasonality, temporary market changes, or random fluctuations (Reynolds, D. 2008). The yields of Fund C might also be random. However, noting that the managers and employees of the companies in this fund make every effort to increase earnings, the consistent decline in profitability is concerning.

It is a rational choice to reject Fund C, especially when there are funds available with more favorable growth tendencies. Fund B appears to be the most. The efforts of its participants succeed in raising rates of return. Thus, considering the possibility of a random movement, Brownian motion of returns, Fund B exhibits features favorable to successful growth and should be selected.

Regardless of the choice, the increase in the rate of return generates variation in the Sharpe Ratio, and variance is a proxy for risk in the Markowitz mean-variance paradigm. This variety should be considered less risky, not more. The detailed analysis of changes in the rate of yield of the second order exceeds the field of interest of this research paper and is dedicated to future continuation. The purpose of presenting this comparison is to underline how funds with different characteristics can exhibit identical average deviations and standard deviations of yields.

The main **solution** to the issue addressed is the **numerator**. A straightforward approach to address the issue with average yields mentioned above is to use compounded yields (Basno C., Dardac N., 2002). Instead of summing each periodic yield from $t=1$ to T , we could choose to take only the compounded yield at the end of the total period ($t=T$). Would this solve the problem? Each fund or security would be directly assessed with the total compounded yield recorded in that period. However, we aim to develop an evaluation method applicable to ex-ante decisions, where matching periodic yields with variance or using a Monte Carlo mechanism to determine probabilistic yields might be desired. For this reason, we intend to maintain the detailing of yields on sub-periods.

Exponential Growth

Calculating simple yields as we have done before is a straightforward process:

$$R = \frac{P_e - P_b}{P_b}, \quad \text{or}$$

$$R = \frac{P_e}{P_b} - 1$$

R	- Return (x100 = %)
P_e	- the price at the end of the period
P_b	- the price at the beginning of the period.

However, as we have noted before, periodic yields are not additive; the sum of returns for multiple periods does not reflect the total return over the entire period. Therefore, to determine the total return in period T, it is necessary to compound the growth for each sub-period, as illustrated here in a simplified form:

$$P_f = P_i(1 + R_n)^n$$

P_f	- final Price
P_i	- initial Price
R_n	- Rate of Return for each sub-period.
n	- number of sub-periods

5. Conclusions

The Sharpe Ratio represents the difference between the average yield of a portfolio and the risk-free rate, relative to the portfolio's volatility. This metric expresses the excess yield relative to the total assumed risk. In other words, the Sharpe Ratio quantifies the net performance of a portfolio in the context of the total assumed risk. A portfolio considered "risk-free" (such as an investment in Romanian government securities with an expected yield representing the risk-free rate) would have a Sharpe Ratio of 0 (zero). Generally, the higher the Sharpe Ratio value, the more attractive the risk-adjusted yield becomes. The Sharpe Ratio is calculated over 1 year, based on daily values.

The Sharpe Ratio assesses the performance of a portfolio manager by considering both the rate of return and the level of diversification (expressed through the standard deviation in its denominator). Therefore, this metric is more suitable for well-diversified portfolios as it more accurately captures the risks taken by the portfolio (Christmall P.M., Consumer B., 1995).

The Sharpe Ratio serves as a statistical measure of the stability of an asset or portfolio. It is important to note that, in situations where the investor wants to consider only the negative dynamics of changes in return, the Sharpe Ratio can provide a useful perspective on the portfolio's performance.

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The Influence of Covid-19 Pandemy on Financial Fraud Risk Assessment

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Abstract

In today's economic environment, the many harms caused by financial fraud have attracted increased attention from academia and regulatory bodies alike. In the last two decades, marked by great crises, pandemics, financial fraud has affected to the global economy, being a threat for stability of the capital markets. The purpose of this study is to highlight the main aspects of the specialized literature on the subject of fraud risk, for its analysis and assessment. This study aims to obtain a financial profile of entities at risk of being subject to financial reporting fraud or asset misappropriation. The sample is represented by the entities listed on the BSE regulated market in the period 2020-2022. According to the object of activity, the analyzed entities are grouped as follows: chemical-pharmaceutical, tourism and services. In the study it is proposed the option of analyzing and assessment of fraud risk using quantitative and qualitative methods.

Key words: financial audit, risk of fraud, determined factors, the Covid-19 pandemic, BVB

J.E.L. clasification: C38, C58, M41, M42

1. Introduction

Economic globalisation entails increasingly common scandals in entities, which in turn have led financial auditors to pay much greater attention to detecting financial fraud and manipulating results before these entities suffer significant losses (Agubata, 2021, p. 41). Moreover, in recent years, financial fraud scandals of listed entities have occurred frequently, which has attracted a great deal of attention from regulatory bodies (Amiram *et al.*, 2018, p. 1).

Association of Certified Fraud Examiners (ACFE), in its 2022 report, which presents the analysis of 2,110 fraud cases committed worldwide, estimates that on average, at the level of an entity, the losses generated by such an act are about 5% of total annual revenue, in 79% of cases individual losses below \$ 200,000 are highlighted, and approximately 21% of defrauded entities experience losses of more than \$1,000,000 on average (ACFE, 2022, p. 8). In addition, several studies related to financial fraud have also highlighted how fraudulent activities have affected businesses and economies globally over the years (Andoh *et al.*, 2018; Asmah *et al.*, 2019; Zahari *et al.*, 2020).

The unfortunate reality is that the number of fraud cases continues to increase, posing more threats to entities and economies (Owusu *et al.*, 2021, p. 428). Lately, fraud cases recorded globally have increased by about 12% (ACFE, 2022, p. 9). The increase in reported fraud cases, in part, may explain the increase in research interest in fraud lately.

An essential factor in fraud prevention is the entity's environment itself, characterized by a certain organizational culture, a series of activities and attitudes towards the inherence of fraud risk (Robu, 2014, p. 88). A primary role in fraud detection belongs to the financial auditor, that professional whose independent and objective opinion guarantees the accuracy of financial statements (Robu, 2014, p. 128).

ISA 240 clearly states whose primary responsibility for fraud prevention and detection is: "The primary responsibility for fraud prevention and detection lies with both those charged with the governance of the entity and management." It also states that "An auditor conducting an audit in accordance with ISA is responsible for obtaining reasonable assurance that the financial statements, taken as a whole, are free from material misstatements, whether as a result of fraud or error (IFAC, 2021, p. 104).

The purpose of this study is, on the one hand, to review the main aspects of the specialized literature on the topic of fraud risk, and on the other hand, to obtain a financial profile of entities at risk of fraud during the period before and after the COVID-19 pandemic.

2. Literature review and hypothesis development

Currently, businesses face a global environment characterized by market uncertainty, doubts about the consequences of new regulations, globalization and innovation. Life and the economic environment have become increasingly complex, even if certain activities have become more practical due to new information technologies. In this context, and despite regulatory constraints requiring management to assess the risks associated with fraud, the numerous cases studied worldwide in recent years, which have been widely publicized, have realized the importance of fraud risk management, which will affect not only the entity's financial resources but also its image (Daoui & Maskini, 2021, p. 90).

In the specialized literature, fraud is seen as an illegal act, which aims at deliberately deceiving, voluntarily appropriating financial benefits, respectively intentionally falsifying documents, which can result in significant damage to a person or entity (Le Maux *et al.*, 2012, pp.74-75).

In the literature, fraud has made significant progress in its definition. Many of these definitions have informative keywords or terminology in common. For example: fraud is an act "intentional", "deliberate", "intentional action", "omission", "misrepresentation", "disguise", "deceive", "mislead stakeholders" and "deceive entity managers, regulators and stakeholders" (Rezaee, 2005; Apostolou *et al.*, 2000; Ozkul & Pamukcu, 2012; Ozili, 2015). All of these keywords have primarily been used to describe fraud that is an attempt by one or more individuals, employees, and managers to obtain financial benefits that would not be obtained without such actions (Zahra *et al.*, 2005; Ozili, 2015).

As defined by Black's Law Dictionary, fraud refers to a misknowledge of the truth or concealment of a material fact in order to cause another to act to its detriment (Zhu *et al.*, 2021, p. 1).

Association of Certified Fraud Examiners (ACFE) distinguishes three types of financial fraud, namely: fraud in financial reporting (fraudulent statement), asset misappropriation and corruption (Alqatan *et al.*, 2020, p. 218).

Fraudulent reporting consists of voluntary misstatements in statements, both financial and non-financial, reported by the entity with the aim of misleading users of financial statements (ACFE, 2020, p. 1.202). Fraud on financial statements almost always involves either overstating assets, income and profits or understating liabilities, expenses and losses as appropriate (ACFE, 2020, p. 1.203). Regarding the theft of assets, we can list frauds committed on cash or other treasury equivalents, as well as fraud on stocks or goods of the nature of inventory objects, by their illegal appropriation (IFAC, 2018, p.181).

The third largest category of fraud, which takes the form of corruption, includes conflicts of interest, bribery, illegal gratuities and economic extortion (Mironiuc *et al.*, 2012, p. 3). However, both ISA and SAS auditing standards recognize only the first two forms of fraud impacting audit risk, namely: fraudulent reporting and misappropriation of assets (Mironiuc & Robu, 2011, p. 23).

Among the main actors involved and responsible for these phenomena are: entities, external controllers (from external auditors, certified accountants to state control bodies, by deviating from the code of ethics and deontological standards) and banks (Robu *et al.*, 2012, p. 3).

Empirically, several studies (Abdullahi & Mansor, 2015; Manurung & Hadian, 2013; Huber, 2017) have often used the *Fraud Triangle* to explain the reason behind fraudulent activities by individuals against entities.

Regarding the determinants of financial fraud, Steve Albrecht identifies the following: an extravagant lifestyle, irresistible desire for personal gain, high indebtedness, close agreements with clients, poor remuneration in relation to assigned responsibilities, wasteful attitude, desire to defeat the system, family and social pressures (Albrecht *et al.*, 2018, pp. 95-103; Daoui *et al.*, 2021, p. 91).

From the perspective of ISA 240, the factors determining the emergence of fraud risk, associated with misstatements resulting from fraudulent financial reporting, are mainly influenced by certain management characteristics and internal control environment, sector-specific conditions (economic and regulatory environment in which the audited entity operates) and certain operational characteristics (Jaba *et al.*, 2012, p. 15).

Among the most famous researchers in the field of financial fraud is Donald Cressey (1919 - 1987). He argues that the determinants of financial fraud could be synthesized in a fraud triangle (later assumed by ISA 240), in which each angle is represented by the motivation for committing the fraud (Mironiuc & Robu, 2012, p. 180).

Donald Cressey's approach to the drivers of fraud resulted from a study of 200 people convicted of various financial crimes. In *Other People's Pressure Opportunity Rationalization Money* (1953), Donald Cressey proposes a synthesis of the determinants of financial fraud in three dimensions, in the form of *Fraud Triangle*, as follows:

Figure no. 1. Fraud triangle proposed by Donald Cressey



Source: Adapted from (Cressey, 1953)

As can be seen from the figure above, there are three main categories of factors underlying the occurrence of fraud, these being pressures, opportunities and reasoning. First, fraud involves pressures that can manifest themselves on one or more persons, respectively on the entity. These can be classified into categories such as: financial pressures, management pressures, others (Albrecht *et al.*, 2018, p. 35).

As far as opportunities are concerned, there are a number of factors that generate them and which result in fraud, these can be summarized as follows: deficiencies of the internal control system related to the prevention and detection of illicit acts; the absence of an adequate system for evaluating the performance of the entity's employees; lack or inefficient application of a regulatory framework to hold accountable persons who commit fraud; access to confidential information; vulnerability, ignorance and inability of entities or management to prevent fraud; the absence of a traceability system for high-risk financial operations (Robu, 2014, p. 84).

Rationalization is the third element of fraud triangle theory. This concept indicates that in the process of committing fraud, a fraudster must convey different types of morally acceptable behaviors that will be used to rationalize his idea before violating trust (Abdullahi *et al.*, 2018, p. 4).

Although the *Fraud Triangle Theory* has existed in the literature for a long time, it remains a solid basis for modern ways of investigating and examining financial fraud (Albrecht *et al.*, 2018, pp. 257-268). The importance of this theory in explaining the phenomenon of financial fraud has been highlighted in numerous studies (Albrecht *et al.*, 2018, p. 35; Lister, 2007, pp. 61-66; Murdock, 2008, pp. 1-14; Rae & Subramaniam, 2008, pp. 1-43). All of these studies provide empirical evidence that individuals commit financial fraud due to the pressures they face, the existence of the opportunity for financial fraud, and their ability to rationalize their actions (Owusu *et al.*, 2021, p. 433). Sujeewa *et al.*, (2018) conclude that the Fraud Triangle still remains a classic model for the professional offender.

Recent studies in the field of financial fraud highlight that the use of financial ratios may signal the emergence of fraud risk within the entity (Robu, 2012, p. 17). In addition, some studies support the idea that the occurrence of fraud (in its two forms: asset theft and fraudulent financial reporting) are conditioned by the entity's financial position and performance (Mironiuc *et al.*, 2011, pp. 1-13). Moreover, some researches nuance the idea that, at entity level, the degree of indebtedness, respectively the object of activity have a great influence on the occurrence over time of fraud risk (Jaba *et al.*, 2011, pp. 220-233). Also in this respect, some specialized studies support the premise that statistical methods are essential in the fraud risk assessment process, useful at the same time to any financial auditor. Based on the above, the following working hypotheses are proposed for testing and validation:

- H1:** *The fraud determinants represented by pressures, opportunities and reasoning synthesized in the fraud triangle also have a financial dimension, influenced by the financial performance, financial structure and degree of liquidity/solvency of the entity.*
- H2:** *At the level of fraud risk by objects of activity, there are significant differences, depending on the identified financial dimensions of the fraud triangle. Thus, it is proposed to estimate the parameters of the fraud risk assessment model.*

Starting from the proposed hypotheses, the analysis will be carried out to test and validate them.

3. Research methodology: population, sample, models and variables, data source, data analysis methods

In order to test the research hypotheses, a statistical approach is proposed (Jaba, 2002; Robu, 2021) which considers: identification of the population, selection of the sample, choice of variables, establishment of data analysis methods and proposal of econometric models to be analyzed, data collection and processing, as well as obtaining the research results and their interpretation (Grosu *et al.*, 2023).

3.1. The studied population and analyzed sample

In order to analyze and assess the risk of fraud, the target population is represented by all entities listed on the Bucharest Stock Exchange, whose financial statements are subject to statutory financial audit, in accordance with Law no. 162/2017 regarding the statutory audit of annual financial statements and consolidated annual financial statements and amending certain normative acts, published in the Official Gazette of Romania no. 548/12 July 2017 and the selected sample includes only entities on the regulated market.

In order to carry out the proposed study, we want to analyze a sample containing a number of 14 entities listed on BVB, in the Premium and Standard categories, drawn randomly. According to the object of activity of the analyzed entities, the sample structure is as follows: 42.86% are chemical-pharmaceutical entities, 28.57% are entities active in tourism and other services.

In choosing the period under analysis, the study of the entities will take into account the period culminating in the emergence and manifestation of the Covid-19 pandemic, respectively post-pandemic.

Data on the analyzed entities (field of activity, financial information, auditor) will be extracted from the financial statements related to each entity, using the online database of Bucharest Stock Exchange.

3.2. Variables analyzed, data source and models proposed for testing

Within the study, for the sampled entities, the audit reports issued by auditors, CAFR members, for the financial years between 2019-2021 were consulted. All reports had an unqualified opinion. However, for a number of 16 reports out of the 42 with an unqualified opinion, it was possible to highlight some aspects that, although insignificant, were at odds with the manner of faithful representation of the information in the financial statements.

In this study, entities for which a number of elements were not identified that contradicted the reference accounting framework in audit reports that presented an unqualified opinion were classified as entities without risk of fraud on financial statements. Entities for which a number of elements or other aspects were identified that contradicted the reference accounting framework, in audit reports that presented an unqualified opinion, were classified as entities at risk of fraud on the financial statements.

At the level of the analyzed sample, based on the aspects signaled by the auditor in the audit reports, for entities at risk of financial fraud, unqualified opinions were issued in 100% of cases. It should be noted that in the study, entities were classified into risk groups according to the contradictory aspects signaled and formulated in the opinions in the audit reports, and not according to the opinion formulated by the auditor. Depending on the classifications made regarding the existence of contradictory facts reported by the auditors, it was proposed to analyze and assess the risk of fraud on the financial statements reported by the entities listed on BVB, for the financial years 2019-2021.

In order to test the hypotheses formulated and obtain the results, the study used a series of quantitative variables proposed by the specialized literature for the analysis and evaluation of fraud risk. Quantitative variables, also called numerical, are countable or measurable and are classified into discrete or continuous (Jaba, 2002, p. 25). These variables are represented by a series of financial ratios that describe both the position and financial performance of the entity.

Table no. 1. List of independent variables used in the study

Symbol	Variable description	Calculation mode
Commercial profitability ratio (X1)	Return on sales of the entity	Net result/Turnover
Intangible assets ratio (X2)	Degree of capital investment of the entity	Intangible assets/Total assests
General liquidity ratio (X3)	Extent to which current liabilities can be financed from current assets	Current assets/Current liabilities
Current assets ratio (X4)	Elasticity of the entity to market demands	Current assets/Total assets
Term indebtedness ratio (X5)	The proportion in which long-term liabilities participate in the formation of the entity's total financing resources	Liabilities greater than 1 year/Total asset
Global indebtedness ratio (X6)	Degree of dependence of the entity on financial resources from third parties	Total Liabilities/Equity
Financial profitability ratio (X7)	Return on equity involved in the entity's overall business	Net income/equity

Source: own processing

The data presented in Table no. 1. were collected manually, data collection was carried out at the level of financial statements reported by the sampled entities, the number of observations being 42 (14 entities x 3 financial years).

In order to obtain the results of the study on fraud risk analysis and evaluation, a series of methods specific to financial analysis were used in the paper, as follows: PCA - the principal component analysis, ANOVA - analysis of variance.

The principal component analysis involves synthesizing as much as possible the analyzed data, in order to better interpret a large number of initial data, but also to identify their common nature. The main purpose of this method is to reduce the number of analyzed variables by replacing them with 2-3 latent variables, thus eliminating collinearity, respectively facilitating the analysis.

Starting from a set of initial variables, X_i ($i=1...n$), we identify new variables, called factors or components, of the form:

$$C_j \text{ (} j=1...m \text{), unde } C_j = b_{j1}X_1 + b_{j2}X_2 + \dots + b_{jn}X_n, \text{ iar } m \leq n.$$

Under this method, the main components determined by the linear combination of initial variables are independent of each other. In addition, specific to this method of analysis is the hypothesis of independence of the main components, which can be validated by several tests, such as: test χ^2 statistics, used to test the existence of a link between variables, and KMO (Kaiser-Meyer-Olkin) statistics, used to determine the strength of this link.

KMO statistics are defined on the range [0,1]. KMO values below 0.5 indicate insignificant links, values between 0.5 and 0.6 indicate mediocre links, values between 0.6 and 0.7 indicate links of acceptable intensity, values between 0.7 and 0.8 existence of good links, KMO values above 0.8 indicate the presence of very good links, and values higher than 0.9 indicate that the solution obtained from PCA application is excellent (Lebart *et al.*, 2006, pp. 186-190).

In the proposed model, C_i ($i = 1...3$) represents the independent variables (factors/components identified by PCA), β_i ($i = 0...3$) the coefficients of the logistic regression model and ϵ represents the error component. In the study, the treatment of the data subjected to analysis was carried out with the help of the statistical program SPSS 22.0.

4. Results and discussions

The application of PCA on the 7 variables introduced in the analysis (X_i , $i = 1,..., 7$) led to the identification and estimation of the main components that cause fraud, at the level of the analyzed sample. Following the introduction into the PCA of the variables in Table no. 1., a significant link can be seen between the variables proposed in the analysis. The intensity of this link is supported by an exceedance of the threshold value of 0,5 for the Kaiser Meyer-Olkin statistical test ($KMO = 0,542$) (see Table 2). The value of the test statistic used to test component independence, KMO, is 0,542, indicating the existence of a significant link between the initial variables that entered the structure of the resulting main components, according to the data presented in Table no. 2. The results obtained indicate that the assumption of independence of variables is accepted, for a $GI = 0,00$, below the minimum materiality threshold of 0,05.

Table no. 2. The value of KMO statistics for testing the existence of association between variables included in the analysis

Kaiser – Meyer – Olkin Test (KMO)		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0,542
Bartlett's Test of Sphericity	Approx. Chi-Square	186,426
	df	21
	Sig.	0,000

Source: Own processing in SPSS 22.0.

Through the linear combination of the seven variables, financial ratios, introduced in the analysis, three main components are obtained that explain, to a significant extent, the occurrence of fraud risk at the level of the entity sample analyzed during 2019-2021. According to the data in table no. 3., the three main components obtained through PCA, characteristic of BVB listed entities, explain **78.820%** of the variation associated with fraud risk. Based on the data obtained, it can be seen that 33.884% of the change in fraud risk is explained by component 1, 59.412% of the variation by component 2, and 19.408% of the change in fraud risk is explained by component 3. The remaining 21.181% of the variation is explained by the influence of other factors not included in the analysis that grouped into insignificant components (4-7).

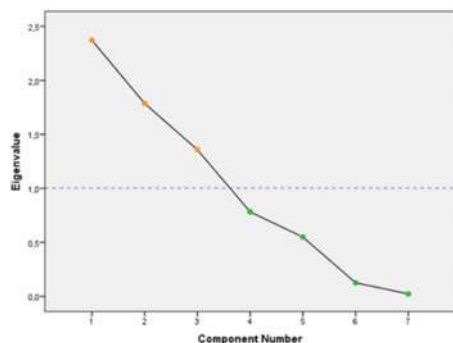
Table no. 3. Establishing the number of components according to Benzecri's criterion

Components	The initial value of the eigenvector			The initial value of the eigenvector in the case of rotation of the factorial axes		
	Total	% from variance	Cumulative %	Total	% from variance	Cumulative %
1	2,372	33,884	33,884	2,372	33,884	33,884
2	1,787	25,527	59,412	1,787	25,527	59,412
3	1,359	19,408	78,820	1,359	19,408	78,820
4-7	<1,000	21,181	100,00	1,483	21,181	100,00

Source: Own processing in SPSS 22.0.

In the process of selecting the number of main components of fraud risk, compliance with Benzecri's criterion was taken into account, which establishes as significant components for which the eigenvector value is greater than 1. From Table No. 3., as well as from the diagram in figure no. 1 It can be noted that for the first three components of fraud risk, the values of the associated own vectors are higher than the established threshold, one. For the other components, the values of the associated eigenvectors shall not exceed the established limit threshold.

Figure no. 2. The values of the eigenvectors associated with the identified components of fraud risk



Source: Own processing in SPSS 22.0.

The three components of fraud risk obtained in PCA, for BVB listed entities, are determined as a linear combination of the seven variables remaining in the analysis. The influence of variables on each of the three components is shown in Table No. 4.

Table no. 4. The structure matrix regarding the influence of each variable, on the dimensions of fraud risk

Variables	Component		
	1	2	3
Commercial profitability ratio (X1)	-0,019	-0,319	0,787
Intangible assets ratio (X2)	0,765	-0,624	-0,002
General liquidity ratio (X3)	-0,450	-0,364	-0,213
Current assets ratio (X4)	-0,774	0,610	-0,004
Term indebtedness ratio (X5)	0,788	0,472	0,014
Global indebtedness ratio (X6)	0,593	0,726	-0,003
Financial profitability ratio (X7)	-0,110	0,203	0,832

Source: Own processing in SPSS 22.0.

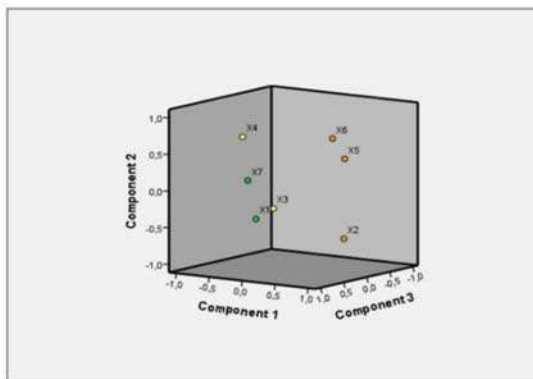
From the data in table no. 4. It can be seen that fixed assets ratios and debt ratios have a significant influence on the first component of fraud risk. Thus, 76.5% of the change in the fixed assets ratio, 78.8% of the change in the forward debt ratio, 59.3% of the change in the overall indebtedness ratio also determine a variation in the values of the first financial component of fraud risk, in the case of entities listed on BVB. Depending on the nature of the variables that dominate component one of risk, its name will be: *Leverage component*.

The second component of fraud risk is significantly influenced by current assets and forward debt ratios, respectively global indebtedness. Thus, 72.6% of the change in the overall indebtedness ratio, 61% of the change in the current assets ratio and 47.2% of the change in the term debt ratio determine a significant variation in the values of the second financial component of fraud risk, in the case of entities listed on BVB. Depending on the nature of the two variables that dominate the second component of risk, its name will be: Liquidity component.

The third component of fraud risk is significantly influenced by rates of return. Thus, 83.2% of the change in the financial rate of return and 78.7% of the variation in the commercial rate of return determine a significant variation in the values of the third financial component of fraud risk, in the case of entities listed on BVB. Depending on the nature of the two variables that dominate component three of risk, its name will be: Profitability component.

The graphical representation of the influence of dominant variables on the three financial components identified for fraud risk, specific to BVB listed entities, is highlighted using the diagram in Figure 2.

Figure no. 3. Representation of the correlations between the financial ratios remaining in the analysis and the three financial components of the fraud risk



Source: Own processing in SPSS 22.0.

In the diagram in figure no. 2. One can highlight the achievement of three main components and their influence on variables. At the level of the analyzed sample, we can observe the existence of three main components of a financial-accounting nature that determine the occurrence of financial fraud.

A first component is significantly influenced by levels $X2 = (Ai/At)$, $X5 = (D > 1 \text{ year}/At)$ and $X6 = (Dt/Cpr)$ describing the entity's chosen financial structure (on the basis of own resources or on the basis of foreign resources). This component explains the occurrence of financial fraud through the pressures (related to financing from foreign resources) to which entities are subjected. In this case, in order to present a favourable and attractive image vis-à-vis potential investors, the entity will resort to inadequate reporting on the financial structure of its resources.

The influence of the Indebtedness Component on the fraud risk can be explained as follows: the increase in the volume of investments based on foreign resources leads, implicitly, to an increase in the degree of indebtedness.

In conditions of a high cost of borrowed capital, the entity's financial results are strongly affected, which also leads to a decrease in the amounts allocated for shareholders' remuneration. This reduces the attractiveness of investors to the shares of the entity listed on the capital market. In conclusion, referring to the three determinants, synthesized in the fraud triangle, the first component resulting from the study can be associated with the pressure factor.

The second component is significantly influenced by $X4 = (Ac/At)$, $X5 = (D > 1 \text{ year}/At)$ and $X6 = (Dt/Cpr)$. Referring to the fraud triangle, it can be said that this component can be associated with the opportunity factor. Thus, it can be seen how the presence of liquidity can lead to financial fraud (at least in the form of asset theft), while through a high degree of fixed assets their theft is much more difficult (these can only be encountered at reporting level: depreciation and depreciation).

Component three is significantly influenced by the level $X_1 = (R_{net} / CA)$, $X_7 = (R_{net} / Cpr)$. These indicators characterize the financial performance of the entity through the economic and financial results obtained.

This component explains the occurrence of fraud through financial reporting that aims to misrepresent and hide the truth in financial statements. Based on the determining factors summarised in the fraud triangle, this component can be associated with the reasoning factor, which highlights the fraudster's attitude towards the added value created by the entity. Thus, by virtue of associating the wealth of the entity with personal wealth, the fraudster considers that he is entitled to a share of the gain (reflected by positive, significant values of rates of return), often appropriating it illegally. This leads to financial fraud in the nature of fraudulent reporting.

Once the three main components of fraud risk have been identified, in the case of Romanian entities listed on BVB, the punctual influence of each of the seven variables can be highlighted by a linear combination of financial rates, weighted with corresponding coefficients. In Table No. 5 The parameters of the three econometric models related to the three main components of fraud risk, obtained in the study, are presented.

Table no. 5. Estimates of the parameters of the models associated with the three financial dimensions of the fraud risk

Financial rates	Component		
	1	2	3
Commercial profitability ratio (X_1)	-0,008	-0,178	0,580
Intangible assets ratio (X_2)	0,323	-0,349	-0,002
General liquidity ratio (X_3)	-0,190	-0,204	-0,157
Current assets ratio (X_4)	-0,326	0,342	-0,003
Term indebtedness ratio (X_5)	0,332	0,264	0,010
Global indebtedness ratio (X_6)	0,250	0,406	-0,002
Financial profitability ratio (X_7)	-0,046	0,114	0,613

Source: Own processing in SPSS 22.0.

Econometric models based on which the values of the three financial components of fraud risk are obtained are as follows:

Debt component = $-0,008X_1 + 0,323X_2 - 0,190X_3 - 0,326X_4 + 0,332X_5 + 0,250X_6 - 0,046X_7$

Liquidity component = $-0,178X_1 - 0,349X_2 - 0,204X_3 + 0,342X_4 + 0,264X_5 + 0,406X_6 + 0,114X_7$

Profitability component = $0,580X_1 - 0,002X_2 - 0,157X_3 - 0,003X_4 + 0,010X_5 - 0,002X_6 + 0,613X_7$

For components identified through analysis of the PCA core components, descriptive statistics associated with them are presented in Table No. 6.

Table no. 6. Descriptive statistics regarding the components determined by PCA

	Component 1	Component 2	Component 3
N	Valid 14	14	14
	Missing 14	14	14
Mean	0,00000	0,00000	0,00000
Std. Deviation	1,00000	1,00000	1,00000
Minimum	-1,78382	-1,86833	-3,32095
Maximum	1,71016	1,81800	2,64123

Source: Own processing in SPSS 22.0.

From the data presented in Table 6, it can be shown that the positive values of the Profitability component indicate the existence of economic and financial profitability at entity level, negative values of this component highlighting the opposite. For the profitability component, positive score values indicate that the entity uses borrowed resources primarily in carrying out its business, while negative values indicate that in external financing the entity uses resources that are settled more than one year.

Through the financial ratios proposed in the study, with the help of PCA, the main components of financial statements whose content ensures the intelligibility of financial information were identified.

5. Conclusions

Over time, human society has witnessed various financial scandals, which had as main actors and representatives of the accounting profession, who, using the trust granted by investors, have acquired knowledge in committing or complicity in fraud. As we could see based on the information captured in the specialized literature, the concept of fraud is not a recent one, it makes its presence felt in human society at various stages of its development, while trying to prevent and combat this phenomenon through various normative acts or through specialized professions to support the fight against fraud.

The results of the study led to obtaining a financial profile of listed entities subject to fraud risk and to identifying the determining factors in order to estimate the risk. Based on the associations between a series of quantitative and qualitative variables, the financial profile of the entities listed on BVB subject to fraud risk was made.

The main quantitative variables used are financial ratios of liquidity, leverage, financing, structure, profitability, and the qualitative variables took into account the object of activity, the membership of a particular auditor, the type of audit opinion issued for that entity and the BVB category on which the entity is listed. In order to estimate the fraud risk, the study used established indices and signal indicators on liquidity, leverage, financing, structure, profitability, in order to estimate the parameters of the models.

The limits of the present systematization of the main ideas in the field of financial fraud are determined by the complexity of this issue and by the impossibility of capturing all the factors that lead to the emergence and development of these fraudulent acts of financial nature. The study proposed a qualitative and quantitative analysis of the dynamics of the main ideas and problems that can form the basis of prospective scientific studies.

Through the results of this study, the future directions aim at addressing the same topics of interest at national and international level: fraud risk assessment, identification and analysis of determining factors, modeling a fraud risk profile. However, for visibility in terms of international research, the approach to financial fraud aims to make a series of comparisons at the level of the main systems regulating this issue of fraud, as well as a series of empirical studies on the motivational factors of financial fraud.

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Methodology for Implementing the Investment Decision in the Certain Economic Environment

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Abstract

The purpose of the work consists in identifying the optimal decision-making option using the methodology of implementing the investment decision in the certain economic environment. The importance of this research theme derives from the fact that investments, by their nature, have as their target the stimulation of economic growth itself and the development of social-cultural activities.

The topicality of this theme is also accentuated by the fact that, in the future, the investment process in our country will increase, so that the Romanian economy can face the economic crisis that is manifesting itself.

The purpose of this research approach is developed analytically through the following objectives:

- ✓ *Presentation of the evaluation indicators of investment projects, as well as the main financial elements of an investment in a certain economic environment;*
- ✓ *Highlighting the strategic character of the investment through the long-term impact triggered by the selection of the optimal decision-making variant.*

Key words: decision, investment, decisional alternative

J.E.L. classification: M21

1. Introduction

The enterprise, during the realization of its activity, pursues multiple and complex objectives. In the conditions of the market economy, the manager's actions are aimed not only at obtaining the highest possible profit in relation to the consumption of resources, but also pursue other aspects, according to a plan that includes primary objectives, secondary objectives, as well as intermediate objectives. It must be stated that there is a set of elements that can have a certain impact on these objectives.

The overall strategy of the firm is influenced by the existing type of market economy, promoted by the government, by the political options and the policy that the firm promotes.

Two factors are important for a successful investment:

- ✓ Investment policy and establishing investment objectives;
- ✓ Policy implementation through an appropriate investment strategy.

The conditions of monetary instability, of the exchange rate, the numerous legal-economic regulations, the problem of restructuring, the model of the new economy lead to a new definition of the investment strategy, which includes: objectives, strategies, mechanisms, all aligned with the change of the system in which it operates.

Thus, the investment policy, the choice of investment projects, goes beyond the purely financial framework. At the same time, long-term profitability is pursued, which is the main element of the investment activity.

The major changes, generated by the characteristics of a dynamic competitive environment, but also by the amplification of the globalization phenomenon, have put domestic organizations, public and private, in front of new problems and challenges, the solution of which requires experience and managerial skills.

2. Theoretical background

Investments are the most important stimulus for any economic activity. Within the national economy, investments constitute the fundamental element that initiates and develops any human activity, it represents what is the engine for an active system. The positive effects of investments for the national economy are not limited only to economic growth.

The word investment is synonymous, from a linguistic point of view, with: allocation, placement, endowment and so by extension we arrive at efforts made now in the hope of future rewards.

Investments can be defined in several ways, in a narrow definition, only expenses that materialize in a purchase of durable goods are considered investments. The notion of investment in this case symbolizes the acquisition of new fixed assets, tangible or intangible assets (Vintilă, 2009, p. 181). Understanding the notion allows the overlapping of an accounting view and a legal view on investments because only the patrimonial elements are retained in these two views regarding investments.

Regarding the role of the investment process in economic and social development, the object of investments is part of the set of requirements that are followed when determining the destinations of resources accumulated by society, respectively when determining the ratio between resources intended for development and those for consumption. The complex impact of investments in an economic system is also justified by the fact that companies that initiate investment actions and that implement various projects increase their supply of goods and services, which implicitly leads to additional income (Ciobănică, 2011, p. 121).

At the same time, any investment project generates additional needs or demands in related sectors, which causes a chain increase in income for all economic entities involved.

Some specialists believe that investments represent "an exchange between a present, certain monetary expenditure and a hope of receiving a flow of sums in the future". Through this definition we already position our vision of finance against the definition of the investment concept. Other specialists believe that the notion of investment involves three defining elements: duration, risk, efficiency. In order to obtain a complete and faithful image of the investment concept, the three-dimensional image of this notion must be studied: accounting, economic, financial.

As a recapitulation and synthesis of these opinions, the following general definition of investments can be materialized: "Investment is the current financial effort made for a better future, created through development and modernization, having as a source of financing the renunciation of safe but small current consumptions and non-performing, in favor of higher future consumptions and in a modern structure, closer to the users' options, but probable" (Postăvaru, 2006, p. 68).

3. Research methodology

The starting point in this research approach is the fact that the enterprise is nothing more than an investment portfolio for capital providers, associates and creditors, who considered that this allocation of resources is the best among the options available at the time of making the investment.

In order to substantiate the investment decision regarding the purchase of equipment specific to the production of furniture and furniture accessories, a series of research procedures were used, among which are found:

- ✓ Bibliographic documentation;
- ✓ The direct documentation of the economic reality and the gathering of the necessary information, through the direct contact of the primary documents, employees, specialists and persons of decision from the company that was the object of the case study.

Regarding the data processing and treatment, the quantitative analysis of the available data was used, systematized by grouping and tabulation.

At the same time, the collected data were standardized and adjusted so as to allow the calculation of specific indicators in the process of substantiating and adopting the investment decision.

Qualitative analysis of data collected through quantitative methods was also used.

4. Findings

4.1 Presentation of the investment

The project proposes the financing of a capital investment to cover the expenses necessary for the purchase of equipment specific to the production of furniture and furniture accessories within CELINA company. The general objectives considered by making this investment aim at:

- ✓ The re-engineering and development of the current production of furniture and accessories in order to create a competitive product offer in terms of quality and manufacturing costs;
- ✓ Improving productivity considering the high levels achieved by furniture and accessory manufacturers from countries that operate on the same market as CELINA company;
- ✓ The specialization of production by market segments, in order to satisfy the demands of the customers regarding the quality of the products;
- ✓ Increasing the volume of sales on the market (forecasts for the expansion of contracts with business partners are favorable) after the installation of the new machines when the maximum capacities will be used;
- ✓ Increasing earnings so that the company can cover expenses and maintain its viability throughout the life of the product;
- ✓ Improvement of environmental protection conditions.

The project consists in building a wood processing factory, namely a diverse furniture factory. The production capacity is presented in two variants:

- ✓ Option 1: 10.000 pieces of product/month;
120.000 pieces of product/year.
- ✓ Option 2: 15.000 pieces of product/month;
180.000 pieces of product/year.

Investment opportunity

As a part of the development strategy, the company proposed to build a furniture factory. The project is part of the restructuring program modernization CELINA company, regarding increase the profitability and competitiveness of the products offered by the economic agent on competitive markets. This investment aims to:

- ✓ The production of the necessary accessories for furniture fittings from the company's production, as well as for sale (export);
- ✓ Production through modern technology, with performance machines and low costs;
- ✓ Abandoning the existing section, where the activity is carried out in inappropriate conditions and with outdated technology, however, some machines will be used in the new project.

The market and the product

The CELINA company has the possibility of increasing the current sales program, but the lack of product volume is one of the obstacles.

The conclusions of the market studies, as well as the forecasts regarding the development of the furniture industry, highlight an increase in the possibility of absorbing foreign markets, a fact that confirms the opportunity to create a new furniture factory.

Location

The furniture factory will be located in an area bordering the city of Constanța.

The financing plan

The capital to be invested was determined based on the estimation of each physical component and all related costs based on the estimates per object. The value equipment proposed for financing was evaluated according to their quotations in the offers of equipment suppliers selected according to criteria of technical performance and reliability.

The preliminary financing plan

Local investments will be borne by the company from its own sources or from internal credits, in the short term. The necessary financing for the renovation is proposed to be carried out from the credit, granted under conditions of repayment for a duration of 5 years, with 1 year of grace, with an annual interest of 15%.

Technological data

Two capacity options were studied: one considered as minimum feasible and another optimal so that the machines with high productivity are loaded:

- Option 1: 10.000 pieces of product/month;
- Option 2: 15.000 pieces of product/month.

The argument for the choice of the two processing capacities starts from the use of a modern technology with high-performance machines, in one version a minimum admissible load is achieved with the high-performance machines, and in the other an optimal load is obtained. In both variants, shown in table no. 1, the same profile and structure of production is considered.

Table no. 1 Presentation of production capacity

Specifications	Unit	Variant 1	Variant 2
Production capacity			
Monthly	pieces / month	10.000	15.000
Annually	pieces/year	120.000	180.000
From which:			
- Made of oak wood	pieces/year	6.0000	90.000
- Made of beech wood	pieces/year	40.800	61.200
- Made of resinous	pieces/year	19.200	28.800
Timber consumption, of which:	cubic meters / year	6.640	10.000
- beech timber	cubic meters / year	3.180	4.770
- oak timber	cubic meters / year	2.560	3.830
- resinous timber	cubic meters / year	900	1.400
Necessary personnel, of which:	man / day	17	30
Directly productive	man / day	15	28
Production hall area	square meters	5.400	4.480
Warehouse area finished products for 5 - 6 days stock	square meters	432	348
The technology investment totally sucks	Ron	1.400.000	1.500.000
Machinery from the country	Ron	1.400.000	1.400.000

Source: The investment plan of the CELINA company

From a technological and organizational point of view, the two options have in common a series of elements taken as a basis in the dimensioning and evaluation of the investment, namely:

- The technical equipment is the same from a technical point of view in the two versions, the difference being only the number of machines;
- The estimation of the investment value takes into account the existence of machines in good condition in the furniture factory to be used;

- The equipment of means of transport in the hall is similar in both versions: with roller conveyors, with the creation of a central stock specialized for types of furniture and landmarks - in the mechanical processing sector;
- Cooperating with clients on manual and mechanical sculpting and turning operations;
- Timber storage will be done on the existing bearings within the own platform;
- The timber is dried in the existing drying facilities;
- The storage of technical and auxiliary materials will be done in the new warehouse,
- The effects of applying a new technology are primarily reflected in the reduction of labor consumption per product between 35% and 55%, depending on the type of product.

It is also possible to achieve a reduction in timber consumption by 15-22% depending on the type of furniture produced. The main data characterizing the two variants are presented in the table. From the comparative data, the superiority of Variant 2 is highlighted. Thus, although the increase in production capacity in Variant 2 is 50%, the difference in the area of the hall to be built is smaller than that provided for in Variant 1 and in the case of technological investment the difference is 0.7%.

4.2 Calculation and analysis of the technical - economic indicators of the investment

The evaluation of the economic efficiency of the investment, by which it is provided the construction of a wood processing factory, constitutes the purpose of the economic analysis of the project. The designed level for both variants is presented in table no. 2.

Table no. 2 Variants of the technical-economic indicators of the investment

Crt. no.	Indicator	Unit	First variant	The second variant
1.	Total investment (I_t), from which:	Mil. of Ron	1.400	1.500
	- First year	Mil. of Ron	500	600
	- The second year	Mil. of Ron	500	-
	- The third year	Mil. of Ron	400	900
2.	Annual production capacity (q_h)	Mil. of Ron	120	180
3.	Value of production sold (Q_h)	Mil. of Ron	1.500	1.800
4.	Annual production costs (c_h)	Mil. of Ron	1.100	1.600
5.	Effective operating time (D)	Years	10	10
6.	Annual profit (P_h)	Mil. of Ron	400	200

Source: The investment plan of the CELINA company

4.2.1 Evaluation of the economic efficiency of the investment with the help of the static indicators

In the case of the study, the execution duration of the works is three years and the operating duration of the investment objective is 10 years.

FIRST VARIANT

1) *Total investment (I_t)* is a volume indicator that quantifies the total investment effort made to achieve the objective. It is selected according to the minimum criterion.

$$I_t = 1400 \text{ mil. of Ron}$$

2) *The duration of achieving the investment objective (d)* represents the time required to achieve the investment objective expressed in years. In economic theory, three ways of staggering the total investment during the realization are distinguished: increasing stagger, constant stagger and descending stagger. It is selected according to the minimum criterion ($d = 3$ years).

3) *The duration of effective operation (D)* represents the time that elapsed from the moment the fixed capital resulting from the investment is put into operation until the moment it is taken out of service or decommissioned. It is selected according to the maximum criterion ($D = 10$ years).

4) *The specific investment (s)* expresses the investment effort made to obtain a unit of capacity expressed in value. It is selected according to the minimum criterion.

$$s = I_t / q_h \quad (1), \text{ where}$$

I_t = the total investment
 q_h = production capacity

$s = 1400 / 120 = 11,67$ monetary units invested per physical production unit (ron invested per piece)

5) *The payback period (T)* expresses the time period in which the investment is recovered from the annual profit. It is selected according to the minimum criterion.

$$T = I_t / P_h \quad (2)$$

$$P_h = Q_h - c_h \quad (3), \text{ where}$$

P_h = annual profit
 Q_h = annual income
 c_h = annual expenses

$T = 1400/400 = 3,5$ years

6) *The economic efficiency coefficient (e)* expresses the annual profit obtained per 1 ron invested, is calculated as the inverse of the recovery term. It is selected according to the maximum criterion.

$$e = P_h / I_t \quad (4)$$

$e = 400 / 1400 = 0,29\%$

7) *Equivalent or recalculated expenses (K)* express the total effort (with investment and annual production expenses) made to obtain a unit of physical capacity. It is selected according to the minimum criterion.

$$K = I_t + c_h \times D \quad (5)$$

$K = (1.400 + 1.100 \times 10) = 12.400$ monetary units total effort

8) *The economic return (R)* quantifies the final profit (after recovery of the investment) obtained for an invested monetary unit. It is selected according to the maximum criterion.

$$R = (P_t / I_t) - 1 \quad (6)$$

$R = (400 \times 10 / 1400) - 1 = 1,86$ ron net profit per 1 ron invested

9) *Specific expences (k)* quantify the total effort that goes back to a physical or value unit of production obtained

$$k = K / q_h \times D \quad (7)$$

$k = 17.500 / (120 \times 10) = 12.083,33$ ron total effort per piece

THE SECOND VARIANT

1) *Total investment (I_t)*
 $I_t = 1.500$ milion ron

2) *Duration of achieving the investment objective (d)*
 $d = 3$ years

3) *Duration of effective operation (D)*
 $D = 10$ years

4) *Specific investment (s)*
 $s = I_t/q_h = 1.500/180 = 8,33$ monetary units invested per piece

5) *Recovery term (T)*
 $T = I_t/P_h = 1.500/200 = 7,5$ ani

6) *Economic efficiency coefficient (e)*
 $e = P_h/I_t = 200/1.500 = 0,13$ %

7) *Equivalent or recalculated expenses (K)*
 $K = I_t + c_h \times D = (1.500 + 1.600 \times 10) = 17.500$ ron total effort

8) *Economic return (R)*
 $R = (P_t/I_t) - 1 = (200 \times 10 / 1.500) - 1 = 0,33$ net profit per 1 ron invested

9) *Specific expenses (k)*
 $k = K / q_h \times D = 12.400 / (180 \times 10) = 6.888,89$ ron total effort per piece

The interpretation of the results is presented in table no. 3.

Table no. 3 Economic evaluation indicators of investment options

Crt. No.	The name of the indicators	Indicators symbol	First variant (V1)	The second variant (V2)	Criterion of appreciation	Agreed variant
1.	Total investment	I_t	1.400	1.500	Minim	V1
2.	Duration of achieving the investment objective	d	3	3	Minim	V1,V2
3.	Duration of effective operation	D	10	10	Maxim	V1,V2
4.	Recovery term	T	3,5	7,5	Minim	V1
5.	Specific investment	s	11,67	8,33	Minim	V2
6.	Economic efficiency coefficient	e	0,29	0,13	Maxim	V1
7.	Expenses equivalent (recalculated)	K	17.500	12.400	Minim	V2
8.	Economic return	R	0,33	1,86	Maxim	V2
9.	Specific expenses	k	12.083,33	6.888,89	Minim	V2

Source: The investment plan of the CELINA company

4.2.2 Evaluation of the economic efficiency of the investment through the lens of the size of the fixed assets

Financial theory indicates that in making the investment decision certain criteria can be found that lead to the use of one method or another. In general, the dynamic approach is a much better technique than the static approach in terms of considering these criteria.

The process of making investments and recovering the funds consumed takes place over time, the investments and their effects, as well as the level of efficiency, having a pronounced dynamic character (Doval, 2008, p. 198).

Since the investments currently allocated are no longer equivalent, under the influence of time, from a value point of view to the profit that will be obtained in the future, it follows that a concrete approach to the investment processes, in order to scientifically substantiate the decision, requires their dynamic analysis taking into account by the multiplying influence of the time factor.

For this, a phasing of the phenomenon under research will be carried out, the period in which the funds are consumed (in the presented case study, the funds are spent at the beginning of the period), so the correction factor (k) will be quoted during the calculations for the two variants of investment project to the value of 1.

The duration of the investment works is 3 years, and the operation of the objective is 10 years.

- 1) The size of total fixed assets (M_i) is an indicator that is obtained through calculations performed on the spent investment fund, the execution time of the objective influenced by the correction factor.

$$M_i = \sum I_h \times (d - h + k) \quad (8), \text{ where:}$$

I_h = the investment fund spent in year h;

d= duration of the objective;

k=correction factor, with a value of 1.

- 2) The specific immobilization (m_i) expresses the immobilization belonging to a unit of production capacity.

$$m_i = M_i / q_h \quad (9)$$

- 3) The average annual immobilization (m_a) expresses the level of the average annual immobilization and is calculated as a ratio between the size of the total immobilization and the duration of execution.

$$m_a = M_i / d \quad (10)$$

- 4) Losses from fixed assets (E_i) reflect the unrealized effect as a result of the removal of investment resources from the productive circuit, with the help of the calculation relationship:

$$E_i = M_i \times e \quad (11)$$

- 5) The specific economic effect of fixed assets (δ) is calculated to ensure the comparability of the warrants, by the formula:

$$\delta = E_i / q \quad (12)$$

Knowing that the funds are spent at the beginning of the year, the calculation of the immobilization indicators is as follows:

Variant I

1) Size of total fixed assets (M_i)

$$d = 3 \text{ years, } h = 1 \text{ year, } I_h = 500 \text{ million lei}$$

$$M_i = [500 \times (3 - 1 + 1) + 500 \times (3 - 2 + 1) + 400 \times (3 - 3 + 1)] = 2,900 \text{ million of ron total fixed assets}$$

2) Specific fixed assets (m_i)

$$m_i = M_i / q_h = 2,900 / 120 = 24,166.67 \text{ ron immobilized per piece}$$

3) Average annual fixed assets (m_a)

$$m_a = M_i / d = 2,900 / 3 = 966.67 \text{ million of ron immobilized per year}$$

4) Losses from fixed assets (E_i)

$$E_i = M_i \times e = 2,900 \times 0.29 = 841 \text{ million of ron losses}$$

5) The specific economic effect of fixed assets (δ)

$$\delta = E_i / q = 841 / 120 = 7,008.33 \text{ ron losses per piece}$$

Variant II

1) Size of total fixed assets (M_i)

$$M_i = [600 \times (3 - 1 + 1) + 0 + 900 \times (3 - 3 + 1)] = 2,100 \text{ million of ron total fixed assets}$$

2) Specific fixed assets (m_i)

$$m_i = M_i / q_h = 2,100 / 180 = 11,666.67 \text{ ron immobilized per piece}$$

3) Average annual fixed assets (m_a)

$$m_a = M_i / d = 2,100 / 3 = 700 \text{ million of ron immobilized per year}$$

4) Losses from fixed assets (E_i)

$$E_i = M_i \times e = 2,100 \times 0.13 = 273 \text{ million of ron losses}$$

5) The specific economic effect of fixed assets (δ)

$$\delta = 273 / 180 = 1516.66 \text{ ron losses per piece}$$

Knowing that the immobilization indicators are selected according to the minimum criterion, the data in table no. 4 will determine the choice of the optimal variant, in the situation where the funds are spent at the beginning of the year, so on the correction coefficient value $k = 1$.

Table no. 4. Efficiency of the investment through the lens of the size of the fixed assets

Crt. No.	Indicator	Variant 1	Variant 2	Criterion of selection	Agree variant
1.	The size of total fixed assets (M_i)	2.900	2.100	Minim	V2
2.	Specific fixed assets (m_i)	24.166,67	11.666,67	Minim	V2
3.	Average annual fixed assets (m_a)	966,67	700	Minim	V2
4.	Losses from fixed assets (E_i)	841	273	Minim	V2
5.	The specific economic effect of fixed assets δ	7.008,33	1516,66	Minim	V2

Source: The summary financial-accounting documents of the CELINA company

According to the presented table, we can specify that the determination of the economic efficiency of an investment project requires the analysis of the influence of the indicators both on the allocated resources and on the expected results.

The duration of execution of an objective is the one in which most of the value of the investment is consumed, which makes its phasing directly influenced by the immobilization of funds. Therefore, the company in question will choose the second project variant as the most advantageous, regarding its intention to invest.

5. Conclusions

Investments, by their nature, aim to boost economic growth and develop social-cultural activities. Investments take place over time, often over a long period, so that the recovery of the money spent becomes an uncertainty, the assumed risk increasing as the reference time is longer. For an economy in full reconstruction, as is the case of our country, the risk related to investments is a particularly interesting topic and still not discussed enough.

The topicality of this theme is also accentuated by the fact that, in the future, the investment process in our country will increase, so that the Romanian economy can face the economic crisis that is manifesting itself.

Direct investments and their efficient exploitation represent the only solution for the internal and external supply of goods and services, in other words a real economic growth.

The rigorous substantiation of investment decisions through the present paper represents a necessary and useful theoretical and applied approach, especially in the Romanian context of the development of the market economy and its convergence with the European economy.

The present work wants to highlight the opportunity of making an investment in a wood processing factory, namely a diverse furniture factory, having 2 work options available. In the study carried out, the technical-economic indicators of the investment are calculated and analyzed for each option separately, so that at the end of the study, the decision to finance only one option, namely the second option, is taken.

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Fiscal Policies to Diminish the Deficit in Romania

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Abstract

On 27.10.2023, Law no. 296/2023 on some fiscal-budgetary measures to ensure long-term sustainability was published in the Official Gazette no. 977. This law introduced substantial amendments to the Tax Code and introduced many new elements from a tax perspective, with an impact on both individuals and legal entities, including the liberal professions, not only in terms of an increase in the level of taxes and contributions, but also in terms of an increase in their administrative burden. Following the negative reaction expressed in particular by the business sector, taking into account the recommendations issued at European level for Romania, on 15.12.2023, Government Emergency Ordinance No. 115/2023 was published in the Official Gazette No. 1139 on some fiscal-budgetary measures in the field of public expenditure, for fiscal consolidation and combating tax evasion, for amending and supplementing some normative acts, as well as for extending some deadlines. This paper aims to analyse the possible impact of the new fiscal-budgetary measures at macroeconomic level, determining the positive and negative sides with regard to the fulfilment of their intended purpose.

Key words: budget deficit, economic crisis, fiscal-budgetary measures, macroeconomic impact, fiscal news

J.E.L. classification: K29

1. Introduction

Law no. 296/2023 (published in the Official Gazette of Romania, no. 977 of 27.10.2023) amending Law no. 227/2015 on the Tax Code (published in the Official Gazette of Romania, no. 688 of 10.09.2015), is structured in 5 chapters, each of which deals with tax and accounting measures, which became applicable as of 01.01.2024. The main issues covered by the new amendments relate to (1) the taxation regime for micro-enterprises, as well as certain accounting and tax measures in relation to them; (2) the increase in VAT rates for certain products and services; (3) the introduction of the mandatory use of the digital invoicing system e-Invoice, for products and services categorised as having a tax risk, as well as for the invoicing of products and services in B2B and B2G relations; (4) the introduction of the payment of a minimum corporate income tax for companies whose turnover in the previous financial year exceeded the amount of 50,000.000, if they do not apply certain special regimes provided for in the Tax Code; (5) the abolition of the ceilings of 6, 12 and 24 minimum wages per economy respectively established up to and including 2023 for the payment of social contributions to the public health system, followed by the introduction of a new single ceiling set at the level of 60 minimum wages per economy, these provisions being applicable both to natural persons and to owners of unincorporated enterprises who are required to report certain types of income annually; (6) the introduction of a 70% tax rate applicable to income whose source cannot be identified, i.e. income which has either not been

declared although the individual or legal entity is obliged to declare it, or which has been duly declared but whose source cannot be identified by the tax authorities; (7) the abolition of tax relief in the IT, construction and agriculture sectors; (8) the amendment of the ceilings for cash payments and the introduction of a maximum amount of EUR 50 per person per year; (9) the introduction of a new tax rate of EUR 50 per person per year for the taxable person who is not a taxpayer. 000 lei that can remain in the cashier of companies, with the exception of cash-and-carry stores and hypermarkets, for which the amount of 500,000 lei has been set; (9) prohibition of crediting companies through cashier, which will be possible only through bank transactions from the personal accounts of company owners; (10) limitation of the deductibility of certain categories of expenses.

Since the fiscal-budgetary changes introduced by Law no. 296/2023 are numerous and the deadlines for their application were set shortly after its entry into force, by Government Emergency Ordinance no. 115/2023 (published in the Official Gazette of Romania no. 1139 of 15.12.2023), the regulation of some of the measures introduced by Law no. 296/2023 has been revised. 296/2023, but, on the other hand, new legal provisions on public expenditure, fiscal consolidation and the fight against tax evasion were introduced, mainly concerning the following : (1) limiting the deductibility of certain categories of expenses; (2) reducing the tax loss recovery period from 7 years to 5 years, as well as limiting the tax loss recovery to the level of 70% of it; (3) limiting the applicability of the income tax rate on microenterprises, with reference to the direct or indirect holding, by the holder(s) of enterprises, of securities of more than 25% in other enterprises; (4) the introduction of the flat rate of 20% applicable to income from the transfer of the use of goods when determining the net taxable income; (5) the introduction of the obligation for the legal entity lessee to calculate, withhold, report and pay the net income tax due by the natural person lessor.

This legislative act was based on the Recommendation of the Council of the European Union of 03.04.2020 with a view to bringing an end to the situation of an excessive government deficit in Romania (published in the Official Journal of the European Union, C116/1, Brussels, 08.04.2020), according to which it was established that an excessive budget deficit exists in Romania, which, according to Article 126 of the Treaty on the Functioning of the European Union (published in the Official Journal of the European Union C 326/47, 26.10.2012), must be avoided. The EU Council recommendation was issued following the Fiscal-Budgetary Strategy for the period 2024-2026 (Romanian Government, "Fiscal-Budgetary Strategy for the period 2024-2026", December 2023), according to which the public deficit exceeds the reference value set at 3% of gross domestic product. Thus, the recommendation of the EU Council was based, in concrete terms, on the progressive reduction of the budget deficit by 0.2% of gross domestic product from one budget year to the next, as well as on the adoption of measures to correct the budget deficit in a sustainable manner, favourable to the consolidation of the national economy in the long term.

2. Theoretical background

The high level of public debt of the Member States of the European Union is governed by Article 126 of the Treaty on the Functioning of the European Union, according to which excessive levels of public debt must be avoided and, if they cannot be avoided, they must be managed in an efficient and sustainable manner, with the ultimate aim of ensuring the stability of the fiscal policies pursued by the Member States. Article 126 (2) (2) of the TFEU regulates the way in which the European Commission monitors budgetary developments in the Member States and the level of public debt, which is based mainly on the following criteria: (1) the ratio of the planned or actual government deficit to the gross domestic product of the Member State concerned, and (2) the ratio of public debt to the gross domestic product of the Member State concerned. The reference values of the two criteria are governed by Article 1 of Protocol No 12 on the excessive deficit procedure (published in the Official Journal of the European Union, C 115/279, 09.05.2008), which set the following maximum reference values: (1) in the case of the ratio of the planned/realised government deficit to gross domestic product, the reference level was set at 3%; (2) in the case of the ratio of government debt to gross domestic product, the reference level was set at 60%. Romania is committed to respect the obligation not to exceed the two reference values and to ensure economic sustainability in the medium and long term by maintaining fiscal-budgetary

discipline, respecting the principles, objectives and rules of fiscal-budgetary policy set out in Law No 69/2010 on fiscal-budgetary responsibility (republished in the Official Gazette of Romania No 472 of 04.06.2020).

For the year 2023, by Law no. 360/2022 on the approval of the ceilings of some indicators specified in the fiscal-budgetary framework for the year 2023 (published in the Official Gazette of Romania, no. 1212 of 16.12.2022), the ceiling of the consolidated budget balance as a percentage of gross domestic product was set at -4.40%, while the ceiling for public debt was set at 49.80% of gross domestic product.

In view of the fact that Romania has exceeded, in previous years, at least one of the criteria established at EU level for the surveillance of fiscal-budgetary developments, the European Commission has implemented the procedure for correcting the budget deficit, following the steps regulated by Article 126 of the Treaty on the Functioning of the European Union. Thus, the European Commission issued a report, which has the favourable opinion of the Economic and Financial Committee, addressed to Romania, with the information of the Council of the European Union. Noting the existence of a real budget deficit, the Council adopted, on a recommendation from the European Commission, a set of general recommendations on the limitation of the excessive deficit, with the simultaneous imposition of a deadline for this purpose. According to Council Regulation (EC) No 1467/97 of 7.7.1994 on speeding up and clarifying the implementation of the excessive deficit procedure (OJ L 209, 2.8.1997), the package of recommended measures aims at reducing the annual deficit by at least 0.5% of GDP.

The package of recommendations was not made public beforehand, but addressed directly to Romania for implementation. However, in view of the deadline for the limitation of the excessive deficit, the deficit limitation package was made public through the publication in the Official Journal of the European Union of the European Council Recommendation of 3 April 2020 with a view to bringing an end to the situation of an excessive government deficit in Romania (2020/C 116/01). In addition, if Romania had not complied with the objectives imposed by the package of measures issued by the EU Council, the consequences provided for in Article 126(2) of the Treaty would have been applied. (9) and (11) of the Treaty on the Functioning of the EU, namely: (1) the obligation to submit regular reports according to a fixed timetable, so that the efforts to adjust the excessive budget deficit can be analysed at European level; (2) the obligation to publish information required by the EU Council. prior to the issuance of government bonds or other securities; (3) notification to the European Investment Bank of the revision of the borrowing policy towards Romania; (4) obligation to establish an interest-free deposit of 0.2% of the gross domestic product of the previous budget year until the date on which the excessive deficit is deemed to have been corrected by the E.U. Council; (5) fines of a fixed amount of 0.2% of GDP and of a variable amount, but not more than 0.5% of GDP.

In order to avoid the consequences of an increase in the budget deficit, on the one hand, and to strengthen consumer and investor confidence in the sustainability of the economy, the latter having in turn an impact on the internal market, Romania has adopted an extensive package of fiscal-budgetary and fiscal-accounting measures, materialised in the amendment of the Tax Code and other legislation, through Law 296/2023 and Government Emergency Ordinance 115/2023.

3. Research methodology

The measures adopted by Romania to limit the budget deficit and its annual correction to the minimum level set by European legislation led to the need to adopt an extensive package of tax measures, with a direct impact on both individuals and legal entities. Practically all taxpayers in Romania will directly feel the impact of these tax measures, which will take the form of an increase in taxes and contributions due from 2024, taking into account that the tax measures were implemented in the last quarter of 2023. It can be said that the tax changes made possible by the adoption of the two pieces of legislation constitute a genuine tax reform, the main objective of which is macroeconomic stability and the limitation of the general level of indebtedness, the latter making a direct contribution to the macroeconomic stability of the internal market at EU level.

In the context of the tax reform, it was considered necessary to analyse the most relevant legal acts that were the basis of the reform, applying for this purpose the theoretical research method,

since the effects start to be produced as from 01.01.2024. Given that the tax changes are numerous and have a high degree of impact on all taxpayers, and taking into account the level of inflation which affects purchasing power, we considered it useful to analyse the possible effects that will be produced in particular on micro-enterprises, as they are the most vulnerable and have the lowest degree of short-term adaptability to the increases in taxes and contributions that will be due to the state budget from 2024.

4. Findings

4.1. Modification of the micro-enterprise tax regime

Law No 296/2023 amended Article 51 of the Tax Code, concerning the tax rates on the income of micro-enterprises, as follows : (1) in the case of micro-enterprises whose turnover is less than 60.1) In the case of micro-enterprises with a turnover of more than 60,000 euros, the tax rate is set at 1%, provided that the enterprise has employees working full-time (8 hours per day); (2) In the case of micro-enterprises with a turnover of more than 60,000 euros but less than 500,000 euros, the tax rate is set at 3%, provided that the employees work at least 8 hours per day. The exception to the rule of taxation at 1% of turnover, even if all the conditions are met, applies to businesses carrying out certain activities listed in the CAEN nomenclature, i.e. businesses operating in the medical, HoReCa and I.T. sectors, which will be obliged to apply the tax rate of 3% of annual turnover, up to the ceiling of €500,000 laid down for the change of tax vector to the corporation tax regime. If companies carry out these activities in the form of a secondary CAEN code, the tax rate is applied to all the company's income from other CAEN codes not covered by these exceptions, and not only to income from the CAEN codes covered by the exception. With regard to the switch from one tax rate to the other, the Tax Code, as amended by Law 296/2023, allows both the switch from the 1% rate to the 3% rate when the €60,000 threshold is exceeded during the financial year and vice versa, i.e. the switch from the 3% rate to the 1% rate when the company's income falls below the €60,000 threshold during the financial year. An exception to this rule is made for companies operating in the above-mentioned fields, which, regardless of the level of income recorded and up to the €500,000 threshold, will apply the 3% tax rate on all income earned. In the case of other businesses, the change in the tax rate will start from the quarter following the quarter in which the threshold of €60,000 is exceeded or fallen below.

4.2. Increase in tax on income whose source cannot be identified

Law No 296/2023 amends Article 117 of the Tax Code to increase the tax rate on income without identifiable source from the current 16% to 70%. According to Article VII of Law No 296/2023, these provisions will enter into force on 01.07.2024 and will apply to tax decisions issued by the competent tax authorities from the same date. The solution given is natural, since income obtained in a financial year is declared in the first 5 months of the following financial year, in the case of income obtained by natural persons and by natural persons who are owners of enterprises without legal personality. A number of important points need to be made in this respect. Firstly, there is currently a 16% tax rate for income without an identifiable source, so the measure is not new. What is new, however, is that there is not such a high tax rate on any type of income. Secondly, it should be pointed out that if the taxpayer has a justification for the taxable income, the tax authorities cannot apply the 70% tax rate, but the general 10% rate. Any document concluded in compliance with the provisions of the Civil Code (Law no. 287/2009 on the Civil Code, republished in the Official Gazette of Romania no. 505 of 15.07.2011), such as a donation contract, loan/credit contract, deposit contract, and similar, but also certain operations such as the recovery of sums borrowed, obtaining income from lawful sources, obtaining income from carrying out economic activities of an occasional nature, etc. may constitute a justification of taxable income. Thirdly, it should be pointed out that, according to the interpretation of Article VII of the above-mentioned legislative act, the 70% tax rate is to be applied exclusively on the initiative of the competent tax authorities which, following a tax inspection, issue tax decisions.

It is also extremely important to note that the tax authorities will additionally determine the amount of additional charges due for non-declaration and/or declaration of taxable income without an identifiable source. Therefore, according to Article 176 of Law No. 207/2015 on the Tax Procedure Code (published in the Official Gazette No. 547 of 23.07.2015), the level of late payment penalties is set at 0.1% for each day of delay and is calculated from the due date until the date of actual payment of the entire amount due. Also, in our opinion, if the taxable income has not been declared by the taxpayer, or has been declared incorrectly, the provisions of Art. 181 concerning the establishment of penalties for non-declaration apply, which, under the current rules, amount to 0.8% per day of delay, starting from the day following the due date until the actual payment of the entire debt, except in the limited cases provided for in Art. 181 para. (2), according to which the amount of the non-declaration penalties may be reduced by 75% by decision of the competent tax authorities. If the tax authorities establish that the income whose source could not be identified was obtained as a result of the commission of the offence of tax evasion established by the competent judicial bodies, the level of the non-declaration penalties shall be doubled and their amount may exceed the principal tax liability on which they were calculated. In other cases not involving economic offences, the level of non-disclosure penalties may not exceed the principal tax liability on which they were calculated.

4.3. Amendment of the system of taxation of self-employed income

Income from self-employed activities is subject to the following tax obligations: (1) tax on net income, set at a rate of 10%; (2) insurance contributions to the public health system, set at a rate of 10% of net income, not exceeding certain ceilings; (3) insurance contributions to the public pension system, set at a rate of 25% of net income, not exceeding certain ceilings. Until 2023, the ceilings for limiting CAS and CASS contributions were set at 12 gross minimum wages per economy, so that self-employment income above this level was subject to CAS and CASS contributions at the maximum ceiling of 12 gross minimum wages per economy. Optionally, if income was below the level of 6 minimum wages per economy, the taxpayer had the option to pay CAS and CASS contributions at the level of at least 6 minimum wages per economy in order to be insured in the public health and pension system. In 2023, Government Ordinance No 16/2022 amending and supplementing Law No 227/2015 on the Tax Code, repealing certain regulatory acts and other financial and fiscal measures (published in the Official Gazette of Romania No 716 of 15.07.2022), doubled the tax burden of these contributions by introducing a new ceiling for income earned in 2023, set at the level of 24 minimum wages per economy, resulting in a doubling of the ceiling and, implicitly, a doubling of the social contributions payable by self-employed persons. From 2024 income, to be reported in 2025, self-employed persons will be subject to social contributions to the public health system on the basis of their net income, without exceeding a ceiling of 60 minimum wages per economy. As regards social contributions to the public pension system, the three ceilings set by O.G. No 16/2022 are maintained, namely 6, 12 and 24 minimum wages per economy. As a further novelty in this respect, both contributions will be deductible when calculating net taxable income, so that the 10% tax will be applied to a tax base from which both types of contributions will have been deducted. However, the change from the maximum ceiling of 24 gross minimum wages per economy to 60 implies a higher tax burden on this category of taxpayers. Moreover, under the new provisions, if income is below the level of 6 minimum wages per economy, self-employed persons will be obliged to pay CASS at the minimum level set by the 3 ceilings, i.e. 6 minimum wages per economy. As a final novelty in this respect, it is worth mentioning that income from self-employment will no longer be cumulated with other income for the purposes of setting the ceilings of 60 minimum wages per economy for CASS and 6, 12 or 24 minimum wages per economy for CAS, and that these contributions will be applied separately for each category of income.

4.4. Increase in VAT rates for certain goods and services

Certain taxable transactions for VAT purposes will be subject to the reduced rate of 9%, up from the reduced rate of 5% : (1) the supply of housing classified as part of social policy; (2) the supply and installation of high-efficiency, low-carbon heating systems, such as photovoltaic panels, heat pumps, for housing but also for local or central government buildings or units under their management, excluding companies, whether supplied as a whole or as separate components; the increased rate of VAT also covers the supply and installation of components for the repair, maintenance or extension of these networks; (3) services covered by the CAEN nomenclature for codes 9321 and 9329 relating to admission to fairgrounds and amusement or recreational parks; (4) services relating to admission to sporting events.

Law No 296/2023 also repealed lit. c) to k) inclusive of Art. 291 para. (3) concerning the application of the reduced VAT rate for certain categories of goods and services, so that they are, as from 01.01.2024, subject to the standard VAT rate of 19%.

4.5. National e-Invoice and e-Invoice system in Romania

By Government Emergency Ordinance 120/2021 on the administration, functioning and implementation of the national system on electronic invoicing in Romania (...), published in the Official Gazette of Romania no. 960 of 07.10.2021, the legal framework was created for the development and administration by the Ministry of Finance of the national system on electronic invoicing RO e-Invoice. This system is based on a computer application through which the issuer of an invoice sends the invoice to the purchaser, stores it for archiving purposes and the recipient of the invoice uses the same system for receiving, downloading and storing the invoice. (1) of GEO No 120/2021 and, if the Ministry of Public Finance certifies compliance, it must apply the electronic seal and immediately send the invoice to the recipient. Failure to comply with the technical specifications will display a message detailing the errors, and the issuer will then proceed to rectify them. The technical specifications of the e-invoice are laid down in the Order of the Minister of Finance No 1366/2021 (published in the Official Gazette No 1148/29.11.2022).

The recipient can refuse payment of the invoice received in the electronic system, having the possibility to upload a message detailing the reasons for the refusal. Electronic invoicing is mandatory in the following situations: (1) in the case of B2B (Business to Business) commercial relations; (2) in the case of B2G (Business to Government) commercial relations, which apply in the field of public procurement, with the exception of the execution of classified contracts; (3) in B2C (Business to Consumer) commercial relations, when the invoicing concerns the delivery of goods or services classified as high tax risk. The use of the electronic system RO e-Invoice is mandatory, and penalties are regulated for non-compliance with the provisions of the regulations referring to it. For example, in B2B relations, non-compliance with the legal provisions is classified as a contravention, and is sanctioned by the amount of VAT related to the invoice/invoices not registered in the electronic system. The procedure for registering users in the RO e-Invoice electronic system was regulated by Order of the Minister of Finance No. 1713 / 2021 (published in the Official Gazette No. 1040 of 01.11.2021).

Law no. 296/2023 amends Article 319 of the Tax Code on invoicing, which, in the content of the paragraph. (1), states that "invoice" means any document or even messages on paper, provided that they contain the minimum elements regarding the information that makes up an invoice. By way of exception to the above rules, for transactions between taxable persons, only those issued via the electronic Ro e-Invoice system will be considered invoices, which means that documents issued in accordance with the provisions of Article 319(1)(b) and (c) of Directive 77/388/EEC will be regarded as invoices. (1) of the Tax Code will no longer be able to be accounted for in the financial statements of either entity (the issuer and the recipient). According to Article VII of Law No 296/2023, the provisions in question are to enter into force from 1 July 2024.

The same law also sets a deadline for the submission of electronic invoices via the IT system, so that invoices must be submitted within a maximum of 5 working days from the date of issue, but no later than 5 working days from the deadline set by the Tax Code for issuing the invoice, under penalty of fines of between RON 1,000 and RON 10,000, depending on the category of taxpayer to which the offender belongs, in relation to the size of his business from a tax perspective.

5. Conclusions

In the last fiscal quarter of 2023, Romania adopted an extensive package of fiscal-budgetary measures aimed at helping to cover the budget deficit within the limits regulated at European level. However, these measures have a direct impact on all categories of taxpayers, individuals and legal entities, which will inevitably lead to financial bottlenecks in the internal market and hinder the delivery of goods and services in the trade chain. As a direct effect, we estimate that both the number of professionals who will fall under the scope of Law No. 85/2014 on insolvency prevention and insolvency proceedings and the number of individuals with consumer status who may be subject to insolvency proceedings under Law No. 151/2015 will increase significantly. This is also due to the loss of purchasing power, generated by the increased level of inflation, to which is added a new fiscal burden, translated by the increase in the level of taxes and contributions due to the state budget following the entry into force of the two legislative acts analysed in this paper.

Directly, in the short term, we can estimate that it will increase the level of collections to the state budget, but given the short implementation deadlines and, implicitly, the inability of taxpayers to adapt their tax situation to the new requirements, we can say that, in the long term, the level of collections will decrease dramatically and the ultimate goal of the tax reform will not be achieved.

We conclude by stressing that macroeconomic sustainability must be based on certain principles such as transparency, predictability and reasonable deadlines for all categories of taxpayers concerned to adapt to the new fiscal reality.

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Current Research Trends in IFRS 15 Revenue from Contracts with Customers: a Comprehensive Review

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Abstract

Due to the need to provide a framework to motivate consistency, comparability and simplification of financial reporting arose a new standard IFRS 15, which intrigued the academic environment, challenged researchers to explore its implications in depth and raised the interest of the international financial community for a better understanding of how it influences accounting practices and reporting processes. Through a meticulous analysis of research available in the Web of Science database, this article discusses significant developments in the interpretation and application of IFRS 15, thus providing a comprehensive perspective on the subject. The interpretation of the data in the field was carried out using the bibliometric analysis tool Biblioshiny, thus obtaining relevant information about the current state of IFRS 15 research. This study is a useful guide for accounting professionals, researchers and practitioners in the financial and accountants field, providing an up-to-date understanding of IFRS 15 trends and the challenges associated with applying it in an ever-changing environment.

Key words: financial reporting, IFRS 15, revenue from contracts, bibliometric analysis, accounting standards

J.E.L. classification: M40, M41

1. Introduction

In a world where globalization has become necessary and indispensable, companies have been forced to comply with the complex demands of stakeholders. Transparency, standardization and comparability of entity reports have become essential to doing business in today's reality. In this context, IFRS 15 Revenue from Contracts with Customers represented a significant turning point for the financial and business community worldwide. This standard was introduced to bring clarity and consistency to the recognition of revenue from contracts with customers, emphasizing performance-based principles. In this article, we will explore the current state of research on IFRS 15, assessing its impact on companies, accountants and academia. We will look at challenges and emerging trends in the application of this standard and provide insight into how it continues to evolve.

The purpose and objectives of the research include the comprehensive analysis of the literature on IFRS 15, the systematization of scientific publications depending on their relevance, the identification of the correct database on the Web of Science, the analysis of the database by means of the bibliometric analysis tool Biblioshiny and the formulation of conclusions related to the current state of research and trends in IFRS 15 research.

The topicality of the subject resides in the fact that IFRS 15 has been adopted by most countries around the world and has become an essential standard for financial reporting. With its implementation in practice in 2018, and with a transition underway, research in this area remains vital to understand what areas and perspectives have been of interest to researchers and what future research directions can be forecast. It is worth noting that the Web of Science database still does not have a large number of publications addressing IFRS, this fact serving as another argument for the development of scientific research in the field. By offering proposals and directions for further investigation, it can improve the current state of research, enriching publication databases with new approaches, ideas and viewpoints.

2. Literature review

In order to gain a full understanding of IFRS 15, it is crucial to analyze the context and rationale behind this standard. IFRS 15 was developed to bring consistency to revenue recognition worldwide. Previous standards such as IAS 18 and IAS 11 were often interpreted differently by companies and auditors, leading to variations in revenue reporting.

The main premise for the development of IFRS 15 was the need for standards, practices and rules that could reflect the complexity of the activity of modern companies. Also, through the application of IFRS 15, answers are provided to situations of uncertainty related to revenue recognition, (Grosu, 2016, p. 105), which underwent significant changes with the implementation of the IFRS 15 standard. It improves and streamlines recognition and reporting practices of revenues, unifying the provisions in a practical model for customer contracts, while allowing comparability between companies' reports (Grigoriu, 2017, p. 64).

In the research carried out by Onie S., Ma L., Spiropoulos H. and Wells P. insights are provided on the process of transition to IFRS 15, with most of the companies analyzed using the retrospective and cumulative approach. Firms that experienced a significant impact had lower earnings explanatory power before the adoption of IFRS 15, which did not improve after the transition (Onie, 2022, p. 955, 970).

In the construction industry, the implementation of the new international accounting standard, IFRS 15, has been crucial for entities to understand and manage the challenges and controversies it presents. The successful implementation of IFRS 15 depends not only on its quality and provisions, but also on the ability of companies to approach, interpret and apply the standard in the context of their own enterprise (Usurelu, 2021, p. 331). IFRS 15 has a significant impact on earnings management in the telecommunications industry as well, requiring careful analysis and monitoring by regulators and managers (Marco, 2019, p. 232).

The application of IFRS 15 proves to have a positive influence on companies and stakeholders by improving the quality of financial-accounting information, namely increasing the relevance and comparability of reports (Grosu, 2022, p. 368). An advantage of the implementation of IFRS 15 for large companies is the ability to attract investors, who have greater accessibility of data, as well as the option to make a more viable comparison of reports. For SMEs, especially those from the Republic of Moldova, the application of IFRS 15 represents a difficulty, because it is expensive and there are fewer accounting experts qualified in the field of IFRS. Accordingly, a revision of the standards should take into account the needs and possibilities of SMEs as well as the situation of emerging countries (Ghedrovici, 2014, p. 268).

3. Research methodology

The choice of research methodology is an important process that requires special attention in the development of a scientific study. Therefore, the research methods selected comprise qualitative analysis, including deduction, induction and comparison. At the same time, in order to identify the relevant studies in the field of IFRS 15, we carried out an exhaustive research of the literature, including articles, normative documents and other relevant sources. We thus identified primary and secondary sources that managed to outline the conceptual framework and context of IFRS 15.

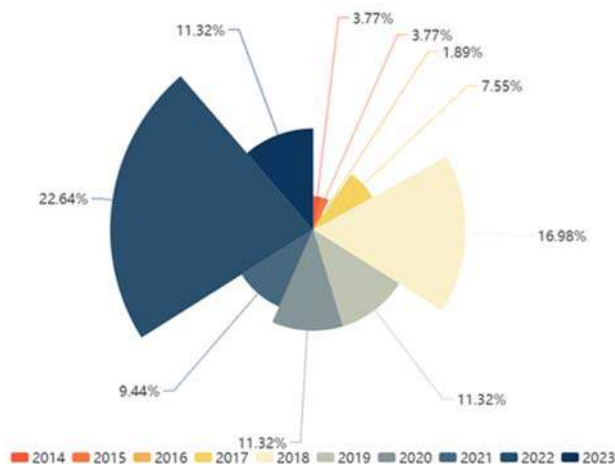
To perform the bibliometric analysis, we used the Web of Science database with the aim of identifying the most cited papers. No time frame was set, because IFRS 15 is a new standard, the beginnings of which date back to 2014. In order to find targeted scientific research on the subject, the search was set according to the criterion of content in the Title, abstract or keywords of the words "IFRS15" or "IFRS 15" or "Revenue from contracts with customers" or "Revenues from contracts with customers". As a result, a database containing 53 works published by 128 authors between 2014 and 2023 was downloaded.

After the extraction of the database, the interpretation of the data was undertaken with the help of the bibliometric analysis tool Biblioshiny, which allowed the analysis of information in relation to the year of publication of the works, the authors, the productivity of the authors, the relevance of the research, research themes, etc. This bibliometric review methodology helped us to obtain a comprehensive picture of the current state of research related to IFRS 15 and to identify significant contributions of authors, key trends and issues of interest in the area of revenue recognition from contracts with customers under IFRS 15.

4. Findings

The database of IFRS 15 papers extracted from Web of Science totaled 53 scientific publications. This total number of publications can be an argument for the topicality of the studied theme, given the fact that this field requires the undertaking of several analyzes and researches. In this context, it can be highlighted that no identified work has analyzed IFRS 15 from a bibliometric perspective, respectively this study is unique and represents a scientific novelty.

Figure no. 1. Annual scientific production



Source: prepared by the author based on Web of Science database

Figure no. 1 provides a perspective on the annual productivity of research in the field of IFRS 15. Thus, starting from 2014, a constant increase in the number of published articles is observed, suggesting a continuous interest and a growing importance of this standard. The year 2022 marked a peak, with 12 published articles, the share of the total number of articles being 22.64%.

Over the years, scientific output has been variously distributed. However, the years 2018 and 2019 were particularly productive, accounting for 16.98% and 11.32%, respectively. In this sense, the application in 2018 of the new standard and the need for changes in companies can be an explanation for the increase in the number of published articles.

In recent years, scientific output has remained relatively stable, with approximately 6-12 articles published annually. The share of 11.32% of articles from the year 2023 is a premise to predict the surpassing of the result of the previous year, considering the annual growth rate of 12.98%.

Table no. 1. Top 5 research areas related to IFRS 15

Research areas	Record count	The percentage of the total
Business Economics	47	88,68%
Mathematics	2	3,77%
Science Technology	2	3,77%
Automation Control Systems	1	1,89%
Computer Science	1	1,89%

Source: prepared by the author based on Web of Science database

The results regarding the research area assigned to IFRS 15 studies provide a clear insight into the predominant area of research related to the IFRS standard. Business Economics represents the most important research field, representing 88.68% of all published works. Most research and interest from the academic and professional community focuses on the impact of IFRS 15 on the economy and business environment.

Although the field of Business Economics obviously dominates, there are also some studies that fall into fields such as Mathematics, Science Technology, Automation Control Systems and Computer Science. Thus, it can be emphasized that IFRS 15 has implications and interest in various contexts and fields, including from the perspective of mathematics, technology and systems control.

The presence of diverse fields indicates a degree of interdisciplinarity and a cross-cutting impact of research related to IFRS 15. This aspect can provide a more comprehensive perspective on the impact of the standard and help to approach the recognition of revenue from contracts with customers from several angles.

Table no. 2. Most Relevant Sources

Sources	Articles
International Journal of Disclosure and Governance	3
Issues in Accounting Education	3
Comptabilite Controle Audit	2
Proceedings of the International Conference on Business Excellence	2
Revista Ambiente Contabil	2

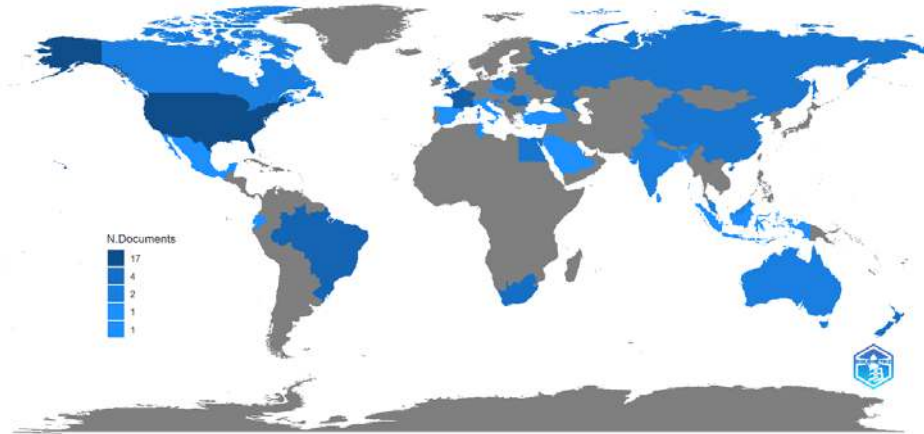
Source: prepared by the author based on Web of Science database

To identify credible and important sources for the IFRS 15 study, the Most Relevant Sources table was generated. It lists the journals and conference proceedings that are significant in determining where researchers' efforts are focused and in which journals or publications the most relevant studies are found.

The magazines International Journal of Disclosure and Governance and Issues in Accounting Education registered an equal score of 3 published works that focused on the analysis of IFRS 15. In this sense, it can be concluded that these magazines can serve as a source of knowledge and inspiration for researchers investigating this topic.

The three sources Comptabilite Controle Audit, Proceedings of the International Conference on Business Excellence and Ambiente Contabil Magazine presented to the public 2 researches each, this fact demonstrating the interest of researchers regarding IFRS 15 in various directions and fields.

Figure no. 2. Most Cited Countries



Source: prepared by the author based on Web of Science database

Another important aspect of the research is the analysis of the works from the perspective of the geographical location of the researchers, thus it is possible to create an image of the globalization of the interest in studying and applying IFRS. The United States of America stands out as the country with the largest number of published papers, with a total of 17 studies. This can be attributed to the fact that the United States of America is a global financial center and is home to many financial institutions and organizations that are affected by the IFRS 15 standard.

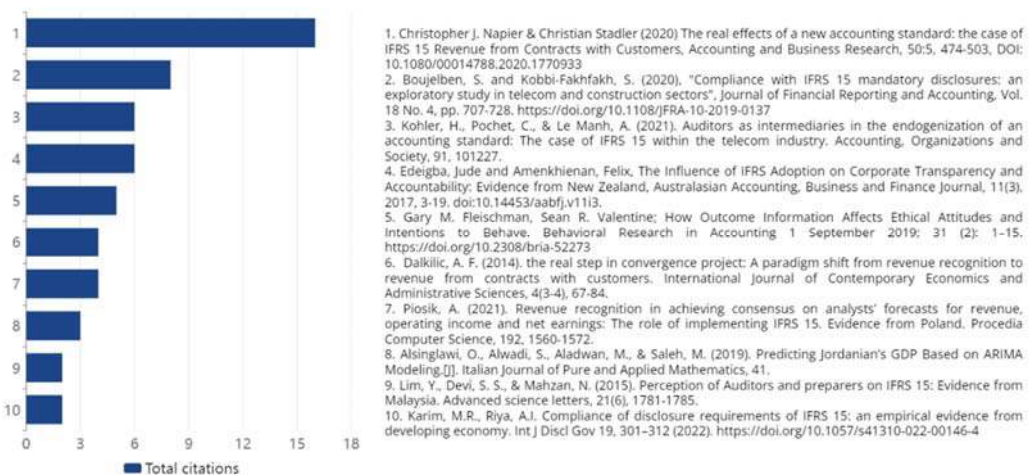
France ranks second in terms of the number of studies, with a total of 8 publications, reflecting the interest of French researchers in the field of IFRS 15, but also an opportunity to increase the impact of the research carried out.

Brazil ranks third, publishing 6 articles related to IFRS 15. Brazilian research such as De Souza P., Silva D., Dias A. addressed IFRS 15 from the perspective of its impact on the quality of revenue management, the approach to IFRS 15 in companies telecommunications and the effects and correlation between IFRS 15 and the national standard CPC 47.

New Zealand, Romania, Great Britain and South Africa each contributed 4 studies in the field of IFRS 15. Researchers from these countries being classified as researchers with an impact on the academic community, having made relevant contributions to the development of the IFRS 15 study.

In the context of geographical analysis, it can be seen that the global impact of IFRS 15 is confirmed and this standard has implications for researchers and practitioners on different continents.

Figure no. 3. Most Global Cited Documents



Source: prepared by the author based on Web of Science database

The figure above provides a table of the most cited and relevant articles that addressed and analyzed IFRS 15. Among the listed articles, the research carried out by Napier C.J. and Stadler C. is highlighted, which managed to have a significant impact on researchers in the field, citing the article 16 times. The importance of the research can be argued through the current topic and the results obtained, the authors identifying a minimal impact of IFRS 15 on the largest European companies, but highlighting its usefulness in finding solutions for several questions related to the recognition of revenue from contracts (Napier, 2020, p. 500).

Another article with a total of 8 citations is by the authors Boujelben S. and Kobbi-Fakhfakh S. The authors analyzed 22 annual reports from 2018 and found that the sampled groups do not fully comply with IFRS 15 requirements, with varying degrees of conformity between the two sectors (Boujelben, 2020, p. 725). The number of citations can be motivated by the originality of the study, which is the first to explore the degree of compliance with IFRS 15 in a cross-country sample of EU listed groups.

A research group led by Kohler H. studied auditors as intermediaries in the endogenization of accounting standards, focusing specifically on the IFRS 15 draft. The study suggests that auditors act as intermediaries between the IASB and representatives of the telecommunications industry, contributing to the endogenization of the draft standard (Kohler, 2021, p. 92). In accordance with the diversity of research topics, the multiple exploration of the IFRS 15 topic can be highlighted, which denotes the interest and creativity of the academic environment in the analysis of IFRS 15, as well as the current trends and challenges that researchers are addressing to bring new perspectives to the field accounting and financial reporting.

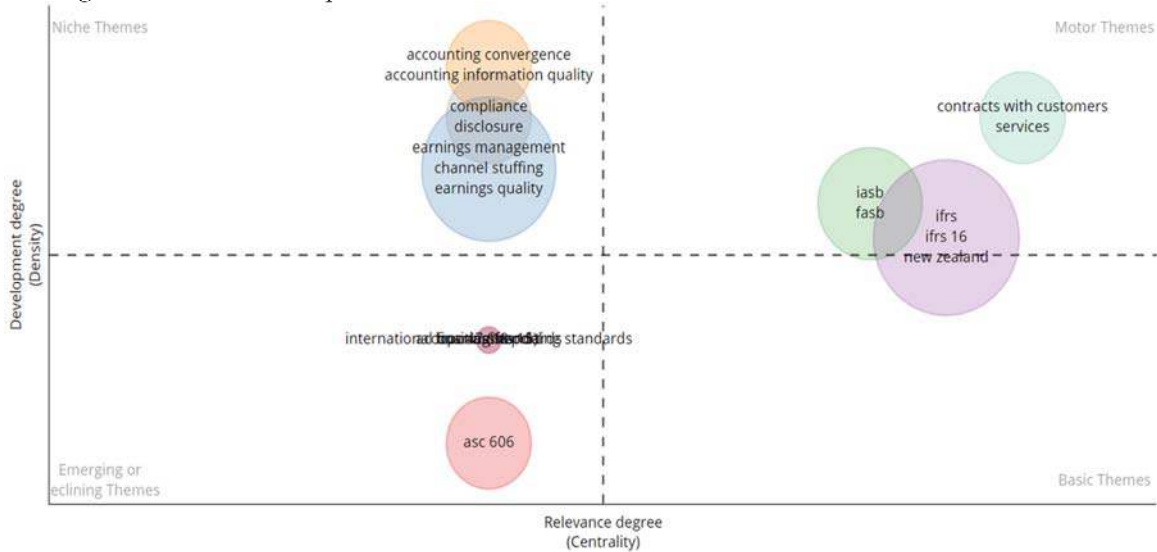
Figure no. 4. WordCloud related to IFRS 15 research



Source: prepared by the author based on Web of Science database

The figure above is a graphical representation of the keywords most frequently used by article authors, providing a simplified and intuitive picture of the research priorities and interests related to IFRS 15. Based on this data, the most frequently applied keyword can be highlighted is ASC 606, this term being associated with the US revenue recognition standard and reflecting interest in this standard in the context of research related to IFRS 15. Other keywords with a relatively high weight are Earnings management, IFRS 16, Accounting convergence, Accounting information quality, terms that reflect key topics and aspects of IFRS 15 research.

Figure no. 5. Thematic Map



Source: prepared by the author based on Web of Science database

Figure no. 5 provides insight into the key concepts and topics associated with IFRS 15 investigations. The results show that there are several thematic clusters covering various sub-areas of the accounting standard. For example, the cluster called Earnings management indicates significant interest in earnings management issues in IFRS 15 research, supported by centrality metrics. Studying earnings management, the authors correlated this term with two other terms, channel stuffing and earnings quality. The results of the research were controversial as some authors found out a negative impact of IFRS 15 application on earnings managements in specific sectors (Souza, 2022, p. 687), while others detected that „IFRS 15 may accelerate the timing of revenue recognition and provide managers a strong incentive to engage in channel stuffing earnings management” (Kuo, 2022, p. 360).

In the list of specialized themes there are also two other clusters that present topics of interest in the research regarding IFRS 15: Accounting convergence and accounting information quality; Compliance and disclosure. Certain research outcomes appear to support and reinforce earlier investigations in this domain, indicating that the macroeconomic impacts encompass a rise in foreign direct investment, notably in regions characterized by robust investor safeguards and minimal corruption levels, subsequent to the implementation of IFRS. These results also imply secondary stock market advantages arising from the obligatory adoption of IFRS (Usurelu, 2018, p. 999).

In the category of key themes there are 3 clusters: Contracts with customers and services; IASB and FASB; and last but not least IFRS, IFRS 16 and New Zealand. The authors concerned about these topics identified that the adoption of IFRS aims to enhance financial statement transparency, but it is unclear how this is achieved (Edeibga, 2017, p. 15). On the other side, researchers Bubnovskaya et. al. confirmed that the implementation of IFRS 15 helps improve revenue recognition and mitigate customer risks (Bubnovskaya, 2022, p. 470)

Based on the information provided in Figure 5, it is evident that there are two distinct thematic clusters marked by the keywords ASC 606 and CPC 47. These clusters may suggest emerging or diminishing areas of interest within the context of IFRS 15 research. It is essential to closely monitor these evolving themes to understand the shifting dynamics and priorities in the field of international financial reporting standards.

5. Conclusions

Adapting to changes has never been easy, migrating from one standard to another is an arduous process for both accounting experts and companies. The implementation of the IFRS 15 standard has been a challenge for many, and for researchers the last few years have been an interesting field for investigating the course of companies in this adventure.

The bibliometric analysis carried out revealed a significant increase in interest in IFRS 15, but the number of annual publications is still small, reflecting the need to study the field further to be able to provide relevant information to both academics and practitioners. At the same time, the research by fields highlighted Business Economics as the field with the highest weight, but other fields were also identified, a fact that allows the interdisciplinary analysis of IFRS 15 to be mentioned.

Also, the journals International Journal of Disclosure and Governance and Issues in Accounting Education turned out to be the most relevant in studying IFRS 15, having the most publications. From the perspective of the countries involved, the USA is the country with the greatest impact, carrying out a series of important studies in the field. The analysis carried out through the Biblioshiny tool also highlighted the most cited articles, which were concerned with such topics as the impact of IFRS 15 on the largest European companies, the compliance of companies with the standard, the role of auditors as intermediaries in the endogenization of the standard, etc.

The generated keyword cloud illustrated the most frequent keywords including ASC 606, Earnings management, IFRS 16, Accounting convergence, Accounting information quality. They highlight themes of previous research and provide insights for potential themes of investigation.

Future research directions could be the evaluation of the impact of modern technologies in the implementation of IFRS, as the use of modern technologies would contribute to greater accuracy in the application of IFRS standards and, in the current situation, without the application of modern technologies, the implementation of IFRS is practically impossible.

Another relevant topic could be the assessment of how the implementation of IFRS 15 influences the perspectives and decisions of investors, as investors are very important stakeholders for the development of companies.

At the same time, the experience of IFRS 15 adoption in different countries and continents could be analyzed to compare and highlight distinctive elements. Also, when carrying out this research, Hofstede's cultural dimensions and their impact on the application of IFRS 15 could be addressed.

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The Effects of Budget Constraints in the Ministry of Internal Affairs in Romania

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Abstract

The main purpose of this paper is to demonstrate how important it is for the Ministry of Internal Affairs to have a sufficient budget to carry out the missions entrusted by law. The Ministry of Internal Affairs has very important responsibilities in terms of maintaining public order and intervention in emergency situations. The Romanian Police, the Romanian Gendarmerie, the Romanian Border Police, which are in charge of maintaining public order, as well as the General Inspectorate for Emergency Situations, which is in charge of extinguishing fires and providing first aid through SMURD ambulances, are active within the Ministry of Internal Affairs. In this paper, the possible negative impacts of the application of the Government's Emergency Ordinances regarding some fiscal-budgetary measures, adopted in 2023, will be presented.

Key words: budget, internal affairs, public finance, accounting

J.E.L. classification: H83

1. Introduction

The Ministry of Internal Affairs, abbreviated MIA, is the most numerous and complex structure within the National Security System in Romania. The MIA is composed of institutions of particular importance, vital for the functioning of the Romanian state under normal conditions.

Within the MIA, responsible for public order are the Romanian Police, the Romanian Gendarmerie and the Romanian Border Police. Maintaining, ensuring and restoring public order covers a very wide range of operations, from the fight against organized crime, to anti-terrorist intervention or the protection of the borders of the European Union, i.e. activities of particular importance.

The other department that operates within the MIA is the Department for Emergency Situations. Through the General Inspectorate for Emergency Situations, the intervention of the Romanian state is ensured in special situations generated by natural calamities, fires, road accidents or the provision of first aid through the SMURD ambulances or helicopters for citizens who call the emergency number 112.

The Romanian Police, the Romanian Gendarmerie, the Romanian Border Police and the General Inspectorate for Emergency Situations, abbreviated GIES, have subordinate territorial units that they coordinate. General inspectors approve the budgets of subordinate units, for each county or territorial inspectorate.

However, the amounts allocated for expenses can be influenced by the stage of revenue collection to the state budget by the Ministry of Finance. In this sense, in order to ensure a budget balance and not to exceed the budget deficit negotiated with the European Union and assumed by Romania's leading factors, the Government decided to adopt emergency measures to reduce expenses in 2023.

The normative acts adopted in 2023 with a negative impact including on the activity of the Ministry of Internal Affairs, are the Government's Emergency Ordinance no. 34 and Government's Emergency Ordinance no. 90.

The need to adopt emergency ordinances is justified in the preamble of the normative acts by the Government's obligation to conduct fiscal-budgetary policy prudently in order to manage budgetary resources and obligations.

2. Literature review

Unfortunately, most young Americans do not have an adequate understanding of the ever-increasing national debt, budget deficit, and the principles of fiscal responsibility or the budget process itself. As a result, they cannot analyze public policy options as they relate to the budget deficit nor responsibly engage in influencing those policy decisions in ways that reflect an informed point of view (Marri et al., 2011). Arguments against increasing government expenditure and budget deficits which invoke some form of 'sound finance' and by appeal to 'confidence' are frequently heard, whether rising debt being unsustainable, 'government credit card maxed out' and calls for some form of balanced budget (Sawyer, 2023). In the late 2000s, when the global financial crisis started and forecasts of reduced tax revenues were released, austerity measures were once again anticipated to hit (Donatella et al., 2023). The budget deficit is not harmful, and can actually be utilized in order to offset the tendency to waste resources under capitalism (Lopez-Gallardo, 2000). The fiscal austerity agenda is rooted in wrong-headed economic analysis. It was the wrong economic agenda before the economic crisis, and it is even more wrong in light of the deep economic weaknesses the crisis has revealed (Palley, 2011).

3. Research methodology

Regarding the research methodology, I have analyzed the legislation in force referring to the budgetary constraints, which entered into force in 2023.

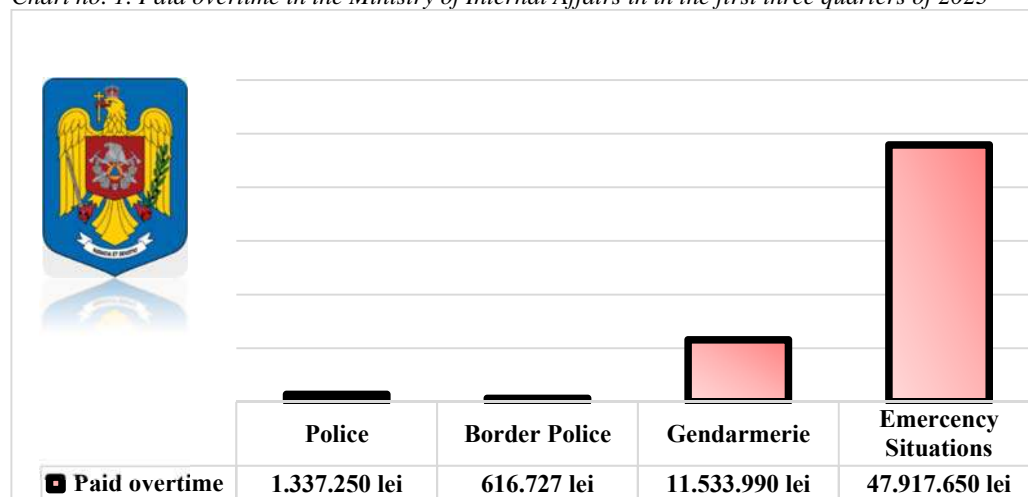
The information published on the Forexebug platform was also analyzed and processed. In this case, the budget execution accounts of the secondary authorizing officers from the Ministry of Internal Affairs were processed in order to estimate the impact of the Government's Emergency Ordinances no. 34 and no. 90 of 2023.

4. Findings

By Emergency Ordinance no. 34/2023 it is forbidden to fill vacant positions in public institutions in 2023. But the shortage of personnel within the MIA is quite worrying, as employees from the public order system and interventions in emergency situations are forced to work overtime.

The situation of paid overtime is presented in Chart no. 1.

Chart no. 1. Paid overtime in the Ministry of Internal Affairs in the first three quarters of 2023



Source: own processing, using the data provided by the Ministry of Finance
(<https://mfinante.gov.ro/web/forexepublic>)

As can be seen from the information presented regarding the budgetary execution related to the payment of overtime, the institution most affected by the entry into force and application of the Emergency Ordinance no. 34/2023 by which the recruitment of personnel in public institutions was blocked, is the General Inspectorate for Emergency Situations. Due to insufficient staffing, the military firefighters are forced to work overtime to cover duty shifts for the intervention against fires, floods and providing first medical aid through the SMURD ambulances. The most worrisome effect of the staff shortage is the fact that firefighters, even if they are paid for additional work, can accumulate fatigue due to the fact that they do not have adequate recovery time, i.e. the normal number of days off after a duty shift.

At the level of the police structures, in the case of the Romanian Police and the Romanian Border Police, a significant percentage of extra hours were not provided, compared to the firefighters and gendarmes.

The most gratifying fact is that Emergency Ordinance no. 34/2023 no longer produces effects in 2024, since then the deficit structures of the MIA can be staffed.

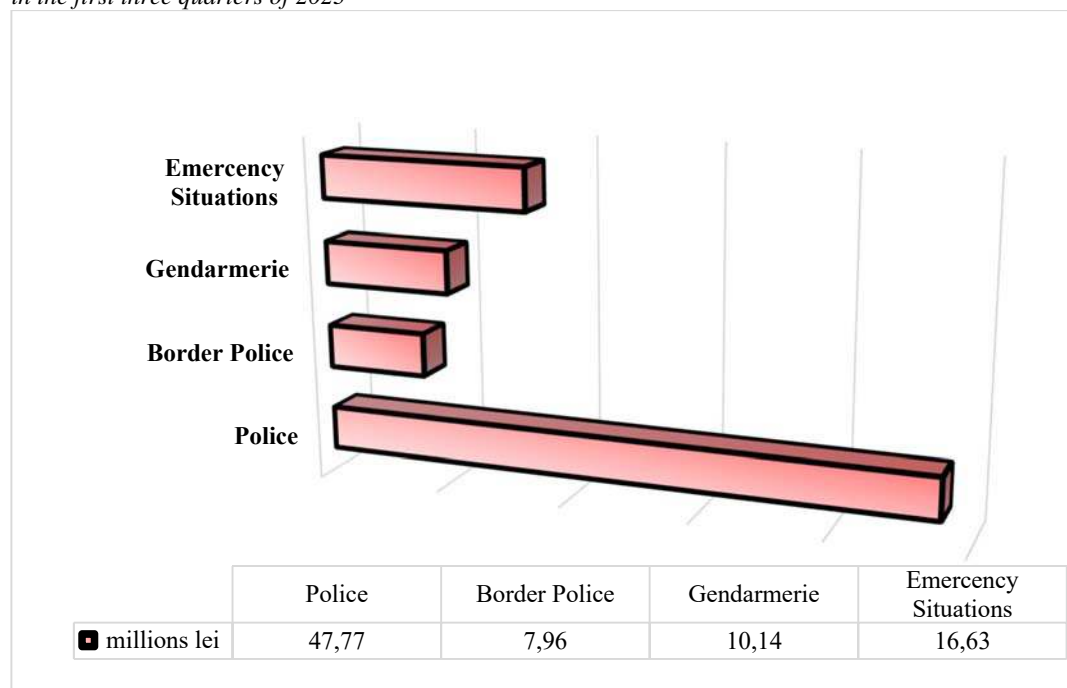
Starting with October 27, 2023, Government Emergency Ordinance no. 90/2023 has produced effects. The most important budget restrictions refer to the prohibition of concluding legal commitments, that is, contracts, for certain usual budget items. In this case, public institutions can no longer employ budget credits for the conclusion of contracts for office supplies, current repairs, inventory items, professional training or consultancy and expertise.

Also, in the months of November and December 2023, public institutions cannot make payments for goods and services in an amount higher than the monthly average of payments from the first three quarters of the year.

The biggest problem encountered is the prohibition to repair vehicles that are engaged in public order missions or specialized intervention in emergency situations.

The most worrying effect of the budgetary constraints implemented by Emergency Ordinance no. 90/2023 represents the fact that the system of public order and emergency situations would be unable to repair the equipment provided for the execution of missions.

Chart no. 2. The situation regarding the payments of current repairs in the Ministry of Internal Affairs in the first three quarters of 2023



Source: own processing, using the data provided by the Ministry of Finance (<https://mfinante.gov.ro/web/forexepublic>)

The expenses incurred with repairs within the Ministry of Internal Affairs amount to tens of millions of lei, in this case 47 million lei at the level of the Romanian Police and 16 million lei at the level of emergency situations. Most of these expenses were related to the repair of the equipment, i.e. the police cars and the fire brigade's intervention tables.

However, the Romanian Government granted within the Emergency Ordinance no. 90/2023 an exception for expenses for actions to maintain public order and intervention in emergency situations.

The effects of the budgetary constraints applied in 2023 can be mitigated at the MIA level through the exceptions proposed by the Government, otherwise the activity of public order and response to emergency situations could be blocked, this scenario creating chaos.

5. Conclusions

In this study, the normative acts adopted in 2023 were analyzed by which certain budgetary constraints were established, namely Emergency Ordinance no. 34 and no. 90 of 2023.

Through these legislative acts, certain restrictions and budgetary constraints were imposed, which included the Ministry of Internal Affairs, the most numerous ministry within the National Security System, responsible for public order and intervention in emergency situations in Romania.

In this paper, the negative effects of budgetary constraints were presented, namely the performance of an impressive and overwhelming number of overtime hours by the military personnel in the ministry, this factor leading to the accumulation of fatigue over time.

Again, the situation regarding the restrictions imposed in November and December for the contracting of repair services was presented and the related risks were presented.

In conclusion, the Ministry of Internal Affairs, through the very important missions imposed by the laws in force, should be exempted from the measures regarding budgetary constraints, because a blockage at the level of this ministry would have catastrophic effects.

6. Acknowledgement

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Main Expenditures of NATO through NSIP in Romania

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Abstract

Over the years, ensuring the necessary resources to meet the performance standards imposed by international organizations to which Romania belongs, namely NATO, has held a very important place among the main objectives and activities of the state. The extensive process of transformation and continuous adaptation undergone by various bodies and structures of the country has led to a harmonization of resources, with studies conducted on the unfolding phenomena and measures implemented to adapt to the requirements of today's society regarding their management. The objective of this study is to outline a general overview of how NATO investment projects are carried out in Romania through public institutions under the Ministry of National Defense, using financial and accounting information, in compliance with national and international legislation, to ensure the continuous fulfillment of objectives and standards set by the North Atlantic Alliance.

Key words: NATO; NSIP; defense; public finance; expenses

J.E.L. classification: H83

1. Introduction

The North Atlantic Treaty Organization (NATO) is the military and political alliance established in 1949, currently consisting of 31 countries from North America and Europe. The main objectives of the Alliance are to protect the territories and populations of each member state by supporting an effective defense system and ensuring the security of its members. To ensure economic transparency, NATO publishes its entire civil and military budget each year, as well as the budget of the NATO Security Investment Program (NSIP).

The entire civil budget of NATO (including operating costs for NATO headquarters), the military budget (costs of the entire command structure), and the NATO Security Investment Program (NSIP) for military capabilities are collectively funded to cover all Alliance requirements, with no single member being solely responsible. The total costs are shared among the current 31 members based on an agreed and unanimously accepted formula, taking into account the national Gross Domestic Product of each member and a certain percentage of the defense budget. The cost-sharing mechanism of NATO is published annually. Although NATO ensures continuous oversight and financial and political responsibility, all projects managed by NATO can also be collectively funded by member countries, identifying priorities and funding requirements. The entire system of planning, budgeting, and financial evaluation is an integrated part of the management process for all NATO entities.

2. Literature review

The distribution mechanism of funds based on gross national income for common military funding aims to equip member states with various resources that might not be feasible to finance individually. Therefore, all eligibility criteria for common funding are continuously assessed, incorporating specific adjustments based on needs and the security context within the zone of member states (Cotiga, 2019).

Romania's commitment to allocating a minimum of 2% of national income or Gross Domestic Product (GDP) in accordance with NATO requirements has led to a constant transformation and resizing of the defense budget (Cordesman, A. H., 2019). This transformation adheres to different rules of utilization and legal norms than those of national legislation (Techau, J., 2015). It encompasses specific funding sources and functional or economic classifications. The expense segments resulting from assuming the status of a partner in international alliances and the strategies established through political agreements are justified as long as they reflect both the goals in the governance program and the provisions set in international summits regarding the armament of the armed forces (Harper, J., 2015).

3. Research methodology

The research used in this study included two methods: descriptive research and quantitative research. Descriptive research allowed us to analyze various terms, starting from the general, such as the generic term NATO, down to specific aspects like aggregated budgets and funds. Additionally, various research methodologies were employed, including economic analysis, observation of information and phenomena over time, as well as methods such as empirical analysis and literature review.

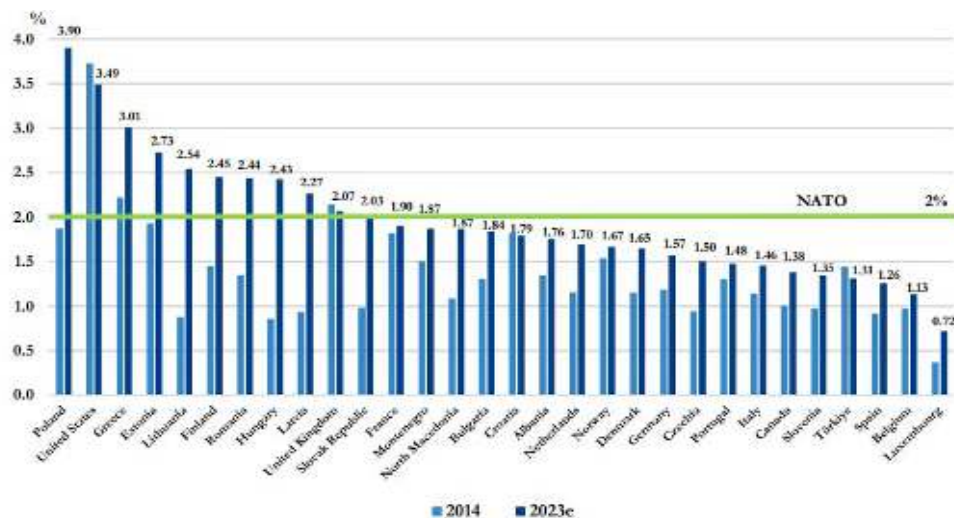
4. Findings

Common funding involves the contributions of NATO member states to civil, military budgets, and the NATO Security Investment Program. This aims to achieve major capabilities within the Alliance, maintaining an optimal and efficient level of security globally. NATO structures define their needs based on imposed objectives and priorities, along with the required funds to achieve them.

In 2006, NATO Defense Ministers agreed to allocate a minimum of 2% of the Gross Domestic Product for common defense expenditures, ensuring the Alliance's continuous military preparedness. This represented an indicator of the political will of each country contributing to NATO's joint defense efforts (Cordesman, A. H., 2019).

In 2014, representatives of the defense investment department urged NATO member countries to meet the 2% GDP for defense and allocate 20% of defense spending to the acquisition or development of significant new capabilities by the year 2024.

Figure no. 1. The main categories of defense expenditures (estimated percentage of the total expenditures for 2023)



Source: NATO statistics

At the NATO member states' level, the evolution of each country's general public expenditures for defense can be observed, including the difference between 2014 and the estimated figures for 2023. Romania is projecting defense spending at 2.44% of its GDP, compared to 2014 when it allocated less than 1.5% for defense.

The projects funded through the NATO Security Investment Program in Romania are carried out exclusively within the Ministry of National Defense. This involves the signing and approval of documents by the Minister of Defense. The implementation is managed by the ministry's subordinate structures responsible for investment project management, maintaining close correspondence and connection with NATO's specialized structures. All requirements and legal standards, both at the national and international levels, are adhered to in the financial, legal, technical, and administrative domains, as dictated by NATO legislation.

The projects funded through the NATO Security Investment Program (NSIP) in Romania are financed through various channels:

1. The direct funding of NSIP projects

- *National Contribution* - each country contributes funds nationally to support the NSIP);
- *Financial Contribution to NSIP* - the funds for NSIP projects are directly contributed to the specific account "Disponibil pentru proiecte NSIP" (Available for NSIP Projects). This account is managed by the Ministry of National Defense and is opened by the State Treasury;
- *Funds Transferred by NATO Member States* - Member states transfer funds directly to support NSIP projects, contributing financially to these endeavors;
- *Other Financial Funds* - Additional financial resources may be used to support NSIP projects.

To receive and utilize NSIP funds, the Ministry of National Defense must use a dedicated account, specifically classified as "50.48 Available for NSIP projects." This account remains open in the name of the public institution under the Ministry of National Defense after completing all budget regularization operations, as per the Order of the Minister of Public Finance No. 720 of 2014. All payments made through this account must be justified, align with NSIP project requirements, and adhere to national norms and legislation.

Figure no. 2. Treasury Account where no revenues are collected and from which no expenditures are made

50.42	Available from sums collected by administrative-territorial units for other budgets
50.48	Available for NSIP projects

Source: List of accounts of the Ministry of Public Finance

The available funds for NSIP projects, remaining at the end of the budget year, are carried over to the next year without changing their intended purpose, as approved and funded for the investment project. If the transfer of funds and contributions from NATO member states for NSIP projects cannot be made within the specified deadlines, the Ministry of National Defense makes the due payments from its own budget. Subsequently, it replenishes its funds during the same budget year. If the fund replenishment occurs after the end of the financial year, the payments made will be considered revenues for the state budget.

2. Co-Financing of NSIP Projects

Co-financing involves funds dedicated to paying invoices resulting from public procurement processes for NSIP projects. These funds are reflected in the main credit holder's budgets under the economic classification of expenses at item 55.02.06, "Co-Financing for the NATO Security Investment Program" .

Figure no. 3. Economic Classification of Expenditures

Annex I			2023
CLASSIFICATION OF PUBLIC FINANCE INDICATORS			
EXPENDITURES ECONOMIC CLASSIFICATION			
Title	Article	Paragraph	NAME OF THE INDICATORS
	55.02		B. Current transfers abroad (to international organizations)
		55.02.01	Contributions and dues to international bodies
		55.02.02	International economic cooperation
		55.02.03	Development assistance allocated abroad
		55.02.04	Other current transfers abroad
		55.02.05	Romania's contribution to the European Development Fund
		55.02.06	Co-Financing for the NATO Security Investment Program

Source: Annex of Expenses of the Ministry of Public Finance

Unlike the direct funding of NSIP projects through "50.48 Available for NSIP projects", co-financing projects require a shorter period for utilizing the funds and making payments for procurement contracts established between the contracting authority and the contractor. Additionally, co-financing involves a simpler procedure for the contracting authority responsible for the NSIP project, as the main credit holder is responsible for transferring the funds directly into the authority's budget, following the established economic classification of expenses.

5. Conclusions

The current political and economic context significantly influences the organization and functioning of the defense, public order, and national security system, impacting the overall expenditures of the country. These expenditures aim to achieve the objectives and standards set by the North Atlantic Alliance for all member states.

Economic transparency within NATO relies on the annual publication of military and civilian budgets, as well as NSIP funds, illustrating the distribution of agreed-upon funds for each member state. This is achieved through common military funding, ensuring states are equipped with diverse resources.

The aspects mentioned throughout this study provide arguments justifying the importance of understanding the financing and allocation of NATO funds and budgets. This understanding is crucial for the judicious implementation and execution at the national level, ensuring the efficiency of the entire process in aligning with imposed standards and equipping the public sector of the state with goods, materials, or services.

The execution of investment projects in Romania under NATO must follow an upward trajectory for maximum efficiency, minimizing identified deficits to correspond between civil and military endowments through NATO funds. The goods resulting from these projects enter the public domain of the state.

6. Acknowledgement

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The Role of ESG Factors in Improving Firm Financial Performance

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Abstract

The present research investigates the correlation between environmental, social, and governance (ESG) factors and financial performance, dissecting the impact of each element on a company's profitability. The study focuses on small and medium-sized enterprises (SMEs) situated in the South-East of Romania within the construction sector, spanning a five-year period (2016-2021). The empirical findings reveal a positive association between ESG practices and financial performance, pointing out that enhancing ESG initiatives could effectively improve profitability of SMEs.

Key words: financial statements, ESG, return on equity, construction sector

J.E.L. classification: G30

1. Introduction

The European Green Pact's objective of reducing pollutant emissions by at least half (European Commission, 2019) requires a reorientation of company practices (including those in Romania) to minimize the impact of their activity on the environment. The literature has shown that adopting environmental practices usually leads to good environmental performance (Melnik et al, 2003; Annandale et al, 2004; Zhu et al, 2004). However, good levels of environmental performance can be achieved based on the implementation of different types of environmental practices, practices that do not always have the same effects on environmental performance (Henri et al, 2008).

In a study, R.D. Klassen, and D.C. Whybark (Klassen et al, 1999, p.3) indicate that proactive environmental pollution technologies exert a positive influence on firm performance, while end-of-pipe technologies do not. More recent studies have shown that a high level of firm performance coincides with a high level of environmental performance only if the technologies used by the firm's environmental management have a proactive pollution orientation (Wagner, 2005, p.2).

Social responsibility, as a measure of the degree to which firms fulfill their legal, economic, ethical, and philanthropic responsibilities to society has become highly relevant in achieving economic benefits. Cho, Chung and Young (Cho et al, 2019, p.3) demonstrate the positive association between corporate social responsibility and firm performance using financial-accounting and market indicators. It is worth noting that the sector of activity greatly influences the analysis of the dependence between social responsibility and financial performance. In the same study, (Cho et al, 2019, p.15) it is shown that the impact of social responsibility is greater for firms in the service sector compared to those in manufacturing industries. The social role of firms (especially large firms) is greater as public perception is quickly influenced by social decisions. From a cost perspective, some of the research in the field of social responsibility shows that, in general, firms' social actions lead to higher profits. However, a small number of studies show the opposite, i.e. that social responsibility generates costs that exceed profits (McWilliams et al, 2001, p.5).

Corporate governance, in the view of some authors, refers to the issue of agency (Roy, 2016, p.3) and refers to the way in which financial decisions made by those at the top of companies are influenced. From an investors' perspective, corporate governance is of great interest because it provides information on the accuracy, transparency and sustainability of financial reporting and auditing. Sustainable reporting has the merit of reflecting, beyond financial aspects, organizational change, and development (Lozano et al, 2016, p.25). The motivation to report and weigh results from the perspective of economic, social, sustainable, and environmental dimensions, driven by numerous

factors, has been highlighted in this context (Engert et al, 2016). It has also demonstrated the need for managerial attention to the appropriate use of control levers that precede financial reporting and address non-compliance during the decision-making process.

2. Literature review

The growing recognition of climate change and concerns related to human capital are steering companies toward considerations beyond conventional financial profits. Specifically, the evolving attitudes of the global community towards sustainability issues, coupled with the accessibility of environmental, social, and governance (ESG) indicators, are drawing investors towards socially responsible investment choices.

According to some authors (Bassen and Kovacs, 2008, p.1), ESG indicators are designed to encompass dimensions of financial performance that are not addressed in accounting data. They contend that financial reports of companies lack information pertaining to aspects such as reputation, quality, brand equity, and safety. As a result, analyzing ESG practices and may lead to improved financial results.

In terms of financial performance, there are a wide variety of financial indicators as ways of measurement such as percentage of sales related to new products, profit rate (PM), earnings per share (EPS), return on assets (ROA), return on equity (ROE), return on invested capital (ROCE) (Salawu, Akinlo, 2005, p.3; Selvarajan et.al., 2007, p.10; Hsu et.al., 2007, p.4). In addition, return on investment ROI and net profit after tax NIAT have also been used as indicators to measure financial performance. For our research, a traditional metric has been considered the main indicator of financial performance, i.e. return on equity (ROE). (De Lucia et al, 2020, p.2; Alareeni et al, 2020, p.4; Qureshi et al, 2021, p.2; Akbar et al, 2020, p.4).

Various theoretical frameworks offer explanations for the connection between ESG practices and financial performance (FP). The stakeholder theory supports a positive relationship between ESG and FP, while the trade-off theory argues for a negative relationship. On the other hand, the slack resources theory proposes a positive relationship between FP and ESG, whereas the managerial opportunism hypothesis suggests a negative relationship between FP and ESG.

The positive correlation between ESG and financial performance may be attributed to the fact that companies with higher profits possess higher resources to invest in ESG-related activities. It is also plausible that profitability increases when a company adequately manages its ESG-related risks. Alternatively, it might be a combination of both factors. If it is indeed a mix of both, it implies that initiatives promoting good ESG practices contribute to enhanced financial performance. This, in turn, provides the financial means to further invest, making the company even more proficient in ESG matters, thus leading to improved performance in a continuous cycle. In their study, Whelan, Atz and Clark (Whelan et al., 2021, p.4) reported that, out of more than 1000 research studies published between 2015 and 2020, 58% found a positive link between financial performance (measured as ROA or ROE) and ESG.

Therefore, previous literature referring to the link between ESG factors and financial performance demonstrated a strong connection between the two. Hence, a favorable correlation between ESG factors and financial performance metrics such as ROE has been established (DeLucia et al, 2020, p.2). Some studies (Alareeni et al, 2020, p.10) argue that larger companies experience enhanced operational and financial performance (measured by ROA and ROE) with increased disclosure of ESG factors.

A favorable correlation between the ESG and ROE was also established in the case of Chinese real estate companies. (Shao, 2022, p.1041). Hence, real estate businesses ought to adopt green design, standardize the use of environmentally friendly building products, and implement green construction practices to conserve resources and minimize pollution. This way, ESG practices enable companies to pursue long-term sustainable development.

Whether testing the nexus between FP and E, S, G separately (Atan, 2018, p.2; Ahmad, 2021, p.4) or combined, the correlation varies based on the specific ESG pillars considered, the type of FP metrics employed, and the nature of the industry. Firm size also matters (Ahmad et al, 2023, p.6), along with other sectorial variables.

3. Research methodology

To conduct this research, an analysis of the financial documents was carried out. Thus, for a sample of 300 Romanian companies in the construction sector located in the South-East region, ROE was calculated.

Subsequently, a survey was conducted. A questionnaire was used as the survey instrument. The perceptions of employees, customers, partners, and civil society operating in the sector under analysis were targeted. The questionnaire was designed on a Likert-type scale, with scores from 1 to 5, where 1 represented the minimum score that could be attributed to a statement, representing the respondent's total disagreement with that statement, and 5 represented the maximum score, expressing the respondent's total agreement.

Consequently, a dependency was tested by correlating the results obtained from respondents' answers with the results obtained from financial statements. A credit scoring model was used to ensure data comparisons (absolute values obtained for ROE were transformed into scores). This made it possible to make correlations.

Given that the central objective of the research undertaken is to identify the impact of non-financial factors on a company's financial performance, i.e. to measure the influence of all environmental, social and governance factors on the results of the company's activity and the extent to which they lead to superior financial performance, a series of hypotheses were formulated as follows:

- *H1: There is a positive correlation between the environmental responsibility of Romanian companies and ROE.*
- *H2: There is a positive correlation between the social responsibility of Romanian companies and ROE.*
- *H3: There is a positive correlation between the governance model promoted by Romanian companies and ROE.*

To validate the hypotheses, a series of statistical tests were carried out. In case of validation of all the hypotheses, i.e. H1-H3, it is considered that all the factors of non-financial performance have a significant influence on the financial performance; hence, an improvement of any of the considered factors will lead to a higher non-financial performance, and ultimately to higher financial results.

The research carried out aimed at identifying those significant correlations between the variables analyzed through the questionnaire and the profitability variable (ROE). The existence of dependency relationships between variables was investigated based on the calculation of Pearson correlation coefficient (parametric correlations).

4. Findings

The three variables analysed through the questionnaire (independent variables) allowed the assessment of the non-financial performance of the studied companies through the perceptions of the respondents of this study. Thus, the scores of the three investigated variables led to a non-financial performance score of 3.415 points, out of a maximum of 5 points - Table no. 1. The highest score was recorded by the variable called Environmental responsibility and the lowest score was recorded by the variable called Corporate governance.

The total score obtained for the assessment of non-financial performance, as a measure of all three factors included in the study, indicates a mediocrity of the companies in the sector analysed. Thus, although non-financial performance scored an apparently acceptable 3.410 out of a maximum of 5 points, in reality it is far from satisfactory. The companies in the sector under review cannot be considered as excellent performers - they do not excel in all aspects of the business - so they cannot be classified as non-financial performers.

A number of negative aspects regarding the factors used in assessing non-financial performance were highlighted. These refer to:

- employees do not have a fair system of promotion at work;
- the companies analysed do not have employees from all social categories;
- existing equipment has not been fully replaced by energy efficient equipment;

- employee access to information is restricted;
- not enough financial resources are allocated to waste recycling activity;
- the employee promotion system is often corrupt;
- management does not take an interest in employee and customer grievances and is often primarily concerned with making higher profits;
- companies have little involvement in raising awareness of human action on the environment, no responsible attitude towards natural resources and no campaign to clean up nearby beaches.

Table no. 1 Summary of non-financial performance results

No.	Non-financial variables	Score
1.	<i>Social responsibility</i>	3,443
2.	<i>Environmental responsibility</i>	3,349
3.	<i>Corporate governance</i>	3,193
Non-financial performance- Total		3,410

Source: Authors' own processing

Although employee perceptions of the non-financial variables studied indicate the existence of average-level performance within the sector under analysis, they do not provide concrete evidence on the losses, or conversely, the profits associated with higher levels of non-financial performance, the effects of increased non-financial performance on the financial results of firms, or the extent to which the variables studied may be determinants of financial performance. Accordingly, we continued the analysis to identify the extent to which these factors have a significant impact on financial performance.

This research aimed to identify those significant correlations between the variables analysed through the questionnaire and ROE. The existence of dependency relationships between the variables was investigated by calculating the Pearson correlation coefficient r and r^2 (parametric correlations) - Table no. 2.

The significant influence of the variable measuring social responsibility on ROE is revealed by the high, positive value of the Pearson correlation coefficient (0.772). This first identified dependence underlines the need for firms to intervene in public perception, as it is a key factor in obtaining financial benefits. Therefore, the social impact of the companies' activities is mitigated as a result of improving the image in the eyes of society, but also in the eyes of employees. The conclusion is that social responsibility has a positive impact on companies' profitability.

Table no. 2 Pearson correlations between non-financial performance variables and ROE

Indicator	ROE
<i>Social responsibility</i>	$r=0,77231$ $r^2= 0,5961$
<i>Environmental responsibility</i>	$r=0,76101$ $r^2= 0,57913$
<i>Corporate governance</i>	$r=0,74735$ $r^2= 0,55853$

Source: Authors' own processing

Social inclusion, effective resource management, coordinating and involving employees, solving problems quickly, resolving work conflicts, practicing results-based reward schemes are all attributes of effective management. In our research, it has been shown that the existence of effective management (governance variable) has a strong, positive influence on the financial results of companies in the sector under analysis, so that it leads to increased profitability and leads to improved financial structure, with a positive impact on financial performance.

Environmental responsibility moderately influences firm profitability, as shown by Table 4.2. It is thus demonstrated that adopting a responsible attitude towards the conservation of the natural environment, increasing focus on recycling, using green energy and adopting measures to improve health of employees (European Green Pact goals), leads to an improvement in the financial structure,

generating additional income for companies. Therefore, an increased responsibility towards the environment has a direct effect on financial performance of Romanian companies.

The high, positive values of the correlation coefficients r and r^2 between the non-financial performance variables and ROE (Table 4.2) demonstrate the existence of a strong dependence between them, so we consider *that hypotheses H1-H3 are validated*.

5. Conclusions

In the context imposed by the European Green Pact, the need has arisen for European companies to take concrete steps to ensure a future neutral climate. Companies within the construction sector in Romania have made significant investments in this sense, but the financial results will certainly be achieved over a longer time horizon.

The present research confirms the results of previous studies in the field, namely the existence of a nexus between social, environmental and governance factors and firm financial performance. Whether examining the connection between ROE and environmental, social and governance factors individually or collectively, results have shown that in case of Romanian SMEs, there is a positive correlation. Consequently, improved profitability may be achieved by allocating resources for ESG practices.

A future research direction could involve expanding the analysis to other regions of Romania or even at national level. In this way, the obtained results could provide a comprehensive picture of the Romanian construction industry and would allow formulating conclusions regarding the possibilities to improve financial performance of this sector.

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Econometric Insights into Non-Governmental Credit Fluctuations: A Case Study of Romania

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Abstract

In this scientific paper, we will conduct a multiple regression analysis using the non-governmental credit (NGC) as the dependent variable and the inflation rate, unemployment rate and the M2 – money supply as independent variables, over a ten-year period, specifically the period of 2013-2022. The study was conducted analyzing the macroeconomic data of Romania and the purpose of this paper is to perform multiple regression analysis method to determine how turbulences such as the pandemic crisis, the Russian-Ukrainian war, and the energy crisis, have impacted the non-governmental lending activity and to find whether there is a significant association as determining factors (a correlation) between the mentioned variables.

Key words: multiple regression analysis, non-governmental credit, macroeconomic indicators, Central and Eastern Europe, global economic turbulences

J.E.L. classification: C51, E44, F34, G01, P34

1. Introduction

The last few years, from 2020 to 2022, there has been a period of important changes and challenges all around the world. We've seen the COVID-19 pandemic change the way we live and work, which has had a significant impact on economies worldwide, the onset of the COVID-19 pandemic triggered unprecedented economic disruptions, leading to shifts in investment patterns and credit dynamics. During this time, there was also the conflict between Russia and Ukraine, adding geopolitical tensions to an already strained global economy. On top of these, as an effect of the Russian-Ukrainian conflict, an energy crisis has made things even more complicated for countries and their economies, especially for European Union zone.

Non-governmental credit refers to loans and other forms of credit offered by private financial institutions, as opposed to those issued or backed by governments and plays a significant role in the financial system, fueling business investments, consumer spending, and overall economic growth. The dynamics of non-governmental credit are affected by various factors, including economic policies, market conditions, and broader geopolitical events.

Financial institutions had to deal with a series of challenges during the period analyzed, in the context of the pandemic, that came with its economic lockdowns and shifts in consumer behavior, has led to changes in both the demand for and the supply of credit. Financial institutions have had to navigate a landscape marked by increased risk, economic uncertainty, and changing government policies.

In the context of the Russian-Ukrainian conflict and the energy crisis, lending activities have further been influenced. These events have led to heightened economic volatility, affecting currency values, investment flows and the financial stability of regions, particularly in Romania.

Our study focuses on Romania, which is particularly sensitive to these global shifts due to its post-socialist economic influences and geopolitical position. We will use a statistical method called multiple regression analysis with the purpose of identifying the interplay between these major global events and the evolution of non-governmental credit in this region.

The paper is structured as follows: section 2 reviews the relevant literature, highlighting previous studies from the field, the role of sectoral credit allocation in macroeconomic fluctuations, and the impact of macroeconomic factors on credit risk. Section 3 describes the research methodology, including the aim of the research, the design of the study, and the statistical tools employed. In section 4 we present the findings from the regression analysis, offering insights into the relationships between the dependent and independent variables. In section 5 we discuss these findings drawing the conclusions about the influence of independent variables on the dependent variable, while also acknowledging the limitations of the study. In the last section can be find the list of the references that were used in the elaboration of this research paper.

2. Literature review

Mihaylova-Borisova (2022) had studied the evolution of bank credits in Central and Eastern European countries, including Romania, highlighting how different crises have influenced credit dynamics. Her study is particularly relevant for understanding the Romanian banking sector's response to economic disruptions, such as the financial crisis, European debt crisis, and the COVID-19 pandemic. She notes that despite significant challenges, including a sharp decline in lending rates and an increase in non-performing loans, there has been a recovery in credit growth post-pandemic, indicating resilience in the face of adversity.

The study by Müller and Verner (2020) investigates the relationship between sectoral allocation of credit, macroeconomic fluctuations, and financial crises. Their research, based on a novel database covering 117 countries since 1940, demonstrates how credit booms disproportionately favor the non-tradable sector, such as construction and real estate, over the tradable sector. This allocation of credit, especially when skewed towards non-tradable sectors, systematically predicts subsequent growth slowdowns and financial crises. In contrast, credit expansions in the tradable sector are linked with sustained output and productivity growth without increasing the risk of financial crises.

In the context of understanding the impact of macroeconomic factors on credit risk in the banking sector, the study by Naili and Lahrichi (2022) offers critical insights. The research elucidates the roles of inflation and unemployment in credit dynamics. It highlights that high inflation can potentially exacerbate bank credit risk by eroding borrowers' real income, thereby impairing their debt repayment capacity. This effect is particularly evident in loans with variable interest rates and in economies where wages do not promptly adjust to inflationary trends, the unemployment rate on the other hand is directly correlated with deteriorating loan quality, as individuals with lower incomes, who are more susceptible to unemployment, face heightened difficulties in repaying loans.

A key finding of a study conducted by Horebet et al. (2021) is the significant impact of the unemployment rate on banking profitability. The research shows that changes in the unemployment rate are closely tied to the performance of the banking sector. Higher unemployment rates are associated with increased non-performing loans and a reduction in the demand for new credits, particularly in the non-governmental sector. This relationship indicates that as unemployment rises, banks face heightened risks and lower profitability due to a decrease in credit demand and an increase in loan defaults. The study also notes that the effect of unemployment on new credit demand is more immediate than its impact on non-performing loans, underlining the direct and immediate influence of unemployment rates on banking sector stability and profitability.

Yurdakul (2014) has made an analysis over the impact of changes in the M2 money supply on banks' credit risk. The research indicates that an increase in the M2 money supply is associated with a rise in banks' credit risks. This suggests that fluctuations in the money supply can have a significant impact on the stability and performance of banks, influencing the level of credit risk they face.

For the M2 money supply and our selection as a variable in our study, is further supported by insights from the research conducted by Crayne, Williams and Neupane (2021). The authors are presenting an analysis of how the M2 money supply has expanded significantly over time, as seen in the United States from 1969 to 2020, where the volume in M2 had a continuous increase, without any decrease from one fiscal year to the next and signifies the growing availability of liquid assets in the economy, which can directly influence lending and borrowing activities in the financial sector. The study also indicates a strong positive correlation between the M2 money supply and other significant economic indicators, such as the Dow Jones Index and National Debt. Based on that we

have taken into account that changes in the M2 money supply can closely be linked to broader economic trends and market dynamics, and can also be linked to non-governmental credit, and therefore a correlation can appear between these two variables.

3. Research methodology

3.1. Research aim

The aim of this research is to study and understand the complex interplay between the selected macroeconomic variables and the dynamics of non-governmental credit (NGC) in Romania over a decade that experienced both global and regional upheavals. This decade, from 2013 to 2022, was characterized by a series of significant events, each with the potential to significantly reshape economic behaviors and financial patterns.

Non-governmental credit refers to the loans extended by private financial institutions, as opposed to loans issued or backed by government entities. NGC by definition is a vital component in the financial system, having a vital role in funding business investments, consumer spending, and overall economic growth.

In setting the scope of our research, we have chosen to focus on the inflation rate, unemployment rate, and M2 money supply. We picked the inflation rate because it's like the thermometer of the economy. When prices rise it affects how much people and businesses can spend and save. For banks, it means the money they lend out might not have the same value when it's paid back, so we're looking into how this rise and fall in prices influences the lending behavior of private banks. The unemployment rate is a straightforward yet powerful indicator. When a large percentage of people are out of work, it generally means there's less money going around for spending and paying back loans and therefore this could make banks to be more reticent about who they lend to and how much. For the last variable - M2 money supply - the inclusion is based on its representation of the liquidity available in the economy. It encompasses cash, checking deposits, and near-cash assets and the fluctuations in this monetary aggregate can signal changes in economic policy and overall economic health, which in turn can influence lending activities.

To determine the correlation between NGC and inflation rate, unemployment rate, and M2 money supply the following hypotheses were formulated:

H₁: *There is a significant negative relationship between the inflation rate and non-governmental credit in Romania.*

H₂: *The unemployment rate is negatively correlated with non-governmental credit.*

H₃: *Changes in the M2 money supply have a significant impact on the volume of non-governmental credit.*

3.2. Research design

For our study statistical data were collected for each variable on a period of 10 years, respectively 2013-2022. We have chosen a ten-year interval because it provides a substantial number of data points, enhancing the robustness of our statistical analysis by mitigating the effects of short-term volatility and seasonal fluctuations while offering a solid foundation for the application of multiple regression techniques. Also, this period is particularly significant because the interval under review includes the years before and after the COVID-19 pandemic, in the aftermath of the pandemic we have seen a series of crises the Russian-Ukrainian conflict and as a consequence of war, the energy crisis.

Statistical databases were identified in the National Bank of Romania (2023), INSSE (2023a, 2023b), EUROSTAT (2023).

We employed the Least Squares method, specifically Non-Linear Least Squares (NLS) and Autoregressive Moving Average (ARMA) models, to conduct a multiple linear regression analysis. This approach was chosen for its efficacy in estimating the parameters of a linear regression model in a way that minimizes the sum of the squares of the differences between the observed dependent variable and those predicted by the model. The dependent variable in our study was non-governmental credit (NGC), a key indicator of financial health and lending activities. As for the

independent variables, we selected a range of independent variables, which will be detailed in the following table:

Table no. 1 Selected variables

Acronym	Indicator	Unit
M2	M2 – intermediate money supply	Lei million
INF_rate	Inflation rate	Annual inflation rate (%)
UNEM_rate	Unemployment rate	Annual % of population in the labour force

Source: Author's contribution

For the implementation of our regression analysis, we utilized EViews, a sophisticated statistical software package renowned for its powerful econometric and time-series analysis capabilities. EViews provides an intuitive and user-friendly interface, which allowed us to efficiently manage our data, perform complex statistical analyses, and visualize the results effectively. The choice of EViews was driven by its strong reputation in the field of econometrics for delivering accurate results, which was essential for the rigorous examination of the relationship between non-governmental credit and the selected macroeconomic variables.

4. Findings

The adjusted R-squared value of 0.995006 in our regression model is particularly telling, underscoring the strength and quality of the model in explaining the variance in non-governmental credit (NGC) through the selected macroeconomic variables. This value indicates that nearly 99.5% of the variability in NGC is accounted for. The Akaike and Schwarz criteria, with their respective values are suggesting a robust fit and are at the level that allows this model to be considered high quality one.

Table no. 2 Least Squares Panel

Variable	Coefficient	Std. Error	t-Statistic	Prob.
INF_RATE	3286.832	424.9586	7.734475	0.0002
UNEM_RATE	4204.968	1284.206	3.274371	0.0169
M2	0.354351	0.019864	17.83923	0.0000
C	80927.28	14543.55	5.564478	0.0014
R-squared	0.996671	Mean dependent var		258864.8
Adjusted R-squared	0.995006	S.D. dependent var		51377.09
S.E. of regression	3630.777	Akaike info criterion		19.52146
Sum squared resid	79095240	Schwarz criterion		19.64249
Log likelihood	-93.60728	Hannan-Quinn criter.		19.38868
F-statistic	598.7049	Durbin-Watson stat		3.199222
Prob(F-statistic)	0.000000			

Source: Author's contribution

All variables show statistical significance with p-values below the conventional threshold of 0.05, indicating a less than 5% probability that these relationships are due to chance. The F-statistic is significant, with a p-value close to 0, indicating that the overall regression equation is statistically significant, and the relationship is not due to random chance and standard errors of the coefficients are relatively small compared to the coefficients themselves, indicating precise estimates of the coefficients. The equation form resulted for the model attached is:

$$NGC = 3245.36 * INF_RATE + 4550.59 * UNEM_RATE + 0.34 * M2 + 90952.20$$

The inflation rate (INF_RATE) has a coefficient of 3245.36, suggesting that a one percentage point increase in inflation is associated with an increase of approximately 3245 units in NGC. Unemployment rate (UNEM_RATE) comes with a coefficient of 4550.59, indicating that a one percentage point increase in unemployment is associated with an approximate 4550 unit increase in NGC.

For the M2 money supply we got a coefficient of 0.34, indicating that for each one unit increase in M2, NGC is expected to increase by roughly 0.34 units.

Table no. 3 Correlation table

	NGC	INF_RATE	UNEM_RATE	M2
NGC	1.000000	0.848899	-0.351287	0.973904
INF_RATE	0.848899	1.000000	-0.202141	0.726686
UNEM_RATE	-0.351287	-0.202141	1.000000	-0.478114
M2	0.973904	0.726686	-0.478114	1.000000

Source: Author's contribution

The correlation table reveals a strong positive correlation between non-governmental credit (NGC) and M2 money supply, indicated by a coefficient of 0.97. This suggests that as the amount of money in the economy increases, so does the lending to non-governmental entities. Such a high correlation could imply that the variations in the money supply directly influence lending activities due to increased liquidity and available capital for loans. The inflation rate also shows a strong positive correlation with NGC, with a coefficient of 0.85. This implies that higher inflation is associated with increased non-governmental credit. A possible explanation for this is that with rising prices, there is a higher demand for credit as consumers and businesses seek funds to sustain purchasing power and investment activities. For the unemployment rate we obtained a negative correlation with NGC, at -0.35. This negative value aligns with the expectation that higher unemployment, which often reflects an economic slowdown, is associated with decreased lending due to lower consumer spending and business investment.

The correlation table and the coefficients from the regression output can be used to evaluate the truth of the stated hypotheses:

H1: *There is a significant negative relationship between the inflation rate and non-governmental credit in Romania:*

False - the correlation coefficient between the inflation rate (INF_RATE) and non-governmental credit (NGC) is positive (0.85), indicating a significant positive relationship, not a negative one.

H2: *The unemployment rate is negatively correlated with non-governmental credit:*

True - the correlation coefficient between the unemployment rate (UNEM_RATE) and NGC is -0.35, indicating a negative relationship. This supports the hypothesis that as unemployment rises, NGC tends to decrease.

H3: *Changes in the M2 money supply have a significant impact on the volume of non-governmental credit:*

True - the strong positive correlation coefficient of 0.97 between M2 and NGC suggests that changes in the M2 money supply are indeed significantly related to the volume of non-governmental credit. This relationship is further substantiated by the regression coefficient for M2 in the regression equation, which is positive and statistically significant.

5. Conclusions

The empirical analysis conducted reveals a counterintuitive yet significant positive correlation between the inflation rate and non-governmental credit in Romania. This suggests that contrary to the initial hypothesis (H1), inflation did not impede credit growth within the studied period of time. Indeed, this positive correlation could be that during times of inflation, there might be an increased demand for credit as consumers and businesses seek additional funds to keep up with the rising costs of goods and services, which in turn may lead to a growth in credit volumes. Moreover, the National Bank of Romania's decision to increase the monetary policy interest rate in response to high inflation typically aims to temper inflationary pressures by making borrowing more expensive, however in the context of our findings, it appears that such measures did not stifle credit growth this could happen because of the lag effect of monetary policy, where the impact on credit growth is not immediate, or the presence of strong demand-pull factors that sustain the growth of credit despite rising interest rates.

The substantial correlation between NGC and the M2 money supply, indicated by a coefficient of 0.97, initially suggests a strong linear relationship where movements in M2 closely follow the fluctuations in NGC. Such a correlation might typically raise concerns about multicollinearity, potentially inflating the variance of the estimated regression coefficients and leading to less reliable statistical inferences. However, the Variance Inflation Factor (VIF) for these variables, particularly the centered VIF values, remains below the threshold of 5, which is commonly regarded as the upper limit for moderate multicollinearity. Therefore, the high degree of correlation between NGC and M2, accompanied by moderate centered VIF values does not present a substantial concern regarding multicollinearity within our regression model, also it's important to note that the presence of multicollinearity does not bias the regression estimates but rather affects the precision of the estimation of the individual regression coefficients.

It is also important to acknowledge certain limitations of our study and one such limitation is the potential for omitted variable bias. There may be other factors not included in the model that could influence non-governmental credit, such as fiscal policy changes, international capital flows, or GDP related indicators, the absence of these variables could lead to an overestimation or underestimation of the effects of the included predictors. The interval of the data is restricted to a ten-year period and to Romania, which may limit the generalizability of the findings to other time frames or economic contexts.

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Assessing Economic Inequality Through the Lorenz Curve in Central and Eastern European Countries

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Abstract

This study analyses economic inequality in Central and Eastern Europe (CEE) using tools such as the Lorenz Curve and the Gini coefficient. Originating in 1905, the Lorenz Curve, conceptualized by Max O. Lorenz, serves as an essential tool in illustrating income distribution, complemented by the Gini coefficient for assessing numerical inequality. Examining a decade of data from eleven CEE countries through Eurostat, the study constructs Lorenz curves, providing a visual and quantitative description of variations in income distribution. Percentile analysis reveals nuanced disparities, providing insight into the evolution of inequality. Methodologically, the study addresses the challenges, recognizing the advantages of the Lorenz curve in detailed information on income distribution, but also its disadvantages in data sensitivity. The findings show that the Lorenz curve and the Gini coefficient work synergistically, providing a comprehensive overview of economic inequality in CEE.

Key words: economic inequality, Lorenz Curve, Gini Coefficient, inequality analysis, income distribution

J.E.L. classification: D31, D63, F00, H00.

1. Introduction

Economic inequality in Central and Eastern Europe (CEE) has become a central topic in contemporary economic discussions. In the context of this study, we aim to analyze in detail the income distribution in this region, using tools such as the Lorenz Curve and the Gini coefficient. These will not only give us a visual perspective on how economic resources are distributed, but also a numerical measure of the degree of inequality.

Originally developed by the American economist Max O. Lorenz in 1905, the Lorenz Curve has become an essential tool in illustrating income distribution and has become a focal point in assessing economic inequality. In combination with the Gini coefficient, it provides a comprehensive view of how a society distributes its resources.

This study aims to make a significant contribution to the specific understanding of economic inequality in the E.E.C. The article examines ten years of data from eleven countries in the region, using information accurately extracted from Eurostat, the European Union's main provider of statistics.

The paper used the data to construct Lorenz Curves, highlighting variations in income distribution within each country and across decades. Through our detailed analysis, the aim is to highlight significant differences in income distribution and provide insight into the evolution of inequality in CEE. This approach not only complements the existing literature on inequality, but also brings to the fore region-specific issues that may influence future economic and social policies.

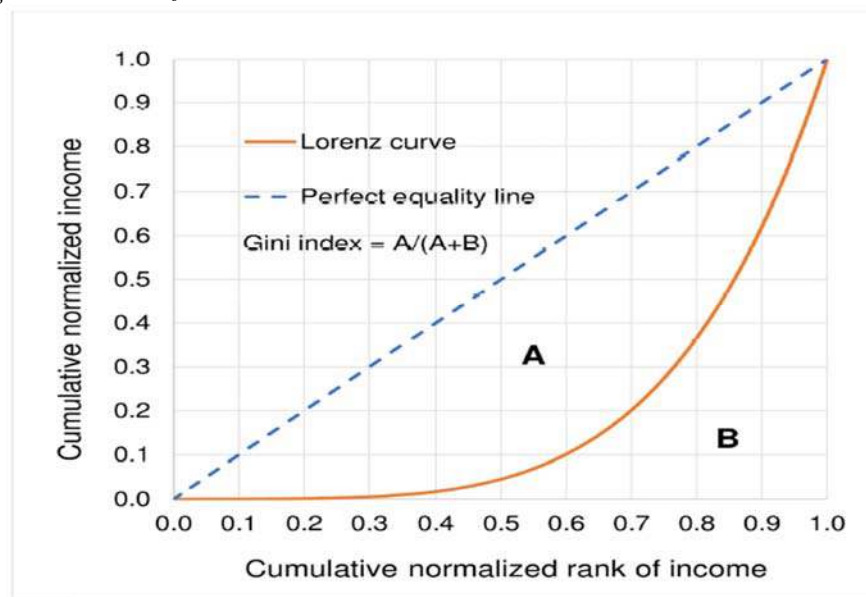
2. Literature review

Originally developed by the American economist Max O. Lorenz in 1905, the Lorenz curve is a fundamental method for quantifying the concentration of wealth in a population. According to research by Sitthiyot and Holasut (2023), it is a graphical relationship between the cumulative normalized rank of the population, starting from the poorest to the richest, and the cumulative normalized wealth held by that population in the same sequence.

With a history of more than a century of use, the Lorenz curve has become a widely used tool for highlighting the distribution of income and assessing inequality within that distribution (Sitthiyot and Holasut, 2021). Its significant contribution in measuring and comparing income inequality is also highlighted by Paul and Shankar (2020). In addition, the Lorenz curve serves as the foundation for calculating the Gini index, according to Gini (2005), a common measure of inequality expressed as the ratio of the area between the line of perfect equality and the Lorenz curve (A) to the total area below the line of perfect equality (A + B).

The Gini index, with values between 0 and 1, reflects the degree of inequality in income distribution: the closer it is to 0, the more equal the distribution, while the closer it is to 1, the more unequal it is. It is important to note that, according to research by Sitthiyot and Holasut (2021), the Lorenz curve can be estimated using various methods, including interpolation techniques, assuming specific functional forms for the income distribution, and specifying parametric functional forms for the Lorenz curve.

Figure no. 1. Lorenz Curve



Source: (Sitthiyot T, Holasut K. 2023)

3. Research methodology

The data for this study were obtained from Eurostat, the official statistical body of the European Union, known for providing standardized and verified data on economic and social issues in EU member countries. Data for each country and year were entered and managed in a time series analysis. A variable of interest, such as the Gini coefficient, was selected to measure inequality in income distribution in Central and Eastern European (CEE) countries.

Data were collected for the variable of interest for each country in the region over a 10-year period. For each year, countries were ranked according to the variable of interest. Cumulative percentages of the variable were calculated for each country, reflecting the total proportion held by different percentages of the population. The cumulative percentages were used to construct the Lorenz Curve for each country and year.

This involved drawing a line on a graph with the axes representing the percentage of the population and the cumulative proportion of the variable.

Lorenz Curves of different countries were compared to show differences in income distribution. Detailed interpretations were provided, including the identification of the countries with the highest and lowest inequality. The link between the Lorenz Curve and the Gini coefficient was highlighted, showing how these two concepts work together to provide a comprehensive picture of economic inequality.

In order to obtain detailed information on inequality at different levels of the distribution, the corresponding 50th and 90th percentiles for each country were analyzed and highlighted.

The methodology included a detailed discussion of the advantages and disadvantages of using the Lorenz Curve in inequality analysis, highlighting the sensitivity to data quality and the challenges of curve construction.

The study concluded on the degree of inequality in income distribution in CEE countries, highlighting the importance of the Lorenz Curve and the Gini coefficient in the analysis of economic inequality. This methodology provided a detailed analysis of income distribution and highlighted variations in inequality between the countries analyzed.

4. Findings

The Lorenz curve is a concept used in the analysis of economic distribution and income inequality. It is used to visualize and quantify the degree of inequality in the distribution of income or other economic variables among members of a population.

Concentration analysis is based on the Lorenz curve which is usually constructed for distributions built on grouping intervals and involves the following steps:

- the individual values of the variable under study are ordered in ascending order;
- calculate the total proportion of income (or of the variable in question) held by each percentage of the population (e.g. the first 20%, the next 20% and so on);
- construct the Lorenz curve by plotting these proportions, where on the horizontal axis are the percentages of the population and on the vertical axis is the proportion of income held by these percentages of the population.

In a perfectly equal distribution, where each individual has the same proportion of income, the Lorenz curve would coincide with the 45 degree diagonal of the graph. The further the curve moves away from this diagonal, the greater the inequality in income distribution. In other words, when the Lorenz curve gets closer to the upper left corner of the graph, it means that a smaller proportion of the population has a higher proportion of the income, indicating greater inequality.

The Lorenz curve is often used in combination with the Gini coefficient, which is a numerical indicator of inequality, to quantify and compare economic inequality between different countries or regions.

Table no. 1 Table of percentage distribution of population in central and Eastern European Countries

Cum. Pop.(%)	Bulgaria	Czechia	Croatia	Estonia	Latvia	Lithuania	Poland	Romania	Slovakia	Slovenia	Hungary
0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
10%	1.87%	4.07%	2.96%	3.00%	2.48%	2.34%	2.15%	1.64%	3.54%	4%	4%
20%	5.68%	10.01%	8.02%	8.08%	7.00%	6.70%	7.06%	5.49%	9.55%	10%	9%
30%	10.71%	16.84%	14.30%	14.12%	12.61%	12.25%	13.21%	10.82%	16.74%	17%	16%
40%	16.70%	24.40%	21.65%	20.91%	19.15%	18.73%	20.48%	17.53%	24.91%	24%	23%
50%	23.75%	32.83%	30.16%	28.74%	26.74%	26.21%	28.80%	25.68%	34.02%	33%	32%
60%	31.92%	42.07%	39.75%	37.79%	35.54%	34.98%	38.15%	35.30%	43.99%	42%	41%
70%	41.52%	52.33%	50.57%	48.38%	45.71%	45.24%	48.69%	46.38%	54.94%	53%	52%
80%	53.33%	64.09%	63.01%	61.02%	57.90%	57.39%	60.78%	59.49%	67.07%	65%	64%
90%	68.58%	78.40%	77.75%	76.66%	73.26%	72.78%	75.37%	75.35%	81.17%	79%	78%
100%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100%	100%

Source: Authors's contribution

The data in Table no. 1 represent the cumulative population percentage distribution for each country in the group analyzed. Each column represents a specific country and each row indicates the percentage range of the cumulated population. Below are some comments on the data analyzed:

- the first column, "Cumulative Population %", shows the proportion of the cumulative population in each range. For example, at 10%, the cumulative population is 1.87% for Bulgaria, 4.07% for the Czech Republic, and so on;
- the values in the table show the cumulative population percentage for each interval. For example, at 20%, the cumulative population is 5.68% for Bulgaria, 10.01% for the Czech Republic, and so on;
- the table provides an insight into the distribution of the population by percentage range. It can be used to assess the relative distribution of the population within the group of countries;
- this data can be useful to compare the relative proportion of the population in different categories and to understand how the population is distributed in the group of countries.

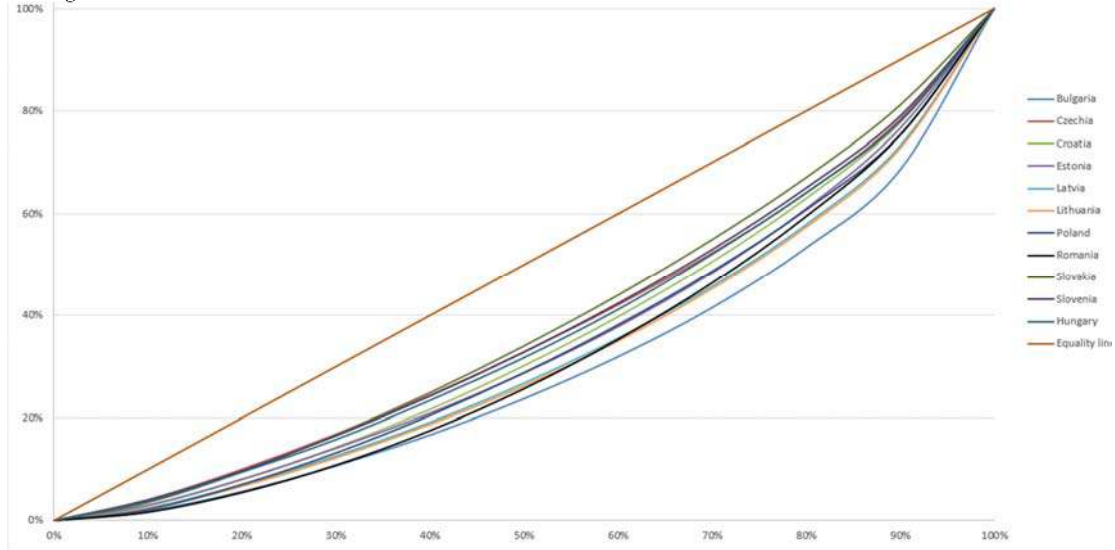
In Table no. 1 is shown the cumulative population percentages and associated values for each country and percentage range. The percentages and values in the table were appropriate for constructing the Lorenz curve. This data is to plot the curve and to analyze distribution and inequality within the population.

In our case, data was collected for 11 countries over a period of 10 years. To construct the Lorenz curve for this data, it was needed:

- rank countries by the variable of interest (such as Gini coefficient, tax burden or GDP) for each year;
- calculate the cumulative proportion of the variable of interest to the total for each country and year. This can be expressed as the total percentage of the variable up to a certain point;
- constructing a curve by connecting the points representing the cumulative proportion of the variable for each country and year in ascending order of the variable;
- drawing a diagonal line from the origin (0%, 0%) to the point on the Lorenz curve corresponding to 100%;
- comparing the Lorenz curve obtained with the diagonal line. The more the curve deviates from the diagonal line, the greater the inequality in the distribution of the variable.

This analysis can give us an insight into the relative distribution of the variable of interest within the 11 countries over the 10 years.

Figure no. 2. Lorenz Curve in



Source: Authors's contribution

In Figure no. 2 it can be seen that as the percentage of population increases, the variable of interest accumulates in a higher proportion for some countries. This may indicate greater inequality in the distribution of the variable of interest between the countries under analysis. The Lorenz curve provides a visual insight into the relative distribution of the variable of interest and can help in the analysis of inequality within the population. To determine which country is most affected in terms of inequality or distribution, we can follow the Lorenz curve. The further the curve is from the line of equality (the diagonal line from 0% to 100%), the greater the inequality. There are several ways to interpret this:

- the point on the Lorenz curve furthest from the equality line indicates the maximum degree of inequality in the population distribution. So the country with a higher percentage on this point will have higher inequality;
- the area between the Lorenz curve and the equality line is the measure of inequality in the population. The larger this area, the more pronounced the inequality. Thus, a comparison of the areas between the Lorenz curves of different countries and identify the country with the largest area, indicating greater inequality;
- comparing the slope of the Lorenz curves can also give clues about inequality. A steeper curve indicates greater inequality, while a smoother curve indicates a more equal distribution.

By analyzing these issues and comparing Lorenz curves for each country, an insight can be gained into the degree of inequality or distribution of resources and income in each country.

The advantage of the Lorenz curve would be that it provides detailed information on the distribution of income in a population and allows a more accurate view than some summary statistics. By showing the distribution at each percentile, the Lorenz curve provides a clear picture of how incomes differ from the equality line. The data needed to construct the Lorenz curve are also essential for calculating the Gini coefficient, which is an important measure of inequality.

When sufficient data are available, the Lorenz curve can be generated for different geographical regions, providing tax policy makers with a more detailed insight into the optimal use of tax brackets and systems.

The disadvantage is the construction of the curve. Specifically, it involves fitting a continuous function to an incomplete data set, which does not ensure that the values on the Lorenz curve reflect the true income distribution. This is due to the difficulty or cost of collecting all the necessary data. Most of the points on the Lorenz curve are extrapolations based on the shape of the curve that best fits the observed data. As a result, the shape of the Lorenz curve can be sensitive to the quality and size of the data sample as well as mathematical assumptions, which can lead to errors between the Lorenz curve and the true distribution.

The Lorenz curve describes the income distribution for the year 2021. The dataset is also compared to a straight diagonal line representing perfect equality (assuming a perfect society, the bottom half of the population would receive 50% of the total).

For the countries analyzed, at the 50th percentile of income, the corresponding Lorenz curve values are shown in Table no. 2 (The corresponding percentage means that the top half of the population receives that percentage of the national total income).

Table no. 2 Percentile distribution at 50% in Central and Eastern European Countries

Prcnt.	Bulgaria	Czechia	Croatia	Estonia	Latvia	Lithuania	Poland	Romania	Slovakia	Slovenia	Hungary
50%	23.75%	32.83%	30.16%	28.74%	26.74%	26.21%	28.80%	25.68%	34.02%	32.83%	31.74%

Source: Authors's contribution

It can be seen that most countries are below the 30% threshold (Bulgaria, Estonia, Latvia, Lithuania, Poland, Romania), however there are also a few countries that are above this level (Czech Republic, Croatia, Slovakia, Slovenia and Hungary). In terms of inequality at the 50th percentile level, Bulgaria (23.75%) and Romania (25.68%) stand out as having the highest inequality, while Slovakia (34.02%) has the lowest level of inequality.

If inequality is examined from the perspective of the 90th percentile, the corresponding Lorenz curve values are as follows:

Table no. 3 Percentile distribution at 90% in Central and Eastern European Countries

Prcnt.	Bulgaria	Czechia	Croatia	Estonia	Latvia	Lithuania	Poland	Romania	Slovakia	Slovenia	Hungary
90%	68.58%	78.40%	77.75%	76.66%	73.26%	72.78%	75.37%	75.35%	81.17%	79.02%	77.98%

Source: Authors's contribution

In this situation, Bulgaria retains the position of the country with the highest inequality (68.58%), while Slovakia remains the country with the lowest level of inequality (81.17%). The Lorenz curve and the Gini coefficient are two closely related concepts in the analysis of economic inequality. Both are used to measure the unequal distribution of a variable, such as income, wealth or consumption, in a population.

The Lorenz curve is a graphical representation of the cumulative distribution of a variable as a percentage of the population. It compares the true distribution with a perfect equal distribution, represented by a diagonal line. The more the Lorenz curve deviates from the diagonal line, the greater the inequality.

The Gini coefficient is a numerical indicator used to measure the inequality of a variable. It is calculated from the Lorenz curve and gives a value between 0 and 1, where 0 indicates a perfectly equal distribution and 1 indicates a perfectly unequal distribution. The closer the Gini coefficient is to 1, the greater the inequality.

The Lorenz curve and the Gini coefficient are therefore complementary tools in the analysis of economic inequality and are often used together to get a more comprehensive picture of the distribution of variables in a population.

5. Conclusions

This study provided a detailed look at income distribution in Central and Eastern Europe, using the Lorenz Curve and the Gini coefficient as key analytical tools. A first conclusion would be the significant variations in income distribution. The Lorenz Curve analysis revealed significant differences in income distribution between CEE countries. From Bulgaria to Slovenia, each country showed distinct patterns of inequality, reflecting the economic diversity of the region.

The corresponding 50th and 90th percentile values provided deep insights into inequality in different strata of the population. From countries with high inequality to those with more equitable distributions, this detailed percentile analysis brought to light the variability in income distribution.

Analyzing data over a 10-year period, there can be observed significant changes in economic inequality in the CEE. Some countries have seen significant improvements, while others have experienced increases in inequality, highlighting the complex dynamics of economic and social factors in the region.

The Lorenz curve has been an essential tool in providing a detailed visual representation of income distribution. Approaching a perfect equal distribution, this curve revealed subtleties and trends that could not have been captured by summary measurements.

The calculation of the Gini coefficient provided a numerical measure of inequality, reinforcing the results obtained by the Lorenz Curve analysis. This dual approach allowed for a comprehensive and robust understanding of income distribution in CEE.

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Relevance Versus Irrelevance of Scientific Research Skills to the Practice of the Accounting Profession

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Abstract

Assessing the relevance of scientific accounting research to the practice of the profession is a topic less present in the literature, and the results of empirical research are often divided. In this context, the research aims to analyse the extent to which scientific accounting research is necessary and relevant for the practice of the profession. The views and opinions presented in this paper will represent the author's perceptions of students' and practitioners' attitudes towards indigenous accounting research, formed both from an academic perspective and from the perspective of the practicing accountant.

Key words: research skills, accounting, professional practice, (i)relevance

J.E.L. classification: M40, M41

1. Introduction

Scientific research is an important prerequisite for the development of any society and an essential element in the work of the national economy. Scientific research in the field of accounting is motivated by the search for solutions to changes in economic processes and the governance of entities, addressing new and better directions, technologies and standards capable of continuously improving best practices. Scientific research in accounting has grown significantly in recent decades, both nationally and internationally. In this respect, research directions are directed towards pressing situations for entities, regardless of their form of ownership or level of development, such as the organisation of accounting, accounting reasoning for non-routine economic events, legislative changes, perpetual reporting, etc.

In today's conditions, despite scientific and technological progress, which is a driving force in economic development, the efficient activity of entities cannot be carried out without accounting, which remains the most accurate form of accounting. As a result, the usefulness of accounting in economic life and the usefulness of scientific research skills in the practice of the accounting profession are determined by the continuing need of entities to know accurately and in a timely manner the size and structure of their assets, the results of their activities, and to publish concrete and relevant financial and accounting information to internal and external users. Research in the fields of accounting, auditing and economic analysis depends, in turn, on the dissemination of information through the publication of articles by researchers specializing in the field, which is why knowledge of research concerns in the aforementioned directions in the RM is useful (Lazari, & Bajan, 2018).

In the last two decades, efforts in higher education in the country have focused on the transition from knowledge-based to competence-based education, with the focus on competences being oriented towards quality education that values the student's personality. Efforts to increase the

relevance of scientific research in Moldovan universities began with the signing of the Bologna Treaty, the Republic of Moldova joined the EHEA development initiative and responded to the obligation assumed by the Ministers of Education in the Bergen (2005), London (2007) and Leveun (2009) declarations.

In the same vein, since 2005, the conceptual and methodological foundations of curricular policies at national level, as well as curricula based on competences and learning outcomes, have been developed. In this context, the National Framework of Qualifications in Higher Education (NQFHE) was developed and subsequently updated as a single instrument for establishing the structure of qualifications and ensuring the national recognition, compatibility and international comparability of qualifications acquired in the higher education system.

With regard to the field of accountancy, the NQFIS states that professional training (competence) is the ability to apply, transfer and combine knowledge, skills and abilities required by the accountant in a variety of work situations and environments (National Qualifications Framework Higher Education, 2013). We confirm and endorse that the work environment in which accountants work is constantly changing and this requires them to develop and maintain professional competence throughout their career. However, the employment and work of accountants in entities in various fields and industries requires anticipation and adaptation to concrete situations, largely dictated also by such phenomena as globalisation, technological advances, business complexity, social changes, increased regulation and accounting supervision, public expectations (National Qualifications Framework Higher Education, 2013), etc. Thus, to cope with changing work environments accountants need to possess critical thinking skills to solve problems, obtain information for reasoning, make decisions and formulate relevant conclusions, which ultimately boils down to research activities.

The topicality of the research topic stems from the accounting profession's requirement to respond to change by accepting challenges. The originality of the theme also derives from the imperative to develop scientific research knowledge and skills in the practice of the accountancy profession in relation to the realities of the 21st century: education, professional reasoning and digitisation.

The aim of the research is to analyse whether scientific research skills are necessary for accountancy professionals in their professional practice, in tandem with establishing the (i)relevance for accounting practice of the indigenous academic scientific research in the field of accounting.

In the context of the above, this paper expresses the authors' views on both the need for future professional accountants to possess research skills and their application in the accountant's daily work, taking into account the globalization and complexity of transactions, the impact of technologies, etc. At the same time, the paper emphasizes the need and importance of developing lifelong research skills, both at the stage of university studies and during professional work in the business environment.

2. Literature review

In order to achieve the purpose of the present research, an analysis of national and international studies and researches dealing with scientific research in the field of accounting was carried out. As a result, the authors focus on revealing the usefulness of research skills, or this skill is the best preparation for accounting students, the knowledge acquired during studies combined with research skills, thus increasing the satisfaction of the labor market.

In the same vein, the research shows that currently the assessment of the relevance of scientific research in the field of accountancy in relation to the practice of the profession is a less investigated topic in the local literature and the current situation requires directions for improvement. However, the local literature more often deals with topics related to the transformation of the accounting profession under the impact of globalization, digitalization, sustainability, etc. Economist Bîrcă A., deals with the evolution and transformation of the accounting profession under globalization, providing a historical perspective on the profession and exploring issues such as professionalism, standardization and technology in the field (Bîrcă, 2014). Likewise, local researchers Lazari L. and Grigori L. address the importance of the accounting profession in serving the public interest and highlight the importance of accountants' commitment to ethics, integrity and transparency in their work so that they can contribute to the development of a fairer and more prosperous society (Lazari, & Grigori, 2017). In the same vein, authors

Bădicu G. and Mihaila S. examine the impact of digitization on the accounting profession and emerging technologies such as artificial intelligence, blockchain and big data on it, at the same time, they focus on the professional training of accountants in the context of digitization, the changes needed to adapt and develop skills necessary to remain competitive in the labor market (Mihaila, & Bădicu, 2022).

At the international level, the works of authors Ionescu B. Ș., who address the role of scientific research in the development of society and the importance of reporting the results of scientific research from an active or passive perspective, the authors also examine topics such as ethics in scientific research and transparency in reporting results (Ionescu, 2015). Authors Boghian F. A. and Socoliuc M., explore the impact of the evolution of digital technology and the transformations it has brought to various fields, including accounting, stressing that the accounting profession must be able to adapt and integrate these technologies to remain relevant and competitive (Boghian, & Socoliuc, 2020). Researchers Stoica, O. C. and Ionescu-Feleagă L., explore how digital technology has changed the accounting and auditing profession, noting that it can improve the efficiency and accuracy of accounting and auditing activities, but can also bring challenges related to data security and compliance with regulations and professional standards (Stoica, & Ionescu-Feleagă, 2022). Similarly, Balteș N., explores how the accounting profession can contribute to the sustainable development of society through its activities such as financial reporting and auditing, noting that accounting professionals and auditors can provide relevant information on the financial performance and social impact of organizations, thus helping to improve their decision making and social responsibility (Balteș, 2014). Author Bunget O., in his paper, reviews accounting knowledge assessment practices in education and professional certification exams, emphasizing that knowledge assessment must be rigorous and objective to ensure that accounting professionals are well prepared to fulfill their roles and responsibilities (Bunget, 2014). In the same vein, researcher Tabără N., analyses society's perception of the accounting profession, being of the opinion that public perception of the accounting profession can be influenced by various factors, such as the reputation of educational and professional certification institutions, the level of training, identifying that the accounting profession has a positive image in society, but there are also aspects that need to be improved (Tabără, 2011).

3. Research methodology

The research methodology is concerned with the methodological tools characteristic of the social and economic sciences. In this endeavour, classical scientific research methods such as the quantitative and qualitative method have been used. The authors also applied other methods inherent to the economic sciences, which took the form of observation, analysis, synthesis and comparison. The techniques specific to the field of research included critical analysis of the literature (Google Scholar, WOS) and the normative framework specific to higher education, problematization and bibliometric analysis.

Thus, in order to identify relevant publications in relation to the researched topic, several platforms were used based on several criteria, such as the identification of the phrase "accounting research" in the topic of the publication (title, abstract, keywords), and the results obtained were interpreted using the bibliometric analysis tool Biblioshiny and VOSviewer.

So, studying the importance of scientific research in the field of accounting for the practice of the profession, using the Web of Science search engine the notions "accounting research" in correlation with notions, such as "professionals", "accountants", "job", "practice", "research-based learning in accounting", etc. and no results were obtained. This result motivated us to investigate the notion "accounting research" without correlation of another term to study the perspectives of researchers in this field. We obtained 331 articles published between 1957 and 2023, and studies were published in 92 sources, involving 577 authors (Figure 1). At the same time, it is worth mentioning that most papers were written by the collaboration of two authors, and the annual growth rate of published papers is 1.68%.

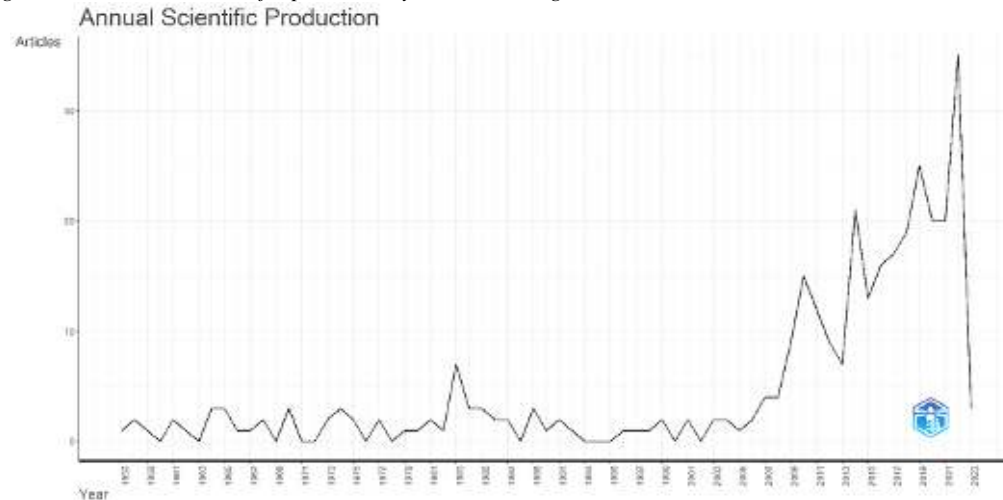
Figure no. 1. General information on research on accounting research



Source: Web of Science data processed through Biblioshiny

Performing a Web of Science database analysis using Biblioshiny of the same phrase "*accounting research*" (Figure 2), the most papers were published in the year 2022 (35 papers), 2019 (25 papers), 2014 (21 papers), 2020 (20 papers) and 2021 (20 papers). In the year 2023, 3 papers were published that address accounting research. This information can be useful to estimate trends in accounting research and to guide potential future research.

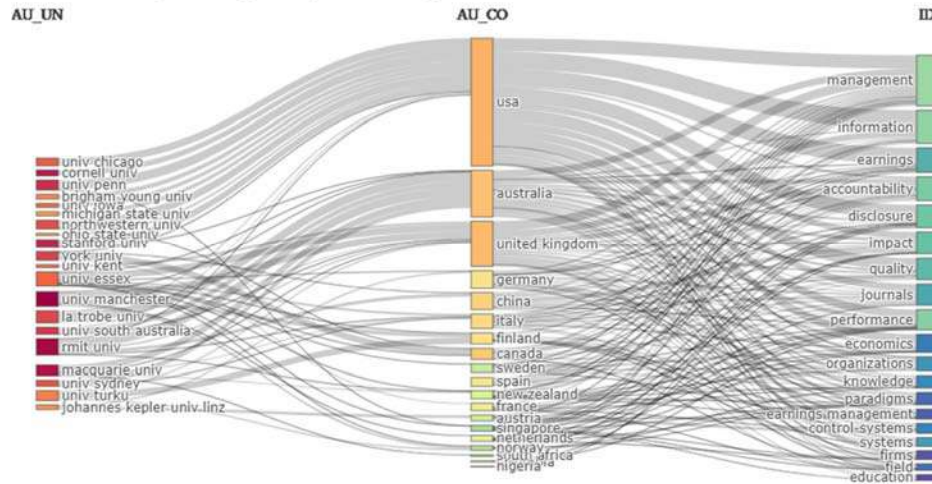
Figure no. 2. Annual scientific productivity on accounting research



Source: Web of Science data processed through Biblioshiny

In Figure 3, we aimed to present the intersection of university-country-keyword notions with a limit of 12 variables per category. The height of the rectangular nodes is proportional to the frequency of occurrence of a given country, institution or keyword in the correlation network. Thus, the width of the lines between nodes is proportional to the number of connections, where the USA has a contribution of 218 papers with relevant participation of 13 universities, using keywords such as "management", "information", "earnings" and "accountability", and Australia shows a contribution of 80 papers with strong participation of 8 universities and 18 main keywords. Like the US, Australia has an academic contribution to the evaluation of accounting research from the perspective of management, information, research impact and how research is presented. Thus, UK researchers published 78 studies involving 17 main keywords and 8 universities.

Figure no. 3. Three-field diagram of accounting research studies



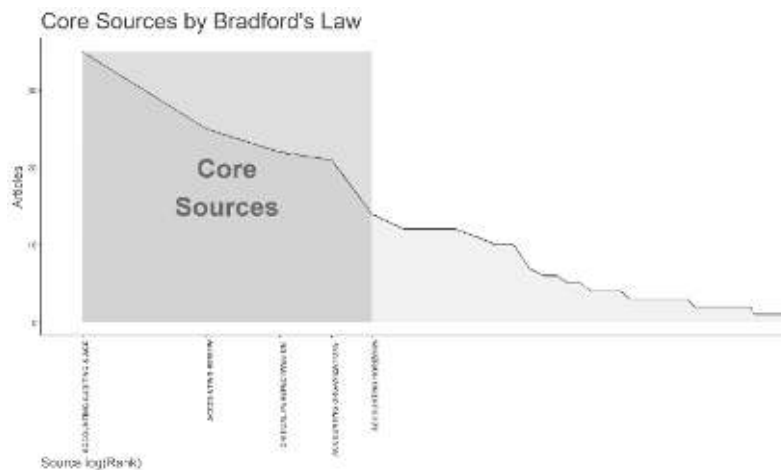
Source: Web of Science data processed through Biblioshiny

Following the analysis conducted, we can point out, that the American researcher Warfield argues that research should focus on the real problems of accounting practitioners and use sound research approaches to help identify solutions to practical problems (Warfield, 2018). In the same vein, Australian researchers Grantley Taylor and Sue Wright, explore the relationship between accounting research and accounting practice, concluding that accounting research and accounting practice should work together to achieve the common goals of improving accounting information and accounting development (Taylor, & Wright, 2003).

The primary sources where the most important "accounting research" papers have been published are (figure 4): Accounting Auditing & Accountability Journal, Accounting Review, Critical Perspectives on Accounting, Accounting Organizations and Society, and Accounting Horizons. The five accounting journals mentioned have different domains, users and areas of interest. Accounting Auditing & Accountability Journal and Critical Perspectives on Accounting focus on exploring the social and environmental implications of accounting, while Accounting Review, Accounting Organizations and Society and Accounting Horizons cover different subfields of accounting and their practical applications.

It is worth noting that Accounting Review and Accounting Organizations and Society have a higher impact factor than the other journals, indicating a greater influence in the field. These sources can be used primarily to conduct studies in the area of scientific research skills in accounting.

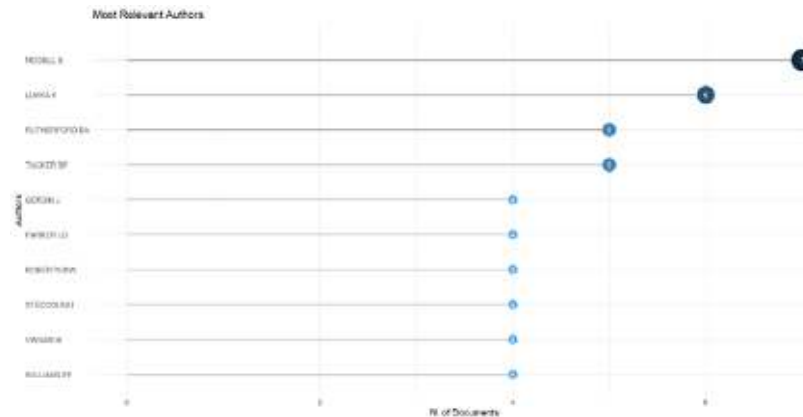
Figure no. 4. Core journals that have published papers on accounting research according to Bradford's



Source: Web of Science data processed through Biblioshiny

The most productive authors in accounting research (figure 5) are Sven Modell from the University of Manchester with 7 published papers, Karri L. from the University of Turku with 6 papers and Rutherford B. from the University of Alabama with 5 published studies. Modell S.'s studies focus on different aspects of accounting research such as research methodologies, construction of the ideal image of an accountant, public interest and dissemination of accounting knowledge (Modell, 2017). And researcher Karri L. focuses on methodological and theoretical aspects of accounting research and its impact on accounting practice and education (Lukka, 2010), and Rutherford B.'s work addresses various aspects of accounting research, including the role of accounting research in decision-making and public policy-making, accounting regulation, social and environmental accounting, and emerging trends in accounting research (Rutherford, 2003).

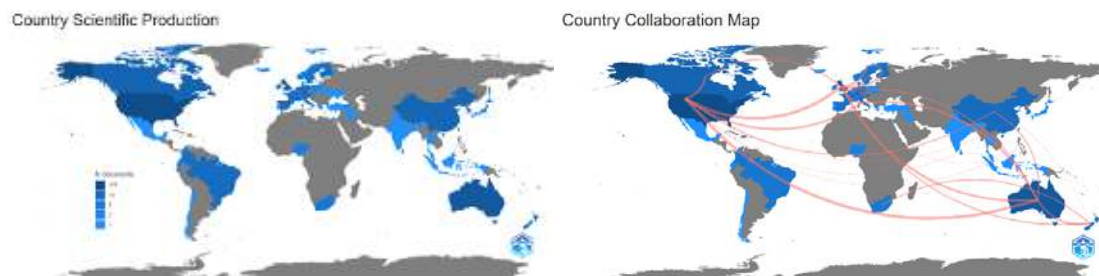
Figure no. 5. The most relevant authors by number of papers published with "accounting research" in the title



Source: Web of Science data processed through Biblioshiny

Figure 6 shows the countries with the highest productivity, where researchers in the USA have conducted 171 studies, the UK 89 and Australia 63. Most collaborations between authors were between: US-Australia, US-UK, UK-Italy, Australia-Italy and UK-Australia. It is important to consider that scientific output is not necessarily a perfect indicator of research quality or impact. Some countries may have a high scientific output due to the large number of researchers or resources available for research, but this does not guarantee that the research is of high quality or has a significant impact on the field.

Figure no. 6. Scientific productivity of countries and the network of collaborations between countries in the analysis of "accounting research".



Source: Web of Science data processed through Biblioshiny

In order to analyse the directions of development of accounting research, we have generated a thematic map through Biblioshiny. Analyzing this figure (Figure 7), it can be concluded that there are developing works addressing accounting research in relation to the keywords: knowledge, paradigms and methodologies (Huston, & Samuels, 2022). Also in development is work addressing *social media*, *futures* and *big data* (Moll, & Yigitbasioglu, 2019). The driving themes are

To summarize, the research of the stated problem has the task of providing information on the direction of research activity in the field of accounting in conditions of relevance or irrelevance, and the result of the research can be used to formulate conclusions on the current level of scientific research in the practice of the profession and future directions of increase. Thus, the objective of the research was to analyze and demonstrate, firstly, that accountants need research skills and, secondly, that accounting research is carried out not only by researchers, academics, but also by accountants, only that the final product of the research differs.

The research method used was the selection of the most relevant articles for the topic of the paper from different databases in which we identified issues related to scientific accounting research. At the same time we used the exploratory research method - focus group. The groups consisted of students from the second cycle of Master's studies, who are concurrently employed as accountants/managing accountants.

The authors formulate some research questions:

1. Why should students develop scientific research skills?
2. What would be the motivation of students for scientific research?
3. What would be the relevance of research skills for an accountant?

4. Results and discussions

1. Why should students develop scientific research skills?

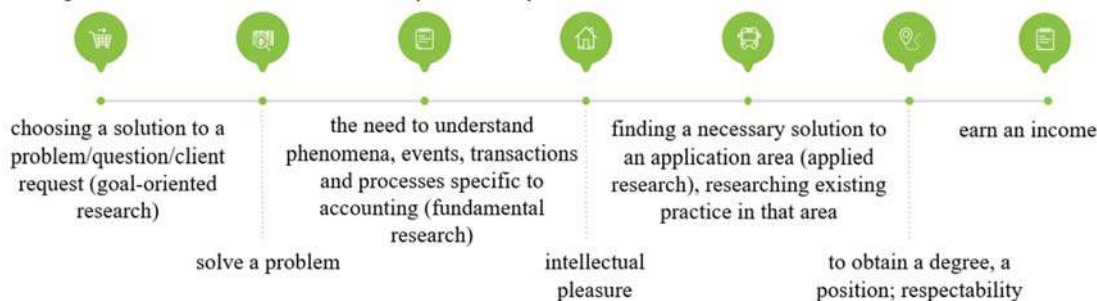
Based on the bibliometric analysis of the publications on the topic of this article, we can conclude that the Web of Science search engine of the terms "accounting research" in relation to terms such as "professionals", "accountants", "job", "practice", "research-based learning in accounting", etc. did not give us any results. Thus, we were motivated to investigate the notion "accounting research" without correlating it with another term. The analyses carried out show the need to align and focus international scientific research on the real problems of practitioners. However, in the Republic of Moldova we have a different situation, scientific research is mostly of an applied nature, and less fundamental, focused on the microeconomic level, and less macroeconomic. At the same time, some top research journals that address the topic under discussion are appreciated. Unfortunately, the Republic of Moldova does not have registered scientific journals specialized on accounting. Among the countries that most address the issue of accounting research are the USA, UK, Australia. At the national level the approaches to research skills in accounting are in a very small number.

The focus group discussions reveal that scientific research skills are largely needed by those doing research, who are teachers, researchers, interdisciplinary teams in academia and business. But at the same time they are aware that accountants/auditors in different industries also undertake and carry out research. However, accountants' research and research results are not perceived as a scientific product materialised in a scientific paper (scientific article, master thesis, PhD, etc.) and/or presented in a scientific conference. Rather, the results of an accountant's research are materialised in the solution of accounting, auditing and economic analysis problems within the entity by issuing an accounting treatment solution for complex transactions. The possession of research skills is also challenging due to the fact that the accounting profession is constantly confronted with the instability of the legislative and regulatory framework, the quality of professional standards in the field, is strongly influenced by information and communication technologies, the emergence of new software products, new reporting methods, etc. These challenges require the accountant to think critically, using the whole fund of knowledge and skills to understand relevant events and facts and to make a professional judgement. On the other hand, accountants need to present and defend their own views on critical issues to auditors/managers/auditors/experts in the field through formal or informal disclosures.

2. What would be the students' motivation for scientific research?

Students' motivation for scientific research, emerging from the focus group discussions, is shown in Figure 9.

Figure no. 9. Students' motivation for scientific research



Source: elaborated by authors

3. What would be the relevance of research skills for an accountant?

Given that accounting theory cannot fully explain and predict accounting practice and/or we often identify a clash between theoretical and practical methodology, accountants are daily put in the situation of analysing and solving concrete problem situations and/or investigating and analysing some problems in accounting, auditing, taxation, etc. However, identifying the problem they face, carrying out documentation by consulting literature, databases and regulatory frameworks, analysing information and developing the solution are phases of the scientific method in accounting. It may be that the accountant applies them in his daily work without realising that he is carrying out accounting research. In such cases, the accountant applies professional skills, including research skills, to develop and formulate a solution to the problem at hand. In fact, the accountant carries out an applied research, investigates a problem of practical, immediate, acute importance (Andone, Toma, Georgescu, Solomon, 2013), either for the purpose of its reliable recording in accounting or for its improvement. The practical problem becomes even more complicated in cases where there is no adequate scientific literature and/or regulatory authorities have not yet developed methodologies, such as for example transfer pricing, which has been included in the regulatory framework and will be applied in the Republic of Moldova, starting from 01 January 2024.

The relevance of research skills for the practice of the accounting profession also derives from the application of international financial reporting standards, which may have economic consequences depending on the industry in which they are applied, or on issues related to financial instruments, fair values, post-employment benefits, etc. The accountant must apply IFRS based on an understanding of their economic and social impact on society in general and on the entity in particular (Andone, Toma, Georgescu, Solomon, 2013).

Other critical situations for accountants are listening carefully and understanding the views of inspectors/ auditors/ managers/ subject matter experts. Often, accountants have to present and defend their own views to them through formal or informal disclosures.

The relevance of research skills to the practice of the accounting profession arises, as already described above, primarily from the accountant's daily confrontation with various problems, which in fact are largely caused by the lack of clarity and/or imperfection of the regulatory framework. On the other hand, it should also be emphasised that as entities adopt more inclusive, sustainable business practices that recognise the impact on the environment and society, how accountants engage and respond to these challenges will be critical to their success. Thus, those who are able to adapt to new economic contexts will succeed, and research skills will be of great help, to better fulfil their purpose, to be the sustainable professionals that business and society will demand them to be.

4. What would be the role of accounting research in and for entities?

As a rule, a prejudice persists in society that scientific research is carried out only by researchers in research institutions, by academics in universities, by students in their bachelor, master and/or doctoral theses. In fact, this is just a prejudice. Scientific accounting research is carried out both by researchers and by practising accountants, both in specialised institutions and in and for entities. However, the complexity of economic facts/transactions, the reproduction and implementation of new regulations/standards/rules, etc. requires the accountant to think critically and reason

professionally. Many accounting/auditing/consulting firms have been created as a result of research and development in the business environment (Andone, Toma, Georgescu, Solomon, 2013).

5. Conclusions

From a scientific point of view, we conclude that the Republic of Moldova has a small community of accounting researchers compared to other countries, with accounting research being carried out almost entirely in universities. The results of scientific activity in the form of books, treatises, studies, etc. are most often the product of personal initiatives, as there is a lack of institutionalised forms of accounting research. Although some works in the accounting literature can be considered as good documentary syntheses, by exploiting foreign and domestic bibliography, original approaches, with an innovative role in conceptual and methodological terms, are still insignificant. The scientific community in the field of accounting is not very present with scientific events at national level, nor does it have its own "forum", i.e. a journal that promotes authentic accounting research. In our opinion, the practitioners' view of accounting is predominantly technical, based on a scheme of accounting procedures laid down by legal rules, often very detailed (laws and government decisions, explained by instructions and methodological rules) and with a short duration of application (caused by very frequent legislative changes).

Regarding (i) the relevance of research skills in the practice of the accounting profession, we conclude that master students perceive and support the need for these skills in the practice of the accounting profession, as they also work concurrently in the role of chief accountant and/or accountant, and encounter daily situations in which they have to make professional judgements. However, their knowledge does not always allow them to make judgements promptly, they have to research and apply professional judgement in order to make the best and reasoned solution/conclusion/report/etc.

To develop accountants' research skills and remain lifelong 'learners/students', teachers should make maximum use of inquiry-based learning, which requires students to seek out and use educational resources to explore relevant and engaging questions and challenges. Students collect, process, systematize and evaluate information and ideas, develop hypotheses and formulate conclusions as they build their research, communication and critical thinking skills.

Future trends and concerns in accounting will be predominantly driven by expectations of information users, globalisation, technological advances, business complexity, societal changes, increased regulation and oversight, etc. In this context, the accountant equipped with research skills and competencies will be competent in anticipating and adapting to change.

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Insolvency of Companies in Romania

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Abstract

The purpose of the paper is to analyze the main aspects regarding the insolvency of companies in Romania. The main objectives considered were the theoretical presentation of the concept of insolvency, the principles of insolvency, legislative regulations, the report of the judicial liquidator. In the case study presented for the company X SRL, we presented some accounting records, the statement of payments and receipts, as well as information related to the liquidation balance sheet.

Key words: insolvency, debtors, liquidation balance sheet, payments, reorganization

J.E.L. classification: M41, Q40, Q56

1. Introduction

Insolvency is a state of a debtor's patrimony that is characterized by insufficient funds available to pay debts.

At the level of Romania, the National Office of the Trade Register publishes in electLeiiic format the Bulletin of Insolvency Procedures. It ensures the service of subpoenaing parties, communication, summons, notification of procedural documents issued by courts and judicial administrators/liquidators in the context of insolvency proceedings.

The insolvency proceedings bulletin contains all the procedural documents issued by the courts and the judicial administrators/liquidators in the course of the insolvency proceedings of legal entities, namely: summonses; communications; Notifications; summonses; court decisions; other procedural documents provided by law (reports issued by the administrator/judicial liquidator, judicial reorganization plans, announcements).

The publication of the Insolvency Procedures Bulletin brings clear benefits:

- accelerates the insolvency procedure and simplifies the communication of subpoenas, summonses, notices, court decisions and other procedural documents issued by courts and judicial administrators/liquidators, thus establishing an electLeiiic communication procedure.
- unifies and standardizes procedural documents issued by courts and judicial administrators/liquidators.
- contribute to the development of a national database of procedural documents issued by courts and judicial administrators/liquidators (namely subpoenas, communications, court orders, summonses, notices, reports, reorganization plans)
- facilitates quick registration in the trade register / other registers with regard to insolvency mentions which are provided by Law no. 85/2014 on insolvency prevention and insolvency procedures to be registered in the register.
- provides interested persons access to procedural documents issued by courts and judicial administrators/liquidators (<https://e-justice.europa.eu/>).

According to a study carried out by HotNews, the number of Romanian companies in financial difficulty increased by over 30,000 in the last 2 years, problems being in the field of trade, distribution and construction.

2. Theoretical background

The specialized literature in the field of insolvency has published numerous studies over time, some of which we will stop in the following.

Insolvency means the inability to pay one's debts or collect one's obligations (Rochon M., et.all, 2017. p.22).

According to a study by Bates and Pavel (2019), "insolvency risk is a vast field of study, investigated for over 50 years. The promoter of the studies is considered to be the researcher Edward I. Altman, who used statistical methods as a basis for investigating the risk of insolvency, his activity being developed and later used in other researches (Balteş N., et. al, 2019, p.58).

According to lawyer Sandu (2023), the state of difficulty is a state generated by any circumstance, which causes a temporary impairment of the activity that gives rise to a real and serious threat to the debtor's future ability to pay his debts when due, if no appropriate action is taken (Sandu F., 2023, p. 84).

Insolvency practitioners are, for example, obliged to communicate relevant information to the insolvency practitioners of other group members and to analyze whether there are possibilities to coordinate the insolvency proceedings of the group members (Pepels S., 2020, p. 97).

According to Barton and Taylor (2020), "insolvency can affect a trust structure in a number of ways, some more directly than others. Consider the case of a judgment creditor who may have spent two or three years in litigation against an apparently wealthy individual before obtaining a substantial money judgment. The debtor pleads personal poverty. Their apparent wealth is in fact that of a trust that they settled some years previously" (Barton Z., et al, 2020, p. 445).

A study by Pindado and Rodrigues (2004) deals with the problem of insolvency on a diagnostic basis. It has been shown that in small companies, the relevant information for the preventive diagnosis of insolvency can be synthesized in a model built with a smaller number of economic and financial reports(Pindado J., et. al, 2004, p. 51).

In the insolvency of a group of companies, it clearly makes more sense to find substantive group insolvency rules that are able to prevent the insolvency of all group members, rather than to optimize jurisdictional rules, leading to or at least not prevents insolvency of all group members (Siemon K, et. al, 2013, p. 61).

In all legal systems, the most traditional device for addressing the problem of insolvent debtors consists in collecting the debtor's assets, selling them on the given market and distributing the proceedings among the claimants in proportion to their credits (Martino P., et al, 2010, p. 139).

The legal basis in Romania regarding insolvency is Law no. 85/2014 on insolvency prevention and insolvency procedures, with subsequent amendments and additions. According to art. 2 of law no. 85/2014, the purpose of this law is to establish insolvency prevention procedures that debtors in difficulty can resort to and, respectively, collective insolvency procedures to cover the debtor's liabilities, in which the debtor benefits, when possible, of the chance to recover his activity.

Law 216 of July 14, 2022 amends and supplements Law 85/2014 on insolvency prevention and insolvency procedures and transposes the business prevention mechanisms introduced at European level by Directive no. 2019/1023. Through the amendments to the insolvency law, the business prevention mechanisms imposed by Directive no. 2019/1023 and certain concepts and methods of action that were up to this point left to the discretion of the parties or different interpretations by the courts are clarified.

The amendments brought to the Insolvency Law by this normative act aim at:

A. Introduction of the early warning procedure:

- professionals are alerted by the fiscal body regarding the non-execution of certain obligations and information is made available to them free of charge regarding the recovery solutions provided for by law through a website (Law no. 216//2022, art. 5¹).

- alert notifications are sent automatically through the electLeiiic communication system developed by the Ministry of Finance/National Fiscal Administration Agency in relation to non-execution of obligations to the state budget, to the state social insurance budget or to the unemployment insurance budget. The procedure for communicating alert notifications, including the amount of outstanding obligations that trigger the issuance of the alert message, by categories of debtors established according to fiscal legislation, the date of issuance of the first alert message and,

if applicable, the frequency of the alert message and its format, is approved under the provisions of Law no. 207/2015 regarding the Fiscal Procedure Code, with subsequent amendments and additions (Law no. 216//2022, art. 5²).

B. Another change concerns the insolvency prevention procedure:

If an insolvency prevention procedure resulted in a definitive discharge of obligations, the debtor cannot access another insolvency prevention procedure within a period of 12 months from the date of closure of that procedure.

The debtor cannot access an insolvency prevention procedure who, in the last 3 years prior to submitting the request for confirmation of the restructuring agreement or the request to open the composition procedure, has been definitively convicted for committing an intentional crime against patrimony, corruption, service, forgery, for the crimes provided by the Companies Law no. 31/1990, republished, with subsequent amendments and additions, Law no. 129/2019 for the prevention and combating of money laundering and the financing of terrorism, as well as for the amendment and completion of some normative acts, with subsequent amendments and additions, Law no. 227/2015 regarding the Fiscal Code, with subsequent amendments and additions, Law no. 241/2005 for preventing and combating tax evasion, with subsequent amendments and additions, Competition Law no. 21/1996, republished, with subsequent amendments and additions, as well as for the crimes provided for in art. 240 and 241 of Law no. 286/2009 regarding the Criminal Code, with subsequent amendments and additions.

The debtor retains his right of administration under the conditions of common law. The individual and collective rights of employees, including the rights to information and consultation, provided for by law or collective labor contracts, are not affected by the procedures provided for in this title. In case of subsequent insolvency of the debtor, the new financing provided in the restructuring agreement or in the restructuring plan, as well as the intermediate ones, cannot be canceled unless it is proven that they are fraudulent.

After the confirmation of the restructuring agreement and until the closure of the procedure, the debtor will not be able to access another insolvency prevention procedure.

After the confirmation of the restructuring agreement and until the closure of the procedure, the insolvency procedure against the debtor cannot be opened at the request of an affected creditor.

For a period of 3 years after confirmation, quarterly, the restructuring administrator will monitor the implementation of the agreement, even if the period provided for its execution is longer.

If the period of the agreement is less than 3 years, then the monitoring period is reduced to its period. If the confirmed agreement provides for debt reductions, any taxes owed by the debtor become due on the date of the pLeiouncement of a decision by the syndic judge confirming the fulfillment of the agreement.

The procedure of the restructuring agreement ends with the pLeiouncement of a decision to close the procedure by the syndic judge, in a closed file.

3. Research methodology

The scientific approach is based on information from the national and international literature, as well as from the practical documentation made through the presented case study. In the elaboration of the paper, we chose to combine quantitative and qualitative research in order to obtain the expected results. Following the research undertaken, the research tools belong to the two categories of methods, namely: literature review, comparison, descriptive analysis, case study method, data interpretation. In carrying out the case study, I presented the way of recording in accounting some operations regarding the sale of fixed assets during the period when the company X SRL is in insolvency proceedings, the presentation of a centralizing statement of the receipts and payments made by it, as well as a liquidation balance sheet. In another aspect presented is the one related to the judicial liquidator's report on the state of the company X SRL.

The main method used to achieve the research objectives is the case study method, which presents the main accounting aspects within X SRL, an insolvent company.

4. Findings

Next, we will present some accounting records related to X SRL, an insolvent company. All documents issued by company X SRL state that the company is in bankruptcy. These accounting entries are as follows:

- sale of land with an area of 1700 square meters with a value of 206825 Lei and material storage worth 108313 Lei. The accounting value of the land is 226555 Lei and the deposit is 118645 Lei. The deposit was fully amortized.

<u>4111 „Customer”</u>	=	<u>7583 „ Income from the sale of assets and other capital operations”</u>	206825 Lei
<u>6583 „Expenditures regarding the transferred assets and other capital operations”</u>	=	<u>2111 „Lands”</u>	226555 Lei
<u>6583 „Expenditures regarding the transferred assets and other capital operations”</u>	=	<u>212 „Buildings”</u>	118645 Lei

- the sale of commercial space with an area of 36.89 square meters in the amount of 96254.42 Lei, the book value being 141330 Rn, fully amortized

<u>4111 „Customer”</u>	=	<u>7583 „ Income from the sale of assets and other capital operations”</u>	96254.42 Lei
<u>6583 „Expenditures regarding the transferred assets and other capital operations”</u>	=	<u>212 „Buildings”</u>	141330 Lei

- the sale of a drilling machine worth 1260 Lei, VAT 239.40 Lei. Book value 2050, fully amortized

<u>4111 „Customer”</u>	=	<u>7583 „ Income from the sale of assets and other capital operations”</u>	1260 Lei
<u>4111 „Customer”</u>	=	<u>4427 „ VAT collected”</u>	239.40 Lei
<u>6583 „Expenditures regarding the transferred assets and other capital operations”</u>	=	<u>2131 „Technological equipment”</u>	2050 Lei

The situation of cumulative payments and receipts since the beginning of the liquidation period is presented as follows:

1. available at the beginning of the period: 721.91 Lei of which available in the cashier: 619.94 Lei, available in the bank: 101.97 Lei.

2. receipts: 1232150.88 Lei: sales of goods 1124450.38 Lei, debit receipts 18127.94 Lei, receipt of rent 33834.01, receipt of good performance guarantee 27611.35 Lei, receipt of utility bills 28127.2 Lei, receipt of interest 76.17 Lei.

3. Payments 1232872.79 Lei: postal expenses 5691.52 Lei, salaries 30228 Lei, suppliers 24179 Lei, liquidation fund 40125.39 Lei, liquidator's fee 125131.5 Lei, etc.

4. Available at the end of the period 0 Lei.

This statement of income and receipts, as well as any other document: invoice, receipt, salary statement, are signed by the judicial liquidator.

Also, the verification balance of the company X SRL and the liquidation balance are drawn up. From the liquidation balance sheet of the company X SRL, the indicators are presented as follows:

- Fixed assets - 1611839 Lei
- Current assets - 722 Lei
- Short-term debts - 2682350 Lei
- Negative working capital - 1069787 Lei
- Paid-up capital - 200 Lei
- Loss of the financial year - 1069989 Lei
- Equity - 1069789 Lei.

What is the liquidator's report? According to art. 59 of Law no. 85/2014, the judicial administrator will submit a monthly report describing how he fulfilled his duties, justifying the expenses incurred with the administration of the procedure or other expenses incurred from the existing funds in the debtor's estate, as well as, if necessary, the stage of the inventory. The report will also mention the fee collected by the judicial administrator, specifying the manner of its calculation. This report is submitted to the case file and published electronically in the Insolvency Proceedings Bulletin.

Next, we will present, synthetically, the content of the judicial liquidator's report, made by company X SRL, the company entered into insolvency.

The structure of the insolvency report of X SRL includes the following sections:

1. Identification data of the debtor: company name, address, including information on the appointment of the judicial administrator; it is appointed by the court within the locality where the debtor is from;

2. Measures taken in the procedure by the judicial administrator: reference is made to financial statements from the last 3 financial years, the trial balance, the list of creditors, the list of assets, etc.

Based on the list of creditors made available by the debtor company, notifications were made pursuant to art. 61 of Law no. 85/2006 regarding the opening of insolvency proceedings and the submission of debt statements. The notification was made through the Bulletin of Insolvency Proceedings, through correspondence sent to each creditor, and for unknown creditors, an announcement was published in a local circulation newspaper. According to the notification, the following terms were established:

- the deadline for registering the application for the admission of claims on the debtor's assets;
- the deadline for the verification of claims, the preparation, display and communication of the preliminary table of claims;
- Any objections to the preliminary table shall be submitted to the court within 5 days from the date of publication in Insolvency Proceedings Bulletin of the preliminary table according to art. 73 para. (2) from the law on the insolvency procedure;
- the deadline for resolving any appeals filed against the preliminary table of claims.

The first meeting of creditors was set on a specific date at the judicial administrator's headquarters, with the following agenda: presentation of the debtor's situation; appointment of the creditors' committee; confirming the judicial administrator and establishing his remuneration; other mentions.

During the creditors' meeting, the following were approved: the creditors' committee was appointed, consisting of 3 members; the receiver was confirmed and the receiver's fee was approved.

3. Measures taken by the judicial liquidator

The court of the locality where company X SRL is located ordered its entry into insolvency proceedings and the liquidator Y was appointed. The meeting of creditors was convened for a specific date, at the headquarters of the judicial liquidator with the following agenda: confirmation of the judicial liquidator and determination of remuneration. During the meeting of creditors, Y SRL was confirmed as judicial liquidator and the remuneration of the judicial liquidator was approved.

4. Information about Total active

According to the last financial reports drawn up by the debtor X SRL before the opening of the insolvency procedure, the company's patrimony includes the following:

- Other intangible assets in the amount of 5825 Lei - of which the value of 5742 Lei is amortized;
- Lands worth 777762 Lei;

- Constructions worth 898,523 Lei - of which 65591 Lei is amortized value;
- Technological equipment, devices and technical installations, means of transport in the amount of 864229 Lei - of which 833769 Lei is amortized value;
- Office furniture worth 65072 Lei - of which 47222 Lei is amortized value;
- Raw materials in the amount of 48298.3 Lei;
- Consumable materials 5635.29 Lei;
- Services in progress 349976.91 Lei;
- Finished products worth 2714 Lei;
- Goods 9112 Lei;
- Debtor suppliers 38802 Lei;
- Customers worth 174585 Lei;
- Shares held in entities 31259 Lei;
- Current bank accounts 27156 Lei;
- Available at home 6390 Lei;
- Treasury advances -2973 Lei.

An inventory of the assets of the debtor's estate was carried out.

5. Information about total passive

Information related to the passive mass, refers to the total of registered receivables in the amount of 2682350.05 Lei. Each creditor is then presented with the corresponding amount.

6. The situation of receipts and payments. Distribution plans

According to the situation of receipts and payments drawn up during the liquidation period, receipts were made in the amount of 1232150.88 Lei, as follows:

- 124450.38 Lei - from the capitalization of goods;
- 18127.94 Lei – debt recovery;
- 33834.01 Lei - rent receipts;
- 28127.2 Lei – utility re-invoicing;
- 27611.36 Lei - collection of good performance guarantees;
- 76.17 Lei – interest.

The amount available at the beginning of the period was 721.91 Lei.

From the collected amounts, payments were made in the amount of 1232872.79 Lei, as follows:

- 5691.52 Lei - postal expenses, advertisements, bank commissions;
- 7021 Lei – evaluation services expenses;
- 17947 Lei – current obligations to the salary budget;
- 1467 Lei – current microenterprise tax; 30228 Lei – current VAT; 24179 Lei - salaries;
- 40125.39 Lei – utility suppliers;
- 23947.8 Lei – 2% liquidation fund;
- 125131.5 Lei – administrator/judicial liquidator fee;
- 929000 Lei - amounts distributed to creditors according to distribution plans no. 1-5;
- 2549.58 – guaranteed credit accessories;
- 25585 Lei - expenses for taking over and keeping the archive.

In the bankruptcy procedure, 5 distribution plans were drawn up.

7. Proposals and requests addressed to the syndic judge

Considering that the debtor does not own any assets to capitalize on and no longer has receivables to be collected, it is proposed to the syndic judge, after the approval of the final report, to order, based on art. 132 paragraph 2 of Law 85/2006, the closure of the bankruptcy procedure and the deletion of the debtor from the records of the Trade Registry Office.

Also, according to art. 136 of Law 85/2006 requires the discharge of the judicial liquidator from any duties and responsibilities regarding the procedure, the debtor and his assets, creditors, holders of guarantees and associates.

The final report, accompanied by the liquidation balance sheet, will be notified to the creditors and the debtor, and a copy has been posted at the court registry, art. 129 paragraph 1 of Law no. 85/2006.

5. Conclusions

A company becomes insolvent when it can no longer pay its debts. Insolvency should not be confused with bankruptcy, bankruptcy being the last stage of insolvency, companies reaching this situation only when they cannot pay their debts within a certain period, a period imposed by law. Insolvency is of two types: general and simplified. The general procedure provides for judicial reorganization actions, while the simplified procedure provides for direct entry into bankruptcy.

Summarizing the above, we can state that insolvency is a measure by which the debtor's liabilities are covered. The insolvency procedure is a collective procedure, essentially judicial, transparent, generally applicable, a procedure of compromise and sacrifice. It is a measure to relieve the company of the financial difficulties it is facing, to recover it, and in case of impossibility of recovery, to liquidate the assets and remove the company in question from the market (Piperea, 2008, p.33 -34).

A legal liquidator is appointed both in the case of the admission of a liquidation plan and in the case of bankruptcy proceedings.

In case of the opening of the insolvency procedure, the outstanding fees of the insolvency practitioner chosen in an insolvency prevention procedure are entered in the table of creditors, similar to new and intermediate financings.

As future research directions, we propose to further study the activity of the company X SRL in order to be able to observe the final result of the insolvency procedure, its recovery or entry into bankruptcy.

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Emphasizing the Coercive Side of the Anti-Tax Evasion Rules

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Abstract

Our work highlights those normative and procedural changes aimed at preventing and combating tax evasion in the Romanian economic landscape. Referring to the most recent ones, we demonstrate that the legislator has sought (even if not achieved at the desired level) to create a business-friendly and fair environment, fostering the economic development of companies by protecting them against unfair competition from those who violate tax laws. This also encompasses the modernization of fiscal administration activities, primarily targeting increased revenue collection, among other goals. Our approaches focus on recent findings in combating tax evasion and fraud in Romania, closely associated with significant references to anti-evasion rules adopted within the context of ensuring Romania's long-term financial sustainability.

Key words: fiscal policy, tax evasion/fraud, recent findings in combating tax evasion, anti-tax evasion rules

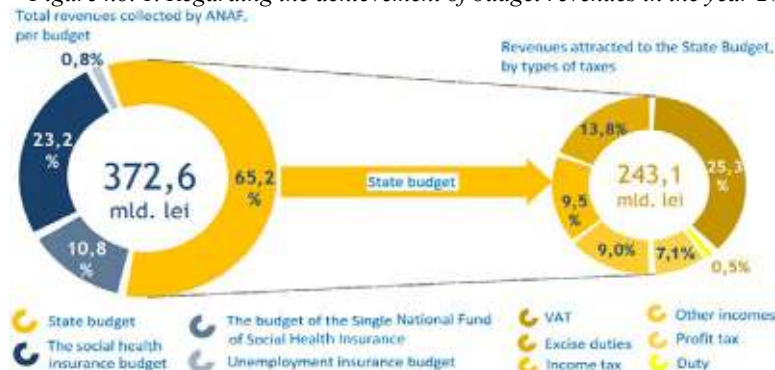
J.E.L. classification: H26, H32, H69, K14, K34

1. Introduction

The European Commission has initiated the excessive deficit procedure for Romania due to exceeding the ESA deficit of 3% of GDP in 2019. The adjustment plan in the Convergence Program 2022-2025 establishes that the respective deficit should not exceed 8% of GDP in 2021, 6.2% of GDP in 2022, and 4.4% of GDP in 2023 (RG, 2023). To finance the government's measures and comply with deficit limits, it's necessary to reduce expenses and intensify activities against tax evasion.

For the year 2022, budget revenues - related to taxes and duties - are presented in Figure 1.

Figure no. 1. Regarding the achievement of budget revenues in the year 2022



The budget deficit was 81.01 billion lei, equivalent to 5.68% of GDP, below the target of 5.74% of GDP set in the November 2022 revision ([Economedia.ro](https://www.economedia.ro), 2023). The plan outlined in the Convergence Program 2022-2025 establishes a maximum budget deficit of 4.4% of GDP for 2023. The budget execution in the first three quarters of the year, with revenues below expectations, necessitates restrictions to meet this deficit limit. Without urgent measures to limit expenses, there's a risk of surpassing the deficit target, affecting the costs of deficit financing and funds allocated to investments from the Cohesion Policy and the National Recovery and Resilience Plan. For European funds allocated to the Cohesion Policy 2021-2027, there are penalties, including partial suspension in case of non-compliance.

National legislation aims to create a fair business environment, protecting companies from unfair competition and modernizing tax administration for more efficient revenue collection. A suitable legislative framework strengthens compliance with taxation, ensures swift and efficient collection of unpaid taxes, and penalizes evasive behavior, reinforcing fiscal discipline.

In our work, we focus on normative and procedural changes to combat tax evasion, crucial for adhering to tax laws. These measures target those attempting to circumvent fiscal laws through fraud or non-payment.

2. Theoretical background on the magnitude and effects of tax evasion

Firstly, let's specify that, from a theoretical perspective, tax evasion is „the means by which economic entities respond to fiscal pressure when it exceeds a certain threshold considered necessary for initiating, maintaining, and developing business or any lucrative activity, as well as in connection with their current assets or incomes” (Dinga, 2008). Law 87/1994 stipulates that tax evasion means „the evasion, by any means, in whole or in part, of paying taxes, duties, and other amounts due to the state budget, local budgets, the social security budget, and extrabudgetary special funds, by Romanian and foreign individuals and legal entities, referred to as taxpayers” (RP, 1994).

This definition, with slight variations in wording, appears in numerous editorial works and articles on the subject (Florescu et al., 2013; Anitei & Lazar, 2014; Bostan, 1997, 2017, 2023; Costea, 2019; Drosu-Saguna & Radu, 2016). Law no. 241/2005 for the prevention and combating of tax evasion clearly establishes the activities that taxpayers must carry out and the tax obligations that must be respected for full compliance with the law.

As a phenomenon, tax evasion occurs both at the national and international levels, representing „the evasion, by any means, in whole or in part, of payment of taxes, duties, and other amounts due to public budgets” (Creeaza.com, 2014). In Romania, a substantial legislative framework has been implemented to reduce the negative impact of tax evasion. However, previous assessments of the underground economy indicate that it represents a significant portion of the Gross Domestic Product, estimated at approximately 1/5, while other assessments suggest figures between 35 and 40 billion euros annually (RP, 2012).

Not all mentioned financial resources are attributed to tax evasion, but it can be assumed that these „contribute to corruption, fuel social inequality, and undermine public trust in market economy mechanisms” (Bradu & Preda, 2022). Hence, substantial strengthening of fiscal discipline, the establishment of more severe sanctions, and an expansion of state institutions' actions in prevention are important.

The sanctioning regime we refer to has been sufficiently severe until the year 2023 [Ex. Law 241/2005 for the prevention and combating of tax evasion, Art. 3 „Constitutes an offense punishable by imprisonment from 6 months to 5 years for a taxpayer who intentionally or through negligence fails to restore destroyed accounting documents within the deadline indicated in the control documents”; Art. 4 „Constitutes an offense punishable by imprisonment from 1 year to 6 years for the unjustified refusal of a person to present legal documents and assets from their patrimony to competent authorities, to hinder financial, fiscal, or customs checks, within a maximum of 15 days from the summons”; Art. 5 „Constitutes an offense punishable by imprisonment from 1 year to 6 years for obstructing, in any form, competent authorities from entering premises, facilities, or land, under conditions provided by law, for the purpose of conducting financial, fiscal, or customs checks.” (RP, 2005), but, through Law no. 296/2023 on certain fiscal-budgetary measures to ensure Romania's

long-term financial sustainability (RP, 2023), new penalties have been introduced, which we emphasize in the second part of this work.

3. Research methodology

The research on this topic („Underlining the coercive side of the anti-tax evasion rules”) is grounded in an extensive review of legislative materials, particularly the prevailing regulatory framework applicable to fiscal control, combating, and preventing tax evasion and fraud in Romania.

Simultaneously, we considered supporting annotations within the normative acts in this field (Law no. 55/2021 amending and supplementing Law no. 241/2005 on the prevention and combating of tax evasion; Law no. 207/2015 regarding the Fiscal Procedure Code, etc.), along with specific bibliographic works focused on the same theme.

Furthermore, some of our assertions draw from reports developed and published by the Ministry of Finance (ANAF). Additionally, references were made to the Best Practices Guide in combating tax evasion crimes (Crişan et al., 2015); Tax Control Manual REFORM/SC2022/039 (ANAF, 2023b); Guide for tax inspection (ANAF, 2022).

4. Findings

4.1. Recent findings in combating tax evasion and fraud in Romania

In Romania, despite rigorous anti-tax evasion legislation, „the socio-economic phenomenon of tax evasion has escalated in recent years, emerging as the most substantial offense leading to criminal investigations against companies. In 2020, the VAT deficit reached the highest levels in the European Union (approximately 34%)” (Stancu, 2021). This scenario persists despite improvements in the organization and operation of the primary control structures within ANAF in the recent period (Table 1).

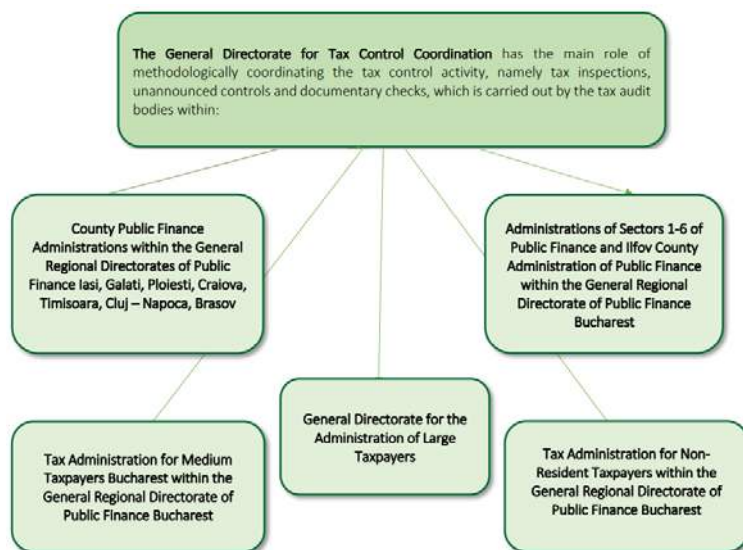
Table no. 1. Control structures within ANAF, categories of audited taxpayers, and main types of audits that can be conducted

CONTROL BODIES	THE MAIN TYPES OF CONTROL CARRIED OUT	CONTROLLED TAXPAYER
General Directorate for the Administration of Large Taxpayers	<ul style="list-style-type: none"> • Tax inspection • unannounced control • documentary check 	Large taxpayers
General Regional Directorate of Public Finance Bucharest – Tax Administration for Non-Resident Taxpayers	<ul style="list-style-type: none"> • Tax inspection • unannounced control • documentary check 	Non-resident taxpayers
Tax inspection body for medium taxpayers within the County Public Finance Administrations / Tax Administration for Medium Taxpayers Bucharest	<ul style="list-style-type: none"> • Tax inspection • unannounced control • documentary check 	Medium taxpayers
Tax inspection body within the county/sector administrations of public finances	<ul style="list-style-type: none"> • Tax inspection • unannounced control • documentary check • Verification of personal tax situation 	Small taxpayers, including individuals
General Directorate for Tax Anti-Fraud	<ul style="list-style-type: none"> • anti-fraud control, and • documentary check 	Any taxpayer
General Directorate for Individuals' Income Control	<ul style="list-style-type: none"> • Verification of personal tax situation • unannounced control • documentary check • Partial tax inspection on income tax 	Natural persons
General Regional Directorates of Public Finance – Tax verification services	<ul style="list-style-type: none"> • Personal tax status check • documentary check 	Natural persons

Source: (ANAF, 2023b)

In practice, fiscal control can be found in forms such as Tax Inspection, Documentary Verification, Unannounced Control, Anti-Fraud Control, and Personal Tax Situation Check. Concerning tax inspection, unannounced control, and documentary verification, the relevant structures within ANAF (for control activities) are depicted using Figure 2.

Figure no. 2. The relevant structures within ANAF where tax inspection, unannounced control, and documentary verification activities are conducted



Source: (ANAF, 2023b)

On December 31, 2022, the number of registered taxpayers was 1,906,698, out of which 389,165 were fiscally inactive. Of the total, 1,293,296 were legal entities, and 613,402 were engaged in independent activities (ANAF, 2023c).

Information regarding tax inspection and combating tax fraud activities, along with the results obtained in 2022 compared to 2021, are presented in Tables 2 and 3. As a result of the conducted checks – 34,991 verifications performed on taxpayers (26,056 on legal entities and 8,935 on individuals, out of which 24,459 were tax inspections, 17,411 on legal entities, and 7,048 on individuals) – additional amounts totaling 2,806.1 billion lei were identified (2,629.5 billion lei for legal entities and 176.6 million lei for individuals; out of this amount, 2,743.7 billion lei represented primary obligations) (ANAF, 2023a).

Table no. 2. Tax inspection activity (2022 compared to 2021)

Indicator name	The year 2022	Comparison to the achievements of 2021 (%)
Number of verifications conducted	34 991	106.4
Additional obligations established (million lei)	2 806.1	56.1
Number of fines imposed	2 284	97.8
Value of fines imposed (million lei)	6.2	93.9
Number of criminal complaints filed	238	68.6
Value of damages (million lei)	457.2	58.4
Value of precautionary measures (million lei)	243.1	23.1

Source: (ANAF, 2023c)

Additionally, 17,303 documentary verifications were carried out on both legal and natural persons, leading to the identification of additional amounts totaling 554.2 million lei and the implementation of 326 precautionary measures amounting to 243.1 million lei. Simultaneously, the fiscal loss was reduced by the sum of 1,848.1 billion lei.

In 2022, „in the domain of discovering and combating tax evasion, anti-fraud inspectors quantified/estimated fiscal implications (representing VAT, taxes, social and health contributions, other receivables) totaling 1,038.6 million lei (of which 41% represents VAT)” (ANAF, 2023a).

Table no. 3. Fiscal anti-fraud activity (2022 compared to 2021)

Indicator name	The year 2022	Comparison to the achievements of 2021 (%)
Number of inspections conducted	35 659	136.1
Number of fines imposed	18 176	146.2
Value of fines imposed (million lei)	105.7	119.6
Estimated value of asset confiscations and amounts (million lei)	28.2	320.5
	462	74.3
Number of activity suspensions	194	64.5
Number of criminal complaints	575.5	72.5
Value of damage related to criminal complaints (million lei)	102.8	49.1

Source: (ANAF, 2023c)

It should be noted that the voluntary compliance rate in meeting tax obligations (in terms of value), including partial payments, was 86.2%, compared to 85.5% in 2021 (a 0.7% increase).

However, the voluntary filing rate of tax returns, across different tax types, stood at 94.26%, a decrease from 94.53% recorded in 2021.

4.2. Anti-evasion rules within the context of measures ensuring long-term financial sustainability

4.2.1. Some provisions included in Law no. 55/2021 amending Law no. 241/2005 for the prevention and combating of tax evasion

Law no. 55/2021 amended Law no. 241/2005 on the prevention and combating of tax evasion by eliminating the causes for reducing prison sentences and introducing the alternative primary penalty of fines for offenses under articles 8 and 9 (Figure 3):

Figure no. 3. The alternative main penalty of the fine for certain tax offences



Article 8: (1) It constitutes an offense punishable by imprisonment from 3 to 10 years and the deprivation of certain rights or a fine for a taxpayer's bad faith determination of taxes, fees, or contributions, resulting in the unauthorized receipt of sums of money as refunds or reimbursements from the consolidated general budget or compensations owed to the consolidated general budget. (2) It constitutes an offense punishable by imprisonment from 5 to 15 years and the deprivation of certain rights or a fine for association aimed at committing the offense referred to in paragraph (1). (3) Attempted acts as provided in paragraphs (1) and (2) are punishable.

Article 9: (1) The following acts committed to evade fulfilling tax obligations constitute tax evasion offenses and are punishable by imprisonment from 2 to 8 years and the deprivation of certain rights or by the following fine: (a) concealing assets or taxable sources; (b) wholly or partly omitting the highlighting of commercial operations carried out or income generated in accounting records or other legal documents; (c) highlighting expenses not based on real transactions or presenting other fictitious operations in accounting records or other legal documents; (d) altering, destroying, or concealing accounting documents, memories of electronic fiscal cash registers or marking devices, or other data storage means; (e) maintaining dual accounting records using writings or other data storage means; (f) avoiding financial, fiscal, or customs checks (...). (2) If the acts provided in paragraph (1) caused damage exceeding EUR 100,000, in the national currency equivalent, the minimum limit of the sentence prescribed by law and its maximum limit shall be increased by 5 years. (3) If the acts provided in paragraph (1) caused damage exceeding EUR 500,000, in the national currency equivalent, the minimum limit of the sentence prescribed by law and its maximum limit shall be increased by 7 years.

Source: (RP, 2005)

According to Article 10, paragraph (1), first thesis of Law no. 241/2005, subsequently amended, if during the criminal investigation or trial, the caused damage is fully covered and does not exceed the amount of EUR 100,000, in the national currency equivalent, a fine can be imposed (within the general limits, with a maximum of 200,000 lei), and the judge has the discretion to decide on imprisonment (within the special limits of 5-15 years). As noted by a prominent expert in tax legislation (Stancu, 2021), considering the second thesis of the same paragraph, only the fine penalty will be applied if the damage caused and recovered under the same conditions does not exceed the amount of EUR 50,000, in the national currency equivalent. Thus, this amendment regulated a special situation of optional or mandatory application of the primary penalty of a fine. Moreover, it is evident that the primary penalty of a fine cannot be applied in cases of damages exceeding EUR 100,000 or in the case of uncovered damages, and it can only be imposed in the two aforementioned situations.

In the case of committing tax evasion offenses mentioned in Article 8 or Article 9 of Law no. 241/2005, Article 10, paragraph (11) regulates an exemption from punishment („if, during the criminal investigation or before the pronouncement of a final court decision, the damage caused by the offense, increased by 20% of the base for calculation, plus interest and penalties, is fully covered, the offense shall not be punished, applying the provisions of Article 16, paragraph (1), letter h) of Law no. 135/2010 on the Criminal Procedure Code, with subsequent amendments and completions”).

It is worth noting that according to paragraph (12) of Article 10, both the special situation of applying the primary penalty of a fine and the exemption from punishment apply to all defendants, even if they did not contribute to covering the damage (Stancu, 2021). In the previous version of Article 10, paragraph (1), the special situation of reducing the penalty referred to „fully meeting the claims of the civil party,” and in the new regulation, it refers to the „full coverage of the caused damage”, a regulation that was in force between 2005 and 2014 in the initial form of Law no. 241/2005. Individuals convicted of a criminal fine are affected by Article 12 of the same law on the prevention and combating of tax evasion, being prohibited from becoming founders, administrators, directors, or legal representatives of the company, and if they were elected to these positions, they are removed, and they are subject to other prohibitions established by the court decision, with the criminal fine representing a form of conviction.

4.2.2. Provisions included in Law no. 296/2023 regarding certain fiscal-budgetary measures for ensuring Romania's long-term financial sustainability

Recently (Q3/2023), a regulatory framework has been developed aimed at more efficiently combating tax evasion. Here we outline some highlights indicating a significant tightening of measures to combat the discussed phenomenon (Figure 4).

Figure no. 4. Measures to prevent and combat illicit economic activities

„(...) (4) Economic activities are prohibited for individuals not registered for tax purposes, including during periods of suspension. (5) It is prohibited to engage in economic activities with goods lacking origin documents (...) regardless of their location during transportation, storage, or commercialization (...); (8) Cash and cash equivalents without legal provenance are assimilated with goods whose origin is undocumented (...); (9) Non-compliance with provision 4 constitutes a misdemeanor and is punishable with a fine ranging from 2,000 lei to 15,000 lei for individuals and from 5,000 lei to 35,000 lei for legal entities; (10) Goods intended, used, or resulting from the misdemeanor defined in provision 9, along with money and assets obtained through the misdemeanor, shall be confiscated; (11) Failure to comply with provision 5 constitutes a misdemeanor and is punishable with a fine ranging from 2,000 lei to 15,000 lei for individuals and from 5,000 lei to 30,000 lei for legal entities (...); (12) Goods intended, used, or resulting from the misdemeanor defined in provision 11 shall be immobilized for the purpose of confiscation under the conditions stipulated in provision 14, letter b); (13) If, within a 12-month period from the application of the last penalty for the misdemeanor described in provision 11, the offender commits a new misdemeanor from the category described in provision 11 for which they have been penalized, a fine ranging from 4,000 lei to 30,000 lei applies for individuals and from 10,000 lei to 60,000 lei for legal entities, along with an additional penalty consisting of the suspension of their activity, including transportation, storage, and/or commercialization, for a period of up to 15 days (...); (14) Upon finding the misdemeanor described in provision 11, the reporting officer shall draw up a record of identification and penalization of the misdemeanors, ordering: (a) the application of the main penalty stipulated in provision 11; (b) the provisional immobilization of assets used or intended to be used for the misdemeanor described in provision 11, along with money and assets obtained through the misdemeanor, for a maximum period of 24 hours. In the same report, the reporting officer informs the offender that they have 24 hours to provide documents proving the legal nature of the assets and that after this period, assets not justified will be confiscated; (c) the application of the suspension penalty stipulated in provision 13 (...).”



Source: (RP, 2023)

We note that the immobilized assets remain in the possession of the offender until their status is clarified, either until the temporary cessation of the immobilization measure or until their definitive confiscation. These assets are handed over to the control authority, and the offender is responsible for maintaining their integrity and condition, required to take all necessary measures to prevent any negative impact on the environment until the expiration of the 24-hour period or until delivery to the control authority.

According to the same law, the stored assets (due to the risk of theft and to prevent possible loss of confiscation) are considered abandoned if the offender does not claim them within three months from the date of communication or delivery of the record of cessation of the immobilization measure.

5. Conclusions

We analyzed the recent legislative and procedural changes aimed at combating tax evasion in the economic context of Romania. These changes hold particular importance as they concern those attempting to avoid tax payment through fraud or non-payment, fundamental aspects for the functioning of a democratic state.

Though the legislation aimed (albeit not entirely successfully) to create a fair and business-friendly environment, promoting economic growth by safeguarding companies against unfair competition from those violating fiscal rules, there is still room for modernizing the tax administration. Our focus highlighted anti-evasion norms in the context of measures to ensure Romania's long-term financial stability, including some provisions from Law No. 55/2021, amending Law No. 241/2005 on the prevention and combating of tax evasion.

We observed that despite a relatively stringent legislative and procedural framework, the voluntary compliance rate with tax obligations, including partial payments, was only 86.2% in 2022. Additionally, the voluntary filing rate for tax declarations decreased to 94.26%, down from 94.53% in 2021. As a result of the 2022 inspections (34,991 checks on corporate and individual taxpayers), additional amounts totaling 2,806.1 million lei were identified, of which 2,629.5 million lei were from corporate taxpayers and 176.6 million lei from individuals. In the same year, anti-fraud inspectors estimated fiscal implications totaling 1,038.6 million lei (of which 41% represented VAT) in efforts to identify and combat tax evasion.

An appropriate regulatory framework, continuously evolving in Romania, contributes to strengthening fiscal responsibility, efficiently and promptly collecting unpaid taxes, and critically, penalizing evasion behavior and reinforcing fiscal discipline.

As a future research direction, we aim to analyze the extent to which Law No. 296/2023, concerning certain fiscal-budgetary measures for ensuring Romania's long-term financial sustainability, has influenced reducing tax evasion and increasing budget revenues collection.

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Accounting Treatment of Tax on Income According to NAS and IFRS

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Abstract

In the following article, a study is carried out on the accounting treatment of tax on income according to the provisions of the National Accounting Standards (NAS) and the International Financial Reporting Standards (IFRS). The research aims to identify the specific aspects of the application of NAS and IFRS for income tax accounting. The following scientific research methods are used in the study: analysis of the normative framework governing the study, synthesis of information, comparison to identify distinctive features.. The results of the research identified the existence of a different approach to income tax accounting according to NAS applied in the Republic of Moldova and IFRS (IAS 12). The result of the study shows that public interest entities that must apply IFRS require a more complex approach to tax on income versus entities that apply the provisions of the national accounting regulatory framework (NAS) of the Republic of Moldova.

Key words: accounting, current tax on income, deferred income on tax, regulatory framework

J.E.L. classification: M41

1. Introduction

In the context of settlements with the state budget, the main problem is represented by how to determine the values related to these settlements (Săcărin, 2021). Over time, as a result of the development of businesses and the placement of capital in various states, the need for the accounting treatment of income tax has become increasingly acute.

One of the most sensitive issues regarding tax on income is the relationship and the links between accounting and taxation on one hand, and on the other hand, it is the accounting treatment of tax on income according to the national accounting framework of the Republic of Moldova (NAS) and the international (IAS 12), in the context of the application of both references by different categories of entities. Accountants are positioned to deal with the ever-changing tax environment on behalf of taxpayers, and the field of income tax, due to its complexity, is imposed on accounting. Tax on income being the first element in state taxes and fees in the Republic of Moldova (Fiscal Code). The following research involves the examination of the provisions of the national accounting regulations but also of IAS 12, establishing the common provisions but also the differences, and their influence on the indicators presented in the financial statements.

The trend of aligning tax legislation with international standards presents a new challenge to the Republic of Moldova, and the imposition of income tax is the main element of reforming the tax system, the importance of which is becoming increasingly evident during its evolution (Vieru, 2020).

2. Literature review

In order to determine the obligations towards the state budget, priority is given to the regulations of the Fiscal Code of the Republic of Moldova and the corresponding regulations specific to tax on income, and their application is based on the accounting regulations, which in the context of tax of

income are complex. The current research is based on the following concepts: income tax accounting through the prism of the national accounting regulations of the Republic of Moldova but also of the international regulations based on the International Financial Reporting Standards (IFRS) because, for the entities in the Republic of Moldova, both normative frameworks are applied according to the method established by legislation or voluntarily selected by the entity.

Existing research on tax on income was identified using data from the National Bibliometric Tool and data provided by Google Scholar shown in Table 1.

Table no. 1. Search strategy for scientific articles

Search source	National Bibliometric Tool		Google Scholar	
Keywords	Tax accounting on		income	profit
	income	profit	tax accounting	
Period	2015-2023			
Results	2 scientific articles (local authors)	3 scientific articles (local authors)	37 300 articles	24 400 articles
Publication source	Articles in conference and journal materials		Journal articles	

Source: developed by authors based on the National Bibliographic Tool and Google scholar

According to the information in Table 1, an imposing difference can be found between the research on tax on income at the national level found in the National Bibliometric Tool from the Republic of Moldova and the existing research at the international level established by Google Scholar. The period subject to the identification of research is 2015-2023 (9 years), the national finding being up to 10 scientific articles and at the international level being tens of thousands of publications, which represents a field that is little known and researched at the national level and of great interest at an international level, this fact also represents an interest for the following research.

3. Research methodology

The aim of this study is to research what is the accounting treatment of tax on income from entrepreneurial activity according to the National Accounting Normative Framework (NAS) and the International Accounting Framework (IFRS). According to the functional purpose, being an exploratory research whose objective is to establish what are the similarities and differences between the two accounting references regarding income tax accounting, and from the point of view of the way of analyzing the information subject to the research, being a qualitative research of both the framework normative related to the study, as well as the existing researches, the synthesis of information being used, the comparison to identify the distinctive features, the deduction of the challenges. Based on the research carried out, the following aim was established: what are the aspects of tax on income based on NAS and IFRS? The analysis of income tax accounting and financial reporting is a complex and sensitive subject, and the research results have important implications for the entities that must apply it.

4. Findings

During the examination of the accounting normative framework from the national (NAS) and international (IFRS) standards regarding the regulation of income tax accounting, it was established the lack of a national accounting standard regarding income tax similar to the existing international level IAS 12 "Income Taxes", nevertheless, income tax accounting according to national accounting standards is governed by the provisions of NAS "Equity and liabilities" in terms of establishing income tax liabilities, by NAS "Expenses" in terms of recognizing income tax expenses from the activity of entrepreneur and by NAS "Receivables and financial investments" for the recognition of income tax receivables. Regarding the financial reporting of patrimonial elements, including receivables, debts, and income tax expenses at the national level, it is regulated by the NAS "Presentation of Financial Statements" similar to the international IAS 1 "Presentation of Financial Statements". Likewise, the national regulation provides for the application of only the current income

tax method, and the international regulation provides for both the current income tax method and the deferred income tax method.

We would like to mention that if we examine the evolution of income tax accounting in the Republic of Moldova, then in the period 1998 - 2015 was applied NAS 12 "Income tax accounting" developed on the basis of IAS 12, which has been missing since 2015.

4.1 The regulatory framework of income tax accounting

The accounting of income tax from entrepreneurial activity is the compartment that can be found within each entity, which represents the base from the fiscal regulatory framework and the accounting regulatory framework. Regarding the fiscal regulatory framework of the Republic of Moldova, the provisions of the Fiscal Code of the Republic of Moldova are applied by all entities, and the accounting one is based on two regulations: the national one (NAS) for all entities, except for the public interest ones (willingly can apply the international framework), and the international one (IFRS) for entities of public interest (the entity whose securities are admitted to trading on a regulated market; bank; insurer(reinsurer)/insurance company; body for collective investment in securities with legal personality; a large entity that is a state enterprise or is a joint-stock company in which the state's share exceeds 50% of the share capital) (Accounting and Financial Reporting Law, 2017, art. 5). In this context, two benchmarks are applied by entities from the Republic of Moldova: NAS and IFRS. Table 2 presents the normative acts that regulate income tax accounting from each reference:

Table n0. 2. Normative acts regulating income tax accounting

The regulatory framework of income tax accounting	
Accounting and Financial reporting Law	
<i>Entities that organise accounting based on NAS</i>	The National Accounting Standard „Equity and liabilities”
	The National Accounting Standard „Expenses”
	The National Accounting Standard „Presentation of financial statements”
	The general chart of accounts
<i>Entities that organise accounting based on IFRS</i>	IAS 12 “Income Taxes”
	IAS 1 “Presentation of Financial Statements”
	IFRIC 21 “Levies”,
	IFRIC 23 “Uncertainty over Income Tax Treatments”

Source: developed by the authors based on the accounting regulatory framework

Based on the information presented in Table 2, the regulatory accounting framework of the Republic of Moldova does not contain a national accounting standard for income tax like the international IAS 12 “Income Taxes”, a fact that determines the regulation through provisions in several accounting standards.

4.2 Accounting elements determined by income tax

Emerging from the normative frameworks applied to the accounting treatment of the income tax, several patrimonial elements are generated, and their knowledge also determines the correctness of the accounting records. Table 3 will present the patrimonial elements generated by the tax on income with their description.

Table no. 3. The patrimonial elements generated by the tax on income

The accounting regulatory framework			
Normative Act	National Patrimonial Element	International	
		Normative Act	Patrimonial Act
Related to the current tax			
NAS „Expenses”	Income tax expenses – the total amount of income tax expenses considered when determining the net profit		Tax expense (tax income) is the aggregate amount of current and deferred tax included in the determination of profit or loss for a period

	(net loss) of (a) management period.	IAS 12 "Income Taxes"	
NAS "Equity and liabilities"	<i>Debts to the budget regarding income tax include the entity's commitments to the state budget regarding income tax, including debts regarding penalties applied for violating the provisions of tax legislation</i>		The current tax of the current period and previous periods must be recognized as a liability, within the limit of the unpaid amount. If the amount already paid for the current period and previous periods exceeds the amount owned for those periods, the exceeds must be recognized as a receivable. The benefit of a tax loss that can be carried forward to recover the current tax of a previous period must be recognized as a receivable.
NAS "Loans and financial statements"	<i>The budget claim regarding income tax is the amounts paid in advance/instalments paid in addition to the budget</i>		
Related to deferred tax			
It does not appear in the national regulation		IAS 12 "Income Taxes"	<i>Deferred tax liabilities</i> are the amounts of income tax payable in future periods in respect to taxable temporary differences. <i>Deferred tax assets</i> are represented by the amounts of profit tax recoverable in future periods regarding: deductible temporary differences; reporting unused tax losses; and carrying forward unused tax credits.

Source: developed by the authors based on the accounting regulatory framework

The regulations in force, for entities that organize accounting according to the national regulatory framework (NAS), expressly indicate the use of the current tax method (Grigori, 2021), so the effects generated by the temporary differences between the accounting result before taxation and the taxable result are not taken into account, (Burada, 2002) which can certainly influence the obtaining of the true image in the financial statements, a requirement established in the Accounting and Financial Reporting Law. The usage by entities of public interest of international accounting framework (IAS 12) by applying the deferred tax method through the recognition of temporary differences, leads to solving this deficiency. The inclusion in the national accounting standard (NAS) of the possibility of applying the deferred income tax would lead to the establishment of the taxable result, not allowing an overestimation of it. The objective of IAS 12 is the comprehensive treatment of current and future tax consequences regarding the tax on income, as well as the presentation of income tax in the financial statements and the presentation of information related to income tax. Nonetheless, the increase in information that deferred taxes bring is far outweighed by the difficulty of understanding specific mechanisms and the complexity of specific calculations (Istrate, 2016).

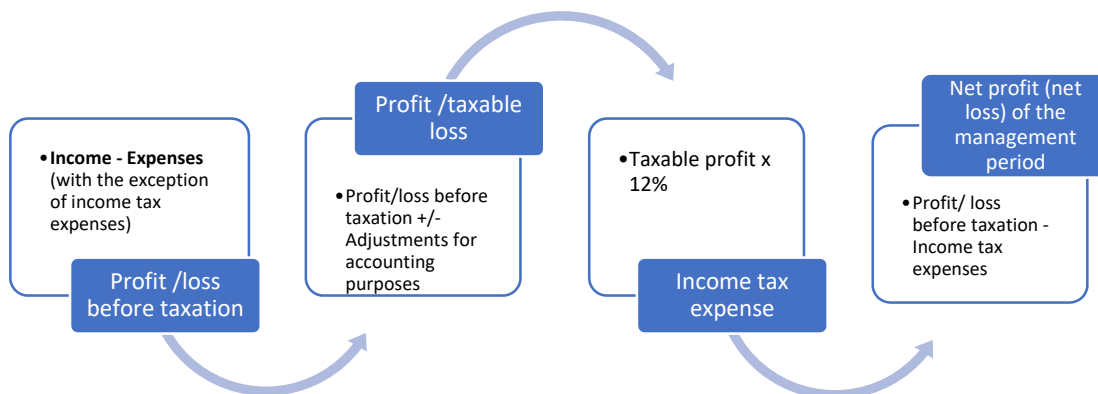
The signing of the Association Agreement with the European Union and the tendency to align the laws of the Republic of Moldova with international standards and practices amplified the importance of studying the issue of income tax mechanism for legal entities in the Republic of Moldova and made it absolutely necessary in order to develop and harmonize the taxation system. In this context, we mention that tax legislation and accounting standards require a metamorphosis, in order to be adjusted to international practices. Considering the long and varied application of this tax instrument by the states that have gone through similar steps towards harmonizing the taxation system, we have every confidence that it will allow Moldova to accelerate efficiently and with fewer obstacles in order to achieve the set goals (Vieru, 2022).

The international accounting doctrine considers two types of distortions between the accounting and fiscal results, which manifest themselves in the form of permanent and temporary differences (Cernuşca, 2017).

For the purpose of financial reporting, tax receivables and liabilities are presented in the balance sheet, in separate positions from other assets and liabilities. When applying the deferred tax, the receivables and liabilities regarding the deferred tax are presented separately from the receivables and liabilities regarding the current tax. Whereas income tax expenses are presented in the Profit and Loss Statement (IAS 1, NAS). The issue of financial and tax reporting and the relationship between these two areas of reporting has always existed and has continuously developed over time. In this

context, the relationship between the rules for calculating the accounting profit and the taxable profit for tax purposes, shown in Figure 1, is of particular importance.

Figure no. 1. The relationship between the accounting financial result and the taxable result



Source: developed by the authors based on the study

According to Figure 1 it can be noted that the basis for calculating the income tax is taken over and recognized from the accounting information, which is subsequently adjusted by the provisions of the tax regulations. In this context, it can be mentioned that the pre-tax loss adjusted for tax purposes can determine taxable profit. Whilst, for an accurate image of the activity of an entity, as provided by the accounting rules, the accountant must resolve the situations arising between the accounting treatment and the tax treatment of the information regarding the tax on income (Gurău, 2017).

5. Conclusions

Tax on income is an important source for the national budget and implicitly for investments at the national level (Ciumag, 2021). The objective of this research was to reproduce the aspects of the national and international accounting references regarding the income tax. The results of this research have identified the existence of a different approach between the tax on income according to the National Accounting Standard and IFRS, even though both regulatory frameworks are applied to the Republic of Moldova. The result of the research shows that the entities of public interest that must apply IFRS require a more complex approach to the profit tax from entrepreneurial activity by aggregating the current tax with the deferred one, versus the entities that apply the provisions of the national regulatory framework of the Republic of Moldova applying only the current tax. For compliance, it is recommended to adopt the national accounting regulation and the deferred tax method.

Within the current income tax, the differences that appear are between accounting revenues and expenses – corresponding to the elements of financial performance, and approach to the result. Within the deferred income tax, the accounting values are compared with the tax values for each element of assets and liabilities – corresponding to the elements of the financial position, and balance sheet approach. A peculiarity of the application of the deferred tax is the fact that the receivables and liabilities regarding the deferred tax are presented separately from the receivables and liabilities regarding the current tax in the financial reporting.

The study of income tax accounting is also current in the context of the initiation of activities to modernize the Fiscal Code for the period 2023 – 2026 with the aim of harmonizing the national legislative framework with the provisions of the European Union directives (The concept of modernization of the Fiscal Code).

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Bibliometric Analysis of the Literature on Reporting Non-Financial Information in Emerging Economy Countries

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Abstract

Non-financial information has become crucial for reporting corporate social responsibility in the European Union (EU) and not only in the EU, the meaning of the term "non-financial information" is not clearly defined. This term has been used by various reporting models and standards in recent decades, encouraging different interpretations encompassing contextual narrative information about information about intangible assets and intellectual capital, environmental, social and governance issues. Thus, the meaning of the term "non-financial information" can be contextually or geographically dependent, and often its interpretation most likely depends on the perception of the sender of the information (preparator) and receiver (interested party). Non-financial information includes an overview of issues related to environmental and social impacts and policies of the company. The purpose of this paper is to find out the interest evolution within the emerging economies.

Key words: bibliometric analysis, emerging economies, non-financial reporting

J.E.L. classification: O00

1. Introduction

Emerging economy countries, characterized by rapid industrialization, diverse cultural landscapes, and unique socio-economic challenges, present a compelling arena for exploration. The disclosure of non-financial information in these regions carries implications for sustainable development, social responsibility, and corporate governance. This study aims to systematically examine and synthesize the existing body of scholarly work, unraveling the patterns, trends, and knowledge gaps that have emerged over time. In the pages that follow, we navigate through the corpus of literature, tracing the evolution of thought, synthesizing conceptual frameworks, and pinpointing areas warranting further investigation. As we embark on this bibliometric journey, our aim is to provide scholars, practitioners, and policymakers with a nuanced understanding of the current state of knowledge, fostering dialogue and inspiring future avenues of research in the dynamic field of reporting non-financial information within emerging economy countries.

2. Theoretical background

Bibliometric analysis has become increasingly used in recent years (Donthu et al., 2020, Donthu, Kumar, Pattnaik, & Lim, 2021, Khan et al., 2021), and this is due to the increasing availability and access to software such as Gephi, Leximancer, VOS Viewer, and databases such as Scopus and Web of Science (Andrikopoulos et al.).

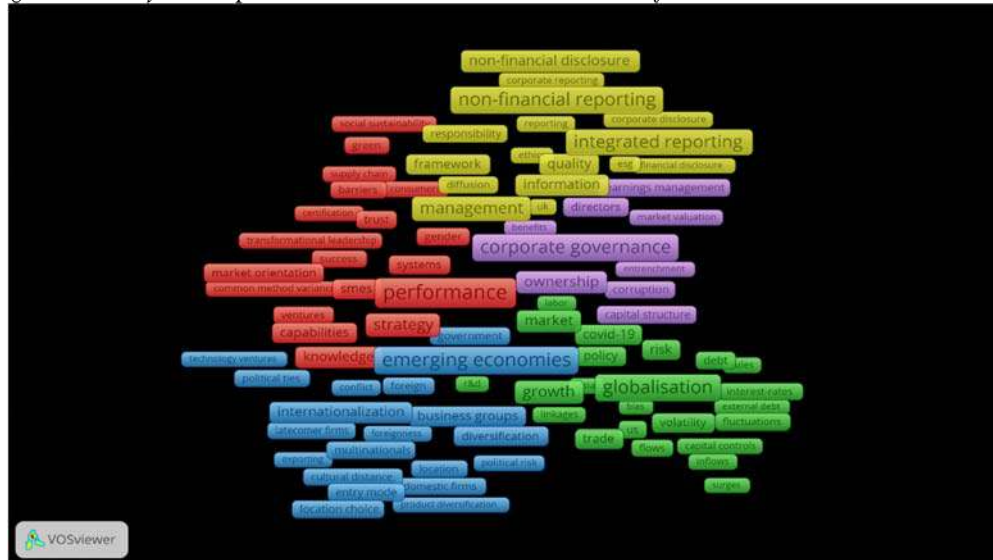
Bibliometric analysis is used for various reasons, such as discovering emerging trends in journal performance, collaboration models, exploring the intellectual structure of a specific field in existing literature (Donthu et al., 2021, Verma and Gustafsson, 2020, Donthu et al., 2020). Bibliometric analysis is useful for mapping scientific knowledge in different fields, giving meaning to large volumes of data.

3. Research methodology

Bibliometric analysis includes two main processes: performance analysis and scientific mapping (Cobo et al. 2011). In the first part of the study, a performance analysis was carried out that evaluated the impact of a group of academic researchers and their activities (type of published documents, field of study, language, country, number of publications). In the second part of the study, scientific mapping is carried out by presenting the cognitive structure of the study, presenting structural and dynamic aspects of science. From a scientific mapping perspective, the study analyzes the structure of the network and the different research components on research topics, the grouping identified for research topics, the importance of identified key topics.

In order to perform the bibliometric analysis there were included the most relevant articles published in the WoSCC database. In order to select the relevant articles, we included the following keywords "non-financial reporting", "integrated reporting", "sustainability reporting", "emerging economies", "emerging countries" and chose the period 2000 – 2022 to have an overview of the evolution of this field. The app identified 114 common terms across its 5,068 publications.

Figure no.1. Keyword representation related to the total number of citations



Source: own processing using data from VOS Viewer

Table no. 1 Keywords related to the total number of citations

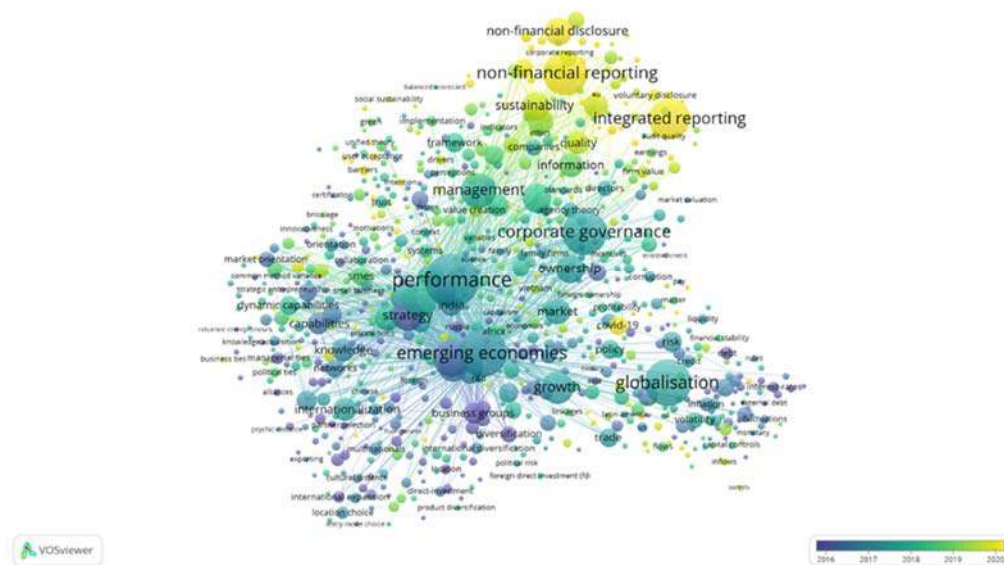
GLOBALIZATION cluster 1 (green)	PERFORMANCE cluster 2 (red)	EMERGING ECONOMIES Cluster 3 (blue)	NON-FINANCIAL/INTEGRATED REPORTING Cluster 4 (yellow)	CORPORATE GOVERNANCE cluster 5 (purple)
Policy Market Labor COVID-19 Risk Debt Rules Growth R&D Trade U.S. Flows	Social sustainability Green Supply chain Consumers Barriers Trust Gender Certification Transformational leadership Success	Government Technology ventures Political ties Foreign conflict Internationalization Business groups Latecomer firms Foreignness Diversification Multinationals Exporting	Corporate reporting Non-financial disclosure Reporting Corporate disclosure Responsibility Ethics Quality ESG	Earnings management Directors Benefits Market valuation Entrenchment Ownership Corruption Capital structure

Volatility Interest rates External Debts Fluctuations Capital Controls Inflows Surges Asia Rules	Systems Market orientation SMES Common method variance Ventures Strategy Capabilities	Location Political risk Cultural distance Location Entry mode Domestic firms Location choice Product diversification	Financial disclosure Information Framework Diffusion Management UK	
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Source: own processing using data from VOS Viewer

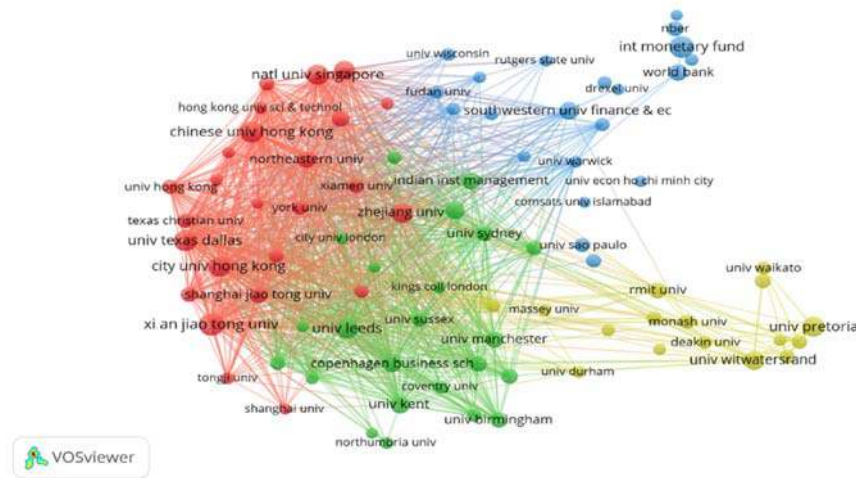
To see the interest evolution of non-financial reporting there was developed a specific representation using Vos Viewer.

Figure no. 2 Representing the evolution of non-financial reporting



Source: own processing using data from VOSviewer

Figure no. 3 Representation of universities with publications by field



Source: own processing using data from VOSviewer

As regards the analysis of institutions' contribution, the first by number of published documents are the International Monetary Fund, the Chinese University of Hong Kong, the University of Leeds in England. However, the total strength of the link indicates that those collaborating most with other organizations are Copenhagen Business School, York University.

There are several clusters, most of which occupy the center of the graph. The different clusters are made up of organizations from different countries.

4. Findings

The frequency of occurrence of keywords in titles and abstracts is reflected by the size of the letters. As you can see in the image above, letters become larger as the keyword appears more frequently. The co-occurrence network of terms is divided into five clusters (green, red, blue, yellow and purple) according to their meaning. Each cluster can be considered a topic (van Eck and Waltman, 2011).

Green cluster - globalization - compresses 21 terms, with 891 repetitions/occurrences. The most relevant keywords are: "growth", "market", "covid-19". This cluster has a special significance in research because globalization has a significant impact in shaping today's society, mentioning opportunities such as promoting economic growth, cultural exchange on the one hand, and challenges such as imposing the obligation of responsible management to address negative consequences and ensure a fairer and more sustainable global future on the other.

Red cluster – performance presents 18 terms, with a repetition of 1208 appearances, evaluating and monitoring the performance of enterprises being activities that have grown considerably in recent years. The main keywords in this cluster refer to "strategy", "capabilities", "knowledge". From this point of view, it is visible within companies, at least lately, that they are taking over their strategy, ways of transferring knowledge to ensure a sustainable future.

The blue cluster – emerging economies – contains 19 keywords, with 934 occurrences. The keywords that are repeated most frequently in the study are "government", "technology ventures", "political ties", "foreign conflict", "internationalization".

The yellow cluster – non-financial/integrated reporting – also known as sustainability reporting, is the practice of presenting information about a company's social, environmental and ethical performance, in addition to its financial performance. This group consists of 14 terms, being the most important cluster with 1472 repetitions within the studied publications.

The purple cluster – corporate governance – contains 8 keywords, which have an occurrence/repetition of 1163 times. The most relevant terms in this group are "ownership", "earnings management". Basically, this cluster refers to the principles underlying this segment in order to

maintain interest in investors, attract capital, respectively the importance of transparency and responsible management in the success of a company.

VOS Viewer presents three different types of visualization for bibliometric mapping: Network view, overlay view, and density view.

5. Conclusions

The bibliometric analysis of non-financial reporting literature provides valuable insights into the evolving landscape of this critical field. The examination of academic publications, citation patterns, and key thematic areas offers a comprehensive understanding of the trends, challenges, and advancements in non-financial reporting research. The increasing attention to non-financial metrics and disclosures reflects a growing recognition of the importance of environmental, social, and governance (ESG) factors in corporate decision-making.

The bibliometric analysis underscores the interdisciplinary nature of non-financial reporting, with contributions from diverse fields such as accounting, sustainability, corporate governance, and social responsibility. This interdisciplinary approach is essential for addressing the complex and interconnected issues associated with non-financial reporting, as it involves not only financial considerations but also ethical, environmental, and social dimensions.

Furthermore, the identification of prolific authors, influential journals, and seminal works provides a roadmap for researchers, practitioners, and policymakers interested in delving deeper into non-financial reporting. Collaboration and knowledge-sharing across academic disciplines and industry sectors are crucial for fostering a holistic understanding of non-financial reporting and for developing effective strategies that contribute to sustainable and responsible business practices.

6. Acknowledgement

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7. References

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Non-Financial Reporting Frameworks in Emerging Economies

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Abstract

Non-financial reporting frameworks in emerging economies have gained prominence in recent years as organizations recognize the need to address environmental, social and governance (ESG) issues alongside financial performance. These frameworks provide guidelines and standards for reporting on various non-financial aspects of business operations. While some emerging economies may adopt internationally recognized frameworks, others may develop their own frameworks to suit their specific contexts. Various international bodies and organizations have developed non-financial reporting standards and frameworks to guide organizations in reporting their ESG performance. Examples include the Global Reporting Initiative (GRI), the Sustainability Accounting Standards Board (SASB), and the Task Force on Climate-related Financial Disclosures (TCFD). These frameworks offer structured guidelines for reporting on specific ESG issues, ensuring consistency and comparability across industries and sectors. Within this paper it is presented the main frameworks used in emerging economies.

Key words: non-financial, emerging economies, frameworks

J.E.L. classification: O00

1. Introduction

The research aimed to study the main frameworks used in emerging economies. Implementing non-financial reporting standards and frameworks brings several advantages. It enhances transparency, allowing stakeholders to make informed decisions about a company's long-term sustainability. Standardization facilitates benchmarking and comparability, enabling investors, regulators, and the public to assess and compare the ESG performance of different organizations.

As the landscape of non-financial reporting continues to evolve, there is a growing call for convergence and harmonization among different standards and frameworks. Achieving a globally accepted and standardized approach to non-financial reporting could further enhance the credibility and effectiveness of ESG disclosures.

2. Theoretical background

In the definition by Marie-Josée Privyk (Privyk, 2022) standards are the agreed level of quality requirements, which people consider acceptable for reporting entities. A standard can be considered as containing specific and detailed criteria or values about the "what" should be reported on each topic. In general, corporate reporting standards have in common the following characteristics: emphasis on public interest, independence, due process, and public consultation, generating a stronger basis for the information requested.

On the other hand, frameworks provide the "framework" to contextualize information. Frameworks are those that are normally put into practice in the absence of well-defined standards. A framework allows flexibility in defining direction, but not the method itself. A framework can be thought of as a set of principles that provide guidance and shape people's thoughts on how to think about a particular topic, but it lacks a defined reporting obligation.

3. Research methodology

In this section we present the stage of evolution of frameworks and reporting standards in emerging economies. For this theoretical analysis to include the elements of interest, we have defined the following research questions:

1. What are the main internationally recognized reporting frameworks/standards?
2. What was the context and necessity at the time they appeared?
3. What are the main differences between the identified reporting frameworks/standards?

The critical analysis model used to highlight in an extended way the frameworks and standards used includes the following elements: conceptual basis, evolution, applicability, main aspects by which these frameworks and standards differentiate between them.

Below, there were included the main internationally recognized reporting frameworks/standards.

Table no. 1 Existing reporting frameworks and standards

Reporting Framework Entity/Standard	Acronym	Type	Year of appearance	Who applies	Users
Global Reporting Initiative	GRI	Standards and tools (including detailed indicators for reporting relevant data (Global Reporting, 2023))	1997	Over 10000 companies from over 100 countries	Expanded investors and stakeholders
RobecoSAM -Dow Jones Sustainability Index	DJSI	Tool including indicators for ranking entities	1999	Over 10000 companies	Investors
Carbon Disclosure Project	CDP	Reporting tool with specific indicators for the classification of entities (CDP, 2023)	2000	More than 23000 entities representing two-thirds of global market capitalization report via CDP in 2023 (CDP, 2023)	Investors and stakeholders
Equator Principles Association	EP	Principles for risk management in financial institutions (Equator Principles, 2023)	2003	140 financial institutions from 39 countries report using this framework (Equator Principles, 2023)	Interested parties
Science Based Targets Initiative	SBT	Tool for assessing the progress of entities against their objectives	2008	Used by over 780 companies globally	Interested parties
Climate Reporting Standards Board	CDSB	Standards for market research	2010	Private sector	Interested parties
Sustainability Accounting Standards Board	SASB	Tool including indicators for ranking entities	2011	Predominantly used in the United States	Investors
International Integrated Reporting Council	IR	Principles for impact reporting	2013	Public and private sector	Interested parties

Task Force on Climate-Related Financial Disclosures	TCFD	Principles and tool for forecasting (TCFD, 2023)	2015	Binding regulatory framework in many jurisdictions, including the European Union, Singapore, Canada, Japan and South Africa.	Investors
UN	SDGs	Tool including detailed indicators for impact reporting (United Nations, 2023)	2015	The framework is used in 162 countries (United Nations, 2023)	Interested parties.

Source: Own processing

4. Findings

Here are some key aspects of non-financial reporting frameworks in emerging economies as defined by corporate law firm Travers Smith (TraversSmith, 2022):

- Adoption of global frameworks: Many emerging economies choose to adopt globally recognized non-financial reporting frameworks to align with international standards.
- Local regulatory requirements: Some emerging economies are introducing regulations or requirements for non-financial reporting.
- Industry specific guidelines: Some emerging economies may develop sector-specific non-financial reporting guidelines.
- Cultural and social factors: Emerging economies often have unique cultural, social and environmental challenges.
- stakeholder involvement: Stakeholder engagement is an essential component of non-financial reporting in emerging economies.
- Integration with financial reporting: Integrating non-financial reporting with financial reporting is a challenge faced by organizations globally; Emerging economies may need to work on aligning these two aspects of reporting to provide a comprehensive picture of their performance.
- Insurance and verification: Ensuring and verifying non-financial reports is increasingly important. In some emerging economies, there may be a lack of expertise and resources for independent insurance, so building capacity for this is vital.
- Global benchmarking: Emerging economies often struggle to compare themselves to their global counterparts in terms of sustainability and ESG performance. This may lead to the adoption of internationally recognised reporting frameworks.
- Government support: Government support through incentives, subsidies, or recognition of ESG efforts can encourage organizations in emerging economies to adopt non-financial reporting practices.

In my opinion, these key issues succinctly present the directions of approach existing at global level, and not only within emerging economies. The adoption of global frameworks on the one hand and the fulfillment of local regulations corroborated with those specific to the industry are aspects that lead to a correct implementation of non-financial reporting.

Alongside government regulations, a wide range of reporting frameworks have emerged to help companies report on sustainability, each with a different focus on audience, reporting requirements and methodology.

The Global Reporting Initiative (GRI), founded in 1997 by the Coalition for Environmentally The fact that the Global Reporting Initiative (GRI) focuses on a more diverse group of stakeholders than the Sustainable Accounting Standards Board (SASB), whose main audience is investors, is one of the most important aspects that differentiates these two organizations. The executive directors of the

GRI and SASB wrote the following in a joint article that was published in 2017: "Instead of competing with each other, the GRI and SASB are designed to fulfill different goals for different audiences." When it comes to companies, it all comes down to choosing the right tool for the task at hand. (Mohin, T., & Rogers, J., 2017). The recent publication of GRI Standard 206 on Tax and Payment Disclosure to Governments demonstrates its relevance to a diverse collection of stakeholders. Wiederhold illustrates how multinational corporations can significantly and legally reduce their tax burden by providing an in-depth analysis of available techniques for valuing intellectual capital and transferring it to tax-advantaged countries. He does this by describing in detail the various methods of evaluating intellectual capital. (Wiederhold, G., 2014). A multinational firm is required to disclose the taxes it pays on a country-by-country basis, as required by the GRI standard. This disclosure would significantly increase the level of openness enjoyed by tax authorities and has the potential to deter tax evasion tactics that are particularly aggressive. In principle, shareholders and some specialists in accounting and tax consultancy benefit from tax evasion. However, this practice has a negative impact on the money available for public infrastructure and social welfare, which in turn affects virtually all other stakeholders. Non-shareholder stakeholders have a collective incentive to mitigate the negative effects of aggressive tax avoidance as they bear a considerable part of the cost of externalities that cannot be mitigated due to uncertain public funding. This is because non-shareholder stakeholders bear a significant share of externalities stemming from aggressive tax avoidance. The failure of the shareholders-focused accounting frameworks (IIRC and SASB) to propose any tax disclosure rule so far may not be a coincidence.

Unlike other frameworks, SASB makes a conscious effort to encode materiality, which sets it apart from other models. According to research, company managers' emphasis on important concerns broken down by industry seems to increase the value relevance of their companies' sustainability efforts (Khan, M., Serafeim, G., & Yoon, A., 2016). However, in a world where disruption is the norm, an erroneous materiality assessment will result from designating some concerns as insignificant and others as crucial through a laborious and sporadic standard-setting process. For example, the Securities and Exchange Commission (SEC) concluded in its materiality map that corporate ethics concerns are not likely to be substantial for the technology and communications industry, despite there being much evidence to the contrary (Bose, S., Guo, D., & Simpson, A., 2019). Similarly, an asset manager would be surprised to find that SASB does not consider data security or client privacy to be significant sustainability challenges for its asset management business. The protection of customers' personal information is not considered a significant concern for commercial banks by the SASB. In 2019, commercial bank and credit card business Capital One said a hacker took data relating to 100 million people living in the United States and 6 million people living in Canada from their systems (McLean, R., 2023 Oct. 30). Even though this was obviously an issue with data security, it also had negative effects on customer privacy. An investor valuing Capital One's portfolio holding against those of its rivals may be concerned about conducting due diligence on Capital One's methods of preserving consumer privacy. These examples show that it is a futile exercise to try to predict the types of concerns that will be significant to an investor in the way SASB claims to be able to do so. Investors cannot afford the luxury of handing over the task of defining the materiality of a static process managed by a standard-setting agency.

The goal of GRI and SASB is to make key performance indicators comparable between different companies. For TCFDs, comparability between issuers receives relatively little attention. According to the TCFD, consumers of climate-related financial information need companies to provide more information about the possible financial effect of climate-related challenges on their business prospects. This is a requirement that entities must meet. (Task Force on Climate-Related Financial Disclosures., 2019). Although the TCFD recommends scenario analysis for reporters, there are very few standard recommendations on the parameters and assumptions underlying such scenarios today. Although the Intergovernmental Panel on Climate Change (IPCC) and the International Energy Agency (IEA) have developed policy-relevant scenario descriptions, there are no 'standard scenarios' that include climate change impacts at a local scale, climate-related determinants of business performance, and climate change uncertainty parameters linked to business planning assumptions. Because of this, it is difficult to compare information that has been suggested by TCFD to different firms. As a result, the usefulness of such information to investors is substantially reduced. TCFD

cannot be considered a standard in the same sense as the GRI or SASB. It is still far too simple for companies reporting under this framework to assess idiosyncratic climate risks that are not properly articulated to investors and then conclude that their business models are robust in the face of such risks. For example, all four illustrative corporate reports that are presented in the latest status report published by TCFD state that their strategies are "resilient" or "robust" to the effects of climate change (Task Force on Climate-Related Financial Disclosures, 2019).

There is a link between civil society's calls for sustainable development, such as balancing economic growth and social and environmental goals, and the universal investor's interest in avoiding companies that generate short-term profits from the unsustainable liquidation of natural and human capital. Specifically, balancing economic growth and social and environmental objectives is a key component of sustainable development. In addition, the general awareness of the emergence of the citizen investor and the trend towards distributed ownership shows that describing investors as primarily the owners of corporations and creditors of these companies is an extremely insufficient definition. Today's investor constituency connects with consumer, employee, and community constituencies in a significantly broader manner than it did in previous centuries. It is therefore neither constructive nor viable to maintain a clear distinction between investors' interests and those of a more diverse cross-section of stakeholders, which is the focus on sustainability proofing frameworks. At the beginning of this chapter, we discussed two potential explanations for the interest investors may have in ESG information: (1) to assess the effect that business action has on environmental and social systems and (2) to locate the origins of ESG "alpha". To address the first reason, it is vital to have consistent, easily accessible, and easy-to-interpret measurements. Standardization and centralized definitions are undoubtedly essential to the aim we want to achieve here. It is not possible to assess the effectiveness of business initiatives for reducing emissions without first establishing a reliable mechanism for calculating scope 1 and scope 2 emissions.

Information is the key raw material in the process of producing value through a security selection process, sometimes known as ESG "alpha" lookup. In this endeavor, information that is familiar to many people or can be obtained with little effort is of much less value than information that must be obtained through laborious procedures, considerable research and attention to detail, along with fortuitous achievements. Information is likely to be incorporated into asset prices to the extent that it is publicly available and can be understood consistently. Therefore, the information is highly unlikely to lead to better performance. One of the conclusions that can be drawn from most of the different formulations of the efficient market hypothesis is that acquiring knowledge of this type is not worth the effort and expense involved. On the other hand, materials that are difficult to understand and understand can be useful for the selection process of security personnel. The esoteric knowledge required to form the basis of alpha containment tactics cannot be obtained by using frameworks that are both widely available and transparent. If they were able to do so, reduced barriers to entry would quickly erase any advantage they would have, which would eliminate why they need to obtain such obscure information in the first place. Investors are looking for this type of information, but the scope of their investigation inevitably extends beyond conventional data sources. Alliances formed between active investment managers, such as Alliance Bernstein and Wellington Management, with climate science institutes such as the Lamont Doherty Earth Observatory and Woods Hole Research Center, respectively, are illustrative of the hunt for esoteric knowledge, but relevant to decisions. These partnerships have the potential to significantly improve the allocation of funds for climate risk reduction and solution financing (AllianceBernstein., 2019).

5. Conclusions

In conclusion, the landscape of non-financial reporting frameworks in emerging economies represents a dynamic and evolving aspect of corporate disclosure. As these economies grow and become increasingly integral to the global business environment, the importance of transparent reporting on environmental, social, and governance (ESG) factors has gained prominence. Non-financial reporting frameworks serve as essential tools to guide organizations in these regions towards sustainable and responsible business practices.

The adoption of non-financial reporting frameworks in emerging economies is influenced by a range of factors, including regulatory developments, stakeholder expectations, and the recognition of the materiality of ESG issues. While some emerging economies may face unique challenges in terms of capacity, awareness, and regulatory maturity, the trajectory indicates a growing acknowledgment of the need for standardized and comparable ESG disclosures. Collaboration between governments, regulatory bodies, businesses, and civil society is crucial for the successful integration of non-financial reporting frameworks in emerging economies. By fostering a cooperative environment, stakeholders can work together to address challenges, share best practices, and drive the development of context-specific reporting guidelines.

In summary, the journey towards effective non-financial reporting in emerging economies is characterized by progress, challenges, and the recognition of the transformative potential of ESG disclosures. As these economies continue to play a vital role in the global economy, the successful integration of non-financial reporting frameworks will contribute not only to the sustainability of individual businesses but also to the broader social and environmental goals of these nations. The ongoing commitment to transparency, accountability, and sustainability will be instrumental in shaping the future trajectory of non-financial reporting in emerging economies.

6. Acknowledgement

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7. References

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Organizational Culture, Corporate Governance and Accounting Outcomes

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Abstract

Corporate governance (CG) disclosures are seen as the essence of the organizations' non-financial reporting. The consequences of governance reporting are based on internal and external interconnected factors, so quantitative studies fail to capture the whole picture. As an example, poor performance can be both the result and the cause of underlying governance mechanisms. The present work aims to analyse the governance reporting rules versus principles by carrying out an empirical research of governance reporting through the Romanian financial investment companies listed on the BSE (Bucharest Stock Exchange). The results show the relevance of organizational culture in promoting governance and positive attitude at all organizational levels.

Key words: corporate governance, accounting informational system, organizational culture, accounting outcomes, corporate governance disclosure

J.E.L. classification: M14, M40

1. Introduction

The financial crises that the global economy has faced in recent years have revealed the inability of corporate governance, based especially on self-regulation, to face all the internal and external challenges that put ever stronger pressure on organizations (Basco, 2023). In particular, precisely this moment of crisis dynamized the identification of developing means for governance mechanisms that correspond to the new challenges of the socio-economic and political environment. Corporate governance has crossed the traditional boundary of management and control and has become a complex structure, built on solid foundations, capable to provide reliable and sustainable long-term governance solutions. Governance has given to the modern economic environment what democracy began to give to states in antiquity, through the ability to apply fundamental democratic principles within organizational typologies. Democracy is the form of organization and political leadership of a state taking into account the will of all members, their interests and aspirations, the supreme power returning to the people and being exercised by elected representatives based on an electoral system. Similarly, the GC is associated with the organization and management of an institution based on democratic principles, by the shareholders who belong to the supreme power, exercised through an elected Council in order to satisfy its interests. But governance also incorporates the efficiency of management systems, the credibility of information, risk management, human resource management, and the improvement of economic life. In all this complex system, based on economic structures and commercial law (Licht, 2014), organizational culture tends to occupy an increasingly important place (Hsieh et al. 2018) within governance, so more and more international regulatory authorities have promoted the need for a positive organizational culture (Basel Committee on Banking Supervision,

2023; UK Financial Reporting Council, 2021; Central Bank of Ireland, 2018) as a vital component of long-term financial success.

In specialized literature, governance is fundamental as an architectural ensemble formed between management, in the broad sense, and all interested parties (European Corporate Governance Institute, 2023), affected by international regulations but also by internal politics (Dobre, 2021). The history of the governance principles is relatively recent, the Cadbury Report (1992) identifies the three pillars that underpin the principles of governance: integrity, transparency and fidelity of information, while the OECD developed the first set of principles in 1999 (OECD, 1999), but it followed the dynamics of economic and social realities and it was revised in 2004 (OECD, 2004), 2015 (OECD, 2015), respectively in 2023 (OECD, 2023). The principles establish the links between the different levels of information transfers from and to organizations. Although there is a risk that these principles remain at the regulatory and declarative level and do not produce the expected effects, they ensure transparency and efficiency (Breton, 2009) to activities, as a factor invoked in analyses of the causes and effects for the financial and economic crises, protect all shareholders' interests, including minority shareholders, improves the communication process and ensures predictability.

The corporate governance report is the most comprehensive means of communication between the organization and all stakeholders, deserving its reputation as the "pinnacle of corporate communications" (Cohen, 2002; Santema et al., 2001; Coy et al., 2004; Linsley et al., 2008). The empirical study of governance reports has become one of interest for the scientific community, especially in the following of recommendations and regulations from the internal and international organizational side, the research following not only the aspects that define what must be reported but also the way in which these aspects are communicated, thus that both the form and the content of the governance reports were of interest, this being the *motivation* for choosing the present research topic. Five types of critical analysis of annual reports have been identified in the literature: subjective analyst evaluations, disclosure index studies, thematic content analyses, readability studies, and linguistic studies (Beattie et al., 2004). In this article, we have chosen to combine subjective assessment with thematic content analysis, with an emphasis on uncovering underlying themes in the results of the whole-text analysis.

The purpose of this paper is to analyse the reporting ways for the corporate governance dimensions, establishing the links between the governance measures and the analysed result variables. In order to fulfil this, we carried out an empirical analysis of the way in which the Romanian investment funds, listed at the BSE, choose to draw up and publish the governance reports, in which situations these principles are more present and if they produced or are producing positive effects.

The work is structured in five chapters. The first chapter presents a brief introduction in relation to corporate governance reporting and the motivation of the chosen theme. The second chapter summarizes the interest of researchers in the field of corporate governance and the connections between it and organizational culture. The third chapter presents the research methodology aimed at identifying the governance reporting practices of Romanian companies listed on the stock exchange. The results obtained from the critical analysis of the GC reports are presented in the fourth chapter, the last chapter summarizes the conclusions of the study.

2. Literature review

European Corporate Governance Institute (2023) characterizes governance as the engine that sets in motion the entire organization activity, broadly defining the connection between the company and the social environment, with an emphasis on the connection between it and the corporate culture. The British Academy (2018) puts organizational culture at the heart of contemporary GC research although the phrase is considered "elusive" (Hsieh et al.,) or "inherently slippery" (Awrey et al., 2013). The Jenkins report (American Institute of Certified Public Accountants, 1994) promoted the effects of reporting oriented to all interested parties, which include a widened and integrated range of financial-accounting and non-financial information (Ionescu et al., 2020). In response, Financial Accounting Standards Board FASB (1998) emphasized the relevance of voluntary disclosure for all information necessary to the rapid changes in the business environment. Organizations are forced to quickly adapt to new regulations and environmental requirements, but also to prove social

responsibility and to quickly and continuously provide comprehensive information on socially relevant aspects for stakeholders (Mansour et al., 2023a).

There are many studies that show the direct link between organizational culture and corporate governance with implications for accounting information system (Vaddadi et al., 2018; Priyadarshanie, 2021). Numerous works have focused on studies of reports published by companies and on the way of publishing information, deviating from one geographical area to another, the determining factor of these situations being national culture as a determinant of organizational culture (Acosta et al., 2016; Kuzey et al., 2017; Vaddadi et al., 2018; Blankespoor, 2019; Albu et al., 2020a; Chang et al., 2021; Mansour et al., 2022a; Shin et al., 2023).

Traditional accounting no longer has the instrumental capacity to provide the tools necessary for the sustainable reporting processes of all interested parties (Mansour et al., 2023b), being necessary to reconfigure them under the subtle influence of social and environmental attractors (Lungu et al., 2009). Organizational culture represents an accumulation over the time of skills and competencies capable of adding value to the company (Pham et al., 2021). Studies have shown a positive association between organizational culture and corporate performance and the publication of financial information as well as sustainable development (Nardella et al., 2020) the response of the markets to these reports being immediate (Mansour et al., 2023c). Organizational culture is one of the factors that benefits not only employees (The British Academy, 2018; Albu et al., 2020b; Priyadarshanie, 2021; European Corporate Governance Institutes, 2023; Moraes et al., 2023) but it is able to confer value to the whole company (Pham et al., 2021). Governance quality is rewarded financially (Awrey et al., 2013) and firms use latitude in accounting rules to manage earnings reporting in a variety of contexts (Dechow et al., 2007; Elias, 2004). Environmental conditions and characteristics can influence reported earnings (Doupnik, 2008), corporate culture correlating with business management, with results (Burgstahler et al., 2003; Teoh et al., 1998; Ball, et al., 2000; Chen et al., 2010; Cheng, 2014), operational efficiency, with executive compensation design or firm value (Li et al., 2020), senior management having to deal simultaneously with various conflicting demands of investors, analysts and regulators (Choi et al., 2003). Earnings management practices affect the quality of financial reporting and among the mechanisms that can constrain these practices are corporate governance (Guan et al., 2005; Han, 2012; Doupnik, 2008; Zhang et al., 2005; Elias, 2004; Geiger et al., 2006; Geiger et al., 2010; Calabrò et al., 2022).

Classic organizational culture, as defined by (Hofstede, 1980) as the sum of national and regional cultures that affect the time-resistant organization behaviour, tends to transform into a digital culture subordinated to the social environment changes, (Shin et al., 2023) deeply related to the organization performance and to the governance mode (OECD, 2023), culture being one of the pillars for a successful transformation of the collective mentality (Moraes et al., 2023). Although innovative organizational culture is a necessary condition for productive governance and an effective accounting information system (Liyang et al., 2023), all this digitalization is a double-edged sword for the organization under the threat of cybercrime, the role of protectors falling to professional accountants alongside digital experts. (Mansour et al., 2022b). A compact approach to data collection, classification, storage and use methods is needed (Moscove et al., 2002) to generate information accounting systems capable of providing governance with a relative advantage, leading in finally to performing businesses (Thuan et al., 2022). Internal actors responsible for financial reporting mobilize their indigeneity, determined by their own national and organizational culture, to generate and operationalize transnational reporting models (Albu et al., 2022).

Organizational resource planning systems, fundamentally related to accounting and reporting, mediate organizational integration and control (Chapman et al., 2005) and a balanced perspective can only be ensured by implementing procedures of legitimate discursive practices, fulfilling the necessary conditions of validity: truth, justice, veracity (Dillard et al., 2006), the integration and resolution capacities of these planning systems being limited by discursive practices of governance (De Beer et al., 2006).

With all these positive aspects of culture on governance, there are also studies that highlight how different cultures can harm different stakeholders and even society as a whole (HSIEH et al., 2018; Chang et al., 2021). Where there is no strong organizational culture oriented towards sustainability, reporting is severely affected and tends to respect the information interest of all stakeholders only in exceptional cases (Bartolomeo, 2000).

3. Research methodology

The research methodology is an empirical one, based on a critical analysis of the corporate governance reports of a number of five financial investment companies listed on the BSE (Bucharest Stock Exchange) in the period 2016-2022. The chosen time interval starts with the year 2016, which is the year of entry into force of the Corporate Governance Code updated by the BSE (2015) and the year 2022 is the last year for which available reports were found at the time of the start of the research effort. The companies included in the sample are those listed on the BSE and for which these reports were made public.

The critical analysis aims to identify the way in which the aspects included in the international recommendations and regulations regarding corporate governance reporting are communicated by the Romanian financial investment companies, as well as the ways in which the informational accounting system supports this reporting. As part of the research approach, we followed, combining the subjective evaluation with the thematic content analysis, how the following levels are included in the sampled reports: relationship with management, relationship with directors, relationship with associations, non-financial indicators, financing indicators.

The web pages of the selected companies were analysed and the information available on the governance page was recorded. The critical content analysis (Hummel, 2021) followed the general reporting structure recommended by BSE (2015) and individual observations were tabulated using Microsoft Word. The information resulting from the critical and interpretive analysis of the content of the reports was subsequently compared and analysed and, based on these observations, the results of the present study were generated.

4. Findings and discussion

Due to its official and audited nature of the company, the governance policies published by the organization are the subject of either a separate report or are contained within an investor relations page and are not published directly on their website, aspect that gives them greater credibility and accuracy of the information presented in a reliable way. So, we have focused our attention on the disclosure practices using these communication channels and not on all the information published on those sites. Disclosure of financial information in separate reporting pages addressed to interested parties is a general practice of financial investment companies listed on the Bucharest stock market.

As a general structure, all the analysed companies present aspects related to: corporate governance structures, the holder of financial instrument of the issuers rights, the directors board performance and commitment, the board structure, the procedure for appointing and remunerating board members, internal control and management risk, affiliated parties' transactions, social responsibility, management system.

The interested parties that hold the power, stakeholders, have a high relevance score, followed by those who possess legitimacy and, finally, those who hold urgency, with companies focusing on stakeholder theory in governance reporting. Although these reports are of interest to many interested parties' categories, not just financial ones, and management has social responsibilities towards them as well, the address formulas of the governance reports are, in particular, aimed at capital holders.

Table no. 1. Name used by companies for CG disclosure

NAME USED FOR THE WEBPAGE	COMPANIES NO.
INVESTOR' SECTION	1
INVESTOR RELATION	1
CORPORATIVE GOVERNANCE	3

Source: made by authors

The same trend focused on the stakeholder theory is also observed regarding the number of attributes addressed to each interested party on the one hand, and their relevance on the other hand. The communication languages are both Romanian and English. The five analysed organizations understood the importance of GC, the necessity and benefits of adopting these norms under the influence of numerous internal and external constraint factors.

The activity field of the analysed companies is highly regulated so that their GC reporting and disclosure mechanism is limited to legal requirements, and less to self-regulatory principles such as "apply and explain" (apply the principles and explain the practice).

Pressure from organizational ownership has led to increased reporting of statistics on the structure and diversity of director boards, a significant indicator of economic and social performance. In order to limit the effects of member volatility, a sign of weakness for potential investors, companies have chosen transparency in terms of the board of directors meeting number, the remuneration level, the percentage of participation in these meetings for each member, but also the necessary cumulation skills and experience as well as the selection and appointment procedures for management members.

The benefits of organizational culture are decisive in providing information about human resources: ethnic and gender diversity of members, their qualification and experience.

With regard to transactions with subsidiaries or involved parties, we have identified substantial, clear procedures for their approval and implementation, accompanied by express statements regarding the absence of conflicts of interest or abstention from the administrator if such conflicts existed. Most of the time, these situations were subjected to an expertise either from the structural side of internal control or from independent administrators.

In the analysis of the presentation for non-financial information, reports are superficial, strictly respecting the legal requirements in force, without reflecting the deep specific mechanisms of the companies, relying, in particular, on the economic perspective to the detriment of the institutional one.

The same level of top management transparency is found in financial performance. Managers tend to provide additional disclosures only to the extent that they describe the activity and results in a better light (Nardella et al., 2020), while poorer performances are presented succinctly. However, there may also to be fewer formal reasons that justify this attitude, corporate governance being closely linked to the organizational culture that in turn determines managerial attitudes, so that it can also be the result of a transparent, collaborative culture. Better financial performance is associated with more open governance reporting, boards within these companies were better remunerated.

All five companies present their auditor in the reports, in four cases, being a company belonging to Big4, an aspect that confirms the strictness in complying with the regulations in force.

5. Conclusions

The investment funds listed at BES comply with the governance rules, those that more easily implement these principles, being those that have ordinary corporations with such codes as their shareholders. It is expected that stakeholders can play their critical role on the organization governance reporting activity.

Social and cultural norms influence GC, but better governance reporting depends on the regulatory level. The governance code is interconnected with accounting and internal rules without representing a goal in itself, but is seen as an added value that can be brought to the company. Transparency of financial and non-financial statements was associated with the opportunity for value creation.

Companies are not fully aware for the reporting transparency relevance and compliance with corporate governance principles, but are focused, in particular, on maximizing shareholder benefits and less on the social and non-financial interests of other shareholders.

It remains a subject of analysis which are the activity fields in which governance principles make their presence felt in a more meaningful way, as well as the extent to which they have generated or have the ability to generate positive effects.

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Tax Evasion in the European Union

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Abstract

Tax evasion is a significant issue within the European Union (EU), impacting both individual member states and the EU. It involves individuals or businesses deliberately underreporting income, hiding assets, or engaging in other fraudulent activities to reduce their tax liability. This study aims to identify most common methods of tax evasion used by European companies. Consequently, we detail the various measures the EU has taken to address tax evasion and enhance cooperation among member states to combat this problem.

Key words: transfer prices, intra-community loans, tax provisions, investments

J.E.L. classification: H26

1. Introduction

Tax evasion is the practice of reducing the amount of tax owed by companies and individuals by exploiting loopholes in tax legislation. It is a legal practice, but one that is often seen as unethical and unfair, particularly by governments that rely on tax revenues to fund public services and infrastructure.

In the European Union, tax avoidance has become a major problem in recent years, with reports suggesting that billions of euros of tax revenue are lost each year due to the actions of companies and individuals trying to avoid paying their fair share of tax. This has led to increased scrutiny of tax laws and the introduction of crackdowns on those who engage in such practices.

One of the key factors contributing to tax evasion in EU Member States is the existence of tax havens. These are countries or territories that offer low or no tax rates and other incentives, such as secrecy, to attract companies and individuals to reduce their tax liabilities. Examples of tax havens in the EU include Luxembourg, Ireland, and the Netherlands, all of which are accused of offering tax breaks to multinational corporations.

This topic is of great interest because legal tax avoidance is a common set of practices among multinational companies to reduce the tax rate partially or fully. This means less tax collected to the state budget and has effects on the state infrastructure, health system, education system, economic growth, welfare of the nation and so on.

2. Theoretical background

Legal tax avoidance, or tax planning, is the practice of organizing financial affairs in a way that legally minimizes the amount of tax owed to the government. Although it is a common practice, it is often a controversial topic because of the perception that it allows wealthy individuals and corporations to avoid paying their fair share of taxes.

Essentially, legal tax avoidance involves taking advantage of the various tax deductions, credits, and exemptions available under the law. For example, individuals may choose to invest in tax-deferred retirement accounts, such as 401(k) plans or Individual Retirement Accounts (IRAs), which allow them to reduce their taxable income and defer paying taxes on their investment earnings until

they withdraw money in retirement.

Researchers studying tax evasion typically explore various aspects of this complex and multifaceted phenomenon. Their work involves examining the underlying causes, economic implications, and legal frameworks related to tax evasion. Key areas of focus are the following:

- **Economic Models and Analysis:** Researchers developed economic models to understand the incentives and behaviors that drive tax evasion. This involved examining how individuals and businesses make decisions about tax compliance and the economic consequences of tax evasion on governments and societies (Ghazo et al, 2021, p.228; Biondo et al, 2022, pp.801-803).
- **Empirical Studies:** Conducting empirical studies involved analyzing real-world data to identify patterns, trends, and factors influencing tax evasion. Researchers used statistical methods to quantify the extent of tax evasion, identify high-risk sectors, and assess the effectiveness of enforcement measures (Slemrod, 2007, p.28; Galbiati et al, p.6).
- **Behavioral Economics:** Understanding the psychological factors that influence tax compliance is a key aspect of research. Several studies explored how cognitive biases, social norms, and other behavioral factors impact individuals' decisions to evade taxes or comply with tax regulations (Alm et al, 2021, p.181; Chetty, 2008, p.3).
- **Legal and Regulatory Frameworks:** Researchers examined the effectiveness of existing legal and regulatory frameworks in deterring and prosecuting tax evasion. The role of international cooperation, tax treaties, and anti-money laundering regulations was highlighted (Shaviro, 2020, p.11; McCafery, 2021, p.28).
- **Tax Policy Analysis:** Investigating the impact of tax policies on evasion is crucial. Researchers assessed how changes in tax rates, tax credits, and deductions influence individuals' and businesses' decisions to comply with tax laws or engage in evasion (Bird, 2016, p.161).
- **Cross-Border Tax Evasion:** Given the global nature of financial transactions, researchers often focused on cross-border aspects of tax evasion. This included analyses of the use of tax havens, transfer pricing schemes, and international efforts to combat cross-border evasion (Dyrenge et al, 2019, p. 185, Guyton et al, 2023, p.12).
- **Technological Advances:** As technology evolved, researchers explored how innovations such as cryptocurrencies, blockchain, and digital platforms may affect tax evasion. Understanding the role of technology is crucial for reducing tax evasion (Thuneibat et al, 2022, p.1367).
- **Compliance Strategies:** Research also focuses on identifying effective strategies for promoting tax compliance. This refers to studying the impact of public awareness campaigns, tax education programs, and the design of tax collection systems (Han, 2020, pp.150-165).
- **Corporate Tax Evasion:** Researchers investigate tax evasion by corporations, examining practices such as profit shifting, the use of tax havens, and the effectiveness of measures aimed at increasing corporate tax transparency (Contractor, 2016, p.6).
- **Social and Ethical Dimensions:** Examining the social and ethical dimensions of tax evasion involves considering public attitudes toward tax compliance, perceptions of fairness, and the role of social norms in shaping behavior (Contractor, 2016, p.10).

Extensive studies on tax compliance and evasion have been published (Heineman et al, 2013, pp.230-231; Abraham et al, 2017, pp.180-181; Alstadsæter et al, 2019, pp.2080-2082) focusing on the economic and behavioral aspects of taxation, exploring factors that influence individuals' decisions to evade taxes. Concerning variables related to public policy, it was highlighted that audits and fines exhibit distinct interactions when it comes to both extensive and intensive margins. These factors positively influence the extensive margin, and their interaction demonstrates a positive correlation: as the probability of an audit increases, the influence of the fine rate on the decision to comply becomes more significant, and conversely. (Alm et al, 2021, p.185). Similarly, corporations can use legal tax shelters or offshore accounts to reduce their tax liabilities. These strategies can include incorporating in countries with lower tax rates or setting up subsidiaries in tax-friendly jurisdictions.

However, advocates of tax avoidance argue that it is a necessary tool to promote economic growth and innovation. (Barker, 2009, p.4). By reducing tax liabilities, individuals and corporations can invest more money in their businesses or in new ventures, which in turn can create jobs and stimulate economic activity. They also argue that many of the tax deductions and exemptions available under

the law are designed to incentivize certain behaviors, such as charitable giving or investing in renewable energy. Ultimately, the legality of tax avoidance depends on compliance with the relevant tax laws and regulations. While there is no single guaranteed strategy to reduce tax liabilities, individuals and corporations can work with tax professionals to develop a tax plan that maximizes their savings while staying within the law.

3. Research methodology

This study conducts bibliographic research. Specialized literature in the field of tax evasion has been studied, and the main methods identified as ways to avoid tax payments have been extracted. In general, such studies aim to analyze and synthesize information from specialized literature to better understand the phenomenon of tax evasion and the methods used to avoid it. We explored various sources such as books, scientific articles, government reports, and other relevant documents. Case studies, tax legislation, and reports from international financial institutions were also analyzed. Generally, methods to avoid paying taxes and duties are diverse and include:

- Transfer pricing. In such situations, companies can manipulate prices in transfers between their entities to reduce profits and, consequently, taxes.
- Tax base erosion. Companies prefer to use legal or less transparent methods to reduce the income considered in tax calculation.
- Tax havens. Multinational companies transfer assets to jurisdictions with lower taxes or more favorable legislation regarding taxation.
- Issuing false or fictitious invoices. Companies or individuals often issue invoices for services or goods that were not actually provided, creating false expenses to reduce profit tax.
- Using registered companies for tax purposes. In many cases, legal entities are used to hide or manipulate money flows.

Bibliographic research in this field provides a broader perspective on tax evasion, highlighting various aspects and methods used in practice. It is important to approach this subject by analyzing multiple sources to obtain a comprehensive understanding of the phenomenon.

4. Findings

4.1. Methods of tax evasion within European Union

There are several methods of tax evasion within the European Union. These include transfer pricing, intra-company loans, deferral of taxation through provisions and investments.

Transfer pricing is a practice in which companies set prices for goods or services that are sold between different parts of the same company. This practice has become increasingly common in recent years, particularly among multinational corporations, as a way of minimizing their tax liabilities. One of the key factors contributing to transfer pricing in the European Union is the existence of tax havens.

The use of transfer pricing can allow companies to shift profits to low-tax countries and reduce their tax liabilities in high-tax countries. This is particularly common among multinational corporations, which often have operations in several countries. By setting prices for goods or services that are sold between different parts of the same company, companies can manipulate these prices to shift profits to low-tax countries and reduce their tax liabilities in high-tax countries.

Transfer pricing is therefore the practice of setting prices for goods or services that are sold between different subsidiaries of the same company. The practice is used by multinational corporations to transfer profits from high-tax countries to low-tax countries to minimize their total tax liability to the government. For example, a multinational corporation has a subsidiary in France and another subsidiary in Ireland. The French subsidiary produces a product that is sold to the Irish subsidiary, which then sells the product to customers in Ireland. The multinational corporation can manipulate the price of the product sold between the two subsidiaries to transfer profits from France, where the tax rate is high, to Ireland, where the tax rate is low.

To illustrate how this works in practice, suppose the French subsidiary produces a product for €100 and sells it to the Irish subsidiary for €120. The Irish subsidiary then sells the product to customers in Ireland for €150, making a profit of €30. If the multinational corporation had priced the product sold between the two subsidiaries at €100, the French subsidiary would have made a profit of €0, while the Irish subsidiary would have made a profit of €50. By setting the price of the product sold between the two subsidiaries at €120, the French subsidiary earns a profit of €20, while the Irish subsidiary earns a further €30. This means that the multinational corporation can transfer profits of €20 from France to Ireland, where the tax rate is lower, thus reducing the overall tax liability.

The transfer pricing method is among the most common in the literature. It assumes the existence of at least two related entities, one of which must be in a low-tax country and the other in a high-tax country. According to the literature, the reasons why a company chooses to remain in such a high-rate state would be: accelerated economic growth, population, wage levels, or other reasons.

Intra-company loans are a common way for multinational corporations to move funds between subsidiaries in different countries. This practice involves one subsidiary lending money to another subsidiary within the same company. Intra-company loans are often used to finance business operations or to finance certain investments, but also to avoid taxation in a legal way.

In the European Union, the use of intra-company loans is subject to certain rules and regulations. These rules aim to prevent companies from using intra-company loans as a way of artificially shifting profits to low-tax jurisdictions or to avoid paying tax, but there are nevertheless ways to practice this.

One of the key regulations organizing intra-company lending in the European Union is the EU Interest and Royalties Directive. This directive was introduced in 2003 and aims to prevent companies from using intra-company loans to transfer profits to low-tax countries. Under the directive, companies can transfer interest and royalty payments between subsidiaries located in different EU countries without having to pay withholding taxes. However, these payments must be made on an arm's length basis, which means they should be set at a level that would be charged between unrelated parties in a similar transaction.

The EU Interest and Royalties Directive applies to all companies that are incorporated in an EU Member State and have subsidiaries located in other EU Member States. The Directive also applies to companies that are incorporated outside the EU but have a permanent establishment in an EU Member State.

In addition to the EU Interest and Royalties Directive, there are other rules and regulations that legally organize intra-company loans in the European Union. For example, the Anti-Tax Avoidance Directive (ATAD), which was introduced in 2016, includes provisions designed to prevent companies from using intra-company loans to artificially reduce their tax liabilities. ATAD sets limits on the amount of interest that can be deducted from taxable income and requires companies to demonstrate that loans are used for genuine business purposes.

The use of intra-company loans in the European Union is also subject to transfer pricing rules. These rules require companies to price intra-company loans on an arm's length basis, which means that prices should be like those charged by unrelated parties in a similar transaction. Companies must be able to provide evidence that their intra-company loans are normally priced, and failure to do so can result in penalties and fines.

In the European Union there are provisions allowing companies to defer taxation of certain income and expenses. This practice, known as deferral, can help companies manage their cash flow and reduce their short-term tax liabilities. However, it can also lead to the accumulation of large amounts of untaxed income, which can create tax planning opportunities and may be seen as unfair by some taxpayers and policymakers.

One of the most common ways for EU companies to defer taxation is through the use of tax provisions. Tax provisions are liabilities that companies withdraw from their accounts to cover potential future tax liabilities. These provisions can be used to defer taxation of income, such as profits that are expected to be subject to tax in a future period. They can also be used to defer the taxation of expenses, such as losses that may be carried forward to offset future profits.

The use of tax provisions is governed by accounting standards such as International Financial Reporting Standards (IFRS) and Generally Accepted Accounting Principles (GAAP). Under these standards, companies are required to make provisions for potential tax liabilities in accordance with relevant tax laws and regulations. The use of tax provisions may also be subject to scrutiny by tax

authorities, who may challenge the amounts set aside by companies and require them to pay additional tax.

Investments made by companies to avoid taxes in the European Union can take many forms, from legitimate tax planning to aggressive tax avoidance schemes that may be considered illegal. The use of such schemes has become a growing concern for EU policymakers as they can lead to significant revenue losses for national tax authorities and distort competition in the single market.

Another form of investment made by companies to avoid taxes in the EU is the use of tax incentives and subsidies offered by Member States. These incentives are often designed to attract foreign investment or to encourage certain types of economic activity, such as research and development or green energy. While these incentives may be legitimate and serve a useful purpose in promoting economic growth, they can also create tax planning opportunities for companies seeking to reduce their tax liabilities.

In recent years, the EU has introduced several measures aimed at tackling aggressive tax avoidance schemes by companies operating in the region. For example, the EU Tax Avoidance Directive (ATAD) includes provisions aimed at preventing companies from artificially shifting profits to low-tax jurisdictions using intra-group financing arrangements, such as the use of hybrid borrowing arrangements or transfer pricing manipulation. ATAD also includes rules designed to prevent companies from using mismatches between different tax regimes to avoid paying tax altogether.

In addition to ATAD, the EU has introduced several other measures to increase transparency and combat tax evasion. These include the introduction of mandatory country-by-country reporting for multinational companies and the adoption of a common EU list of non-cooperative jurisdictions for tax purposes.

4.2 Methods of combating legal tax evasion within European Union

The European Union (EU) has implemented various methods to combat tax evasion, including:

- Common Consolidated Corporate Tax Base (CCCTB): the EU has proposed that the CCCTB should establish a single set of rules for calculating a company's taxable profits in the EU, regardless of its location. This proposal aims to reduce the complexity of tax rules and close loopholes that allow companies to shift their profits to low-tax countries.
- Anti-Tax Avoidance Directive (ATAD): ATAD is a set of EU-wide rules designed to prevent companies from using aggressive tax planning practices to avoid paying taxes. The Directive introduces measures to combat tax practices such as hybrid mismatches, interest deductions and exit taxation.
- Country-by-country reporting (CbCR): The CbCR requires multinational companies to report financial data on a country-by-country basis, including information on profits, taxes paid and employees. This reporting allows tax authorities to identify potential tax avoidance practices and take appropriate action.
- Automatic Exchange of Information (AEOI): AEOI is a system of information exchange between EU Member States that allows tax authorities to obtain information on taxpayers' financial accounts held in other countries. This system is designed to prevent tax evasion by allowing tax authorities to detect offshore accounts and undisclosed assets.

Moreover, the EU has set up a Code of Conduct Group on business taxation, which aims to promote fair and transparent tax practices among EU Member States. The Code encourages countries to eliminate harmful tax practices and implement measures that prevent aggressive tax planning.

5. Conclusions

Legal tax avoidance is a common practice in the European Union, and it is often a controversial topic because of the perception that it allows wealthy individuals and corporations to avoid paying their fair share of taxes. Although legal tax evasion exists, it is important to note that it is different from tax avoidance, which is illegal. The European Union has adopted a series of measures aimed at combating tax evasion, but it is difficult to evaluate if these measures are effective, as long as laws offer companies possibilities to avoid taxes.

Companies' use of investment to avoid tax in the European Union is a complex issue that can take many forms. While some forms of tax planning may be legitimate, aggressive tax avoidance schemes that exploit loopholes in the tax system or artificially shift profits to low-tax jurisdictions can have a negative impact on national tax revenues and competition in the single market.

Although measures adopted by the EU demonstrate its commitment to combating tax evasion, challenges remain, including differences in national tax systems and legal frameworks. Enforcement and cooperation among member states are crucial for the effective prevention and prosecution of tax evasion in the EU.

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The Impact of IFRS on Audit Quality in Romania

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Abstract

Given the current economic uncertainties in the capital market, there is a heightened need for quality audit engagements to maintain the credibility of financial statements and the trust of users. In these circumstances, it is important to use the best practices in order to carry out quality audit engagements, in accordance with professional standards. Aligned with the global push for accounting harmonization through IFRS adoption, our study evaluates how implementing IFRS impacts financial audit quality, focusing on auditor opinions and key audit matters. The research was carried out on a sample of companies listed on the Bucharest Stock Exchange, both in the main and AeRO segments, whose annual reports were studied for the period 2016-2022. Preliminary results reveal that the application of IFRS has a significant influence on the quality of financial audit in Romania in terms of audit opinion and key audit matters.

Key words: audit quality, IFRS, harmonization, audit engagement

J.E.L. classification: M42

1. Introduction

The prospect of Romania's accession to the European Union led to the initiation of a programme to harmonise Romanian accounting with international standards. Thus, since 1999, the evolution of Romanian accounting has been marked by the phenomena of Europeanisation and internationalisation, as measures are taken to harmonise accounting legislation with European Directives and International Accounting Standards (Istrate, 2016, p. 16; Cenar & Deaconu, 2006, p. 238). After many legislative changes, since 2012, Romanian companies listed on the regulated market are required to apply International Financial Reporting Standards (IFRS) in their individual financial statements.

Today's developed economic environment is driven by the desire to make a profit, so reporting financial statements is a key moment throughout the financial year (Toma & Chirleşan, 2011, p. 30). In the case of companies listed on the Bucharest Stock Exchange, this moment has a double significance, as the information disclosed in the financial statements can have a significant impact on the decisions of their users, in particular on the decision of investors whether or not to continue their investment in a company (Adhau et al., 2022, p. 406).

Although both a company's management and investors, a privileged category among users of financial information under IFRS, have a common interest in the entity making a profit, if the company's results are not sufficiently favourable, there is a risk that management will cosmetise the financial statements in order not to lose the support of investors. (Robu, 2014, p. 119) Thus, the risky situation in which external users of financial reports find themselves, amplified by the information

asymmetry, led to the emergence of the term "audit", which began to be used after 1990 in Romania, as a consequence of the initiative to align national regulations with international ones (Florea et al., 2008, p. 110). Globally, the examination of financial statements holds a crucial role in contemporary business norms. Presently, in nations boasting advanced financial systems, audits are mandatory for a substantial number, if not all, of public companies. The auditing process is closely overseen by governmental regulations, though accounting professional associations occasionally play a significant role in shaping these rules (Caprio, 2013, p. 345).

Information is the foundation of any business entity's activities, influencing decisions related to the efficient operation of the company, including choices about optimal sources of credit or strategies for expanding the customer base. They also contribute to meeting the interests of shareholders and potential investors (Robu, 2021, p. 21). In the context of a market economy, financial-accounting information, present in the financial reports of economic entities, is the central pillar of relations between business partners (Berheci, 2010, p. 258; Robu, 2021, p. 43). Therefore, trust in the information provided by companies is essential for users of financial statements, playing a crucial role in economic decision-making. This importance led to the establishment of financial auditing, defined by Chamber of Financial Auditors of Romania through the lens of its objective, namely "the expression of an opinion by the auditor that the financial statements have been prepared, in all material respects (give a true and fair view), in accordance with an identified overall financial reporting framework" (Berheci, 2010, p. 260).

The international standard-setting organisation for auditing is the International Auditing and Assurance Standards Board (IAASB), which issues International Standards on Auditing (ISAs) (Chersan, 2013, p. 17). The purpose of ISA is to serve the public interest by improving the quality and consistency of audit practice worldwide and by enhancing public confidence in the audit and assurance profession globally (Haapamäki & Sihvonen, 2019, p. 38).

The audit engagement ends with the publication of the audit report, in which the auditor expresses an opinion on the picture reflected by the financial reports, issued on the basis of the conclusions resulting from the audit of an entity's financial statements (Robu, 2021, p. 246). The audit report plays a key role in the communication process between the company and the users of the financial information, adding value to the decision making of potential investors. The role of the auditor's opinion is crucial in building the confidence of users of financial information in the good governance of a company and in improving the credibility of financial statements (Robu, 2021, pp. 78-79). Financial auditors are the accounting professionals most exposed to criticism from users of financial reporting information, as they are considered "scapegoats" in their capacity as guarantors of the quality and credibility of the data provided by companies, and are sometimes even considered solely responsible for companies' failures (Toma, 2012, p. 6). Recent financial scandals and crises have given rise to much debate about the value of audits and the role of auditors, particularly with regard to the need to improve the quality of communication between auditors and the users of their reports (Figa et al., 2023, p. 831).

2. Literature review

One of the fundamental issues addressed in the accounting literature is the quality of information presented in financial statements. Various indicators are used to assess this quality and to analyse its influence on different variables, often influenced by the behaviour of investors and other stakeholders (Carp & Istrate, 2021, p.1).

The implementation of International Financial Reporting Standards in both European Union Member States and countries outside Europe represents one of the most significant transformations in the history of accounting, providing a common framework for expressing financial information and thus promoting the use of a single global accounting language (Săcărin, 2014, p. 92). Contemporary economies depend on cross-border transactions and the free movement of international capital. More than a third of all financial transactions take place internationally and this figure is expected to grow. Investors seek diversification and investment opportunities globally, as companies raise capital, trade or expand operations and subsidiaries in multiple countries (IFRS, 2017). Global accounting harmonisation is the process by which national accounting regulations are reviewed and improved to ensure comparability of financial statements. Large international investors

are mainly the ones who have called for accounting harmonisation, as they have a specific interest in evaluating, in a guaranteed manner and with equivalent criteria, the opportunities for capital investment (Dicu, 2015, p. 24).

Instability in the business environment, generated by the globalisation of markets, accentuates and diversifies the risks companies face. In line with investor requirements, these risks should be clearly highlighted in financial statements and easily identifiable through analysis. These realities have prompted accounting standard setters to propose a more detailed financial reporting system, with the aim of increasing the transparency of information on risk exposure and allowing a more accurate assessment of financial performance (Mironiuc et al., 2015, p. 405).

Financial reporting under International Financial Reporting Standards increases the relevance of financial information (Robu, 2015, p. 42) and has led globally to increased information transparency and a high level of disclosure of financial statements, which has also been reflected in audit quality as it has reduced audit risk (Tache, 2020, p. 253).

Audit quality gained prominence in the accounting literature after DeAngelo's seminal work which defined audit quality as the likelihood that an auditor will discover violations of the client's accounting system and report those violations (DeAngelo, 1981, p. 116; Deb et al., 2023). Good audit quality provides a high degree of assurance that the financial statements present fairly the financial position and performance of the entities, based on the financial reporting system and the characteristics of the entity (Carp & Istrate, 2021, p. 1).

Various studies have drawn attention to the fact that the objectives and nature of audit are perceived differently by users, which has led over time to discrepancies in expectations about the function and role of financial auditors, known in the international literature as the "Audit Expectation Gap" (Bunget, 2017, pp. 119-120). A large proportion of users view the audit as a safeguard that protects them from all financial, risk, governance or regulatory issues that could affect an entity, although the auditor cannot make an entity's risks and problems "magically disappear" (Fülöp, 2018, p. 195).

The literature generally documents that the adoption of IFRS, especially when firms adopt IFRS voluntarily, results in improved accounting quality (Liu et al., 2011, p. 672; Christensen et al., 2015, p. 56). However, some academics point out that IFRS has increased the complexity of financial reporting (Fearnley & Hines, 2007, p. 394). International accounting standards are an underestimated factor, but a key contributor to the audit expectation gap, in that they contribute both to the increased complexity of financial accounting, making it easier for management to manipulate financial statements, and to the degree of audit subjectivity, increasing pressure on auditors. The increase in subjectivity is explained by the fact that IFRS are principles-based standards and auditors may therefore fail to remain objective (Astolfi, 2021, p. 171).

The impact of IFRS adoption on audit quality is likely to differ depending on the quality of national accounting standards that were in place prior to IFRS implementation. Because accounting standards have evolved within cultural, legal and institutional characteristics, including in relation to auditing, the success of IFRS implementation is likely to have depended on contemporary changes in domestic capital market institutions and other regulations (Deb et al., 2023). Studies of listed companies have determined that the application of IFRS leads to higher audit quality (Carp & Istrate, 2021, p.5; Dimitropoulos et al., 2013, p. 112).

An important factor in the decision-making process by users of the financial statements is the independent and objective opinions of the financial auditors, which ensure that the financial position and performance are accurately represented in all material respects. Due to the key role that reporting plays in auditing, it has undergone significant changes in recent years to enhance the quality of audit reports (Grosu et al., 2020, p. 73). One such change was the introduction of a separate section on key audit matters (KAM), beginning with the audit of the 2016 financial statements, through ISA 701 - *Communicating Key Audit Matters in the Independent Auditor's Report*. The IAASB adopted ISA 701 as a response to stakeholder concerns about the independent auditor's report, as well as an attempt to mitigate information asymmetry between users of financial statements and auditors (Grosu et al., 2020, p. 74; Porumbăcean & Tiron-Tudor, 2021, p. 654). It has been found that exposure of key audit issues in the prior year causes the auditor to give an unqualified opinion in the current year, as a result of identifying sensitive areas at an earlier stage, audit risk in the immediate future period can be reduced and auditor confidence increased (Grosu et al., 2020, pp. 78-84).

Various studies carried out on companies listed on the Bucharest Stock Exchange show that the application of International Financial Reporting Standards has led to an increase in the unqualified opinions expressed by auditors, suggesting an improvement in the quality of information presented in the annual financial statements (Grosu et al., 2015, pp. 8-13; Manolescu et al., 2021, pp. 626-627).

3. Research methodology

Taking into account the issues outlined in the literature, we set out to test the following working hypotheses in this study:

H1: At the level of the Romanian BSE listed companies, the application of IFRS increases the quality of the audit engagement.

H2: At the level of the Romanian BSE listed companies, the application of IFRS leads to an increase in unqualified opinions expressed.

The studied population for which the research hypotheses are proposed is represented by all the Bucharest Stock Exchange listed companies. However, we have chosen a sample of four companies, listed on the Bucharest Stock Exchange, operating in the construction and real estate sector, of which two (IMPACT Developer & Contractor S.A. and Societatea de Construcții NAPOCA S.A.) apply IFRS, being listed on the regulated market, and two (CONCAS S.A. Buzău and LCS Imobiliar S.A. Cluj Napoca) apply Romanian Accounting Standards (RAS), being listed on the AeRO market. We have chosen a sample based on the construction sector as we believe that the differences between the specific accounting treatments of International Financial Reporting Standards and Romanian Accounting Standards are more pronounced in this industry.

As the 2016 financial year marked the first year of implementation of ISA 701 - Communicating Key Audit Matters in the Independent Auditor's Report, we proceeded to collect and analyse data from the 2016-2022 annual reports.

With regard to the auditor type variable, a distinction is made between Big 4 and Non-Big 4 auditors, with the latter being separated into three subcategories, namely other international companies, local audit firms and sole traders. The situation of the professionals who audited the annual financial statements provided by the four companies for the period 2016-2022 is summarised in Table 1. As can be seen, in terms of preference for a particular category of auditors, only one company in the sample, among those applying IFRS, preferred Big 4 auditors, while the rest of the companies in the sample opted for Non-Big 4 auditors.

Table no. 1 Categorisation of the auditors

Category of auditor		Symbol	Auditors
Big 4		Big 4	DELOITTE AUDIT SRL, Ernst & Young
Non-Big 4	Other International Companies	OIC	-
	Local Audit Firms	LAF	Interfisc SRL, Exconta Fm, MBA Expert Consulting Services SRL, EUROAUDIT SRL
	Sole Traders	SL	Fătăcean Gheorghe

Source: own projection of annual reports

4. Findings

Following the analysis of the audit reports of the four companies, we have summarized in Table no. 2 the audit opinions issued for the annual financial reports to determine whether there is a correlation between the accounting benchmark applied and the likelihood of a particular type of opinion occurring.

Table no. 2 Summary of audit opinions issued during 2016-2022 for the four entities

Entity	Accounting Standard	Audit Opinion						
		2016	2017	2018	2019	2020	2021	2022
IMP	IFRS	UO	UO	UO	UO	UO	UO	UO
NAPO		UO	UO	UO	UO	UO	UO	UO
CONK	RAS	QO	QO	QO	QO	QO	QO	QO
LCSI		UO	UO	UO	UO	UO	UO	UO

Source: own projection of annual reports

Based on the information presented in Table no. 2, it can be seen that the implementation of International Financial Reporting Standards leads to an improvement in the quality of the annual financial statements process. This is evidenced by the consistency of the unqualified opinions expressed over the seven years analysed for companies listed on the main market. In contrast, companies using the Romanian accounting reference framework do not record the same positive results in terms of the type of opinion expressed. This is due to the qualified opinions issued by the auditors of CONCAS S.A., according to the audit reports available on the BVB. The auditors issued qualified opinions due to the valuation of fixed assets at acquisition cost less accumulated depreciation and impairment losses, despite the provisions of OMFP no. 1802/2014 as amended, which establish the valuation of fixed assets at fair value at the balance sheet date.

Further, we analysed audit opinions expressed from the perspective of auditor type in order to estimate a link between categories of auditors and the possibility of expressing a particular type of opinion. Therefore, using Table no. 3., we summarised the totality of the opinions issued by the four types of auditors during the period analysed.

Table no. 3 Audit opinions issued in the period 2016-2022 by category of auditors

Auditor's categories		Audit opinion				Total
		UO	QO	CO	IO	
Big 4		7	-	-	-	7
Non-Big 4	OIC	-	-	-	-	-
	LAF	6	7	-	-	13
	SL	8	-	-	-	8
Total Non-Big 4		14	7	-	-	21
Total		21	7	-	-	28

Source: own projection of annual reports

No entity in the sample chose to benefit from audit services provided by international companies, except for the Big 4, during the period analysed. Also, analysing the data presented in the table, it can be seen that there were no adverse opinions (CO) and no disclaimer of opinion (IO). In terms of audit opinions expressed, we note that the Big 4 auditors issued exclusively unqualified opinions, while the Non-Big 4 auditors had a percentage of 66.67% unqualified opinions and 33.33% qualified opinions. Among the Non-Big 4 auditors, it is noted that local audit firms issued 46.15% unqualified opinions, while they issued 53.85% qualified opinions. The sole traders issued entirely unqualified opinions. Hence, it can be concluded that the Big 4 auditors, with their extensive resources and knowledge, are more skilled in applying audit procedures, thus favouring a higher number of unqualified opinions.

Another aspect worth analyzing is the presentation of the key audit matters (KAM), in accordance with ISA 701. In this regard, we have collected from the reports of the independent auditors all the specified KAMs and through Table no. 4 we presented their distribution both by categories of auditors and by accounting standards, marking with "1" the use of a KAM and with "0" its non-use.

Table no. 4 Key audit matters and their distribution by category of auditors and by accounting standards

KAM	Accounting Standards		Auditor's category			
			Big 4	Non-Big 4		
	IFRS	RAS		OIC	LAF	SL
Valuation of real estate investments	1	1	1	-	1	0
Litigations	1	0	1	-	0	0
Provisions	0	1	0	-	1	0
Transfer in and out of Investment Property	1	0	1	-	0	0
Revenue Recognition	1	0	0	-	1	0
Valuation of receivables	1	0	0	-	1	0
Valuation of property, plant and equipment	1	1	0	-	1	0
The significance threshold	1	0	0	-	1	0
Going concern	1	0	0	-	1	0
Total	8	3	3	-	7	0

Source: own projection of annual reports

Regarding the overview of key audit issues, we note that during the period under review, auditors, regardless of affiliation, identified a higher number of KAMs for companies listed on the regulated market, in contrast to those listed on the AeRO market. By auditor type, we find that local audit firms reported the highest number of KAMs, i.e. seven, followed by Big 4 auditors, who highlighted three KAMs. It is noted that despite the implementation of ISA 701 - *Communication of Key Audit Matters in the Independent Auditor's Report*, sole traders did not address these matters. There, it can be concluded that auditors tend to disclose more key audit matters for companies applying IFRS compared to those applying RAS, and that Non-Big 4 auditors, in the subcategory of local audit firms, show a tendency to disclose more key audit matters than Big 4 auditors. It is important to stress, however, that although the accounting referent and the type of auditor may influence the presentation of key audit issues, the most significant factors are the specifics of the audited firm and the professional judgement of the auditor.

5. Conclusions

The results reached after the data analysis at the level of the proposed sample lead to the validation of the two research hypotheses.

Firstly, in terms of improving audit quality, as reflected in increased transparency and relevance, it can be argued that the trend for auditors to present more key audit matters for firms applying IFRS confirms the first research hypothesis, given that the IAASB adopted ISA 701 - *Communicating Key Audit Matters in the Independent Auditor's Report* precisely to improve the quality of audit engagements.

Moreover, in relation to audit opinions, it can be stated that the increase in the quality of the preparation of financial statements under IFRS is reflected in the benchmarking analysis carried out by the fact that auditors issued only unqualified opinions for companies applying IFRS, while for companies applying RAS they issued 50% unqualified opinions and the remaining 50% qualified opinions, which confirms the second hypothesis.

Extrapolating these results to the entire population of companies listed on the Bucharest Stock Exchange, regardless of the object of activity, we could state that companies adopting IFRS show a more pronounced preference for Big 4 auditors compared to those applying Romanian accounting standards. In addition, the application of IFRS seems to lead to an increase in the number of unqualified opinions expressed by auditors. Also, auditors tend to present more key audit issues for IFRS companies as opposed to RAS companies, and that Non-Big 4 auditors, in the subcategory of local audit firms, tend to present more key audit issues than Big 4 auditors.

However, we would like to express a qualified opinion on the validity of this generalised conclusion, and draw attention to the limitations of the research, namely the small sample size and the relatively short time frame considered. Future research directions aim to continue the study by analysing a larger sample of firms with different activities and a longer period of time.

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A Literature Review of Institutional Performance and Circular Economy

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Abstract

In recent times, there has been notable advancement in the exploration of the circular economy concept. The challenges posed by the global crises generated by the pandemics and wars have underscored the importance of comprehending and adopting new consumption patterns guided by the principles of Reduce-Reuse-Recycle-Recover, as well as streamlining distribution networks. The key research areas pertaining to the circular economy continually evolve. This study conducts a bibliographic analysis based on 2430 research papers indexed in Clarivate Web of Science Core Collection from 1985 to 2023. The bibliometric examination specifically focuses on the economic aspects of the circular economy, and the hierarchical investigation enables the creation of a treemap that captures the most frequently explored research themes. The findings reveal a close association between circular economy research and sustainable development, business performance, breakthroughs in industrial advancements, research on environmental impact, and human involvement in supply chain management.

Key words: circular economy, institutional performance, bibliometric analysis, treemap hierarchical analysis

J.E.L. classification: D80, E20, G00

1. Introduction

In the field of the circular economy, numerous studies delve into various facets of the concept. Some researchers focus on the circular economy by employing bibliometric analysis (Goyal et al., 2021; Camón Luis, 2020), while others concentrate on the practical application of technology or the optimization of consumption within this framework (Georgantzis Garcia et al., 2021). Additionally, there is a growing body of research that examines the interplay between the circular economy and the environment.

Past discussions regarding the tension between economic factors such as growth, institutional performance and administrative efficiency (Rus, 2022; Stan et al., 2023), social well-being, and environmental preservation (Brasoveanu, 2013; Paraschiv et al., 2023) for future generations have gradually given way to the imperative integration of all these aspects within the concept of the "circular economy." This concept aims to advocate for the sustainable development of both the economy and environmental well-being, ensuring their harmonious coexistence.

The current research offers a review of previously published economic studies centred on the concept of the circular economy. Utilizing bibliometric analysis of keywords, along with quantitative analysis and a visual representation of hierarchical data, it was observed that further progress is required in the exploration of circular economy within the realm of business economics. Nevertheless, the existing studies emphasize a rigorous empirical application.

The study's methodology aims to enhance the understanding of current literature trends and is rooted in the subjectivity of research argumentation. Bibliometric analysis proves to be a valuable tool for delving into historical or current research paths. It allows for a thorough exploration of relationships between keywords, actively contributing to the knowledge mapping of various trending topics. The utilization of treemap representation enhances the comprehensiveness of the findings and provides a hierarchical visual portrayal on notable outcomes.

2. Literature review

Due to its comprehensive and interdisciplinary nature, the concept of Circular Economy (CE) lacks a singular definition and has been interpreted in various ways, holding different meanings for diverse audiences and contexts. Some scholars, such as Yuan and Bi (2006), have contended that there is no universally accepted definition of CE. Nevertheless, it is evident that the understanding of CE has undergone changes in recent years. Circular Economy is envisioned as an economic development model aimed at environmental protection and pollution prevention, ultimately fostering sustainable economic growth (Ionescu-Feleaga et al., 2023). For some researchers, CE is viewed as an economic strategy that advocates for innovative approaches to transition from the current linear consumption system to a circular one, emphasizing material conservation. In a broader sense, CE serves as a generic term encompassing all activities that contribute to the reduction, reuse, and recycling of materials throughout the production, distribution, and consumption processes (Herciu et al, 2023). Alternatively, other authors conceptualize CE as a production and consumption system that minimizes material and energy losses through extensive practices of reuse, recycling, and recovery.

The specific actions that circular economy encompasses, such as reuse, refurbish, repair, eco-design, transform (Reike, 2018, Thapa, 2023), have a common predilection for change to a new and performant business system of sustainable consumption and production (UNEP 2012) which requires important investments and commits to hold off lavishness, fraud (Rus, 2019; Rus, 2020) or waste.

The 4R framework, Reduce-Reuse-Recycle-Recover, defines fundamental principles that guide sustainable development efforts to improve environmental quality, achieve economic prosperity, encourage social equity, and strengthen the foundations for the well-being of future generations. The circular economy (CE) generally aims to improve the strategies oriented towards the achievement of sustainable development goals (Schroeder, 2019), to restore environmental resources, strengthen the economy, and develop social well-being.

Bibliometric analysis is a commonly used analytical method in systematic literature reviews. This approach involves quantitatively analysing scholarly works and presenting results objectively using various visual representations. By employing bibliometric analysis, one can assess the productivity of published works and their impact as indicated by citations. This analysis also involves evaluating contributors in the field, addressing aspects related to "performance analysis", which is a major component of bibliometric analysis. Moreover, bibliometric analysis incorporates "science mapping," enabling the identification of key themes (such as economics and management) and topics (like sustainable development, organizational behaviour, circular supply chains, consumer behaviour, and others). This method helps uncover significant trends, historical evolution, and gaps in the field. Consequently, performance analysis and science mapping constitute the essential components of bibliometric analysis (Lim, 2023).

3. Research methodology

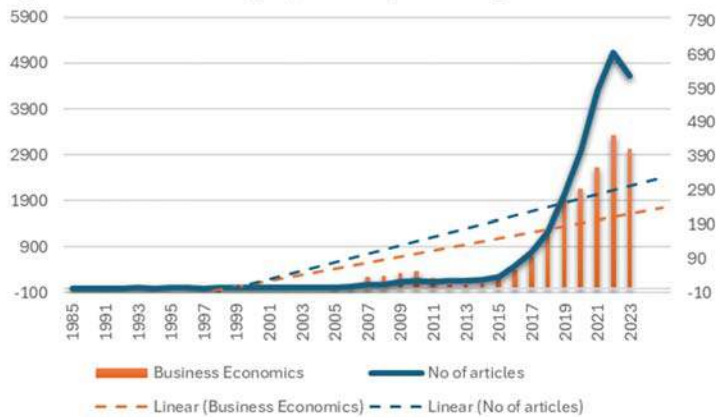
To identify relevant data for our analysis, we interrogated the Web of Science database and systematically reviewed literature on the circular economy main topic, undergoing multiple steps. Our observation period spanned from 1985 to 2023. Initial research phases concentrated on establishing an analytical foundation and refining pertinent information for the study. Criteria for relevance and validity were established to encompass articles and conference papers written in English specifically addressing the "circular economy" topic. A total of 23,015 publications meeting the established criteria were initially identified. Although bibliometric analysis is an objective, quantitative research method, it requires interpretation and, consequently, it encompasses a dose of subjectivity. This paper suggests employing a sensemaking approach to guide researchers from simple description to actively interpreting bibliometric results. This transition transforms raw information into highlighted patterns and insights, enhanced by the visual representation of data in a treemap format.

The first research article addressing the circular economy was published in the Web of Science database in 1985 according to our selection results. From 2003 onward, there was a gradual uptick in research interest regarding the circular economy, and it wasn't until 2018 that the number of

published research papers in the WOS database surpassed the numerical threshold of 1000. The identified research manuscripts spanned various disciplines, including Environmental Sciences, Ecology, Engineering, Science Technology, Chemistry, Energy Fuels, Agriculture, Physics, among others. To narrow the focus of our analysis, we recalibrated our approach and introduced an additional filtering criterion to include only research articles published in the Business Economics research area. This refinement resulted in a database containing 2430 research items.

Figure 1 presents a comparative display of the numerical development of publications within the examined sample. It contrasts the numerical evolution of total published articles on the circular economy with those specifically published in the Business Economics area on the same topic. Dashed trend lines have been computed to project the trend of research on the circular economy. These estimations suggest an increasing interest in the topic of circular economy in the forthcoming periods. Notably, there has been a growing interest among economic researchers in the subject of circular economy since 2006, making it a prominent research topic.

Figure no. 1. Numerical progression of research publications on circular economy



Source: own research

The subsequent stages of the analysis were focused on pinpointing the keywords and examining the connections between them to uncover prominent themes associated with the circular economy. We generated a treemap showcasing interconnected keywords, allowing for an assessment of the significance of links between various items. Additionally, a network of keywords was established to visually represent the interplay among primary research focuses. Utilizing VoS Viewer and bibliometric analysis, we conducted descriptive and quantitative assessments of the data. This included identifying patterns for concurrent and collaborative networks, conducting co-word analysis, and generating word clouds.

The subsequent stages of the analysis focused on reducing the dimensionality of the sample data and investigating the patterns of the temporal progression of key topics associated with the circular economy. The objective was to determine whether there was an observable relationship between the research pathways and their evolution over time. To achieve this, factor analysis was employed to scrutinize the significance of the connections among the examined elements, ultimately resulting in the identification of several research gaps.

4. Findings

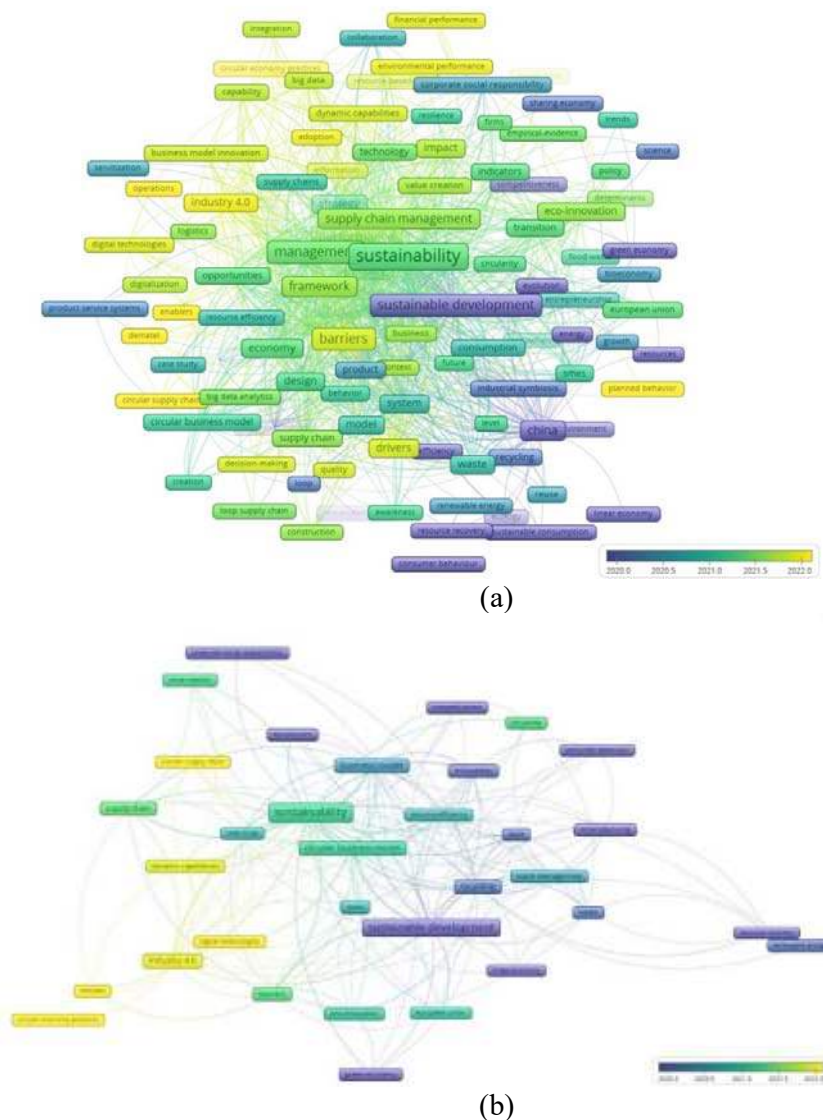
The bibliometric analysis assessed the significance of each chosen research paper and the appropriateness of the included keywords. To enhance the relevance of the analysis, the subsequent phase involved further filtering of the database, requiring that each keyword had a minimum occurrence of 10. Out of the 3204 initially identified keywords, only 130 met this refined selection criteria. The total link strength between the selected keywords was 10327, and 5 clusters were observed based on their association with research topics and their frequency of use in research papers.

The verification of keyword validity occurred in the subsequent data processing phase, wherein filtering targeted similar keywords, such as those in plural and singular forms with identical meanings. Following the application of this final filter, a total of 3191 keywords were recognized, for which the minimum threshold of occurrence was set to 10. Out of the identified 3191 keywords, 117 keywords met this specified threshold, manifesting a total link strength of 10032.

Further analysis was carried out on the set of keywords provided by the authors, yielding a refined sample of 2423 items. After applying filters to remove duplicates, 2417 unique items were identified. To ensure relevance, a minimum occurrences threshold of 10 was set, resulting in 33 author keywords that met this criterion, demonstrating a combined total link strength of 396.

The examination of keywords also considered the historical significance of both the keywords identified through bibliometric analysis of the sample dataset and those provided by authors. The overlay visualization map generated with VosViewer offered insights into the evolving trends of these keywords over time. In Figure 2, darker violet shades represent keywords that have been utilized in circular economy research for more extended periods of time, while yellow shades indicate the most recent trends in research paths.

Figure no. 2. Overlay visualisation for historical use of keywords: (a) all keywords identified by VosViewer, (b) author keywords.



Source: own research

As shown in Figure 2(a), the present analysis has recognized a significant number of emerging topics, indicated by the yellow color in the visual representation. The novelty of these diverse research trends implies the presence of underexplored subjects within the Circular Economy (CE) field or research paths that scholars have recently identified as requiring further development. The overlay visualization map revealed that terms such as "sustainable development", "resource recovery", and "consumer behaviour" were keywords prevalent in research conducted over three years ago. Conversely, current trending topics concentrate on the exploration of digital technologies (Apostol et al., 2021; Aivaz, 2022), circular supply chain, Industry 4.0, practices related to the circular economy and new research methods such as the Decision-Making Trial and Evaluation Laboratory (DEMATEL) method.

Besides being a prominent subject in the Western economy (Stan, 2022), the circular economy (CE) has experienced rapid expansion in various countries, particularly in China. China stands out as the first country globally to enact legislation in 2008 that streamlines the adoption of circular economy practices. In the socioeconomic context of business advancement, CE is acknowledged as a crucial approach for achieving sustainable economic and environmental development (Brasoveanu, 2015; Ogunmakinde, 2022; Brasoveanu, 2023). Consequently, the European Union has responded by introducing a Circular Economy package, extending its previous waste directive.

Keywords serve as the essence of analysed contextual ideas, and their recurrent appearance in numerous studies facilitates the identification of prominent research themes. VosViewer establishes a connection between two keywords whenever there is a co-occurrence relationship in a publication. The total link strength (TLS) indicates the number of papers in which the two keywords appear together. Out of the 117 keywords identified through the bibliometric analysis of all manuscripts and the 33 keywords consistently provided by authors, those with a co-occurrence frequency exceeding 10 were chosen for subsequent stages of analysis, as outlined in Table 1.

Table no. 1 C-occurrence of the keywords most frequently used according to the sample data.

Keyword	All Keywords			Author keywords		
	Occurrences	TLS	Links	Occurrences	TLS	Links
Sustainability	252	1274	114	140	122	28
Barriers	138	889	109	26	29	15
Innovation	125	716	109	30	33	15
Sustainable development	126	453	100	99	65	23
Business model	88	472	100	47	57	21
Industry 4.0	58	340	85	41	42	17
Waste	65	322	86	17	16	9
Circular business model	44	247	86	44	44	19
Supply chain	44	275	82	27	27	11
Eco-innovation	46	281	81	17	13	8
SMES	40	249	75	22	17	13
Recycling	39	129	58	39	47	19
Waste management	33	148	68	24	32	16
Dynamic capabilities	26	161	63	20	17	12
Case study	15	77	89	15	26	13
Resource efficiency	16	96	54	15	24	13
DEMATEL	12	98	71	12	12	6
Reuse	22	84	45	15	26	15
Circular supply chain	10	68	85	10	10	8
Digital technologies	13	72	68	10	15	8
Environment	17	66	42	14	10	6
Resource recovery	17	46	26	15	15	6

Sustainability	Sustainable development	Innovation	Business model	<ul style="list-style-type: none"> ■ Sustainability ■ Barriers ■ Innovation ■ Sustainable development ■ Business model ■ Industry 4.0 ■ Waste ■ Circular business model ■ Supply chain ■ Eco-innovation ■ SMES ■ Recycling ■ Waste management ■ Dynamic capabilities ■ Case study ■ REF - Resource efficiency ■ DEMATEL ■ Reuse ■ CSC - Circular supply chain ■ DTECH -Digital technologies 			
					Eco-innovation	SMES	Recycling
	Waste	Circular business model	Dyna... capabi...				
	Barriers	Industry 4.0	Supply chain		Reuse	Case study	CSC...

Component Plot in Rotated Space

Component 2

Component 1

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780

The Kaiser criteria was used for factor analysis, with the principal component matrix (PCA) as the extraction method and oblique rotation for interpretation. Adequacy testing of the factor analysis on the sample data yielded a Kaiser-Meyer-Olkin result of 0.704, indicating relevance, and the test was highly significant ($p < 0.001$). The analysis resulted in the extraction of two factors that collectively accounted for 84.67% of the variance. The component plot in Figure 4 illustrates that the occurrence (AKO) and total link strength of all keywords (AKLK) are significantly associated with the occurrence (AutOCC) and total link strength of keywords determined by authors (AutLK). However, these variables did not exhibit a notable connection to time evolution. The interpretation of the obtained treemap and the outcome of the factor analysis suggested that the links between research pathways over time are likely influenced by the identification of significant research gaps.

5. Conclusions

Our study aimed to provide an authentic insight into the prominent research directions within the circular economy field. We aspire to pave the way for future literature research that can significantly contribute to the advancement of innovative theoretical and empirical studies in this highly crucial and relevant subject. Upon reviewing the existing literature with bibliometric analysis, we have identified research gaps and recently developed new pathways which aim to enhance the understanding and proactive implementation of the circular economy concept. From an economic standpoint, addressing issues such as the diversification of effective business models, fostering awareness of consumer preferences for eco-friendly products, and optimizing industrial eco-efficiency are crucial considerations for contemporary society.

In recent times, there has been a notable increase in publications focusing on the circular economy within the field of business economics. Correspondingly, studies have explored the implementation of the circular economy to enhance business and operational performance. These investigations have shed light on the potential benefits that the circular economy can offer to companies inclined towards eco-innovation and the optimization of supply chains. However, it is equally crucial to recognize the application of the circular economy within specific sectors, particularly in service-oriented companies with a distinct technological aspect.

Our investigation uncovered various challenges demanding further research and emphasized that resolving these issues is not a quick fix. It is crucial multiple researchers and practitioners alike to significantly intensify their efforts in addressing the complexities of the circular economy. Our study identified several unexplored avenues that require attention. Further bibliometric analysis is essential to refine our understanding of the nuances in theoretical research on the circular economy and its connection with empirical requirements.

We acknowledge the limitations of this study, primarily rooted in its reliance on a single representative research database, the Clarivate Web of Science Core Collection. Although our investigation has established a benchmark for future comparisons in the literature on circular economy, there are additional unexplored avenues that require urgent attention. Nevertheless, our study has furnished valuable insights into the research trajectory and temporal evolution of circular economy concepts, contributing to more informed decision-making and theoretical foundations. By comprehending our past achievements, we can refine our current strategies and strive for a more promising future.

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The Banking System in Romania in the Current Period

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Abstract

The financial system and its components are of interest to economists, researchers and practitioners in the field of banking finance. In Romania more than 77% of the total assets of the financial system are represented by the banking component. Based on this evidence, the paper is an empirical analysis of the evolution of the volume and structure of banking assets in Romania in the period 2020-2023. By analysing the share of foreign versus domestic capital, we also wanted to draw attention to a possible risk of contagion, as external factors have emerged in recent years and are currently affecting the economic and financial balance.

The motivation for this paper comes from the fact that the structure and share of foreign capital in the Romanian banking system shows how sensitive the system is to contagion risk. In the current period, when international events are happening rapidly, the study is timely.

Key words: commercial banks, banking system, banking assets, contagion risk

J.E.L. classification: G01, G20, G21, G24, G30, E50

1. Introduction

After joining the EU, the financial and monetary reality in Romania was closely correlated with international events and changes. The free movement of capital opened the way for foreign-owned banks to all EU countries and implicitly to Romania. Thus banks with domestic capital have come out of the limelight and international financial institutions have gained market share. Competition intensified, which led to the refinement of banking products and services.

What types of banks still exist in the Romanian landscape?

What is the contribution of foreign capital to the banking system today?

These are two of the questions this research will answer.

The analysis will identify the features of the Romanian banking system in the current period, as well as market trends.

2. Theoretical background

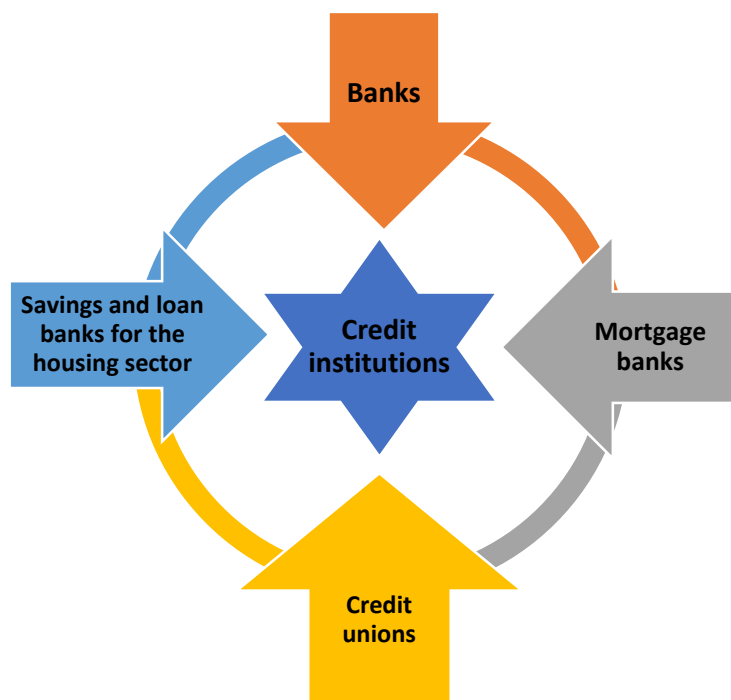
The evolution of countries' economies is often correlated with the state of the banking system. Yet the economy and the banking system do not go hand in hand. In some cases, the development of a region's economy has outpaced the development of banking instruments and the financial system as a whole. In other cases, the modernisation of the banking system and the variety of financing, lending and payment techniques made available to the business community has led to economic growth. It can be said that in these countries, banks acted as real locomotives that pulled the economy along (Apetri, 2007).

Until 1998, the banking system in Romania was overwhelmingly state-owned (Barisitz, 2005). Most of the banks' assets were made up of state loans. In many cases these loans turned into losses. (Bonin, Hasan & Wachtel, 2014) In the pre-accession period to the EU and after the actual accession the situation changed.

The characteristics of a banking system are general to the types of credit institutions operating in the financial market. Within the European Union there are the following categories of banks: corporate banks, deposit banks, electronic money institutions, banks specialised by industry. In the literature there are different models of banks. There is the classic (universal) bank model, the virtual bank model, the investment bank model and the remote bank model.

In Romania, the current model is the universal bank, and the main categories of activities are: retail, SME and corporate. It involves the division of banking institutions according to the predominant field in which they operate. Thus we have banks that specialise in retail operations, i.e. they carry out operations on the current accounts of smaller customers, e.g. individuals, banks that specialise in operations aimed at larger, corporate customers and banks whose main area of activity is financial investment banking.

Figure no. 1. Categories of credit institutions in ROMANIA



Source: own conception

In Romania, the legislation in force on banking institutions, we distinguish the following main categories of credit institutions: commercial banks, mortgage banks, savings and credit banks in collective system for the housing sector and credit cooperatives. Electronic money institutions are also active in this market. As we will show, most of these credit institutions are primarily engaged in attracting deposits and granting loans.

3. Research methodology

In Romania, the banking system has a major share in the financial system. A study by the Black Sea Trade Bank shows that in 2020, more than 75% of total assets in the financial system will be covered by the assets of commercial banks. Non-bank financial institutions have short-term products and services. Although private pension funds have been increasing their assets in recent years, their share in the system is around 8%. Financial investment alternatives are quite small and manage about 5 percent of financial system assets (BSTB, 2020).

The research method focuses on the study of the volume of bank assets between December 2020 and March 2023. By analyzing the data published by the NBR I will study the share of assets of foreign and domestic banks in the total.

A picture of the banking system will also be given by the capital structure present in the Romanian banking market. The conclusions are interesting especially as there are biunivocal links between the banking system, monetary policy and the fiscal system (Lipară & Dănilă, 2015).

A relevant study on contagion risk in the Romanian banking system was conducted by Vogiazas and Nikolaidou. (2011).

It is well known that the efficiency and profitability of a banking system is also influenced by the evolution of the monetary policy interest rate. Central bank decisions generate changes or adaptations in the systems used by commercial banks (Cerchia & Zaif, 2019).

As a benefit, I believe that the empirical model of the analysis of the structure of the Romanian banking system is relevant for future financial policies.

4. Findings

Due to the importance of the banking system in the Romanian financial system we have highlighted the number of credit institutions banks present on the market.

Thus it can be seen that in 2020-2021 there were 34 banks in the system, and in 2022 and 2023 there are only 32 more.

Figure no. 2. Number of banks and net banking assets

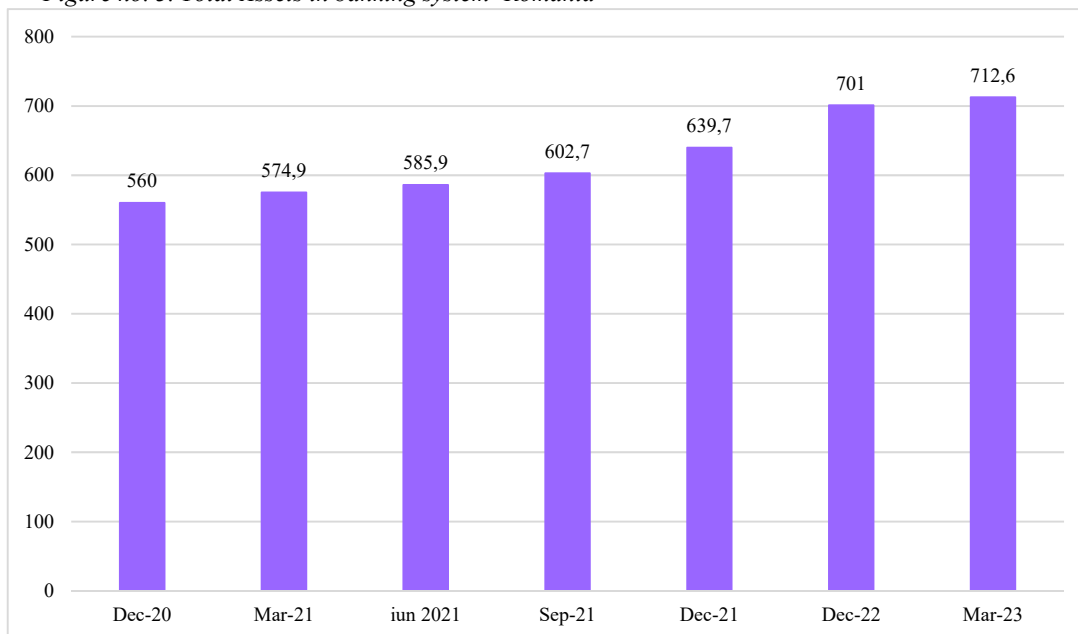
	2020 December	2021 March	2021 June	2021 December	2022 December	2023 March
Credit institutions	34	34	34	34	32	32
- foreign banks	8	8	8	8	8	8
Total net assets, expressed in RON billion	560,0	574,9	585,9	639,7	701.0	712,6
Total assets of privately owned institutions - percentage of total assets	89,4	89,1	88,7	88,9	88,6	87.8
Total assets of foreign-owned institutions - percentage of total assets	70,5	70,2	69,4	69,7	68,2	68,1

Source: National Bank of Romania

In the years 2020-2023, net banking assets - total values - increased by 27.25%, rising from 560 billion RON at 31.12.2020 to 712.6 on 31.03.2023).

The evolution of total assets per Romanian banking system is shown in the Fig. 3

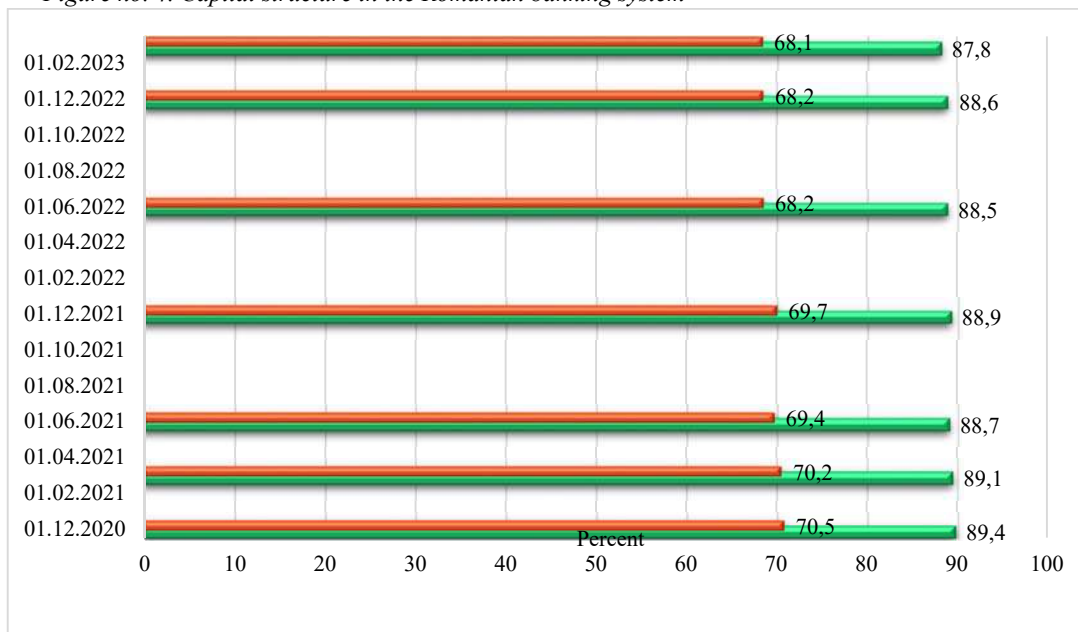
Figure no. 3. Total Assets in banking system- Romania



Source: own processing of data published by National Bank of Romania

Another characteristic of the Romanian banking system is the major share of private and foreign capital. It can be seen from Fig 4. that the share of private capital in total banking assets is almost 90%.

Figure no. 4. Capital structure in the Romanian banking system



Source: own processing of data published by National Bank of Romania

The percentage of foreign capital in total assets has changed as follows: 89.4% in December 2020, 87.8% in March 2023. One reason would be the inclusion of Banca Românească in Eximbank.

Analyses show that foreign capital is the dominant player in the Romanian banking system. The banking system in Romania is characterized by a high degree of concentration. The top 5 banks in the system hold over 60 percent of the total and the top 10 cover 80 percent of total net banking assets.

Romania's banking system is the major link in the financial system. Private pension schemes and financial assets cover less than 17 percent of the total between 2020 and 2023. Banks as financial intermediaries are the most important players in the system, especially as financial assets in Romania

While until the 2000s, banks in Romania were majority state-owned, after EU accession, their share decreased year by year. In the first quarter of 2023, more than 90 percent of bank capital was privately owned and 68 percent was foreign capital.

A positive fact is the increase in the volume of bank assets in the period studied from 560 billion lei in the last month of 2020 to over 712 billion lei in the first quarter of 2023, i.e. by 27.11 percent. Financial intermediation is mainly supported by net banking assets.

5. Conclusions

In the history of human society, money, banks and financial institutions have been a subject of interest. Sometimes controversial, but so useful and useful, their operations have nevertheless supported the economy and the development of society.

Today we can no longer conceive of life without money and its forms. Moreover, in the century of speed, whether we are talking about cars, trains, planes, the internet, applications dedicated to any service - people want everything as fast as possible.

Banks, being the main financial intermediaries, have diversified their business and responded to customer demand with modern, fast and sometimes amazing financial services. Instant fund transfers, access to markets of all kinds, varied financing, loans obtained through computer applications or with the help of robots have been made possible because financial institutions are constantly updating their offerings. But let's not forget that with technology comes a range of risks, and they are becoming increasingly varied.

The lending component is dominant in net banking assets. The increase in their volume must also be seen in the light of interest rate developments. In the current and immediate future period the bank interest rate is on a downward trend, amidst the decline in the monetary policy interest rate.

Lower interest rates lead to an increase in the money supply in circulation by increasing the volume of credit. This has implications for financial intermediation (Munteanu & Dobre, 2021).

The dependence of a banking system on foreign capital can bring risks into the system. A study that reveals the risk of contagion in the case of the existence of non-permanent credit was conducted by Sofoklis Vogiazas, Nikolaidou in 2011. The authors showed that after the financial crisis of 2008-2009, there are correlations between the NPL rates in Romania and Greece. Given significant presence of Greek banks in Romania, the model used consisted of introducing variables representing the Greek crisis. I believe that the model can be adapted to the current situation. I intend to address the issue of contagion risk and the study of non-performing loans in the Romanian banking system in the future.

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The European Central Bank, The Federal Reserve System and the Challenge of Inflation

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Abstract

Worldwide, inflation is one of the most used terms when discussing the economy and beyond. Inflation is the indicator that governments, the population, financial entities, investors and not least monetary authorities are interested in.

Since central banks have price stability as their main objective or not, they act through monetary policies when necessary. Monetary decisions in the Eurozone and the United States - as financially important regions - influence other economies.

This paper focuses on the study of the evolution of the inflation rate in these two cases because of the importance of the subject. It will be found that inflation can also be a challenge for these large financial entities – Federal Reserve System and European Central Bank.

Key words: central bank, inflation rate, FED, ECB

J.E.L. classification: G01, G20, G21, G24, G30, E50

1. Introduction

The Federal Reserve System (FED) is the central bank of the United States of America.

European Central Bank (ECB) is one of the most important central banks in the world. It is the central bank for the entire euro area. It oversees more than 120 banks with significant impact in the area.

Double-digit inflation in recent years has made monetary policy and monetary policy interest rates a topic of interest to all participants in economic and financial life.

2. Theoretical background

Central banks have common functions that derive from specific objects. There are situations where the objective is single or others where we find multiple objectives. In the USA, Switzerland or Japan the central bank declared several objectives. In the case of EU countries, the central bank's objective is one: to ensure and maintain price stability. The stated strategy of these European countries is: inflation targeting.

The Fed conduct monetary policy to promote the goals such: maximum employment, moderate long term interests rate, stabile prices.

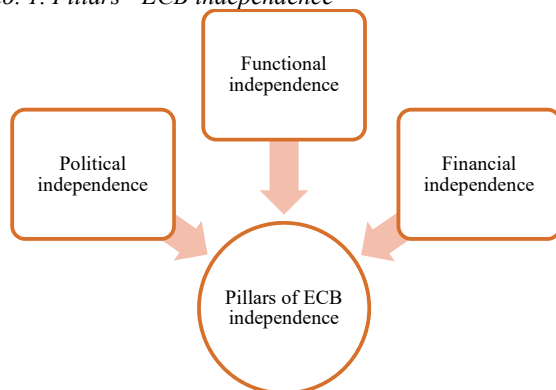
Central banks in the US and the euro area, through their monetary policy instruments, act in the financial market and have responsibilities that have effects on the global economy.

In the case of the Reserve Bank, the basic purpose of monetary policy is to ensure that, over time, the expansion of money and long-term credit will be adequate for the long-term needs of a growing economy under stable price conditions. The bank participates at all times in achieving the nation's economic and financial goals through its potential to influence money and credit in the economy. In short, it seeks to tailor its policies to combat deflationary and inflationary pressures. And, as a lender of last resort, it has the task of using the policy tools at its disposal in an attempt to avoid national liquidity crises as well as financial panics.

The European Central Bank provides currency surveillance and monitors price developments throughout the euro area; is considered an independent central bank (most in the world). The pillars that underpin its activities.

The Bank's objective is to maintain price stability. The single objective is to bring inflation to just below 2% over the medium term. It is achieved through monetary policy, which involves controlling inflation and maintaining the stability of the value of the euro.

Figure no. 1. Pillars - ECB independence



Source: Own design

Whether we are talking about the Fed, the ECB or another central bank, it is well known that the benchmark interest rate has a major impact on the economy. The monetary policy interest rate indirectly influences the lending rate. A monetary tightening leads to a decrease in the volume of credit in the banking sector, even if there is a lagged response. (Dawood, 2019)

3. Research methodology

Monetary policy is far from the only influence on the economy. Fiscal policy, i.e. the federal government's tax and spending policy, has a particularly important impact on the demand for goods and services and, by extension, on credit market conditions. Exogenous price shocks, such as the huge increases in oil prices in the 1970s or the sharp increases in agricultural prices, affect the price level. High inflation creates large imbalances in an economy. It means a decrease in the value of money, which implies an increase in the prices of goods and services. Deflation means the opposite - falling prices.

The Fed's mandate is to maintain a business and population-friendly climate where price stability creates the conditions for interest rates to be at average level.

In this paper we will analyse the evolution of the inflation rate from two major regions: The eurozone and United States. The decisions of these major central banks being the strongest are felt in all countries that have trade, financial links with the Eurozone and the USA. The rhetorical question is: In which countries are the effects of inflation NOT felt in these large areas?

Inflation is a determinant of investment decisions, the efficiency of economic activities, the determination of financial risks, etc.

In view of the mandate of the two central banks presented on inflation, we will analyse its evolution in the two major areas of global financial interest: the U.S. and the euro area. The importance of this analysis also lies in the links between the banking system, monetary policy and the fiscal system. The effects on the economy and the causal relationship between the three has been the subject of extensive scientific work. (Lipară & Dănilă, 2015).

4. Findings

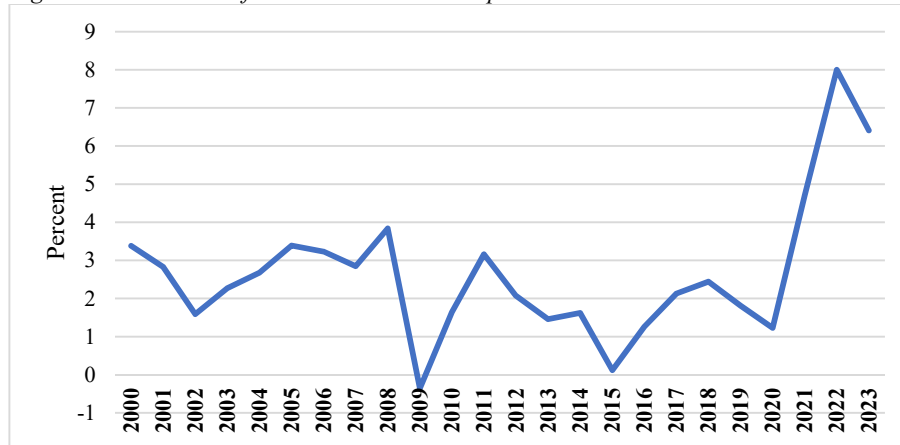
4.1. Analysis of the inflation rate in the US

Monetary policy decisions are taken at FOMC meetings. At each stage, the Committee clarifies in a public statement how it interprets its monetary policy objectives and the principles that guide its strategy for achieving them. A very important point to note about the Bank is that the monetary policy objective is to maintain price stability and effective control of inflation.

Federal Reserve policymakers assess changes in inflation by monitoring several different price indices. A price index measures change in the price of a group of goods and services. The Fed considers several price indexes because they track different goods and services and are calculated differently.

Therefore, these indices can send different signals about inflation.

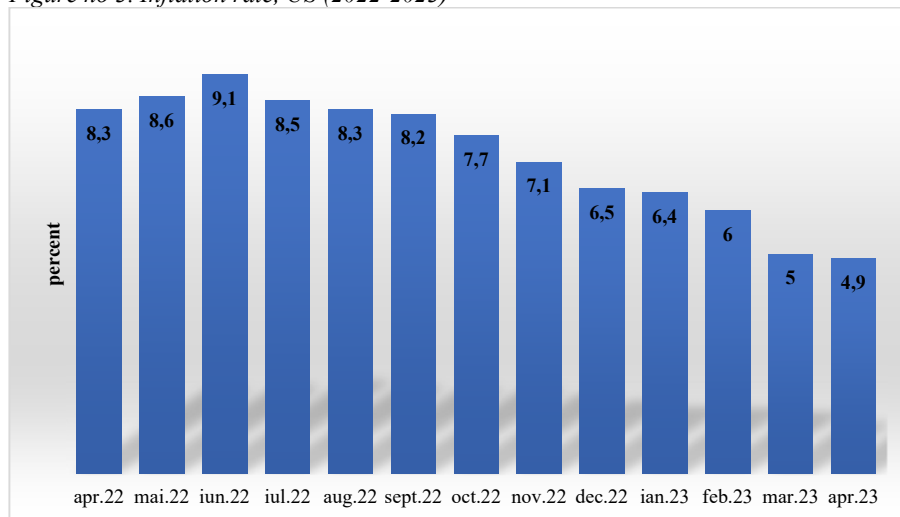
Figure no. 2. Annual inflation rate in the US in percent



Source: Own processing of data published by the Fed

In the United States, inflation was 3.38% in 2000. Since then, inflation has fluctuated around 3%. In 2021, as a result of the Covid-19 pandemic, the annual inflation rate reached 4.70%. A year later, it peaked at 8%. In April 2023 inflation stood at 4.9%.

Figure no 3. Inflation rate, US (2022-2023)



Source: Own processing of data published by the Fed

As can be seen, over the period 2022-2023, inflation has fluctuated widely. This can be seen in graph 3.2., which mirrors the evolution of the inflation rate. In April 2022, the inflation rate was 8.3%, peaking at 9.1% in June 2022. Although down from a peak of 9.1% in the summer of 2022, the inflation rate remains well above the Fed's 2% target. It stood at 4.9% in April 2023.

The FOMC believes that low and stable inflation at a rate of 2%/year, as estimated by the annual change in the personal consumption expenditures price index, is the best way to achieve the dual mandate.

4.2. Inflation rate in the euro area

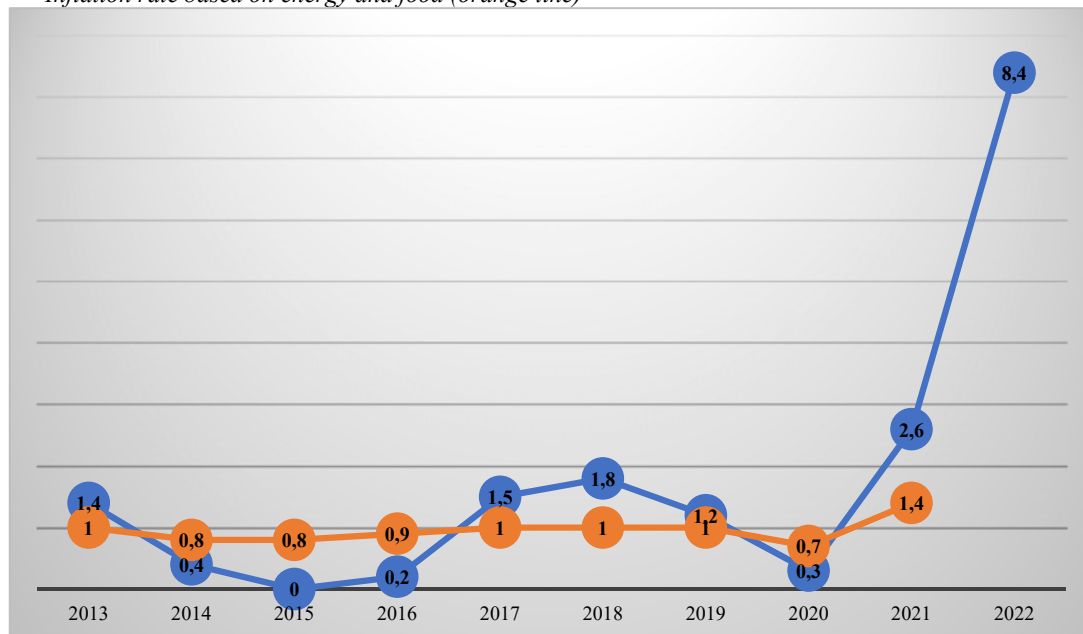
ECB policies are implemented in all Member States of the Monetary Union. The ECB's decisions apply to all these countries. Given the Bank's single objective, we will look at inflation developments in the euro area.

This inflation rate is regularly reported by the ECB, so we can analyse the evolution of this macroeconomic indicator.

Figure no. 4.

Total inflation rate in the euro area (blue line)

Inflation rate based on energy and food (orange line)



Source: Own processing of data published by the Fed

The year 2022 was the year in which the annual inflation rate reached the highest level in the whole period under review, namely 8.4%, significantly higher than the 2.6% in 2021. This increase is driven in the first part of the year by the consequences of the COVID-19 pandemic, and then the invasion of Ukraine by Russia played the most important role. Russia invaded Ukraine on 24 February which resulted in an energy crisis, which contributed to the rise in inflation. Russia decides to cut off gas exports to some EU countries, prompting the European Council to largely suspend the use of Russian gas.

In the last quarter, gas prices fell thanks to savings made at EU level. During the year, the ECB, of course, took measures to try to lower the inflation rate, which included raising interest rates, a measure that had not been taken previously at the ECB for 11 years. This measure failed during the year to keep the inflation rate below 2%, which made the final decision for 2022 to further increase interest rates until inflation reaches the desired target.

In 2021, the inflation rate increased from 0.3% in 2020 to 2.6% in 2021, significantly higher than the ECB's target. This increase was largely due to the pandemic.

The COVID-19 pandemic has had a profound impact on people's lives but also on economies around the world. Globally, many businesses and enterprises have had to reduce their operations or even suspend their activities due to measures taken by the authorities, involving social distancing, travel restrictions and even quarantine.

The European Central Bank is committed to maintaining price stability and supporting economic activity throughout the delicate and difficult period caused by the SARS-CoV-2 virus by implementing a series of monetary policy measures to support the economy. These measures included, among others, cutting interest rates, providing additional liquidity to the banking system and increasing asset purchases.

In 2020 there was a drastic drop in the inflation rate from 1.2% in 2019, 1.8% in 2018 to 0.3% in 2020. This drop was largely due to the start of the pandemic. All the restrictions imposed by the new pandemic, including export restrictions, led to a fall in demand.

Falling prices of metals, oil, agricultural products, but most importantly energy products led to the 0.9% gap compared to 2019 and 1.5% gap compared to 2018 in the 2020 inflation rate.

In 2019, 2018 and 2017 the inflation rate experienced minor fluctuations caused mostly by energy and food prices. Thus the inflation rate increases from 1.5% in 2017 to 1.8% in 2018 and then falls to 1.2% in 2019.

In period 2014-2016, the inflation rate fluctuates, also slightly, with 2016 rising to 0.2% from 0.0% in 2015, and 2015 falling from 0.4% in 2014. However, in 2014, the inflation rate fell to 0.4% from 1.4% in 2013, also due to energy and food prices.

However, the year 2022 remains remarkable as the inflation rate reached its highest percentage in the period under review, namely 8.4%.

Central banks have specific functions and tasks. These derive from their role as well as from the objectives set. Since a sound financial structure is a key ingredient of an effective monetary policy and a growing and prosperous economy, monitoring inflation is a central bank objective. While the Federal Reserve has been entrusted with several functions and objectives, including inflation targeting, the ECB has a single objective: to ensure and maintain price stability.

In the euro area, the year 2022 brought double-digit inflation, which is an all-time high. The month with the highest rate of 10.6% was October. In January was at its lowest, 5.1%, and by October it gradually increased to double its value. In November it falls by 0.4% to 10.1% and by the end of the year it falls to 9.2% in December. As a multi-state area it is obvious that the area rate is determined by the rates of the Member States. Looking at their rates shows that the gap between the minimum and the maximum of the area countries is more than 15 percent.

In February 2023, Luxembourg is the country with the lowest inflation rate in this month, i.e. 4.8%, but the percentages remain high for most countries. Latvia has the highest percentage at 20.1%, significantly higher than in previous years. Following Estonia with 17.8%, Lithuania with 17.2%, Slovakia with 15.5%, Croatia with 11.7% and Australia with 11%, these 6 countries out of 20 are the countries with inflation rates above 10% in February 2023.

5. Conclusions

All banking systems operate in the presence and under the supervision of a central bank. Although there are similarities, the objectives, instruments and degree of independence are different.

It is accepted that the United States has an independent central bank, but theoretically less than the ECB. This is true because the Federal Reserve's decisions do not have to be confirmed by the President or any other government institution. However, it is still subject to congressional oversight and must operate according to the government's economic and fiscal policy objectives.

The analysis of the annual inflation rate between 2000 and 2023 in the US revealed that the historical maximum was reached in 2022 and the minimum in 2008 due to the financial crisis.

Looking at the rates of the euro area countries in February 2023, the range of fluctuation is large, i.e. between the minimum of 4.8% in Luxembourg and the maximum of 20.1 in Lithuania.

Even if they are general to the evolution of inflation and the mandate given, central banks' decisions have short and medium-term effects on commercial banks' strategies. They will adapt their systems, products and services and adjust their prices. (Cerchia & Zaif, 2019). Implicitly there are knock-on effects in the real economy.

Public confidence in central bank decisions is an important issue because it has been found that an accepted measure is easier to implement. Periods of rising or falling confidence alternate over time under the influence of major events. It is found that during the pandemic period confidence in the ECB changed. (Van der Cruiser and Sammarina, 2022).

A survey of the Dutch public to analyse trust in the central bank confirmed the link between right-wing ideology and public trust in the ECB. (Brouer & Haan, 2022)

One can talk about chain reactions and even a vicious circle: if inflation is high and rising, the central bank intervenes and raises the monetary policy interest rate. Commercial banks will increase the price of credit, which will lead to an increase in the cost of finance for economic agents and hence to an increase in the prices of the products and services they offer, at least in the first instance, and hence a further increase in inflation. On the other hand, the increase in prices in the economy, together with the increase in the credit rates of the population, may lead to a decrease in consumption. Will this happen? This is the question we want to reflect on and answer in a future study.

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Reflections on Methods of Digital Processing of Very Large Amounts of Accounting Information

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Abstract

The purpose of this paper is to briefly explore the applicability of information technology methods to very large volumes of accounting data. Current developments regarding the digitization of various sectors of the economy and society are converging towards changes in the accounting information systems of entities. The possibilities of multi-dimensional processing of accounting input data open up new options for modeling accounting reports. The development in a multi-dimensional system of financial accounting reports presents unexpected opportunities for enriching the information transmitted to the users of the annual financial statements. The applicability of new information technology methods is marked by: widespread use of Internet-based applications, 5G and soon 6G high-speed data transmission systems, Wi-Fi 6e wireless systems, Wi-Fi 7, artificial intelligence applications.

Key words: accountings paradigms, new technology

J.E.L. classification: M41, F60

1. Introduction

The use of digital technologies allows the processing of an abundance of data sources - a lot of disparate information, seemingly unrelated to each other. There is a growing trend to integrate intelligent processes into applications (algorithms, mathematical models, artificial intelligence), based on high computing capabilities. A specific characteristic of these technologies is the inclusion in the analysis process of unstructured data in different formats. (www.hyperledger.org)

2. Theoretical background regarding the application of information technology methods in accounting

There is a whole series of algorithms, developed by companies, research institutes, universities, etc., which generally fall into the following broad classes (www.hyperledger.org):

Linear Regression - Linear regression uses the relationship between two sets of continuous quantitative measures. The first set is called the predictor or independent variable. The other is the response or dependent variable. The purpose of linear regression is to identify the relationship in the form of a formula that describes the dependent variable in terms of the independent variable. Once this relationship is quantified, the dependent variable can be predicted for any instance of an independent variable. (www.hyperledger.org)

Logistic Regression - Logistic regression looks similar to linear regression, but is focused on classification instead of quantitative predictions. Logistic regression checks whether an instance of an input variable falls into a particular category or not. The logistic regression result falls within the range 0 - 1. A value closer to 1 indicates that the input variable falls more clearly into that category, and one closer to 0 indicates the opposite. (www.hyperledger.org)

Classification and Regression Trees - Classification and regression trees use a data classification decision. Each decision is based on a question related to one of the input variables. With each question and corresponding answer, the point-in-time value of the data is classified in a specific way. This set of questions and answers, as well as subsequent divisions of the data create a tree-like

structure. After all these trees complete their evaluation of the data, the process combines the individual results to create a final prediction of the analyzed category.

K-Nearest Neighbors - is also a classification algorithm, which allows multivariate classification of data. The learning process is composed of the training set of stored data. Algorithms in this class are often chosen because they are easy to use and have easy-to-interpret results. (www.hyperledger.org)

Pricing algorithms are increasingly used tools by companies to automatically set prices for their products. Algorithmic valuation (algorithm-based valuation) is a term that generally refers to automated decision-making in the field of value management using rule-based or self-learning algorithms. Algorithmic values are often based on statistical analysis of transactional, inventory and catalog data, as well as external criteria such as market values of competing entities. In some cases, image recognition technologies are also used to use text and visual data such as product descriptions and images. Algorithms track all competitor prices and may implement, in response, changes to the values of the products traded by the user of the algorithm. (www.hyperledger.org)

Pricing algorithms can be used in different ways to set values. (www.hyperledger.org)

Dynamic pricing - Algorithms enable frequent and accurate price changes, including basic, promotional and special offers.

Personalized pricing - The algorithmic approach helps to segment or personalize them, based on data on differences in tastes, price sensitivities and other statistical information held about potential buyers.

Differentiated pricing strategies. Algorithms help optimize differentiated pricing strategies, by product and category, based on consumer perception of the product, similarity to other products, and other factors.

Classification of articles. Classification, filtering or ranking algorithms create certain lists by selections from databases or sort a number of items according to predefined criteria.

Algorithms used in pricing can be:

Static - sets prices based on known formulas and variables, which do not change over time;

Dynamic, machine learning - programmed to achieve a certain goal, for example, maximizing sales, profit, being able to automatically adapt their data processing parameters, based on past results and as they have access to more information.

Artificial intelligence (AI) is the ability of machines or computers to perform tasks and tasks commonly associated with human intelligence. (www.hyperledger.org)

In its broadest sense, AI includes any technology designed to mimic, in one way or another, the way a human being works. AI technology learns, adapts to the surrounding conditions, by assimilating and processing information and storing it for use in other similar situations. There are a number of technologies used to implement AI algorithms, presented below.

Robotic Process Automation (RPA): technology that extracts the list of rules and actions to be performed, watching the user perform a specific task. (www.hyperledger.org)

Expert Systems: a computer program that imitates the human decision-making process.

Computer Vision (CV): methods for making sense of digital images (usually divided into activity, image, and "machine vision" recognition). (www.hyperledger.org)

Natural Language Processing (NLP): handles natural language data (involves language understanding, language generation and machine translation). (www.hyperledger.org)

Neural Networks (NNs or ANNs): a class of algorithms modeled after the neural structure of the human brain that improve their performance without being explicitly trained how to do so. The two subclasses of NNs are Deep Learning (a multi-layer neural network) and Generative Adversarial Networks (GAN - two networks that train each other).

Autonomous Systems: lies at the intersection of robotics and intelligent systems (e.g., intelligent perception, dexterous object manipulation, plan-based robot control, etc.).

Inductive Logic Programming (ILP): uses formal logic to represent a database of facts and formulate hypotheses derived from that data. (www.hyperledger.org)

Decision Networks: is a generalization of the most well-known Bayesian networks/ inference/ Bayesian networks/ inferences, which represent a set of variables and their probabilistic relationships through a map (also called a directed acyclic graph). www.hyperledger.org)

Probabilistic Programming: a framework that does not force you to modify the source code of the program for any change in the input data, but works with probabilistic models. Bayesian Program Synthesis (BPS) is a form of probabilistic programming, where Bayesian programs write new programs of this kind. (www.hyperledger.org)

3. Research methodology. The evolution of computer methods in the processing of accounting data - empirical aspects of the research

The research methodology used in this article consists of empirically researching a data set available on the Internet and building models of accounting records.

In the case of Big Data (BD) technologies, data storage is provided by an infrastructure specially designed for recording, managing and retrieving massive amounts of files and data objects. A BD platform is built for much greater scale, speed and performance than traditional data storage has allowed for an entity. It must allow large volumes of data to be stored and sorted in such a way that it can be easily accessed, used and processed by specific applications. Storage of large volumes of data must be able to scale flexibly as needed. (www.hyperledger.org)

A misconception about big data is that the term only refers to the size of the data set. While this is true in principle, the science behind big data goes deeper. The intent is to extract specific subsets of data from multiple large storage volumes. This data may be widely dispersed across different systems and may not have an obvious correlation. The goal is to unify the data in an intelligent way to enable rapid analysis. From the point of view of big data storage, the analysis can be carried out in two dimensions closely interconnected and dependent on each other, respectively: hardware infrastructure and software infrastructure.

There are three cloud implementation models, related to the form of ownership, presented below. (www.hyperledger.org)

The public cloud - based on the investments of a large software company and intended for global consumers regardless of size and field of activity. Today, most consumers own smartphones, with much of their data—photos, contacts, messages, backups—stored in the cloud. Apple, Google, and Microsoft are the largest public cloud providers for mobile devices, for storage, and for purchasing applications. At the same time, the companies Google and Microsoft offer free of charge packages of Office-type document creation and processing applications to customers. The customer receives those services ostensibly for free, but the providing firms recoup some of the maintenance costs through contextual advertising. Other times they are considered loyalty costs: a service offered to a person for free makes them go to the same product line: phone type, operating system, service provider and others. (www.hyperledger.org)

Private cloud – based on the investments of a company or a conglomerate of vertically integrated companies, intended mostly exclusively for internal users of the company. In this form of organization, the equipment and licenses belong to the owning company and the maintenance, development and support is outsourced to the specialized company. (www.hyperledger.org)

The hybrid cloud – based on the use of services provided by the public cloud interconnected with internal information entities, it is mostly intended for very large companies and aims to expand certain internal processing capabilities in order to provide services to consumers inside the company. (www.hyperledger.org)

Because cloud computing services can only be provided over the Internet, businesses must have access to it in order to use them. In 2022 all companies in the EU (99%) had access to the Internet. However, significant differences can be observed between countries. Thus, in Finland, Sweden, Denmark, the Netherlands, Ireland, the United Kingdom and Belgium, at least 60% of enterprises used cloud computing in 2022. On the other hand, in Romania and Bulgaria only 15% or fewer enterprises did so work - according to public data. (www.ziare.ro)

Of the businesses that reported using cloud computing in 2018, about 69% relied on a cloud solution for their email services. Instead of creating a server infrastructure for their email system, which would have involved, among other things, capital expenditures and maintenance costs, these firms opted for a cloud solution based on operating costs per user. (www.ziare.ro)

Cloud computing services can meet a wide range of other business information technology needs. In 2022 - according to publicly available information - almost 8 out of 10 enterprises (80%) using the cloud used it to store files in electronic format. About 63% reported using it for office software (eg word processors, spreadsheets, etc.), while 48% used it for database hosting. Furthermore, through the cloud, businesses access relatively more advanced software applications for end customers, for example for finance/accounting and for managing information about their customers (customer relationship management - CRM) (47% and 35% respectively). Additionally, 20% reported using cloud computing platforms (typically high-performance) for computing power to run their own business software applications. (www.ziare.ro)

4. Findings. Synthetic review on the application of computer methods in the accounting information system

According to publicly available data, the implementation of digital transformation programs in the banking sector is a business priority, starting in 2019. Currently, traditional banks face, on the one hand, increased competition in certain segments, due to the entry of new actors on the market – digital/FinTech banks, banking platform providers – and, on the other hand, with the rapid change in customer expectations, directed towards digital banking to the detriment of traditional banking (with branches and physical agencies). (www.bnr.ro)

According to publicly available data, banks' decision to invest in technology was mainly motivated by their objective to strengthen their competitive position and market share, to increase their ability to attract and retain customers and to obtain cost reductions and an increase in operational efficiency. (www.bnr.ro)

In order to identify the degree of implementation of big data technologies in the Romanian banking sector, the information published by commercial banks was analyzed during the study.

Aspects related to the types of applications/technologies used in the current activity of banks, the types of IT solutions, algorithms, data (structured, unstructured) used, data sources (internal, external), the value of investments in recent years were targeted. , carried out for the development of IT solutions/applications, the benefits obtained from the implementation and by the providers/developers of the solutions, the monitoring tools of the social platforms used. (www.bnr.ro)

It was also aimed at detailing the IT technologies used for the following types of activities (www.bnr.ro):

- risk management (credit risk);
- fraud detection/administration;
- resource planning;
- the decision-making process;
- simplifying work processes;
- real-time monitoring of transactions;
- behavioral/prediction/optimization analytics;
- personalized offers;
- Internet banking and mobile access to banking data by customers;
- identifying customer spending patterns;
- customer segmentation by category;
- reporting/statistics;
- real-time monitoring of social networks;
- security.

From the review of the published data, for the Romanian banking sector, conclusions could also be drawn regarding the methods of analysis of the large volumes of data used and the types of activities specific to the sector, in which big data technologies are used. (www.bnr.ro)

From the point of view of the methods of analyzing large volumes of data, from the data published on the net, the following structure resulted, for the year 2022: (www.bnr.ro)

- 15% use a complete BigData (BD) solution for collecting and processing large volumes of data, including BigData Analytics (BDA);

- 21% use solutions based on DataWarehouse (DW) data warehouses, analyzed with BDA tools;
- 22% use solutions based on DataWarehouse (DW) data warehouses, combined with classic Business Intelligence (BI) analysis solutions;
- 42% use classic analysis and reporting solutions.

The types of data used in BDA analyzes are structured and mostly come from internal sources. For banks that also collect data from external sources, these come from social networks - Facebook, Instagram, Twitter, Youtube, media sources, etc. (www.bnr.ro)

In terms of the types of algorithms used in analyses, most banks using BDA-type analyzes use only static algorithms (eg Fuzzy Matching, Map Reduce, Clustering, Linear Regression), generally for: aggregating data by customer groups, products, segments, periods; creation of customer groups, based on various criteria (e.g. transaction volume/value, balance level); customer grouping, based on various types of criteria (e.g. product types, scoring, collection stage); pre-termination calculation according to product categories; automatic marking of accounts, depending on the configured business characteristics. (www.bnr.ro)

From the review of publicly available information, it emerged that only a few banks reported the use of dynamic Machine Learning algorithms (Logistic Regression, Random Forests, Decision Tree), generally for (www.bnr.ro):

- automatic transaction screening;
- creating alerts, based on the transactional behavioral profile of customers and compared with risk indicators;
- tracking the performance of your own social media channels vs. of competitors;
- optimizing the performance of the content of the own social media channel;
- operational efficiency;
- the development of statistical models, used in the decision-making process of granting credits.

In BDA analysis models, the existence of the so-called Black Box paradox has been noticed, which involves the use of unidentifiable ML Black Box (BB) algorithms, so that the model can only be visualized in terms of input data and output results/analyses, without to know its internal functions. (www.bnr.ro)

5. A Case Study of Electronic Currency Accounting for a Set of Transactions

Table no. 1 Table of transactions related to the case study

Transactions	Textual description of the transactions
01.01.2024	The Sfx99 company purchases 5,000,000 Certificates of Deposit in Digital Currency (CDDC) on 01.01.2024, at the price of 100 monetary units (m.u.). (Nicolae, 2010).
December 31, 2024	On 31.12.2024 the re-estimation is done and it is found that the price of a CDDC has dropped to 95 m.u.
December 31, 2025	On 31.12.2025, the re-estimation is done again, the CDDC reaching the price to 105 m.u.
December 31, 2027	On 31.10.2027 the company sells the CDDC at the price of 120 m.u.

Note:

Debit = D

Credit = C

Source: Case study data proposed by the author.

Accounting data

(Accounting records made by the author)

Table no. 2 Calculations at 01.01.2024

Calculations
Purchase cost: 5,000,000 (Certificates of Deposit in Digital Currency CDDC) x 100 um = 500,000,000 um

Source: Calculations made by the author

Table no. 3 Purchase of Deposit in Digital Currency (CDDC) at 01.01.2024

Account - D	Account - C	Amount
Certificates of Deposit in Digital Currency – CDDC	Available electronic money	500,000,000

Source: Calculations and records made by the author

Table no. 4 Calculations at 31.12.2024

Calculations
Cost of re-estimation = 5,000,000 CDDC x (100 – 95) = 25,000,000 um

Source: Calculations made by the author

Table no. 5 Re-estimation of Deposit in Digital Currency (CDDC) at 31.12.2024

Account - D	Account - C	Amount
Financial expenses - electronic currency	Certificates of Deposit in Digital Currency – CDDC	25,000,000

Source: Calculations and records made by the author

Table no. 6 Calculations at 31.12.2025

Calculations
Revenue from Certificates of Deposit in Digital Currency – CDDC re-estimation = 5,000,000 CDDC x (105 – 95) = 50,000,000 mu

Source: Calculations made by the author

Table no. 7 Re-estimation of Deposit in Digital Currency (CDDC) at 31.12.2025

Account - D	Account - C	Amount
Certificates of Deposit in Digital Currency – CDDC	Financial revenues - electronic currency	50,000,000

Source: Calculations and records made by the author

Table no. 8 Calculations at 31.12.2027

Calculations
Downloading the book value of Certificates of Deposit in Digital Currency – CDDC = 5,000,000 CDDC x 105 = 525,000,000 mu
Earnings from e-currency = 5,000,000 CDDC x (120 – 105) = 75,000,000 mu
Total amount collected = 5,000,000 CDDC x 120 = 600,000,000 mu

Source: Calculations made by the author

Table no. 9 Sale of Deposit in Digital Currency (CDDC) at 31.12.2027

Account - D	Account - C	Amount
Available electronic money	Certificates of Deposit in Digital Currency – CDDC	525,000,000
Available electronic money	Earnings from e-currency	75,000,000

Source: Calculations and records made by the author

6. Conclusions

Our brief analysis results in a set of ideas regarding the possibilities of digital processing of large volumes of accounting and financial data.

New computer technologies open previously unsuspected perspectives regarding the multi-dimensional processing of input data in the accounting information system of various entities. Localized and real-time computer applications of accounting data are being widely spread, applications that allow overcoming the two-dimensional processing, debit - credit, assets - liabilities specific to accounting in the classic system.

We can appreciate that new research horizons are opening up in the field of accounting, horizons determined by the transition to digital information support, replacing the classic paper supports. The perspectives of capitalizing the accounting information in the financial-accounting reports are open, allowing multi-criteria elaborations of the communication of data from the accounting of entities.

The multi-dimensional reporting of accounting information allows the realization of integrated financial statements, on electronic support, in real time, available in the cloud.

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Considerations Regarding Applications of Financial Instruments in Accounting Systems

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Abstract

The purpose of this paper consists in the succinct presentation of a set of considerations of the author regarding the applicability of financial instruments in the accounting systems of entities. We must observe the impact of Information Technology applications on the implementation of financial instruments in the accounting of entities. Financial instruments offer options for financing the activities of entities, compared to the -classic- appeal to bank financing. We can appreciate that new opportunities are opening up in the modern accounting of entities for the formalization of the registration of financial instruments. The widespread applicability of new software products of Information Technology, easy access to high-speed Internet communication, data storage in the cloud - all are incentives of a new paradigm in entity accounting. We can appreciate the innovative character, opening up new possibilities for enhancing the digitized processing of information on financial instruments in the accounting computer systems.

Key words: financial solutions, accounting, technologies

J.E.L. classification: M41, G32

1. Introduction

On the topic of regulation of the digital domain of financial instruments, there are views on growing concerns about the abuse of market power by major platforms, about the extent of their control over data, as well as about the harm caused not only to consumers, but also for society. Some of these platforms have become dominant and almost indispensable to consumers, who, not having many options, tend to use the same ones and show no desire to change. Such platforms are often compared to utilities, in the sense that users feel that they cannot do without them, readily accepting the terms of use. The question arises to what extent, through the application of competition policy, certain problems generated by digital platforms can be solved. There are views that, at some level, it might be more effective for such platforms to be regulated - to ensure open and non-discriminatory access for all businesses and to provide a level playing field - rather than attempting an ex-post approach to competition issues. (www.bnr.ro)

Another concern with dominant digital platforms is their neutrality. One way to ensure this may be to apply the doctrine of essential facilities in the case of dominant platforms, similar to the regulation of the telecommunications sector, where the enterprise that owns or operates the infrastructure and has its own telephone and/or mobile operator is obliged to provide access to other telecommunications operators, at a fair rate. The application of the essential facilities doctrine could help prevent abuse of dominant position by platforms operating similar infrastructures while allowing them to maintain their economies of scale. (www.bnr.ro)

There are views that the application of antitrust law alone would be inadequate to regulate the information industries. One reason is that competition enforcement is triggered by consumer price manipulation and other occasional abuses of market power, which are not the most problematic aspects. As a solution, the application of the principle of separation is suggested, by which to manage power in the information economy. According to this principle, those who develop information, those who own the network infrastructure used, and those who control access must be separated. The three pillars of implementing the principle would be sectoral regulation, antitrust enforcement and self-regulation based on corporate norms. (www.bnr.ro)

2. Theoretical background for the application of financial instruments in accounting systems

The European Union has adopted regulations that encourage innovative technology companies, generically called third party providers -TPPs - to enter the financial banking markets.

The European directives eliminate banks' monopoly over customers' banking data and fundamentally change the way payment operations are carried out and account information accessed, by opening up the payment services market to TPPs (Amazon or Google). The new EU Payments Directive was justified by the need to bring regulation in the field of electronic payments up to the current technological level. (www.bnr.ro)

The use of derivative financial instruments becomes an achievable goal for wide categories of entities, entities that turn to credit institutions for quasi-monetary resource needs. (www.bnr.ro)

Thus, banks will be obliged to grant TPPs access to customers' financial data (only with the customer's consent), including allowing them to execute customer-initiated transactions (only in the case of payment accounts available online), through APIs (application programming interfaces). The TPPs can subsequently develop applications for visualizing/analyzing the financial situation, payments, and other types of financial services addressed to bank customers, based on the data extracted from the banks' databases. Although it stipulates the need to open customer databases to Fintech companies, the European directives do not impose a specific approach (common API or individual solutions), leaving the freedom for local regulatory bodies to adopt the most appropriate approach for the market they regulate. (www.bnr.ro)

Currently, the process of data integration and communication of TPPs with banking institutions is hampered, as each bank is free to grant access to the database through its own interface. To access the services offered by banks, TPPs are forced to implement a different interface for each bank their clients work with. At the market level, this benefits banks with large market shares and disadvantages small banks. The imbalance comes from the fact that each collaboration between a financial services provider and a bank will translate into a specific implementation. (www.bnr.ro)

Developing, implementing and managing a large number of interfaces is inefficient for TPPs. Therefore, they will aim to connect with banks that have as many customers as possible. From the perspective of financial banking institutions, the option of individual APIs may seem the most accessible, with the costs for these implementations being borne by each individual banking institution. (www.bnr.ro)

3. Research methodology. Evolution of financial instruments used in accounting - 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.

Financial instruments currently register an extension in the accounting of credit institutions.

Banking regulations in the European area have increased operational costs (including compliance costs, capital requirements, etc.), making banks less competitive, especially compared to banks in other jurisdictions. Increased regulatory and compliance costs have put downward pressure on earnings, and as a result, banks have achieved cost reductions mainly through general restructuring. The resulting disadvantages varied, but were generally more significant for smaller firms than for larger ones. Additional compliance costs derive from risk monitoring practices required by law. (www.bnr.ro)

The principle of proportionality, which looks at a bank's size, risks, business model and complexity, must be taken into account in this regard. Without disturbing the level playing field, the implementation of regulations must avoid imposing overly complex rules or creating a disproportionate administrative burden. (www.bnr.ro)

Following the financial crisis of recent years, the introduction of regulatory and supervisory norms has become imperative. To ensure their correct and effective implementation, employees must be trained and possibly retrained on these new rules, and highly specialized personnel in the legal and information technology departments are needed. These necessary additional costs can be significant for some institutions. (www.bnr.ro)

4. Findings. Survey on the evolution of the use of financial instruments in the accounting of national entities

Interested users in the banking industry have found that business models have changed rapidly in recent years. The Payment Services Directives have opened up the sector even to third parties (FinTech, BigTech) and unregulated banking (non-banking financial institutions). This has caused an evolution in banking service models, particularly in the payments industry, with an increased presence of fintech. According to the common instructions of the users of the bank financial statements, the information technology departments take over technical and operational duties, with the potential for further reduction in the number of employees. The universal banking model has offset the impact of the financial crisis in some member states. Regulation made high-risk banking unattractive, which affected banks' competitiveness. There has been a massive downsizing of bank branches, not only due to regulatory requirements, but also due to digitalisation, consolidation, mergers and acquisitions and increased costs. (www.bnr.ro)

The profitability problems and disadvantages caused by regulations that European banks have faced compared to those under other legislations have led to a renewed strategic approach and structural changes, including to the banking model. (www.bnr.ro)

While banking business models must be considered in the development of new regulations, these models must be adopted where appropriate. (www.bnr.ro)

Users of European bank financial statements in the banking industry indicate that the playing field is unfair, due to competition from non-banking financial institutions, FinTech companies and BigTech companies, which are not subject to the same regulations as traditional banks. These companies do not face the same regulatory/compliance costs as traditional European banks. For employers who provide high-quality, well-paid jobs within a European social model, as well as for the employees who carry out these activities, it is essential that European banks remain globally competitive. Users of bank financial statements wish to be reminded that the European banking sector has an additional competitor in its immediate vicinity, with the potential to exacerbate already existing adverse effects. (www.bnr.ro)

Banking regulations have helped spur a rise in FinTech companies and accelerated the digitization of the banking industry, for example through verification tools, automation, information sharing and data protection, among others. This will define the new professional universe, in addition to legislation. (www.bnr.ro)

Users of bank financial statements point out that increased cost pressure should not be the main driver of introducing a more agile working style and division of duties. Changes in the professional universe of the future are also stimulated by other factors, such as digitization, new technologies and globalization. Digitization can be accelerated by regulation, but it is a separate trigger. (www.bnr.ro)

As digital technology reaches higher levels of maturity, users of bank financial statements recognize that digitization is useful for increasing productivity. (www.bnr.ro)

5. A case study of the accounting records for financial instruments

Table no. 1 Table of transactions related to the case study for financial instruments

Transactions	Textual description of the transactions
January 1, 2023	The entity Sprint33 contracted on 01.01.2023 a loan of 2,000,000 monetary units (mu), guaranteed by a term deposit with capitalized interest, issued by the banking entity MoneY99 (Nicolae, 2010).
01.01.2023	The term deposit is established
01.01.2023	Transfer the 1st installment of 500,000 mu from the credit
01.04.2023	Transfer the 2st installment of 500,000 mu from the credit
01.07.2023	Transfer the 3st installment of 500,000 mu from the credit
01.10.2023	Transfer the 4st installment of 500,000 mu from the credit
31.12.2023	Capitalized interest in the amount of 120,000 mu related to the term deposit is recorded
31.12.2023	The calculated interest related to the loan in the amount of 240,000 mu is recorded
31.12.2024	Capitalized interest in the amount of 100,000 mu related to the term deposit is recorded

31.12.2024	The calculated interest related to the loan in the amount of 250,000 mu is recorded
31.12.2025	The capitalized interest in the amount of 110,000 mu relating to the term deposit is recorded
31.12.2025	The calculated interest related to the loan in the amount of 260,000 mu is recorded
31.12.2026	The capitalized interest in the amount of 130,000 mu related to the term deposit is recorded
31.12.2026	The calculated interest related to the loan in the amount of 290,000 mu is recorded
01.01.2027	The loan owed is repaid
01.01.2027	The term deposit is liquidated

Note:

Debit = D

Credit = C

Source: Case study data proposed by the author

Accounting data

(Accounting records made by the author)

The following operations take place in the Debtor's accounting:

Table no. 2 Registration of the establishment of the term deposit used as a guarantee

Account - D	Account - C	Amount
<i>Financial instruments – Term deposit in guarantee</i>	<i>Available in electronic currency</i>	2,000,000

Source: Calculations and records made by the author

Table no. 3 Installment 1 of the loan is transferred

Account - D	Account - C	Amount
<i>Available in electronic currency</i>	<i>Financial instruments – Loan secured by term deposit</i>	500,000

Source: Calculations and records made by the author

Table no. 4 Installment 2 of the loan is transferred

Account - D	Account - C	Amount
<i>Available in electronic currency</i>	<i>Financial instruments – Loan secured by term deposit</i>	500,000

Source: Calculations and records made by the author

Table no. 5 Installment 3 of the loan is transferred

Account - D	Account - C	Amount
<i>Available in electronic currency</i>	<i>Financial instruments – Loan secured by term deposit</i>	500,000

Source: Calculations and records made by the author

Table no. 6 Installment 4 of the loan is transferred

Account - D	Account - C	Amount
<i>Available in electronic currency</i>	<i>Financial instruments – Loan secured by term deposit</i>	500,000

Source: Calculations and records made by the author

Table no. 7 Capitalized interest in the amount of 120,000 mu related to the term deposit is recorded

Account - D	Account - C	Amount
<i>Financial instruments – Term deposit in guarantee</i>	<i>Financial gains related to financial instruments - time deposit</i>	120,000

Source: Calculations and records made by the author

Table no. 8 The calculated interest related to the loan in the amount of 240,000 mu is recorded

Account - D	Account - C	Amount
Financial expenses related to financial instruments - Credit guaranteed by term deposit	Available in electronic currency	240,000

Source: Calculations and records made by the author

Table no. 9 Capitalized interest in the amount of 100,000 mu relating to the term deposit is recorded

Account - D	Account - C	Amount
Financial instruments – Term deposit in guarantee	Financial gains related to financial instruments - time deposit	100,000

Source: Calculations and records made by the author

Table no. 10 The calculated interest related to the loan in the amount of 250,000 mu is recorded

Account - D	Account - C	Amount
Financial expenses related to financial instruments - Credit guaranteed by term deposit	Available in electronic currency	250,000

Source: Calculations and records made by the author

Table no. 11 Capitalized interest in the amount of 110,000 mu relating to the term deposit is recorded

Account - D	Account - C	Amount
Financial instruments – Term deposit in guarantee	Financial gains related to financial instruments - time deposit	110,000

Source: Calculations and records made by the author

Table no. 12 The calculated interest related to the loan in the amount of 260,000 mu is recorded

Account - D	Account - C	Amount
Financial expenses related to financial instruments - Credit guaranteed by term deposit	Available in electronic currency	260,000

Source: Calculations and records made by the author

Table no. 13 Capitalized interest in the amount of 130,000 mu related to the term deposit is recorded

Account - D	Account - C	Amount
Financial instruments – Term deposit in guarantee	Financial gains related to financial instruments - time deposit	130,000

Source: Calculations and records made by the author

Table no. 14 The calculated interest related to the loan in the amount of 290,000 mu is recorded

Account - D	Account - C	Amount
Financial expenses related to financial instruments - Credit guaranteed by term deposit	Available in electronic currency	290,000

Source: Calculations and records made by the author

Table no. 15 The loan owed is repaid

Account - D	Account - C	Amount
Financial instruments – Loan secured by term deposit	Available in electronic currency	2,000,000

Source: Calculations and records made by the author

Table no. 16 The term deposit is liquidated

Account - C	Account - D	Amount
Available in electronic currency	Financial instruments – Term deposit in guarantee	2,460,000

Source: Calculations and records made by the author

The following operations take place in the Creditor's accounting:

Table no. 17 Recording the receipt of the term deposit used as collateral

Account - D	Account - C	Amount
Available in electronic currency	Financial instruments – Term deposit in guarantee	2,000,000

Source: Calculations and records made by the author

Table no. 18 Installment 1 is deducted from the loan

Account - D	Account - C	Amount
Financial instruments – Loan secured by term deposit	Available in electronic currency	500,000

Source: Calculations and records made by the author

Table no. 19 Installment 2 is deducted from the loan

Account - D	Account - C	Amount
Financial instruments – Loan secured by term deposit	Available in electronic currency	500,000

Source: Calculations and records made by the author

Table no. 20 Installment 3 is deducted from the loan

Account - D	Account - C	Amount
Financial instruments – Loan secured by term deposit	Available in electronic currency	500,000

Source: Calculations and records made by the author

Table no. 21 Installment 4 is deducted from the loan

Account - D	Account - C	Amount
Financial instruments – Loan secured by term deposit	Available in electronic currency	500,000

Source: Calculations and records made by the author

Table no. 22 The subsidized interest in the amount of 120,000 mu relating to the term deposit is recorded

Account - D	Account - C	Amount
Financial expenses related to financial instruments - Credit guaranteed by term deposit	Financial instruments – Term deposit in guarantee	120,000

Source: Calculations and records made by the author

Table no. 23 The interest collected related to the loan in the amount of 240,000 mu is recorded

Account - D	Account - C	Amount
Available in electronic currency	Financial gains related to financial instruments - time deposit	240,000

Source: Calculations and records made by the author

Table no. 24 The subsidized interest in the amount of 100,000 mu relating to the term deposit is recorded

Account - D	Account - C	Amount
Financial expenses related to financial instruments - Credit guaranteed by term deposit	Financial instruments – Term deposit in guarantee	100,000

Source: Calculations and records made by the author

Table no. 25 The interest collected related to the loan in the amount of 250,000 mu is recorded

Account - D	Account - C	Amount
Available in electronic currency	Financial gains related to financial instruments - time deposit	250,000

Source: Calculations and records made by the author

Table no. 26 The subsidized interest in the amount of 110,000 mu relating to the term deposit is recorded

Account - D	Account - C	Amount
<i>Financial expenses related to financial instruments - Credit guaranteed by term deposit</i>	<i>Financial instruments – Term deposit in guarantee</i>	110,000

Source: Calculations and records made by the author

Table no. 27 The interest collected related to the loan in the amount of 260,000 mu is recorded

Account - D	Account - C	Amount
<i>Available in electronic currency</i>	<i>Financial gains related to financial instruments - time deposit</i>	260,000

Source: Calculations and records made by the author

Table no. 28 The subsidized interest in the amount of 130,000 mu related to the term deposit is recorded

Account - D	Account - C	Amount
<i>Financial expenses related to financial instruments - Credit guaranteed by term deposit</i>	<i>Financial instruments – Term deposit in guarantee</i>	130,000

Source: Calculations and records made by the author

Table no. 29 The interest collected related to the loan in the amount of 290,000 mu is recorded

Account - D	Account - C	Amount
<i>Available in electronic currency</i>	<i>Financial gains related to financial instruments - time deposit</i>	290,000

Source: Calculations and records made by the author

Table no. 30 The credit granted is collected

Account - D	Account - C	Amount
<i>Available in electronic currency</i>	<i>Financial instruments – Loan secured by term deposit</i>	2,000,000

Source: Calculations and records made by the author

Table no. 31 The term deposit is liquidated

Account - C	Account - D	Amount
<i>Financial instruments – Term deposit in guarantee</i>	<i>Available in electronic currency</i>	2,460,000

Source: Calculations and records made by the author

6. Conclusions

In my opinion, the applicability of financial instruments in the accounting system of entities will register a multiple expansion in the future. The possibilities generated by the use of information technology systems require a flexible approach to financing options through various financial instruments. Thus, entities will have the opportunity to access additional financing options for exploitation and investment activities. In this way, conditions are created for attracting monetary resources quickly, with sustainable costs.

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The Importance of ESG in the Real Estate Investments

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Abstract

ESG factors—environmental, social, and governance considerations—have gained growing significance within the real estate industry. This study explores the multifaceted impact of ESG considerations on real estate investments and practices. It delves into the evolving investor, consumer, and regulatory landscape, shedding light on the growing importance of sustainable and socially responsible strategies. It also examines the benefits associated with embracing ESG principles in real estate, encompassing enhanced risk management, improved long-term performance, increased stakeholder engagement, and alignment with global sustainability objectives. Furthermore, it discusses the challenges and opportunities inherent in implementing ESG frameworks within the diverse realms of property development, management, and investment. Through an analysis of current trends, regulatory frameworks, and industry practices, this research provides insights into the transformative potential of ESG integration for fostering resilient, socially conscious, and economically viable real estate ventures.

Key words: real estate, social responsibility, governance, sustainability, environmental factors

J.E.L. classification: R00, M14, G34, Q56, F64

1. Introduction

Real estate developers are increasingly paying attention to environmental, social, and governance (ESG) elements within projects, and the delivery of green buildings is just one component of emphasizing sustainability principles. Focus on energy efficiency and carbon emissions will become a priority against the backdrop of the European Union's policy aiming for carbon neutrality by 2050, which will also influence all new real estate developments.

ESG (Environmental, Social, Governance) criteria in real estate refer to a set of standards that investors, stakeholders, and developers use to assess a property's sustainability and ethical impact. These criteria have gained prominence in the real estate industry as they encompass broader considerations beyond mere financial returns.

Sustainable buildings are designed to be more resilient to environmental changes, such as extreme weather events, and are often adaptable to changing technological and societal demands.

Overall, sustainability in real estate investments not only aligns with global environmental goals but also offers tangible financial benefits, reduced risk exposure, and increased attractiveness to tenants and investors in a rapidly evolving market (Eng, 2023).

The goal of this research is to uncover how extensively investors integrate ESG criteria into their real estate businesses and to examine the benefits of this adoption. This includes advantages not only for the investors but also for fostering sustainable development within the region or country. Investors and stakeholders within the real estate market recognize both the significance and the advantages of integrating ESG factors into the industry as it is shown in our research. Companies started to implement the ESG strategy and make reports about its importance.

In summary, ESG in real estate goes beyond conventional metrics, prioritizing sustainability, social responsibility, and ethical governance to create properties that are not just financially lucrative but also environmentally and socially conscious.

2. Literature review

Environmental factors include aspects like energy efficiency, use of renewable energy, waste management, water conservation, and overall environmental impact. Green building certifications, such as LEED (Leadership in Energy and Environmental Design) or BREEAM (Building Research Establishment Environmental Assessment Method), are often pursued to showcase a property's eco-friendly attributes.

Social impact evaluates the property's impact on communities, occupants, and society at large. Factors might include affordable housing, tenant health and safety, diversity and inclusion policies, community engagement, and the overall well-being of individuals associated with the property (Newell & Marzuki, 2022).

Governance considerations focus on the transparency, accountability, and ethical behavior of real estate companies. This includes factors such as board diversity, executive compensation, adherence to regulations, and anti-corruption policies (Newell, 2023).

Integrating ESG principles into real estate projects can yield various benefits such as risk mitigation, enhanced value and long-term sustainability.

Therefore, sustainability has become a critical factor in real estate investments. Sustainable practices in real estate can mitigate various risks (Warren-Myeres, 2023), including regulatory risks (compliance with changing environmental standards), physical risks (impacts of climate change on property), and reputational risks (negative public perception due to unsustainable practices).

Moreover, properties that integrate sustainability features tend to have higher market value and can command premium pricing. Energy-efficient buildings, for example, often have lower operating costs, which can attract tenants and increase property value.

There's a growing demand for sustainable and environmentally friendly properties. Tenants, investors, and consumers increasingly prefer buildings that prioritize energy efficiency, green spaces, eco-friendly materials, and reduced environmental impact. Still, the autonomy of space users and their ability to act within smart real estate settings face challenges due to the imposition of algorithmic governance on their interactions within smart spaces (Lecomte, 2023)

Sustainable buildings often boast lower utility costs due to energy-saving features like efficient HVAC systems, LED lighting, and renewable energy sources. Over time, these savings contribute significantly to the property's financial performance (Cajias et al., 2011).

As environmental regulations evolve and become stricter, sustainable buildings are better positioned to comply with these regulations. Investing in sustainable features helps future-proof properties against potential regulatory changes. Regulatory bodies, such as the European Union and other governments globally, are implementing policies to encourage or enforce ESG compliance in real estate. This creates a stronger incentive for developers and investors to align with these principles, not just for ethical reasons but also for long-term economic viability.

3. The ESG factors in the real estate market – Evidence from Romania

The real estate market in Romania has been an area of interest and growth, particularly in urban centers like Bucharest, Cluj-Napoca, Timișoara, Constanța and Iași. In recent years, there has been increased attention to integrating ESG principles into real estate development across the country.

Romania has seen a rise in green building initiatives, with a growing number of developers focusing on constructing environmentally friendly buildings. This includes obtaining certifications like BREEAM or LEED for their projects, showcasing a commitment to sustainability. Developers are also exploring renewable energy sources and energy-efficient designs in their buildings to reduce the carbon footprint. This aligns with the broader EU goals of achieving carbon neutrality by 2050. The Romanian real estate market has been influenced by EU directives and policies emphasizing sustainability. This has led to increased attention to ESG factors as part of regulatory compliance and a means of attracting investors interested in sustainable projects. There's growing

interest among investors in ESG-aligned properties. Institutional investors, in particular, are increasingly considering ESG factors in their investment decisions, prompting developers to integrate these principles into their projects to attract funding. There's a developing awareness among consumers and businesses regarding the benefits of ESG-focused real estate. This awareness, coupled with educational initiatives and campaigns, contributes to the demand for sustainable properties.

In the realm of ESG considerations, developers must not only focus on constructing environmentally sustainable buildings but also take into account how these properties affect the community, including aspects like diversity. This approach is already being adopted in the local market, particularly with mixed-use or commercial projects designed to serve the specific needs of nearby communities. For example, a developer investing in road infrastructure, parking facilities, or green spaces actively contributes to enhancing the overall environment of the project's location.

In a survey by PwC Romania, just 30% of companies surveyed reported adopting ESG sustainability standards, with 63% admitting they lack familiarity. When questioned about integrating fiscal policies into their ESG strategies, 26% confirmed doing so, 5% denied it, and a majority (68%) either lacked these strategies or were unaware of their implementation. (Borbely & Chelaru, 2022).

While progress is evident, challenges persist, including the need for greater awareness, investment in sustainable technologies, and alignment with stricter ESG regulations. However, these challenges also present opportunities for innovation, partnerships, and market differentiation for developers.

Overall, the Romanian real estate market is witnessing a gradual shift towards ESG integration, driven by a mix of regulatory pressures, investor preferences, and a growing awareness of sustainability issues. This transition presents opportunities for stakeholders to contribute to a more sustainable built environment while meeting the evolving demands of the market.

4. Research methodology

Analyzing ESG (Environmental, Social, and Governance) factors in the real estate sector aims to understand the influence and implementation of sustainability practices, community engagement, and corporate governance within real estate investments. This analysis typically explores the impact of ESG criteria on property values, tenant satisfaction, regulatory compliance, and overall investment performance. The goal is to provide insights into how these factors affect decision-making and outcomes in the real estate market.

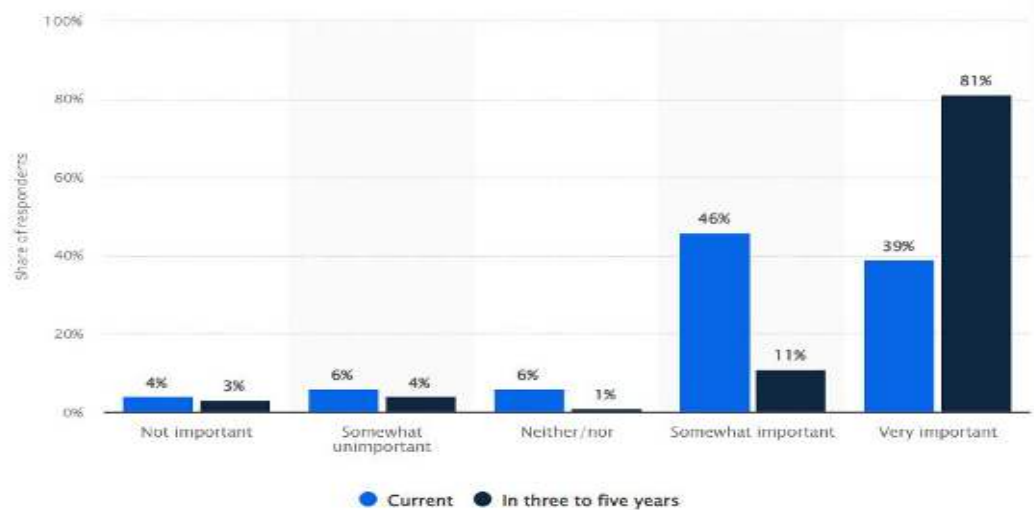
The study will analyse real estate investors' opinion on the current and future importance of ESG criteria, benefits resulting from environmental, social, and governance (ESG) applied in the real estate sector. The assessment of real estate investors' perspectives on various environmental, social, and governance (ESG) measures is crucial for pinpointing elements that hold significant importance in achieving planetary goals and the United Nations Development Goals.

Our research on ESG in real estate, like any study, faces certain limitations such as: data availability and quality. ESG criteria can be subjective, leading to variations in how different researchers or investors interpret and measure these factors. Lack of standardized metrics can impede consistent evaluation. Also, investors or real estate companies might selectively report positive ESG practices while downplaying or omitting negative aspects, leading to a biased view of their ESG performance.

While a relatively novel area for researchers, ESG in real estate holds significant importance and is poised to become a crucial strategy for companies aiming to maintain competitiveness in the market. Additionally, aligning with the new regulations of the EU will be imperative for these companies in the near future.

According to Figure 1, 39% of respondents consider the ESG strategy highly significant for the current state of the real estate sector. However, predictions suggest that this figure will escalate to 81% in the future. Currently, 46% of respondents perceive ESG factors as crucial to their business, with only 11% deeming it somewhat important. These figures indicate a future where all investors will prioritize ESG factors to maintain competitiveness in the market and bolster their profit.

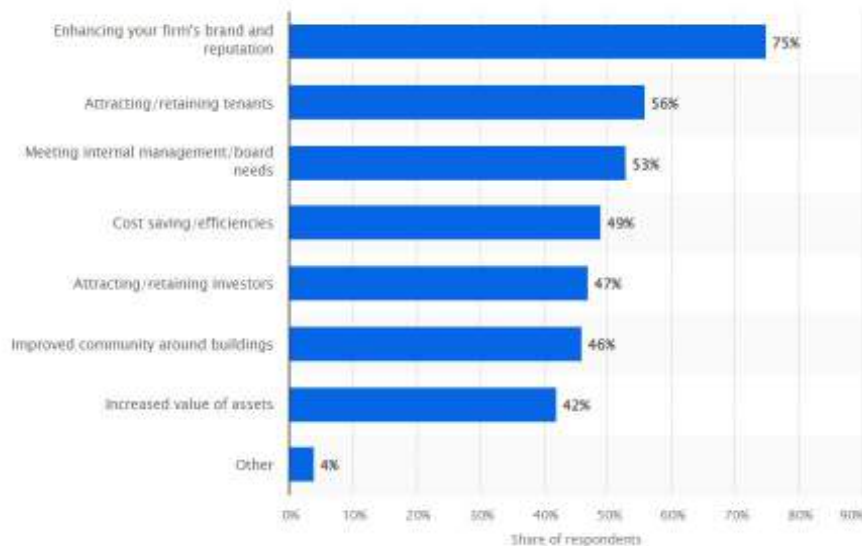
Figure no.1 Real estate investors' opinion on the current and future importance of environmental, social, and governance (ESG) criteria worldwide as of 2022



Source: Statista, 2022, <https://www.statista.com/statistics/1320678/esg-criteria-importance-real-estate-investment/>

Nevertheless, ESG factors bring lots of benefits for developers and real estate sector as investors reported (figure no.2): 75% declared that implementing ESG strategy enhanced their firm's brand and reputation, 56% of the investors considered that they attract/retained more tenants, 53% found ESG connected to their internal management/board needs in a positive way. Other significant benefits are cost savings/efficiencies, attracting/retaining investors, improved community around buildings and increased value of assets.

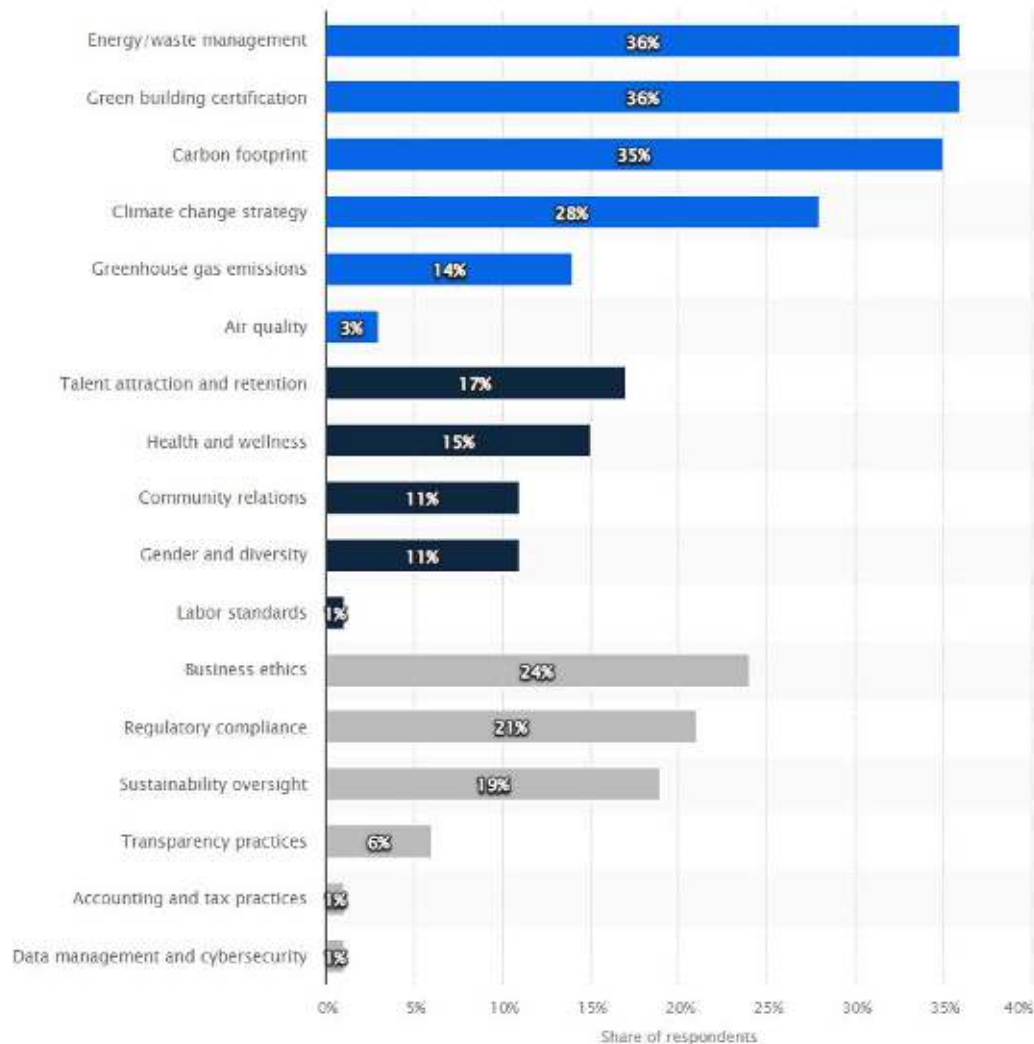
Figure no.2 Share of real estate investors who report different benefits resulting from environmental, social, and governance (ESG) measures worldwide as of 2022



Source: Statista, 2022, <https://www.statista.com/statistics/1329899/esg-measures-benefits-real-estate-investment-globally/>

There's a growing interest among real estate investors in Environmental, Social, and Governance (ESG) factors. These considerations have gained significance as investors increasingly recognize the impact ESG can have on long-term sustainability, risk management, and overall performance within the real estate sector.

Figure no. 3 Real estate investors' opinion on the importance of different environmental, social, and governance (ESG) measures worldwide in 2022



Source: Statista Research Department, 2023, <https://www.statista.com/statistics/1320678/esg-criteria-importance-real-estate-investment/>

In a March 2022 survey (Figure no. 3), environmental sustainability emerged as the primary ESG criterion among real estate investors. One-third of respondents highlighted energy or waste management, green building certification, and carbon footprint as pivotal factors. Within social sustainability, talent attraction and retention garnered the highest consideration, noted as important by 17 percent of respondents. Meanwhile, governance criteria saw business ethics, regulatory compliance, and sustainability oversight ranking prominently. According to survey results, already established ESG measures included corporate sustainability reporting and net zero planning, emerging as some of the most popular among respondents.

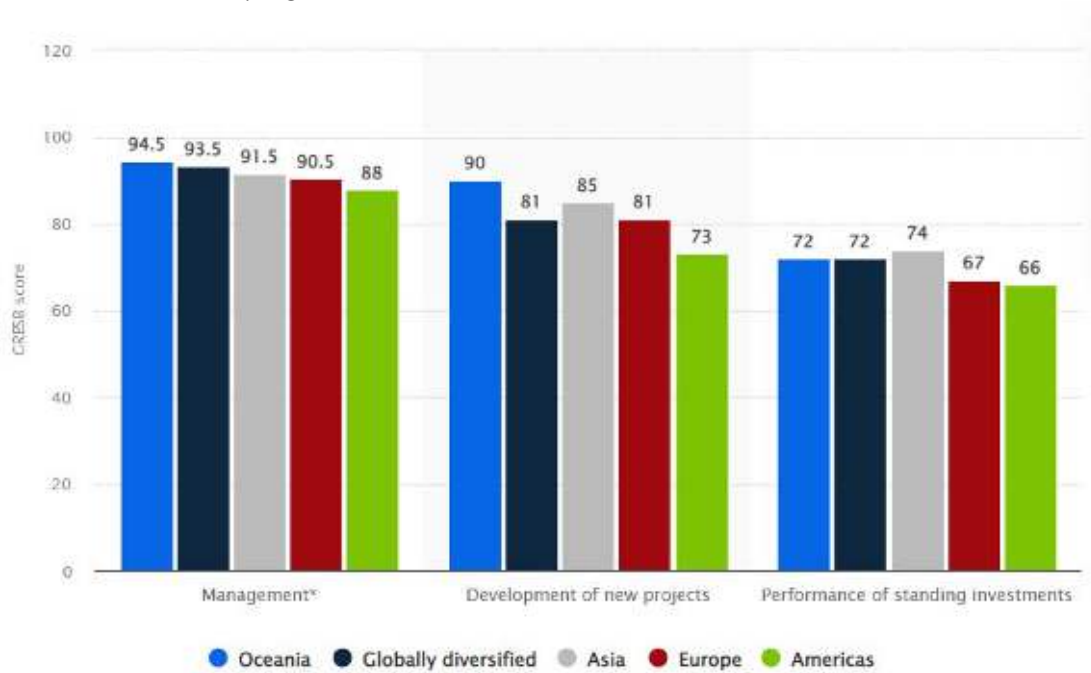
A 2022 Knight Frank study involving 400 UK corporate occupants highlighted their stance on sustainability and ESG. It revealed a lack of consensus regarding the real estate sector's potential role in reducing carbon emissions. Particularly noteworthy was the disparity between intent and

action among businesses prioritizing ESG principles. Among surveyed corporations, 40% had established net-zero carbon objectives, with 77% of this group setting an ambitious target of achieving this by 2030 – a goal within one real estate cycle. However, only 16% of respondents felt that their commitment to achieving net-zero carbon significantly influenced their real estate decision-making processes. Additionally, nearly 60% had less than 10% of their global portfolios consisting of accredited buildings.

All in all, companies can benefit from implementing ESG strategies when developing smart buildings. For example, the implementation of smart, environmentally conscious buildings has the potential to decrease water consumption by up to 30%, energy usage by 40%, and overall building maintenance costs by 10% to 30% (Apanaviciene et al., 2000).

Studies further indicate that these smart-green buildings could yield a lease value increase of 11.8%, accompanied by higher sales values ranging between 5% and 35% (Hatcher, 2021).

Figure no.4 Global Real Estate Sustainability Benchmark (GRESB) score of real estate companies worldwide in 2023, by region



Source: Statista Research Department, 2023 <https://www.statista.com/statistics/1414641/gresb-score-real-estate-worldwide-by-region/>

In 2023, real estate firms worldwide demonstrated exceptional proficiency in sustainable management practices, as per GRESB data. However, across all regions, standing investments showed the weakest sustainability performance. Notably, Asia led with the highest score of 74 out of 100 (figure no. 4). GRESB is an industry-driven entity, assesses, verifies, rates, and compares ESG performance. ESG benchmarking has gained traction within the global real estate sector, with the participation of companies in GRESB steadily rising since 2013.

5. Findings

The ESG trends in the Real Estate sector are: green building and eco-efficient practices: planning and constructing methods aimed at minimizing adverse environmental effects, extending across supply chains and enhancing the eco-efficiency of buildings.

Creating community partnerships: real estate companies should engage local communities from the project's inception to reduce negative impacts, disruptions, and explore how they can contribute to community development, local economic support: prioritizing sustainable supply chains can set

real estate firms apart, while supporting local partners can create positive environmental and communal impacts. Safety measures: real estate entities should prioritize employee and public safety during construction phases and ensure the quality and safety of completed assets, labor standards and social responsibility: given its significant employment impact, the real estate sector should address labor conditions and human rights issues, climate resilience: real estate entities should develop the capacity to anticipate, prepare for, and respond to climate change-related risks affecting both employees and users, such as rising temperatures, sea-level rise, flooding, and more.

The real estate sector's increased involvement with governmental and public entities may necessitate specific attention to engagement levels and effective communication.

6. Conclusions

Cities and regions might implement policies promoting smart growth, mixed-use developments, and transit-oriented designs to reduce environmental impact and encourage social inclusivity (Robinson & McIntosh, 2022). Many regions enforce building codes or offer certifications encouraging energy efficiency, sustainable materials, and environmentally friendly construction practices.

Institutional investors, shareholders, and stakeholders are increasingly demanding ESG integration, influencing company policies and practices.

Real estate firms must adjust to evolving investor, consumer, and commercial demands, securing approval for their business practices and procedures from stakeholders and the public. A comprehensive approach to ESG is necessary to build a resilient "ESG-proof" enterprise, potentially enhancing talent attraction, bolstering reputation, and securing the social license to operate.

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Weaknesses and Strengths in the Evolution of the Romanian Tax System

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Abstract

The tax system is a product of human thought, decision, and action because of the evolution of human society, created to meet financial objectives, to which are added the objectives of the economic and social system.

The general objective of the research on the evolution of the tax system in Romania is to understand the transformations and changes that have taken place in the country's tax system over time. This research aims to analyze the legislative, economic, and social changes that have affected the tax system and impacted on revenue collection for the state.

The research on the evolution of the tax system in Romania and the identification of strengths and weaknesses has the overall aim of understanding and improving the functioning of the tax system, contributing to a more efficient tax administration, and promoting a healthier economic climate.

Key words: tax system, taxes, inflation rate, budget deficit

J.E.L. classification: H2, H6

1. Introduction

Romania's tax system is not just about taxes; it includes significant elements such as the legal framework, which plays a key role in establishing the legal and regulatory conditions for taxation. This legal framework encompasses both the rights and obligations of the tax authority and taxpayers. In compliance with tax and general legislation, taxation is defined as a set of rules that govern the taxation of taxpayers and serves as the legal basis for taxes and duties, without in any way prejudicing the rights and benefits of taxpayers.

Legislation establishes taxes and duties, which are essential elements in shaping and defining the concepts of taxation. The tax system is not just the result of laws, but a manifestation of human thought, decisions, and actions, evolving in line with changes in human society. This system is designed to meet financial objectives by combining them with those of the economic and social system.

The rationale behind the theme Evolution of the tax system in Romania: Strengths and weaknesses reflects a multi-dimensional interest, including economic, social, and political aspects. From an economic perspective, it explores the development of the key components of the Romanian tax system and how they contribute to the revenues of the general consolidated state budget. From the social perspective, it analyses the legal framework governing the regulatory acts and setting the tax rates applicable to both individuals and legal entities. From the policy perspective, it considers decisions, measures, and possible changes to the legal framework, with the aim of facilitating and bringing a valuable contribution to the general state budget.

2. Literature review

The evolution of the tax system in Romania is a complex and relevant subject, with multiple aspects that can influence both the economy and society. Analysis of the strengths and weaknesses of this system can provide a comprehensive perspective on the efficiency and challenges faced by tax authorities, taxpayers, and business. In the process, the research examines historical development, the legal framework, adaptability to economic change, efficiency in tax collection, tax fairness, anti-avoidance measures and the impact on the business environment (Badea, 2003). Identifying and understanding these issues is essential for designing and implementing more efficient and fair tax policies in Romania.

The literature on the evolution of the tax system in Romania provides a wide range of information and in-depth analysis of its strengths and weaknesses. Relevant issues identified include historical evolution, highlighting legislative changes and major economic events that have shaped the tax system over time. The analyses also focus on the efficiency of tax collection, identifying possible problems and proposing improvements for more efficient collection. The literature also reveals tax equity issues, assessing the distribution of tax burdens and the impact on social inequalities. Studies also extend to the adaptability of the tax system to economic changes and the global context, including how it handles recessions or economic growth (Brezeanu, 2009). Detailed analysis of tax legislation highlights ambiguities and loopholes, while evaluation of anti-avoidance measures focuses on their effectiveness and on improving tax compliance. The impact of the tax system on the business environment, investment and competitiveness is also studied, identifying potential challenges or benefits. Comparison with tax systems in other countries brings into discussion good practices and possible improvements adapted to the specific Romanian context.

According to the normative acts, there are several delimitations within the Romanian tax system to highlight the concepts of taxes and duties owed by individuals and legal entities.

Budgetary income is a monetary obligation regulated by normative acts and is applied to all natural and legal persons who obtain taxable income or own taxable goods. The government budget comprises ordinary revenue, i.e. current receipts, and extraordinary revenue, considered temporary depending on the regularity of receipts. The main recurrent sources of the government budget include taxes, duties, and contributions, providing the liquidity needed to finance public expenditure on a regular basis. Taxes are compulsory and non-refundable contributions paid by individuals and legal entities to the state budget, levied on their income or assets. Contributions are mechanisms for recovering public financial resources and are paid by individuals and legal entities on a compulsory or voluntary basis.

Within the state budget revenues, taxes are the second category next to duties. They are issued by public authorities and represent state budget revenue. The characteristics of taxes include the paying party determined precisely at the request of an act, service, or work by the state authority (Vintilă, *et al.*, 2002). Payment of taxes is unequivocal, determined at the level of the state authority, anticipated and one-off. These features distinguish taxes specifically within the tax system.

Public financial resources come, for the most part, from the collection of taxes, duties and contributions from legal entities and individuals. Taxes, related to the earliest forms of state organization, evolved in close connection with the functions and responsibilities of the state. Defined as compulsory contributions for natural and legal persons, taxes are payments to the state imposed at national level on specific income or property.

In the past, payments were designed and made in kind or in labor, but nowadays they are denominated in the currency of the country concerned. For the most part, taxes are directed towards covering public expenditure, financing essential activities for society. Contrary to payments, taxpayers do not receive direct compensation from the competent authorities (Ciucur *et al.*, 2004).

An essential aspect of taxes is recognized by their reversibility, where the amount collected can be transferred into acts and services that benefit taxpayers in the form of social and cultural facilities provided by the state. The tax is therefore seen as a compulsory contribution with no immediate equivalent, but taxpayers become direct beneficiaries of activities organized by the state, without being obliged to pay the consideration.

The literature also focuses on the analysis of compulsory social contributions within contributions, which are paid for social pension insurance, social health insurance and unemployment protection (Minea *et al.*, 2006). Although there are clear demarcations between contributions, taxes, and duties in the functions they perform, common aspects have been identified that apply to all the categories analyzed. In addition to their main functions of mobilizing financial resources and financing public expenditure, contributions become an important economic and social policy instrument to influence the development and redistribution of income and wealth in society.

Taxation was established as a financial instrument to mobilize resources to meet public needs. Compulsory levies in the form of taxes are influenced by the objectives and actions planned in the state budget for a given period. In addition to taxes, there are other sources of financing public expenditure. The size of taxes, as an expression of the financing function of public expenditure, depends on the scale and complexity of public sector actions (Minea *et al.*, 2006). This function is achieved by the State taking a share of the financial results of the subjects of law (in the case of taxes, levies, contributions, or payments) or by establishing a partial participation of the subjects of law in covering the expenditure incurred by the State in organizing public services (in the case of taxes).

The normative nature of the tax requires a rigorous regulatory process based on imperative benchmarks. Theorists have debated since the dawn of capitalism the rules that tax regulators should follow. During the rise of capitalism, the economist Adam Smith formulated four fundamental principles for state tax policy: the justice of taxation (tax fairness), the certainty of taxation, the convenience of taxation and the yield of taxation (Pilat, 2006).

The elasticity of taxation indicates the ability to constantly adapt the volume of tax revenue to the state's need for financial resources. Thus, when budget expenditure increases, it is essential that tax revenues increase, and conversely, a decrease in budget expenditure should lead to a decrease in tax revenues (Tofan *et al.*, 2019). Today, with countries facing increasing public expenditure, all countries are facing an increase in the need for public revenue, which is directly reflected in higher tax revenues. Thus, taxes need to be flexible to adapt to cyclical factors, and if the tax base is sensitive to changes in economic activity, taxes can become an instrument of economic stabilization.

3. Research methodology

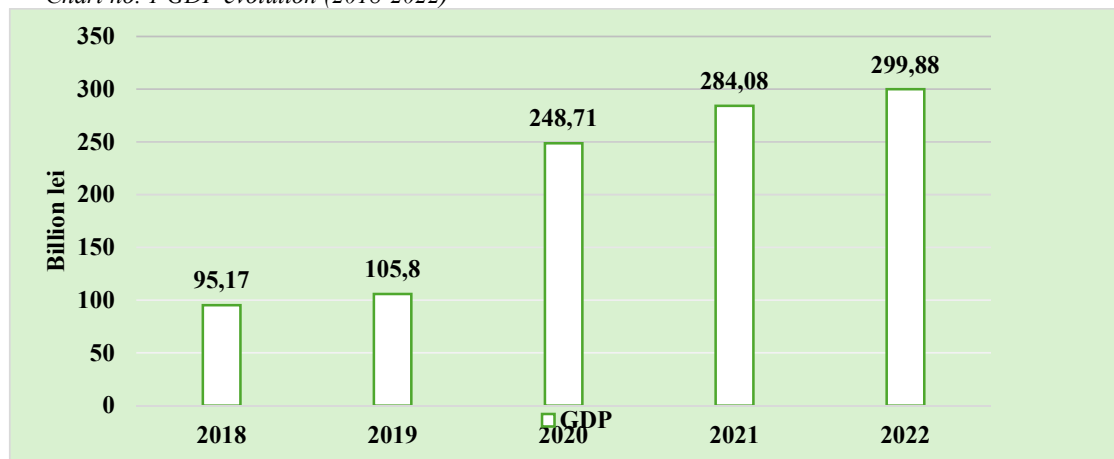
The research method for the analysis Evolution of the Tax System in Romania: Strengths and Weaknesses adopts a mixed approach, combining qualitative and quantitative methods for a comprehensive understanding. The various methods included in the research include documentary analysis, which explores official documents and tax legislation from a historical and legal perspective. Case studies provide detail on specific periods or aspects of the tax system. Interviews with experts, government representatives and other stakeholders provide practical insights and relevant information. Direct research and field observations provide a detailed understanding of how the tax system works in practice. The use of official statistical data provides quantitative assessments of tax trends. Comparative analysis with other countries brings in cross-national perspectives and focus groups with taxpayers and experts gather relevant opinions and perceptions. It is essential that the research is accurate and objective, interpreting the results in the specific context of the Romanian tax and economic environment.

4. Findings

4.1. Strengths of the Romanian tax system

As strengths of the Romanian tax system, we find the growth of the Gross Domestic Product, but also the contribution of the factors during the period analyzed.

Chart no. 1 GDP evolution (2018-2022)

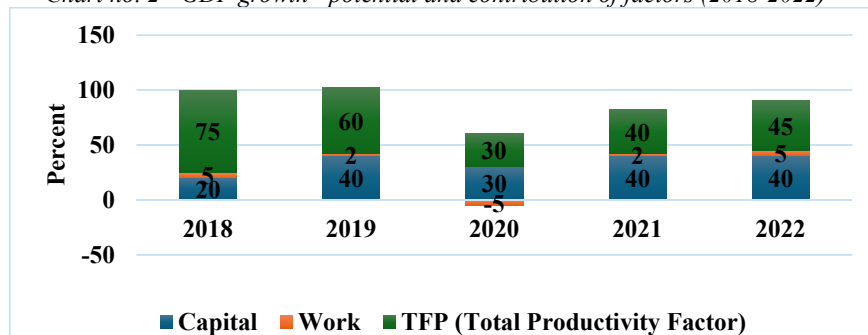


Source: Budget Report 2018-2022, Ministry of Finance, available at <https://mfinante.gov.ro/static/10/Mfp/buget2022/proiectbuget2022/Raportbuget2022.pdf>

In Romania, the Gross Domestic Product has fluctuated significantly in recent years. In 2018, it was 95.17 billion lei, down from the previous year, when it reached 105.80 billion lei in 2019. A notable increase was recorded in 2020, reaching 142.92 billion lei. The upward trend continued in 2021, when GDP reached a total of 284.08 billion lei. The highest point was reached in 2022, with a peak of 299.88 billion lei.

With the growth of the Gross Domestic Product, it becomes important to break it down by the various areas of activity, analyze the main expenditures and assess the contribution made by the main contributors to the annual state budget.

Chart no. 2 - GDP growth - potential and contribution of factors (2018-2022)



Source: Romanian Government, Convergence Program 2018-2022 and National Strategy and Forecast Commission

In the analysis of Graph 2, we examined the evolution of capital, labor, and total labor productivity factor, all of which contributed to the growth of Gross Domestic Product in Romania. The productivity factor accounts for about 30-75% of this growth, reflecting the potential of the productive resources involved in the economic circuit, including material resources such as construction and machinery, but also service resources. The high percentage in the period under analysis is due to the prevalence of economic agents providing services in Romania.

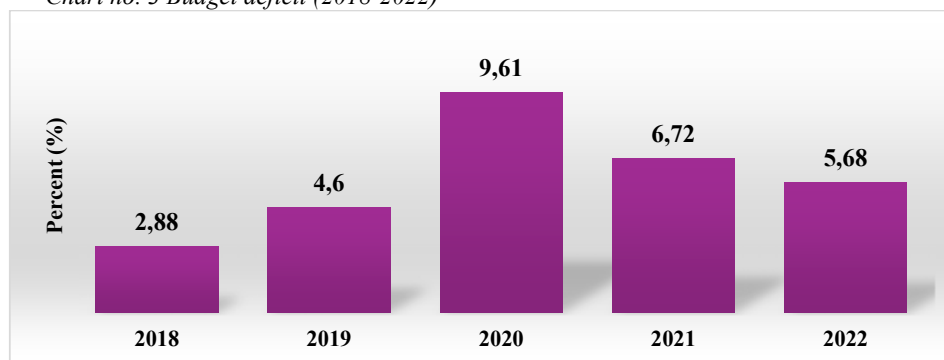
The year 2020 was significantly affected, with a major drop in total labor productivity to 30%, with capital and labor both at 30% and -5% respectively. The COVID-19 pandemic has had a direct impact through shutdowns, massive unemployment and even redundancies in companies. In 2021, there is a significant rebound, with a 10-percentage point increase in the total productivity factor, an increase in labor to 2%, and an increase in capital to 40%.

The year 2022 brings no significant difference, but the total productivity factor reaches 45%, capital remains at 40%, and labor increases to 5%. Further developments in Romania will depend on factors directly affecting the state budget, and particularly the Gross Domestic Product, generating lags and increases depending on these factors.

4.2. Weaknesses of the Romanian tax system

In the context of Romania's fiscal system, weaknesses such as the budget deficit, unemployment, consumer prices, inflation and government debt are highlighted. These indicators are influenced by various aspects of the economic environment, such as the size of the population, labor productivity, the evolution of Gross Domestic Product, the level of income and expenditure and other relevant factors.

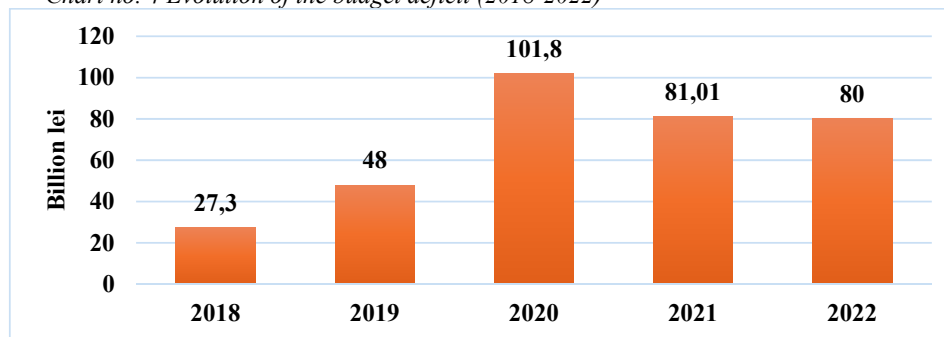
Chart no. 3 Budget deficit (2018-2022)



Source: Ministry of Finance, Budget 2018-2022, available at <https://mfinante.gov.ro/ro/web/site>

According to Graph 3, the budget deficit has shown a significantly high evolution especially in the year of the pandemic implementation. Thus, in 2018 the deficit was 2.88%, in 2019 it increased to 4.6% and in 2020 it reached 9.61%. With an increase of 5.01 percentage points compared to 2019 and a decrease of 2.89 percentage points compared to 2021, which recorded a deficit of only 6.72%. In 2022, the budget deficit reaches 5.68%, which means that from an economic point of view, Romania is going for a recovery of the general consolidated budget, but also for reducing the deficit below a certain ceiling.

Chart no. 4 Evolution of the budget deficit (2018-2022)



Source: Ministry of Finance, Budget 2018-2022, available at <https://mfinante.gov.ro/ro/web/site>

The budget deficit in Romania varied significantly over the period under review, reaching 27.3 billion lei in 2018, 48 billion lei in 2019, and 101.8 billion lei in 2020. In 2021, there was a deficit of 81.01 billion lei, and in 2022 it was 80 billion lei.

After the end of the state of emergency in 2020, economic agents resumed their activities, showing improvements, especially in digitization. In 2021-2022, many taxpayers adapted to work more efficiently, avoiding staff shortages or shutdowns.

The reorganization of economic activities in Romania has had an impact on the general state budget, generating an increase in productivity. However, the legislative changes implemented from the following year onwards affected mainly companies, imposing new legal provisions through percentage rates. Taxpayers are obliged to comply with these legislative changes, under penalty of fines and penalties in case of non-compliance according to governmental ordinances published in the Official Journal of Romania.

One of the aspects contributing to the fragility of the Romanian tax system is the unemployment rate, which is on an upward trend in the period 2018-2022. In 2018, the unemployment rate was 1.3%, dropping to 1.1% in 2019 and reaching 0.5% in 2020. However, from 2021 onwards, the unemployment rate increased to 1%, indicating an increase in the number of unemployed compared to the active population.

Another factor with a negative impact on the tax system is the emigration of the Romanian population to other countries. For financial reasons, many choose to move to countries such as Germany, Italy, Spain, the UK or even outside the European Union to ensure a more decent living for their families back home. The permanent emigration of families to other countries can negatively affect the state budget, as they no longer contribute financially to Romania.

According to data, more than 1 000 people migrate from Romania every year, and more than 4 million Romanians already live in other countries. The main emigration destinations include the United States, Germany, Saudi Arabia, and the Russian Federation, while Romania is among the countries with the most emigrants, along with Bosnia and Herzegovina, Serbia, and Bulgaria.

The World Banks indicate that Romania ranks seventh in the top 20 European countries as a destination and source of international remittances, with about \$8 billion in and \$1 billion out in 2019-2020, representing 3.5% of total remittances.

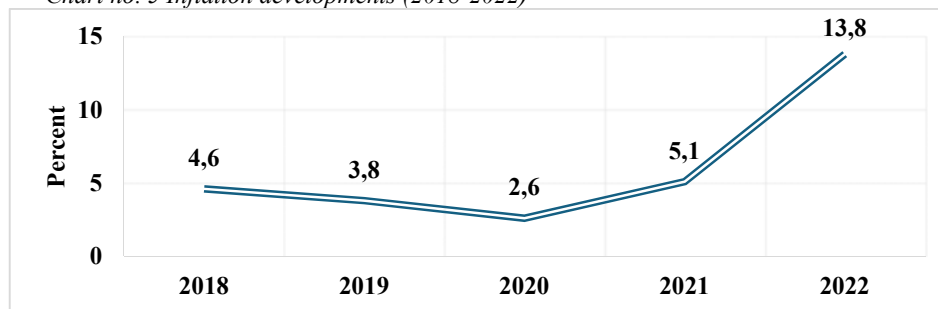
In the sphere of weaknesses, there is also the consumer price index, an important aspect influencing fiscal stability in Romania.

The evolution of the consumer price index in Romania shows an upward trend, with significant changes starting in 2020. In 2018, the index was 104.63%, while in 2019 it recorded a slight decrease to 103.83%. The year 2020 marked a significant decrease, with a reduction of 1.2 percentage points, reaching 102.63%, the major effect of this decrease being the implementation of the SARS-CoV-2 virus pandemic.

From the beginning of 2021, a sustained increase in the consumer price index is observed, recording a value of 105.05% at the end of that year, and in 2022, it reaches 113.8%, reflecting a significant increase of 8.75 percentage points.

Another crucial factor with a direct impact on the general consolidated state budget is inflation. This is generated by the generalized increase in the prices of goods and services in an economic society, substantially influencing the state's financial balance.

Chart no. 5 Inflation developments (2018-2022)



Source: National Institute of Statistics, CPI- annual data series, available at <https://insse.ro/cms/ro/content/ipc%E2%80%93serie-de-date-anuala>

Over the period under review, inflation in Romania increased by up to 9.2 percentage points, which is a considerable percentage, especially in the context of a country undergoing economic development.

In 2018, the inflation rate was 4.6%, with a decrease to 3.8% in 2019. In 2020, it reached 2.6%, and in 2021, there was an increase of 2.5 percentage points to 5.1%. A significant moment was in 2021, when the inflation rate reached 13.8%. The main causes of this include imports of goods from the European Union and other countries, involving customs duties, taxes, and specific duties, generating an increase in the prices of goods, and affecting taxpayers.

In parallel with these price increases, there has been an increase in the gross minimum wage in the country, leading to an increase in taxes paid to the state by economic agents and other public institutions at central and local level. Economic developments in Romania are characterized by increases in taxes, legislative changes and, in general, in the prices of goods and services.

Another aspect in the category of weaknesses of the Romanian tax system is the government debt, which is expanding during the period under review.

During 2018-2022, the government debt did not exceed RON 50 billion, accumulated both at central and local government levels.

In central government, government debt recorded values of RON 47.4 billion in 2018, RON 48.1 billion in 2019 and RON 48.5 billion in 2020, and then slightly decreased to RON 48.3 billion in 2021 and RON 47.9 billion in 2022.

Regarding the government debt of local governments, it was 1.4 billion lei in 2018, 1.3 billion lei in 2019, decreasing to 1.2 billion lei in 2020, 1.1 billion lei in 2021 and 1 billion lei in 2022.

Although there is a downward trend in government debt, it is still a weak point in the Romanian tax system, generating annual expenditure of over 40 billion lei. In the context of other competitive factors, it contributes to the economic downturn, reinforcing the fragility of the tax system.

Within the Romanian economic system, the paper mainly deals with the tax level, accounting for about 23% of the whole topic. Other significant issues include corruption, which according to statistics accounts for 18%, tax regulations for 15%, and access to finance for 14%. Political instability takes up 10%, while the remaining factors, such as inflation, labor, and innovation capacity, are below 10%.

We see that Romania's tax system has both strengths and weaknesses over the period under review. Among the positives are the growth of Gross Domestic Product and the factors that contribute to it, such as capital, labor, and the total productivity factor. In contrast, there are also critical issues such as the deficit, unemployment, the consumption index, inflation, and government debt. All of these interact within the economic system, and government decisions and regulations can bring about significant changes in the financial plan.

5. Conclusions

The research analyzed the evolution of the tax system over a five-year period, focusing on revenue and expenditure. Revenue increased from 141.35 billion lei in 2018 to 216.44 billion lei in 2022, while expenditure doubled to 497.71 billion lei in 2022. This analysis reveals the strengths and weaknesses of the Romanian tax system between 2018-2022.

Among the strengths, the Gross Domestic Product (GDP) has grown steadily from 95.17 billion lei in 2018 to 299.88 billion lei in 2022. Substantial capital shares (20-40%), a labor force with a notable return in 2022 (5%), and a total productivity factor between 30-75% demonstrate significant growth and recovery potential for the Romanian tax system.

On the weak points, the budget deficit is highlighted, reaching 80 billion lei in 2022, an unemployment rate increasing by 1%, the consumer price index rising to 113.80%, and inflation at a level of 13.8%. Government debt at central and local level totals 50 billion lei annually.

The findings suggest that the evolution of the Romanian tax system over the period under review reflects both growth and significant challenges. Proposed solutions include effective legislative regulation, accessibility to external funds, attracting labor and managing price increases for products and services.

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Assessing the Impact of European Funds Absorption in Romania in the Context of Financial Stability

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Abstract

The impact of the absorption of European funds in Romania, in the context of financial stability, is a complex subject, approached with the aim of balancing the associated benefits and risks. Absorption of funds contributes to economic growth, infrastructure development and job creation, supporting the private sector and innovation. However, administrative difficulties and the need to comply with EU rules pose risks. Transparent and efficient management is essential to prevent corruption. Overall, absorption of EU funds can strengthen national budgets and reduce regional disparities. It is crucial that Romania adapts to European requirements and manages funds responsibly to maximize the positive impact on the country's financial stability. The overall objective is to analyze the impact of these funds on economic growth, infrastructure, and the reduction of regional disparities. The aim of the research is to assess how the absorption of European funds influences financial stability in the context of compliance with EU standards and to propose directions for efficient and transparent management.

Key words: investments, sustainable finance, European funds

J.E.L. classification: G3, G4

1. Introduction

When evaluating the absorption capacity, it is essential to discern two primary facets: absorption capacity within the institutional framework of the state, responsible for fund management, and absorption capacity on the part of the ultimate beneficiaries. The latter pertains to the aptitude of potential recipients to formulate and fund projects. Nevertheless, appraising these attributes before the tangible execution of European programs often proves challenging, if not unfeasible.

On the institutional front, absorption capacity hinges on various factors. Firstly, macroeconomic capacity, gauged in relation to the gross domestic product (GDP), plays a pivotal role. The regulation also underscores the necessity to augment budgetary expenditures, particularly to fulfill commitments made during the European integration process. This augmentation encompasses the country's contribution to the EU budget and the funds required for co-financing initiatives supported by Community funds. The ability to absorb the macroeconomic repercussions of these additional expenditures is equally critical, impacting both aggregate demand and supply.

All these aspects are closely linked to nominal and real convergence. Nominal convergence refers to the stability of prices, interest rates and exchange rates, while real convergence aims at social and economic development and the reduction of the gap with the EU average. Assessing and managing these aspects is essential to ensure effective absorption of EU funds and to facilitate the convergence process.

The financial absorption capacity pertains to the competence of both central and local authorities to participate in co-financing programs and projects endorsed by the European Union. This encompasses the capability to strategically plan and secure internal contributions within multi-annual budgets, as well as efficiently gather these resources from the diverse stakeholders involved in each project or program.

The study analyses the sources of attracting European funds in the context of financial stability, covering mechanisms at the European Commission and the European Investment Bank. It explores the beneficiaries, sectors, and schemes for attracting funds, highlighting their contribution to financial sustainability.

The research also examines the amounts of European funds attracted by Romania until 2022, both from the European Commission and the European Investment Bank. The analysis provides details of the amounts and number of projects, highlighting their impact on economic development and sectoral structure.

Specific projects funded by the European Commission and the European Investment Bank are also analyzed, focusing on their impact on the economy at local, regional, and national level. The effects on the environment and social conditions are detailed, providing a comprehensive picture of the contribution of European funds to the country's sustainable development and financial stability.

Attracting European funds is a complex process, with the European Commission (EC) as the main source. The EC provides various forms of funding, such as grants, subsidies, and loans, with strict rules to ensure transparency and accountability in the use of funds. This funding is managed in three main ways: direct funding, shared management, and indirect funding. All these mechanisms require strict control of the funds and beneficiaries must comply with strict requirements to access these European financial resources.

2. Literature review

The literature on the absorption of EU funds initially comprises an extensive body of regulations, laws and decisions designed to govern the distribution of funds at European and national level. Over time, this sphere has been supplemented by studies focusing on absorption capacity, obstacles encountered at European level and in Member States, and the social and economic consequences of this process. Although this research provides insight into the problems of absorbing EU funds, there are significant limitations. These include the considerable diversity of funds, disparities between different countries and regions, and the difficulty in developing appropriate indicators for comprehensive analysis of the absorption capacity and impact of EU funds (Briciu *et al*, 2018).

A country's absorption capacity is affected by several factors at European and national level, and there is a correlation between a region's economic development and its capacity to absorb EU funds. According to studies, smaller countries and less developed regions face the greatest difficulties in absorbing EU funds, with common obstacles such as difficulties in securing co-financing, lack of staff experienced in managing EU funds and lack of cooperation between local partners (Constantin *et al*, 2017).

In the context of the absorption of EU funds, the influencing factors highlighted in the studies fall into three main categories: macroeconomic capacity, financial capacity, and administrative capacity. This capacity is closely linked to the country's GDP, the stability of prices, interest rates and exchange rates, and the ability of the economy to manage additional costs, including the impact on the labor market (Croitoru, 2018). Finally, administrative capacity reflects the extent to which the relevant institutions can facilitate the absorption of funds by having the necessary skills to effectively design and manage programs.

Knowledge management is an innovative approach in management science, aiming to optimize organizational competences by cultivating a culture of continuous learning. Applicable to both the public and private sectors, knowledge management is becoming crucial in public administration, given its socio-local nature and the broad societal development objectives (Gheorghe, 2016).

For public administration in Romania, the absorption of European funds is an essential solution to manage current challenges and the implementation of knowledge management principles can increase the absorption capacity. Principles such as continuous learning, evaluation, application of

learning in administrative practices, and knowledge transfer can improve administrative capacities and the effectiveness of the use of European funds.

These principles can be implemented by creating a culture of learning and knowledge exchange, documenting and transferring relevant knowledge, developing, and using knowledge management tools and platforms, promoting inter-organizational collaboration and learning, monitoring, and evaluating performance and continuous improvement (Ghișe, 2017). Identification and development of key competences, exchange of good practices and lessons learned, and participation in international networks and partnerships are also key aspects of this approach.

By adopting these measures and integrating knowledge management principles, public administrations can improve their capacity to absorb European funds, helping to maximize the efficiency and impact of project and program investments.

Since joining the European Union in 2007, Romania has undergone a significant process of economic and social transformation, stimulated by the non-reimbursable financial transfers granted by the EU through cohesion policy (Ivan *et al*, 2016). These funds, managed according to the principles of strategic programming, partnership, and subsidiarity, have aimed to focus assistance on regions and areas most in need of support.

Through cohesion policy, Romania has benefited from significant financial resources, allocating them to projects in sectors as diverse as infrastructure, innovation, research, regional development, entrepreneurship, and environmental protection. These funds have helped to improve infrastructure, create jobs, and modernize economic sectors (Marchis, 2020).

The reform of cohesion policy after 2007 brought significant changes, consolidating the Structural Funds into three separate entities (ERDF, ESF and Cohesion Fund). Through this process, Romania remains eligible for two main objectives: Convergence and European Territorial Cooperation (Năstase, 2014).

A notable aspect of the reform has been the simplification of the planning process, bringing a strategic approach focused on the Lisbon Strategy priorities. Programming documents, such as the National Strategic Reference Framework and Operational Programs, have become key tools for managing funds effectively and improving their absorption (Roșu, 2019).

In the context of financial sustainability, these changes have brought clarity and efficiency in the use of European funds, contributing to Romania's sustainable development.

3. Research methodology

The research method for analyzing the impact of EU funds absorption in Romania in the context of financial stability involves a complex approach, combining several research strategies and techniques. The case studies will involve in-depth analysis of individual projects financed by European funds, with the aim of assessing their impact on financial stability at local, regional, or national level. These detailed investigations will provide concrete insights into the influence of funds in different sectors. Quantitative methods, such as statistical data analysis, will be used to quantify the financial impact and identify trends in the absorption of EU funds. This may include assessment of economic performance, absorption rates and impact on macroeconomic indicators. Research will also include assessments of the financial sustainability of projects and their long-term impact. It will analyze the capacity of funded projects to continue to deliver benefits and how they contribute to sustainable development.

By combining these methods, the research will provide a comprehensive understanding of how the absorption of EU funds has influenced financial stability in the specific context of Romania.

4. Findings

Emphasizing the positive attributes of the Romanian tax system, noteworthy elements include the rise in Gross Domestic Product and substantial contributions from growth factors noted during the examined period. The research will explore the efficacy of operational programs in the European Union's consecutive 7-year multi-annual budgetary periods, specifically 2007-2013 and 2014-2020. The focus of the analysis will be on programs funded by the European Regional Development Fund,

the Cohesion Fund, and the European Social Fund. These initiatives have provided Romania with an opportunity to progress and synchronize with the developmental paths of other EU Member States.

According to the data presented in the table below, in the period 2007-2013, the lowest absorption was recorded in the Operational Programs focused on financing major infrastructure, such as the Transport Operational Program and the Environment Operational Program. This is worrying given the need for infrastructure development to reduce the gap with Western European countries. Another negative aspect highlighted is the underutilization of European funds for human resources, which have not been fully used, despite the significant need for professional skills in the country. This underutilization affects the achievement of the employment rate growth target.

Table no. 1 Performance of operational programs in Romania, 2007-2013 funding period

Romania's Operational Programmes 2007-2013	Financial allocation 2007-2013 (in billion euro)	Financial allocation (31.03.2017)
Regional Operational Programme	3,966	93.41%
Environment Operational Programme	4,412	84.48%
Transport Operational Programme	4,288	81.07%
Operational Programme for Economic Competitiveness	2,537	100%
Human Resources Development Operational Programme	3,200	90.81%
Operational Programme for Administrative Capacity Development	0,208	100%
Technical Assistance Operational Programme	0,170	100%
Total	18,781	89.08%

Source: own processing by methods used in the research undertaken

During the 2007-2013 period, Romania achieved an absorption rate of approximately 90%, resulting in a loss of around €2 billion. This significant amount could have been directed towards the construction of 400 kilometers of motorways, given an average cost of €5 million per kilometer.

Despite three operational programs (Operational Program for Economic Competitiveness, Operational Program for Administrative Capacity Building, and Operational Program for Technical Assistance) achieving a 100% absorption rate, they received lower allocations compared to programs supporting major infrastructure projects.

The 2007-2013 programming period brought significant investments to Romania, contributing significantly to economic growth and employment. Many projects within this timeframe led to the creation of new jobs, marking Romania's initial 7-year multiannual period as a European Union Member State. This phase served as an adjustment period for the country, preparing for the challenges anticipated in the 2016-2022 programming period and beyond 2020.

The limited uptake under the Transport Operational Program 2007-2013 was primarily attributed to excessive bureaucracy and a lack of competition among applicants for EU funds. This situation meant that major beneficiaries such as motorway, railway, or Bucharest metro companies had little incentive to enhance their administrative and project implementation capacities. Moreover, large infrastructure projects, particularly affected, entail a lengthy preparation period of 6 to 10 years, surpassing the duration of a 7-year European financial cycle. The absence of ready-to-implement projects in 2007 resulted in Romania losing approximately €2 billion during that programming period.

Table no. 2 Performance of operational programs in Romania in the 2014-2022 funding period

Romania's Operational Programmes 2014-2020	Financial allocation 2016-2022 (in billion euro)	Current absorption rate (03.04.2022)
Regional Operational Programme	6,860	22.86%
Large Infrastructure Operational Programme	9,219	26.42%
Operational Programme for Competitiveness	1,330	28.17%
Operational Programme for Human Capital	4,372	27.26%
Operational Programme for the Development of Administrative Capacity	0,553	23.57%
Sectoral Operational Programme for Technical Assistance	0,253	60.51%
Total	22,586	25.91%

Source: own processing by methods used in the research undertaken

The funds received by Romania from the European Union have triggered substantial changes in the country since its accession in 2007. It is crucial to highlight that the European Union imposes specific restrictions on allocating significant sums in areas such as research or climate change mitigation, domains where Romania initially lacked preparedness.

In the programming period of 2014-2020, there were no major alterations in the operational programs. A notable development was the amalgamation of the environment and transport programs, giving rise to the Large Infrastructure Operational Program. Regarding financial allocation for the 2016-2022 period, the Regional Operational Program witnessed a substantial 72% increase, providing regional development beneficiaries with €6.86 billion compared to the €3.96 billion allocated in the 2007-2013 funding periods.

A major cause of the low absorption of EU funds in 2007-2013 in Romania was excessive bureaucracy. However, on a positive note, for the period 2016-2022, red tape has been reduced, making it easier for project beneficiaries by eliminating excessive documentation. The My SMIS system has been introduced, allowing scanned documents to be uploaded for various stages of projects. However, the guidelines for applicants remain complex and the restricted eligibility conditions limit potential beneficiaries in applying for EU funds.

Absorption of European funds in Constanta County

The municipality of Constanta has 25 ongoing projects under the Regional Operational Program for the period 2014-2020. Constanta County ranks first in the South-East region in terms of the number of contracted projects, exceeding the average of 9 projects per county and the national average of 11 projects, recorded at the level of the 41 counties in Romania.

The municipalities of Eforie and Techirghiol lead in the top of contracting, with 6 ongoing projects, which represents 24% of all projects contracted in the county. This translates into an average of 3 projects per town across the county. Other towns that stand out in this context are:

- The town of Năvodari, contributing 18% of the total through its 3 projects, in line with the average.
- The town of Ovidiu, with 18% of the total through the 3 projects, equivalent to the national average.
- Municipality of Hârșova, involved in 3 projects, contributing 18%, like the average.
- Municipality of Cernavodă, with 12% of the total, with 2 projects, below the national average.
- Municipality of Negru Voda, contributing 12% of the total, with 2 projects, below the national average.

Table no. 3 Absorption rate of cities in Constanta County 2014-2022

Cities	Cities Total eligible budget (Euro)	Total non-reimbursable budget (Euro)	% of total non-reimbursable budget contracted within the county
Eforie	27.485.394	26.935.686	44.62%
Techirghiol	11.021.437	10.736.156	17.79%
Năvodari	6.855.916	6.718.797	11.13%
Negru Vodă	5.556.825	5.445.689	9.02%
Hârșova	3.954.916	3.875.818	6.42%
Cernavodă	2.481.286	2.431.660	4.03%

Source: own processing by methods used in the research undertaken

The City of Eforie managed to contract and use approximately 44.62% of the total non-reimbursable budget available within the county, signaling an efficient absorption of European funds and an adequate administrative capacity to implement funded projects. The town of Techirghiol absorbed approximately 17.79% of the total non-reimbursable budget of the county, indicating a significant effort in the use of European funds for the development of the town.

The town of Năvodari contracted and used approximately 11.13% of the total non-reimbursable budget available within the county, reflecting a moderate commitment in the absorption of European funds, with potential for further use of these resources. The town of Negru Voda has absorbed approximately 9.02% of the total non-reimbursable budget available within the county, indicating an effort to use European funds for local development.

The town of Hârșova used approximately 6.42% of the total non-reimbursable budget available within the county, showing a level of absorption of European funds and involvement in local development. The city of Cernavodă contracted and used approximately 4.03% of the total non-reimbursable budget available within the county, showing an effort in the use of European funds for local projects and initiatives.

The 7 cities mentioned have contracted a total eligible budget of € 20.287.997, of which a total non-reimbursable budget of € 19.767.264. The percentage of 53.17% of the total contracted in the South-East Region indicates a significant absorption of European funds in these cities.

It is also noted that the average budget contracted in the county is 8.62 million euros, and the amounts obtained by Eforie and Techirghiol are above average, suggesting a more sustained effort in the absorption and use of European funds in these two towns compared to the other mentioned localities. This data suggests that Eforie and Techirghiol performed better in attracting and using European funds, reflecting a more developed administrative capacity and a stronger commitment to local development through European funds.

Analyzing the field of Tourism, the largest budget was contracted under.

Regional Operational Program (ROP) 2014-2020, amounting to €21.66 million as total non-reimbursable budget. This represents approximately 35.88% of the total budget contracted in the county. Compared to the county average of €7.55 million, the priority allocation of European funds for the development and promotion of tourism in the area is evident, recognizing the importance of this sector for the county.

5. Conclusions

The absorption of European funds has had a significant impact on Romania's development, positively influencing infrastructure, employment, quality of public services and support to the private sector. These investments have contributed to the progress of the country's regional and economic development. In the context of sustainable development, issues such as the financing of local public authorities, the efficient absorption of European funds and their impact in Romania play a key role. Maximizing the benefits and generating a positive impact on communities and regions in Romania depends on the efficient use of EU funds and the development of administrative capacity.

In conclusion, Romania suffered a significant loss of more than €2 billion in the 2007-2013 programming period, highlighting the importance of drawing appropriate lessons to avoid such situations in the 2014-2020 period. Full absorption of EU funds is essential to reduce the gap between Romania and other Member States. We are seeing significant transformations in infrastructure, with more than 300% more kilometers of motorway in Romania since joining the European Union. However, the administrative capacity of beneficiaries and managing authorities needs to be increased to improve absorption of EU funds. In the past, excessive bureaucracy has been a major cause of low absorption, but efforts to reduce it in 2014-2020 are encouraging. The notable rise in financial allocation for the Regional Operational Program in 2014-2020 signifies a substantial progress, presenting a budget of €6.86 billion for regional development. However, it is essential to emphasize that this analysis exclusively concentrates on the absorption of structural funds in Romania. Subsequent articles will delve into absorption rates in other Central and Eastern European countries, as well as Western European countries, providing a more comprehensive comparison of results.

The efficient use of European funds is crucial for Romania's regional and economic progress. It is imperative to strengthen absorption capacity and local public authorities must have adequate sources of funding. The impact of investment from European funds is significant, generating both economic and social benefits in various regions of the country. To ensure optimal use of these funds and to promote sustainable development, continuous analysis and evaluation is essential.

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Contributions to the Improvement of the Process of Internal Audit at Public Educational Entities by Using Chatbots

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Abstract

This paper explores the impact of implementing chatbots in the internal audit process of public education entities. The study analyzes the efficiency and effectiveness of chatbots in optimizing audit operations, highlighting benefits such as increasing efficiency, improving audit quality and facilitating communication between auditors and institution staff. The results highlight the significant contributions of chatbots in reducing administrative burdens, saving resources and creating a more transparent and adaptable audit process. The paper provides relevant insights for public entities seeking to integrate emerging technologies into their internal audit practices, highlighting the importance of chatbots in the effective evolution of this field.

Key words: chatbots, AI, audit, public entities, education

J.E.L. classification: I21, I25, M42, O36

1. Introduction

Internal audit is an essential element of the internal control system of public education entities, having the role of evaluating and improving the efficiency, effectiveness and compliance of the organization's activities. In a world of continuous technological evolution, public education entities face significant challenges in managing and optimizing internal audit processes.

Over the past few years, artificial intelligence (AI) has become a key area of innovation and development in many industries, including internal audit. One of the emerging tools in the field of AI is represented by chatbots, chatbot-type applications that use natural language processing techniques to interact with users in the most natural way possible.

This research aims to explore how the use of chatbots can make significant contributions to improving the internal audit process in public education entities. Integrating chatbot technology into internal audit can bring benefits such as improving operational efficiency, increasing the accuracy of data collected, reducing human error, and ultimately strengthening the quality of audit reports.

In the specific context of public education entities, chatbots can play an essential role in interacting with different stakeholders, such as teaching staff, administrative staff or students. Customized solutions can also be implemented to manage audit tasks, schedule audits, prepare checklists and monitor remedial activities for identified non-conformities. Therefore, this case study will focus on the analysis and evaluation of the impact of the introduction of chatbots in the internal audit process of public education entities. Both the users' perspective (internal audit, staff from public education entities) and the impact on the efficiency and quality of the audit process itself will be investigated.

Next, we will explore the research methods used, the proposed objectives and the potential benefits that this technological innovation can bring to the field of internal audit in public educational entities.

2. Theoretical background

In recent years, researchers and audit professionals have begun to explore the potential of chatbots in the internal public audit for public education entities. These studies investigated various aspects such as the efficiency, accuracy and benefits of using chatbots in this context. Below are some relevant examples of the application of chatbots in internal public audit:

- ***Financial Data Analysis Assistance Study:*** A research study looked at how chatbots can be used to assist auditors in analyzing financial data and identify potential discrepancies and anomalies. The results indicated that chatbots can increase the efficiency of the audit process and facilitate the identification of complex patterns in financial data.
- ***Example of use in data collection:*** Within a public educational institution, the chatbot was implemented to automate the collection of financial and operational information from various departments and internal units. This chatbot enabled auditors to quickly and efficiently obtain the data needed for risk analysis and assessment.
- ***Application in compliance assistance:*** Another example was the implementation of a chatbot to assist in monitoring and meeting compliance requirements at the level of public educational institutions. The chatbot provided guidance and relevant information about internal regulations and policies, thereby helping entities to comply with legal requirements and minimize the risks of non-compliance.
- ***Use in the handling of requests and complaints:*** Another example of the application of chatbots in the internal public audit was in the handling of requests and complaints from students, teaching staff and other interested parties. The chatbot provided quick and accurate responses to questions and requests, facilitating communication and increasing user satisfaction.

These previous studies and application examples show that chatbots can bring significant benefits in internal public audit for public education entities. The integration of chatbot technology in this field can increase the efficiency, precision and quality of the audit process, thus contributing to the improvement of internal control activities and ensuring a good management of resources in educational institutions.

3. Research methodology

In order to conduct rigorous research and obtain relevant and credible results in the case study on the contributions of using chatbots in internal audit in public education entities, well-structured and appropriate data collection and analysis methods are required. In this subsection, we will detail the methods we will use to obtain and interpret the data required for our research.

Data collection methods:

1. Expert interviews: We will interview experts in the field of internal audit and artificial intelligence to gain valuable insights and in-depth understanding of how chatbots can be integrated into the internal audit process at public education entities. These interviews will help identify the benefits, challenges and expectations of using chatbots.

2. Case study at the public entity: We will choose two public entities from education that have/have not implemented chatbots in internal audit. In the case of the institution that has integrated AI, we will collect data on how chatbots have been implemented, the types of tasks assisted by chatbots, and the observed impact on internal audit efficiency and quality. For the other institution we will collect information and data about the traditional conduct of the audit process (represented by the SCIM committee). This will involve reviewing documents, audit reports and feedback from auditors.

Data analysis methods:

A. Qualitative analysis: The expert interviews will be analyzed using the qualitative analysis method. We will identify themes and patterns in the experts' responses, extracting relevant insights into the benefits, challenges and perspectives of using chatbots in internal audit.

B. Quantitative analysis: For data collected from public education entities, we will use quantitative analysis to quantify the effects of using chatbots in internal audit. We will use metrics such as time saved, accuracy rate and efficiency in the audit process.

Evaluation of the results:

Through the combination of qualitative and quantitative analysis of the collected data, we will comprehensively evaluate the impact of the use of chatbots in the internal audit of public educational entities. The results will be interpreted in the context of the research objectives and will provide clear information and sound arguments to assess the benefits and challenges of using chatbots in this field.

In conclusion, the data collection and analysis methods proposed for the case study will allow a comprehensive and rigorous approach to our investigation on the contributions of chatbot technology in improving the internal audit process in public educational entities.

4. Findings

A. Interviews with experts

A.1. The first interview was applied to an expert in the field of internal public audit and included the questions and answers presented below. The interview was conducted orally, the answers being recorded. The purpose and objectives of the case study, as well as the interview questions, were communicated to the expert in advance.

A.2. The second interview was applied to an expert in the field of artificial intelligence and included the questions and answers presented below. The interview was conducted orally, the answers being recorded. The purpose and objectives of the case study, as well as the questions, were communicated to the expert in advance. Confidentiality of personal data has been ensured.

B. Case study in public entities

Two state pre-university education institutions were chosen to carry out the case study. The first institution, hereafter referred to as School A, implemented chatbots in the 2022-2023 school year within the SCIM (Internal Managerial Control System) committee. The second institution, called School B, carried out the activities of the SCIM commission in the traditional way.

The interviews were applied to SCIM managers from the two institutions and were conducted online, through Google Forms, with each institution receiving a set of personalized questions. The questionnaire applied to School A contained nine questions. The questionnaire applied to School B included six questions:

- 1. How does the SCIM process work in the absence of chatbots?*
- 2. What are the methods and tools used?*
- 3. How do you compare the activity of the SCIM committee at institution A with that at your institution?*
- 4. Are there aspects that could benefit from the introduction of chatbots?*
- 5. What are the major challenges faced by the SCIM committee in your school?*
- 6. What are your views on the future of internal audit and the use of technology?*

Analyzing the responses received to the questionnaires, we draw the following conclusions:

- **Process efficiency** - The school that implemented chatbots in SCIM shows increased efficiency in the internal control process, with less dependence on human resources and faster processes.
- **Accessibility and Availability** - School with chatbots provides greater access to information and support, available 24/7, while school without chatbots has time constraints.
- **Data quality and monitoring** - The implementation of chatbots contributes to more efficient data collection and analysis, leading to better monitoring of activities and events.
- **Consistency and Compliance** - School with chatbots show greater consistency in applying policies and procedures, thus helping to maintain compliance.
- **Repetitive tasks and human errors** - Deploying chatbots eliminates repetitive tasks and reduces the human errors associated with them.
- **Cost reduction** – School A benefits from a reduction in long-term administrative costs.
- **Reliance on human resources** - School without chatbots still depends on human resources to manage SCIM activities, which creates vulnerabilities.
- **Level of satisfaction** - Stakeholders are more satisfied with the level of service and responses obtained in the school with chatbots, which contributes to improved

relationships.

- Resources and limitations - However, implementing chatbots also has risks, such as data security issues or initial implementation costs.
- Need for adequate planning and resources - Successful implementation of chatbots requires adequate planning and resources, including staff training.

Assessing the contributions of chatbots in the internal public audit process

The process of implementing chatbots within public internal audit has made many significant contributions and changed the way this field works. In this sub-chapter, we will carefully evaluate the positive impact of chatbots in the internal public audit process, highlighting the benefits and notable changes. Evaluating these contributions is essential to deeply understand the effectiveness and added value of this technology in public auditing.

Increased efficiency

One of the main factors that contributed to the increased efficiency of the internal public audit was the implementation of chatbots. These have enabled the automation of repetitive tasks and data collection processes, reducing the time required to complete an audit. Auditors can now focus more on data analysis and risk identification, trusting that chatbots perform repetitive tasks accurately and efficiently.

Continuous accessibility and availability

Chatbots have facilitated the accessibility and availability of internal public audit. Auditors and staff from public entities can interact with chatbots at any time, 7 days a week. This has resulted in greater scheduling flexibility and quick responses to audit questions and requests. The use of chatbots has removed the limitations of regular business hours, which has significantly increased access to audit services.

Reduction of human errors

Another notable aspect of the contribution of chatbots in internal public audit is the reduction of human errors. Chatbots can perform repetitive tasks without making errors and provide a high degree of accuracy. This has led to increased audit quality and reduced risks related to human error.

Effective data collection and analysis

Chatbots have revolutionized the data collection and analysis process in public internal audit. They can collect data from multiple sources, organize and analyze it to generate useful reports and insights for auditors. This process has become much more efficient, allowing auditors to get a clearer and more detailed picture of the situation.

Cost reduction

The implementation of chatbots has led to a significant cost reduction in internal public audit. They can replace or reduce the need for repetitive tasks that previously required significant resources. Thus, public entities and audit organizations can allocate resources more efficiently.

Improving the quality of services

The quality of audit services has increased significantly with the implementation of chatbots. By eliminating human error, more efficient data collection and analysis, auditors can provide more accurate and useful audit services to public entities.

Innovation and transformation of the audit process

Chatbots have brought a touch of innovation and transformed the internal public audit process. These have opened up new opportunities for the use of artificial intelligence and stimulated creative thinking about how auditing can be done in the future.

Continuous monitoring and adaptation

Assessing the contributions of chatbots in the internal public audit process is not a static process. It is important to continuously monitor chatbot performance and make adjustments and improvements as technology evolves and needs change.

The evaluation of the contributions of chatbots in the internal public audit shows that this technology has brought significant benefits, improving the efficiency, accessibility, quality and innovation capacity of this field. These contributions highlight the continued importance of the exploration and use of technology in public internal audit.

Participant feedback on using chatbots

Participant feedback on the use of chatbots within the Internal Managerial Control Commission (ICMC) in a school where chatbots were implemented was generally positive, highlighting multiple benefits and increased efficiency.

Participants noted a significant increase in the efficiency of the internal audit process. Chatbots have reduced the time required to complete the audit and to collect and analyze data. Users appreciated being able to interact with the chatbots at any time, which provided greater scheduling flexibility and enabled quick responses to audit questions.

Chatbots have brought increased accuracy to the audit process. These eliminated human error and ensured greater consistency in data collection and analysis. Feedback repeatedly mentioned the cost savings achieved by using chatbots. They replaced or reduced the need for human resources for repetitive tasks.

Auditors noted that chatbots can generate reports and information in a much shorter time, which has accelerated the decision-making process. Chatbots have been seen as an innovative tool that has helped transform the internal audit process. They brought a touch of innovation to SCIM.

Users have noted an improvement in the quality of audit services, thanks to the accuracy and consistency that chatbots bring to the process. Participants appreciated the ability to tailor chatbots to the specific needs of the school and the audit process. This allowed for greater customization.

Users also gave positive feedback to the chatbot implementation team for the support provided and proper training. Although there were some initial challenges in getting familiar with the chatbot technology, these were quickly overcome and were not major obstacles.

Overall, feedback from participants suggests that chatbots have been well received and have brought a number of significant benefits to the school's SCIM. These positive observations underscore the potential of technology to improve internal public audit and support decision-making at the school level.

5. Conclusions

The use of chatbots in the internal audit of public entities has undergone a thorough evaluation to determine the efficiency and effectiveness of this technology. The conclusions obtained highlight several key aspects related to the positive impact of chatbots in the internal audit process at public entities.

The use of chatbots has led to increased efficiency in the internal audit process. They have demonstrated the ability to perform repetitive tasks and collect data in a fast and accurate manner. The time required to complete the audit was significantly reduced, and auditors were able to focus more time on data analysis and risk identification.

Chatbots have brought greater accessibility and availability of internal audit services. Being able to interact with them at any hour, 7 days a week, removed the limitations of regular business hours. This increased flexibility and allowed easy access to audit services.

Another notable aspect is the reduction of human errors in the audit process. Chatbots have provided a high degree of accuracy in the execution of tasks, eliminating the risks of human error. This has led to an increase in audit quality and risk reduction.

The implementation of chatbots had a positive impact on costs in the internal audit of public entities. They replaced or reduced the need for human resources for repetitive tasks, which led to a better allocation of financial resources.

Chatbots have improved the quality of audit services by providing accuracy, coherence and consistency in data collection and analysis. This quality improvement is essential in the internal audit process.

The implementation of chatbots brought a touch of innovation and helped transform the internal audit process. They have opened up new opportunities for the use of technology and stimulated creative thinking about how auditing can be done in the future.

The findings show that continuous evaluation and adaptation of chatbots is essential to maintain their effectiveness. It is important to monitor performance and make adjustments as technology evolves and needs change.

Overall, the findings on the use of chatbots in internal audit at public entities indicate that this technology has brought significant benefits in terms of efficiency, accuracy, accessibility and quality of audit services. These conclusions support the continued exploration and implementation of technology in internal audit and indicate significant potential for improving the audit process in public entities.

Practical implications and recommendations for entities

The implementation of chatbots in the internal audit of public educational entities brings with it significant practical implications. To ensure effective integration and get the most out of this technology, specific recommendations are needed. Here are some practical implications and recommendations for entities:

- Each public entity has specific needs and requirements. Before implementing chatbots, it is essential to carefully identify the specific needs and goals of the entity. This will allow the chatbot to be customized to effectively respond to the entity's requirements.
- Choosing the right technology for chatbot development is crucial. It's important to evaluate the available options and work with chatbot development experts to create a chatbot tailored to your entity's needs.
- Protecting sensitive data is a major concern in public auditing. Implementing strong security measures and strict privacy policies is essential. Make sure your chatbot doesn't compromise data security and privacy.
- Make sure that the staff who will work with the chatbot are properly trained and have the necessary knowledge. A good understanding of how a chatbot works and its tasks is crucial to using the technology effectively.
- Monitoring chatbot performance and continuous evaluation of results is essential. Make sure the chatbot meets quality standards and adapts to changes in the entity's needs.
- Technology evolves rapidly. Entities must be prepared to adapt to technological changes and update the chatbot accordingly. Plan for regular updates and improvements.
- Make sure there is a clear line of communication between users and the chatbot. Clear documentation and easy-to-follow instructions can help with effective communication and problem solving.
- Evaluating the costs and benefits of the chatbot is crucial. Quantifying ROI will help justify the investment and evaluate the effectiveness of the chatbot.
- Collaboration with experts in chatbot development and internal audit can be essential. Bringing technology and audit specialists into the implementation process can bring additional expertise and insights.

In conclusion, the implementation of chatbots in the internal audit of public entities can bring many benefits, but it also involves specific responsibilities and requirements. Following the above recommendations and adapting them to the needs and context of the entity will contribute to the success of this technology in the internal audit process.

Limitations and directions for future research

Although the use of chatbots in the internal audit of public educational entities brings many benefits and promising perspectives, this subchapter highlights some limitations of the study and provides directions for future research

Limitations of the study

• Restricted generalization

The comparative case study involved only two institutions and may present particularities specific to their context. The results may have limited applicability in other institutions or public sectors.

• Technological cohesion

Significant differences in existing infrastructure and technologies in the two institutions may have influenced the results of the study.

• Time limitations

The study covered a certain time frame, and the long-term effects of implementing chatbots may require further research.

Directions for Future Research

• Extension of the study

Future research can involve more institutions or public sectors to get a more comprehensive picture of the impact of chatbots in internal audit.

- More detailed assessment of financial effects

Further research can address the financial effects of implementing chatbots in internal audit in more detail, including cost savings and increased financial efficiency.

- In-depth analysis of security and privacy

Issues related to data security and privacy in the context of chatbots could be the subject of dedicated research.

- Evaluation of user satisfaction

Research that investigates users' experience with chatbots, their level of satisfaction and their feedback can provide important insights.

- Qualitative studies

Qualitative studies such as interviews and surveys can provide a deeper understanding of user and staff experiences and perceptions of chatbots.

- Emerging technologies

Investigating how emerging technologies, such as advanced artificial intelligence, may influence internal audit in the future.

- Benchmarking

Conducting comparisons and benchmarking between public entities implementing chatbots for internal audit can provide additional context and comparative insights.

- Adapting to legislative changes

Studies that address how chatbots can be adapted to comply with legislative changes or internal audit regulations.

Finally, these limitations and directions for future research serve as a guide for developing and expanding knowledge regarding the use of chatbots in internal audit at public educational entities and reflect the dynamic nature of this evolving field.

Key results

- The implementation of chatbots in the internal audit of public entities in education can bring multiple benefits, such as increasing efficiency, reducing errors and significant savings in time and resources.

- The use of chatbots has facilitated data collection and analysis processes, allowing auditors to focus on value-added activities.

- Chatbots have helped improve communication with institution staff and other stakeholders, increasing audit transparency and effectiveness.

Key findings

- Chatbots have demonstrated the potential to revolutionize internal audit in public education entities, bringing significant advantages in terms of efficiency and effectiveness of the audit process.

- The implementation of chatbots requires a customized approach, taking into account the specifics of each public entity and ensuring adequate data security.

- Continually evaluating chatbot performance, monitoring user satisfaction, and adapting to legislative changes are critical to successful implementation.

Implications and recommendations

- Public educational institutions that want to integrate chatbots in internal audit should conduct a careful analysis of specific needs and develop customized chatbots.

- Collaboration with experts in chatbot development and internal auditing is recommended to ensure an efficient and secure implementation.

- Proper training and education of the staff who will work with the chatbot is essential.

- Financial evaluation of the impact of chatbots and quantification of ROI can help justify the investment.

General Synthesis

The use of chatbots in the internal audit of public educational entities represents a significant opportunity to improve processes and bring added value. However, the implementation must be well managed, adapted to the needs of the entity and accompanied by continuous evaluation. Chatbots are a powerful tool in the arsenal of public auditors and can significantly contribute to increasing the efficiency and effectiveness of internal audit in the public education sector.

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Effect of the Annual Financial Results on the Stock Price

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Abstract

The paper analyzes the variation of the stock price as an effect of the publication of the financial statements by the companies listed on the stock exchange.

Starting from the general methodology of an event study analysis, the empirical research is supported by a parameter generalization module and one for the optimization of internal variables.

The main conclusion based on a sample of events, being the significant impact of Annual financial statements on share prices.

Key words: course stock exchange, event study analysis, empirical research, financial situations, optimization

J.E.L. classification: B10

1. Introduction

Listing a company on the stock exchange gives it a number of advantages which can be circumscribed to a cheap positive publicity, a continuous assessment made to the market to a potential preferential access to the financial capital, respectively. Additionally, the company has to fulfill certain obligations towards the operator of the respective market and indirectly to the investors. Regardless of the various contemporary stock markets, the transparency of the issuer can be found in the packages of regulations which regulate the issue of companies' obligations towards investors. An essential part of the content of the concept of transparency is the issuers' obligation to provide relevant data regarding the economic-financial activity carried out.

As the local legislation in the field changed, within these obligations of the issuers, the reporting of any event was prioritized significantly from the life of the society with an impact on its economic coordinates, be it we are talking about important contracts (in the sense of orders), new premises/offices, restriction of activity, mortgage or pledge contracts that exceed a certain value threshold assets of the company (20%) or about changes in management, escalations of the relationship unions-patronage etc. In addition to these occasional events, starting from the year 2004 companies listed on the stock exchange in Bucharest communicate to investors the so-called financial calendar, i.e. the specification of the publication date of the statements regarding the situations quarterly financial and, semiannually, more "complex" reports on the activity carried out.

As a rule, the financial calendar is submitted by the issuers to the associated service within the framework Bucharest Stock Exchange in January, possibly the first part of February. Taking into account the reports have a regular character and that the reporting date is known in advance, the publication of the financial reports have a particularly important in the life of a listed company. Basically, the size of the numbers found within the headings regarding turnover or profit will depend on a certain one measure the subsequent evolution of the price of the respective stock on the Stock Exchange. In these conditions, the event is carefully managed both by the issuers (obviously through the desire to presented the most favorable results), as well as by active investors who, in case their forecasts are confirmed, they can thus obtain an additional profit to the market (related to a naive buy & hold strategies) (Ball, Kothari and Watts, 1993), its size being generally proportional to the impact of this report on the market.

Also on the occasion of such an event, important profits can be made through the use of the best information because the financial reports statements still end up with a delay of 2 months at the disposal of investors, and their completion process involves a many people and times. We would still expect an certain discretion in what it looks at the essential figures from the issuers' financial statements, which is certainly not the case their "trumpeting" in private gatherings before the reporting date and without being accompanied of an official communication to all investors (Henderson, 1990).

2. Literature review

A current version of the obligations of companies listed on the Bucharest Stock Exchange can be found in National Securities Commission, regulation no. 1/2006, ch. III (Reporting requirements), section 2.

Precisely for this purpose, some "active" investors behave inappropriately (in the opinion ours) during the stock market meeting immediately after the resumption of trading of a symbol stopped as a result of the communication of the financial results (Dyckman, 1984). Improper, in the sense of printing artificially of a hysterical state by displaying and/or executing on the market (market orders) by large orders but very quickly changed out of obvious fear. Obviously, in the case of an informationally inefficient market, the consideration is justified a $n1 > 0$; however, the possible manifestations of inefficiency from the Bucharest Stock Exchange are acceptable within an 11-day interval centered on the date of the event.

A comparative analysis-evaluation of statistical characteristics of the two models was very good developed (Campbell, Lo and MacKinlay, 1996). Using a important number of functions, the application still requires some execution time non-negligible especially due to the memory stack overload caused by the (re)call function codes. There are, depending on the entered parameters and the extent of the report on which must generate it, performing the operations for a title containing 19 events it can take between 1 minute and 50 seconds and 24 minutes (on a 0.9 Ghz processor (Beaver, 1968).

The methodology was used on the Romanian market (Todea, 2005).

This situation, frequently verified within the Bucharest Stock Exchange, is explained by the fact that on reporting the preliminary annual results, their important elements are already quantified in accounting possible differences may arise from adjustments, corrections of accounting errors or restatements.

Unfortunately, November 2007 is an exception to this rule.

3. Research methodology

The contribution of the academic methodology consists in the additional introduction of a how to optimize the estimated parameters for the characterization of normal returns.

In the within this study, we used two methods for estimating normal returns in parallel: the constant average return method and the market model, the two being the most frequently used.

The optimization module will choose from all of these the parameters that will lead to minimum error-related variances; in this way, for the purpose of the present study case, will choose only those values that best explain the behavior of returns.

In addition, a memorization of all the values recorded by these parameters is required because the problem of the triviality of this optimization is somewhat raised.

In this way, in the additional conditions set out above, for each even it is necessary to estimate 4,500 parameters ($=5 \times 3 \times 300$), and for the entire case study, which contains 313 events, 1,408,500 estimates are needed ($=313 \times 4,500$). This effort becomes relatively impossible to achieve under the conditions of ensuring the quality of the results, and in these conditions, to cope with the huge volume of processing, we designed and developed in the C programming language is a computer application designed to automate ASE methodology. The application thus comes to ease this effort by conferring a generality extended to the study, at the same time completing the field of analysis through the possibility of a study phenomenal such as the sensitivity of output (abnormal returns)

to variations estimation parameters (mean, alpha, beta) or the study of redundancy related to a length too size of the event window.

The first step is the calculation the abnormal returns from the event window (it can be of a single abnormal return or several) for each share (RA_j, t). The second step consists in the "standardization" of these squares by relating to the difference of abnormal returns from the estimated period related to each event.

4. Findings

The average abnormal return on date t will be calculated as the average of the standardized returns on date t for each individual event (this may or may not coincide with some action)

An $RA'_j, t > 1$ indicates that the return is higher than normal respectively lower if $RA'_j, t < 1$. Variable RA'_j, t is distributed according to a Fisher law with 1 and $T-2$ degrees of freedom, T representing the number of returns in the estimation period.

In the case of the average abnormal return RAM_t the z-statistic calculated as below is used.

To carry out the event study, we chose 18 of the most intense traded securities within BVB because "acceptable" liquidity represents a essential criterion in estimating both normal and abnormal returns. Obvious, among these titles are large capitalization companies, as well as some companies relatively new, newly listed through public tender offers (McWilliams, A., Siegel, D., 1997).

For all these issuers, an important difficulty is the identification releases containing the financial calendar because, within a year, an issuer transmits dozens or hundreds of such communications identified only by the date of their publication. Buteven more time-consuming is the process of identifying changes to reporting data communicated initially, because they can come throughout the year thus imposing a sequential search in the content of all communications. It should be mentioned that some companies publishes the reporting data of the financial statements not as a day distinct, but as an interval of 3 to 8 days, thus making it more difficult to isolate the date the event, but thus justifying the use of the event window.

In the case of companies listed later on the Bucharest Stock Exchange, so without having a certain history of trading necessary to estimate abnormal returns, and here we are talking about the Commercial Bank Carpatica (BCC), SSIF Broker (BRK) and Flamingo International (FLA). To be able to test the impact of the first announcements of financial results reported by them we used the solution of the model market-adjusted returns, that is, we considered these securities as normal returns for the first announcements market returns, in our case represented by the BET-C index (may precisely, in the market model we make $\alpha = 0$ and $\beta = 1$). Data Info 1 contains the list of acronyms related to the 18 issuers, the beginning of the monitoring period and the number of daily observations, the last date being for all titles 27.08.2017.

Table no. 1. Data Info

Simbol	Data start	Nr. obs	Simbol	Data start	Nr. obs	Simbol	Data start	Nr. obs
ALR	11.12.2000	1656	CMP	05.01.2001 18.07.2005	1644	PPL	06.01.2000	1896
ATB	06.01.2000	1896	FLA	(08.01.2001)	1643	SCD	05.01.2001	1644
AZO	06.01.2000 09.06.2004	1896	IMP	05.01.2001	1643	SNP	03.09.2001	1476
BCC	(8.01.2001)	1643	OIL	08.01.2001	1643	SRT	05.01.2000	1897
BRD	15.01.2001 03.02.2005	1638	OLT	05.01.2001	1643	TBM	22.01.2001	1633
BRK	(08.01.2001)	1643	PCL	05.01.2001	1644	TLV	05.01.2000	1897

Source: Bucharest Stock Exchange

Another aspect worth emphasizing is the weak trading of these titles in certain periods, especially in the years 2010-2017, a phenomenon that was manifested by the lack of a quotation of closure for several consecutive days. This problem was partially solved by the association of these inactive days of the closing prices related to the last day on which the title, respectively was traded. If, at the absolute price level, this solution proves itself to be acceptable, unfortunately we cannot consider the same in the case of returns, because they will be null throughout the period of inactivity causing unwanted effects, from *Financial and monetary policies in the European Union* the movement of beta towards zero until the formation of distorted probabilistic distributions for returns. It is important to emphasize, however, that by choosing the most liquid titles these shortcomings have been minimized.

For the 18 issuers, between January 2014 and August 20, we inventoried a number a total of 313 announcement data, as extracted from the financial calendars submitted to the BSE.

After carrying out the ASE on the entire sample consisting of the 313 data of announcement, resulted in the average abnormal returns from Data Info 2, which also includes the value the z statistics, respectively the probability of rejecting the null hypothesis, $H_0: RAM_t = 0$. Easy to notice, H_0 is rejected in the entire event window with a probability of over 99.99% both in the case of using the constant average model and in the case of the market model.

Consequently, the following conclusion emerges: the impact of publishing the results financial impact on the stock market price is a significant one and it manifests both before the date their publication, as well as afterwards. In this way, the hypothesis of one is categorically rejected informational efficiencies in the semi-strong sense of BVB.

The results obtained after executing the computer application are very diverse allowing, as I have already specified, the performance of a complex set of analyses. In what in the following we will reproduce only the most important directions by scoring, in the sense of possibility the subsequent exploitation in practice, the main conclusions obtained.

Table no. 2 Data Info

Day t	Model media constant			Model of market		
	RAM _t	z(RAM _t)	Prob-H ₀	RAM _t	z(RAM _t)	Prob-H ₀
-5	1,8784	135,40	1,00	1,9207	141,93	1,00
-4	1,4652	71,71	1,00	1,8968	138,24	1,00
-3	1,6021	92,82	1,00	1,8843	136,32	1,00
-2	1,8301	127,97	1,00	1,9952	153,42	1,00
-1	1,2817	43,43	1,00	1,8140	125,48	1,00
0	1,7905	121,85	1,00	1,9999	154,14	1,00
1	2,6506	254,44	1,00	3,0753	319,91	1,00
2	2,2686	195,56	1,00	2,5558	239,82	1,00
3	1,8347	128,66	1,00	2,0202	157,27	1,00
4	1,7268	112,05	1,00	2,0940	168,65	1,00
5	2,1278	173,85	1,00	2,3816	212,97	1,00

Source: Bucharest Stock Exchange

Analyzing the level of average returns (RAM_t) it is observed in both cases that the day +1 within the window, i.e. the one following the announcement date (0), records the most high value 2.65 and 3.07 respectively, both levels registering maximum values and for z statistic Decreasingly, days +2 and +5 follow, obvious signs of the persistence of the impact on the stock market. Higher values for RAM_t obtained by using the market model can due to a better identification of abnormal returns, respectively a better differentiation their strong compared to the returns recorded in the event window. If constant mean model, the date of the event (day 0) does not seem to be special

compared to the others, being associated with a reduced average abnormal return, of only 1.72, phenomenon also encountered in the case of using the market model. It therefore follows that, as a rule, the issuers communicate their financial results after the close of the stock exchange session, postponing the impact on the next session.

4.1 Results conditioned by issuers

Running the application also allowed an analysis of the ASE results when it is run for each individual issuer, more precisely it led to the identification of particularities of behavior related to the publication of financial results. A first observation in the case these results would be the decrease in the probability of rejection of H_0 in the case of many days of the event window resulting in the fact that, at the issuer level, the publication of the results does not have a significant impact in the entire vicinity of the date of the event. A second observation is that RAM values t results following the application of the two methods (constant average model and the market model) are close, while maintaining the superiority of those estimated with the model of the market. A third observation is related to the behavior of the variance of abnormal returns related to a certain day within the event window, namely it is registered large dispersions on days with RAMt raised and reduced in the rest. The result is not surprising, but however, it indicates that within these days there are significant deviations from "normality".

Adapting the number of examples to the extent of the paper, we point out that in the case of the action Antibiotice Iasi (ATB) significant abnormal returns are much more common dominating the entire post-event period as well as day -5. The surprise is that the climax deviations are recorded on day -2, which reflects a heightened anticipatory behavior from the market in relation to this symbol. Compared to the other issuers, the Bank's shares Carpatica (BCC) do not seem to be significantly affected by the publication of the results, perhaps with except for the date of the event, respectively two days before it; otherwise, abnormal returns register low values, in some cases even raising the question of accepting the hypothesis zero (days -3 and +5).

In the case of BRD-GSG (BRD), the biggest impact is recorded on the immediate day following the publication of the financial results, the effects also being maintained on day +2. Using constant average model, in the case of SSIF Broker (BRK) days -5, +4 and +5 are noted as being abnormal, the results changing in the case of the market model, because for the first 3 events it was considered that the title evolved identically to the market. In this situation, most days in the event window are signs of stock market activity intense. For Compa Sibiu, the major impact is felt on the market on the very day of the event and somewhat less on day -2. For the company with the largest capitalization, Petrom (SNP), the results have a special importance, managing to animate this title throughout the period post-event, showing anticipatory transactions on day -4. Also, we note the existence of significant deviations even in the date of the event as a consequence of the fact that the issuer usually communicates its results before the start of the stock market meeting.

The special case is represented by the action of (TLV), which manifests the smaller abnormal returns in the event window, which would mean that publication the results do not come as a big surprise to market investors. It should be noted that the price of this share registers higher movements the day before publication results, but even here the rejection of H_0 it only occurs with a probability of 85%. So, we can say that the BT issuer's market shows the highest degree of efficiency informational in a semi-strong sense, the market anticipating the bank's results relatively correctly. It require certain clarifications related to this conclusion and they relate in particular to the possibility that the information regarding the financial results to "perspire" within the market and thus the eventualities price changes (in fact, it was mainly a question of appreciation of the quotation due to rates strong growth of the bank) to be realized long before the official date of the announcement, respectively the possibility that the bank's actions are influenced by other events which usually gravitates around the months of April-May (in essence, it is about AGOA decisions and AGEA regarding profit distribution).

4.2 Results conditioned by the type of reporting

A natural question would be whether the quarter for which the financial reporting is done does not does it have any different impact compared to the others, especially since the reporting related to the fourth quarter, for example, it represents the issuer's annual statements, with a lot of informational content more important than the quarterly ones. But, on the other hand, it is possible that these results annual not to bring additional information to the market because before them, about 2 months, the preliminary results are published, which usually represent a very good approximation of those annual , published later. Therefore, we can say that there are at least two major factors which act in the opposite direction on the size of the related average abnormal returns annual reports, the evolution of profitability within the window of the event being only the resultant of these two forces.

Another important influencing factor is the general trend of the market at the moment which the financial results of the companies are published. Intuitively, when these reports arise against the background of an appreciation trend, it is very likely that the eventual results good financials to have an amplified effect in the market, acting wonderfully as a motivation essential for strengthening the purchase decision against that title. In case of the results are below expectations, it is possible that the enthusiasm in the market mitigates the negative effect of them, the overall result being again a combination of abnormal returns higher or lower than would normally be required. The situation is similar in the case of a general depreciation trend of quotations, but this time the effect results above expectations is undersized, while results below expectations will cause amplified drops.

After carrying out the ASE on the entire sample consisting of the 313 data of announcement, resulted in the average abnormal returns from Data Info 2, which also includes the value the z statistics, respectively the probability of rejecting the null hypothesis, $H_0: \text{RAM } t=0$. Easy to noticed, H_0 is rejected in the entire event window with a probability of over 99.99% both in the case of using the constant average model and in the case of the market model.

Consequently, the following conclusion emerges: the impact of publishing the results financial impact on the stock market price is a significant one and it manifests both before the date their publication, as well as afterwards. In this way, the hypothesis of one is categorically rejected informational efficiencies in the semi-strong sense of BVB.

The data thus obtained are presented in Data info 3.

As results from, Data Info 3, the highest abnormal returns are generated by the reporting of financial results for the third quarter followed by those annual preliminary. In this respect, the average abnormal return from day +1 is observed 5.78 (T3) and 2.56 (Prelim.), the null hypothesis being rejected in the case of both with a probability of over 99.99%. As a rule, the month of November, in which reports are made for the third quarter, is the month with appreciation at the stock exchange in Bucharest which partially explains the size of the returns abnormalities found.

Tabel no 3 Data Info

Day t	Quarter I (65 even.)			Quarter II (67 even.)			Quarter III (50 even.)			Quarter IV (65 even.)			Inception (66 even.)		
	RAM _t	z	Pr	RAM _t	z	Pr	RAM _t	z	Pr	RAM _t	z	Pr	RAM _t	z	Pr
-5	1.19 80	1.11	0.87	1.352 4	2.01	0.98	3.2035 8	10.7	1.00	2.245 8	7.00	1.00	1.716 5	4.06	1.00
-4	1.22 97	1.29	0.90	1.132 3	0.75	0.77	1.2327 8	1.14	0.87	2.052 7	5.92	1.00	1.632 5	3.58	1.00
-3	1.53 25	2.99	1.00	1.040 2	0.23	0.59	2.5793 7	7.72	1.00	0.796 3	- 1.14	0.13	2.294 5	7.33	1.00
-2	1.52 36	2.94	1.00	1.127 2	0.72	0.77	2.5365 7	7.52	1.00	0.569 4	- 2.42	0.01	3.552 1	14.46	1.00
-1	0.91 37	- 0.48	0.31	0.724 3	-1.57	0.06	2.2240 5	5.99	1.00	1.368 9	2.07	0.98	1.410 3	2.32	0.99
0	1.65 32	3.67	1.00	1.437 6	2.49	0.99	3.6413 2	12.9	1.00	0.565 0	- 2.44	0.01	2.088 7	6.17	1.00
1	1.74 19	4.17	1.00	2.734 3	9.87	1.00	5.7811 8	23.3	1.00	1.154 4	0.87	0.81	2.562 5	8.85	1.00
2	2.12 39	6.31	1.00	1.798 4	4.54	1.00	2.4870 7	7.27	1.00	2.999 3	11.2 4	1.00	2.003 3	5.68	1.00
3	2.26 56	7.11	1.00	1.967 1	5.50	1.00	1.3899 1	1.91	0.97	2.248 0	7.01	1.00	1.205 8	1.17	0.88
4	1.71 73	4.03	1.00	1.100 2	0.57	0.72	1.9724 4	4.76	1.00	1.851 4	4.78	1.00	2.063 8	6.03	1.00
5	2.07 02	6.01	1.00	1.244 3	1.39	0.92	2.1791 5	5.77	1.00	2.034 0	5.81	1.00	3.134 7	12.09	1.00

Source: Bucharest Stock Exchange

The lowest effect is registered in the case of the second quarter, because the reporting it usually occurs in August, a month with transactions well below the monthly average. Therefore, o explanation for the small-scale reactions to the half-yearly reports would be a more presence reduced number of investors-speculators in the stock market during this period. As for the returns abnormalities related to the first trimester and the fourth trimester, both of approximately the same magnitude, values significantly different from zero are found in the entire post-event period and in in the case of the annual results a high volatility on days -5 and -4 which indicates that these reports are taken seriously by investors. It is no less true that the reporting of the annual results is usually done after the annual AGOA and AGEA meeting therefore there is the possibility of exerting influences from other events as well, influence that can significantly affect stock prices.

5. Conclusions

In conclusion, the market trend can have a significant influence on the size abnormal returns only if they differentiate between results above expectations (good) and results below expectations (negative).

Because in our study it was not done this differentiation (remember that this delimitation is subjective, actually true the problem is what exactly is meant by rational expectations regarding results) we will not analyze these influences in depth, but we will limit ourselves to the analysis of abnormal returns averages related to the reporting of the preliminary results, respectively those for the I quarter. Am chose these two categories because the preliminary annual results usually intervene in the months February-March, which constituted, at least in the period 2004-2007, the peak of the trends of appreciation from the BVB, and those related to the first quarter intervene in the months of April-May, i.e the already classic depreciation period.

To be able to answer all these questions, we will process the results again ASE forming five new samples of events related to the five reporting categories: quarter I, quarter II, quarter III, quarter IV and preliminary annual results.

The results obtained after executing the computer application are very diverse allowing, as I have already specified, the performance of a complex set of analyses.

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Impact of Non-Financial Reporting on Stakeholder Decisions

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Abstract

The main purpose of the paper is to capture the growing role of non-financial reporting on stakeholder decisions. There is a growing need to identify when the information provided by financial reporting is sufficient in adopting a long-term decision to invest/develop a business/withdraw into a business. By utilizing the bibliometric study, we conducted a review of the literature on the significance given by stakeholders to non-financial information. Non-financial reporting provides additional information on how to use the financial resources of the company towards the sustainable development of the community in which it operates. Social responsibility programs serve companies by increasing their image and brand, resulting in the ultimate satisfaction of stakeholders and investors.

Key words: nonfinancial reporting, CSR, bibliometric analysis

J.E.L. classification: M14

1. Introduction

In the business environment, decision making was based on information, both financial and non-financial. The transparency of the activity of companies through periodic reports allows the interested parties to analyze at the recorded performance level.

In an economic approach, performance is seen, in the literature, as a way of comparing the results obtained with the consumption of the factors of production that contributed to their achievement, or, by comparing the forecasts with the outputs (Angelescu C., 2001); or achieving the objectives of the entity, regardless of their nature and variety (Bourguignon A., 2000); it is based on effectiveness, efficiency, efficiency, efficiency, economy & Productivity (Faridah D., Faiz G., 2012).

In an accounting approach, performance is regarded as a relative concept that involves comparing the results obtained with those that would have been possible (Murray CJL, Gakidou EE, Frenk J., More., etc., 2000); implementation of strategies entrusted to entities by political authorities; contribution of value to the public, users to whom the entity is addressed; control of the resources entrusted to them in order to carry out their mission (Demeester R., Lorino P., Mottis N., 2002); social and societal performance (Bertin, E., 2007); growth, growth, profitability, profitability, productivity, yield, competitiveness (Colasse B., 2008).

Currently, the performance concept is correlated with objectives that are part of the management strategy; from obtaining positive financial results, achieving a market share until increasing customer satisfaction and involvement in community development. Thus, the campaigns carried out by companies to positively support the sustainable development of the community, the reduction of waste of resources, are a new indicator of commensurating the performance of a company. These CSR campaigns are a new indicator of measuring the performance of a business.

2. Theoretical background

At European Union level, Directive 2014/95/EU of the European Parliament and of the Council on the presentation of non-financial information and information was issued (Official Journal of the European Union, 2017). This legal regulation provides that the disclosure requirements for non-

financial information are applicable to certain large entities with more than 500 employees, because for small and medium-sized entities, the obligation to apply those requirements would mean costs that would outweigh the benefits. This approach keeps administrative expenditure to a minimum. Entities are required to publish relevant and useful information necessary to understand the progress, results, financial position and impact of their work, rather than a full and detailed report.

The created legal framework proposes that entities publish non-financial information (environmental, social and governmental aspects) that is of high quality, relevant, useful, consistent and comparable, consistent, so as to foster growth and employment in a resilient and sustainable manner and ensure transparency for stakeholders.

In non-financial reporting, the principle of the materiality threshold applies; it is recommended to publish accurate, clear, concise information that has a significant character, but which makes the objective distinction between opinions and interpretations.

The main idea of these non-financial reports is to provide information on the company strategy, business model and medium- and long-term implications regarding the actions taken.

3. Research methodology

The main purpose of this research is to present the current situation regarding the non-financial reporting and the implications it has on the decisions of the stakeholders; be it investors, workers, consumers, suppliers, etc, customers, local communities, public authorities, vulnerable groups, social partners or civil society, entities should provide relevant and useful information to them. Entities should publish the key performance indicators they consider to be most useful for monitoring and assessing progress and for ensuring comparability between entities and across sectors. Depending on the field of activity, we are talking about indicators such as carbon emissions and their intensity, actions taken to reduce them, increasing social protection for certain categories of citizens, etc, active participation in alternative energy production, participation in avoiding waste of resources, increasing the economic well-being of the community and the health of citizens, etc.

Bibliometrics is widely used. Identifying core records, reviewing publications, examining document use and understanding scientific management of library and information departments are examples of micro-level applications. Designing more cost-effective intelligence systems and networks, improving the efficiency of intelligence processing, searching for flaws and defects in document services, predicting the direction of the publication and developing and improving basic intelligence theories are all examples of macro-level applications. The purpose of using this method was to identify in the literature cores of approaching entities towards sustainability and sustainable development. We have prepared a statistical analysis of the written publications that have been reunited in clusters, each with its own core.

We questioned the existing database on the Web of Science in November 2023. The keywords used were "nonfinancial reporting"; to these we added Topic, identifying the written works in the period 2019-2023, phrases such as integrated report and sustainable report. The restocking of the time period had as main argument the novelty character of these reports. In 2022, the first legal regulation at European Union level appeared in this sector. Mentioning the two phrases as filters in the database query took place due to the increased importance that is given to the presentation of non-financial information with the financial information as a whole converging to the realization proposed strategy.

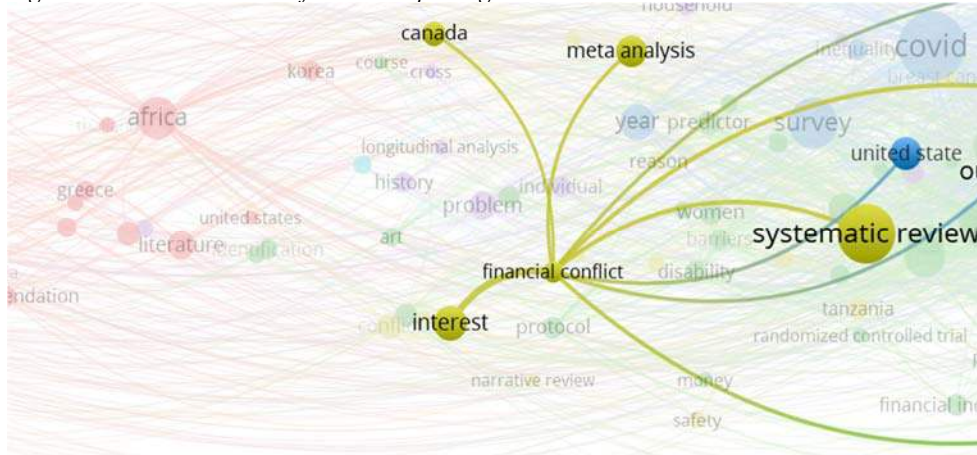
The analysis of the database configured around the search engines with the Web of Science Platform allowed the grouping of the extracted information around some key terms, forming clusters (Ellegaard, Wallin, 2015).

4. Findings

Taking into account the above mentioned parameters, we identified 10665 specialized articles, book chapters, proceedings for international conferences. The method allows the query of the database structured in citation and co-citation analysis, bibliographic couplings and the analysis of the keywords of interest. We have identified 5 clusters that bring together items resulting from database queries.

Within cluster number 4, specialists address the conflict, especially the financial conflict. Among stakeholders, there are a number of uncertainties, problems and search for solutions. The development of projects for the ongoing development of the business environment has always been controversial. The size of the resources used, the quality and the effects of their use have given rise to divergent perceptions regarding the investment of the positive financial results obtained.

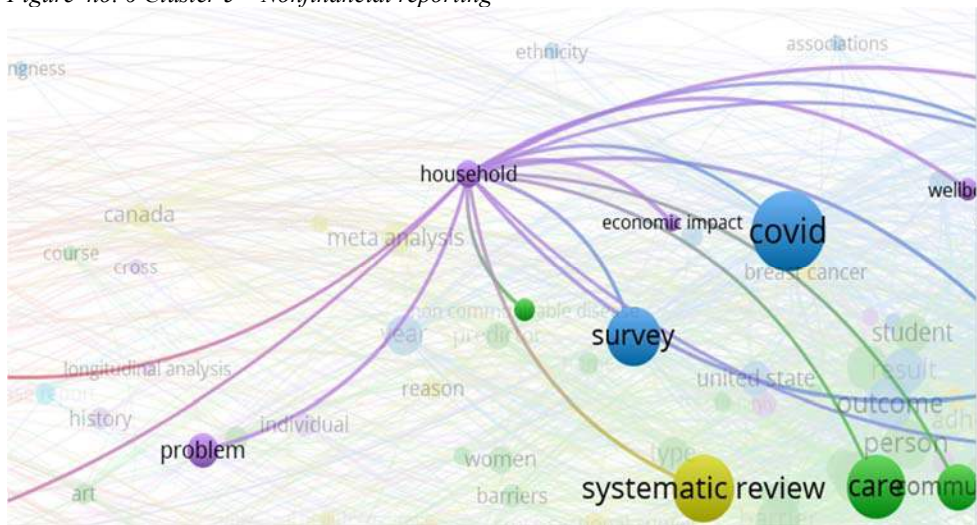
Figure no. 5 Cluster 4 – Nonfinancial reporting



Source: own processing

The last cluster includes concepts related to the economic impact of sustainable actions. Risk management and the policies adopted in this segment of activity have been the subject of prospective studies. It seeks to define concrete objectives, clearly defined and which include in the annual reportages besides relevance and coherence of information. The complex assessment identifies, prevents and minimises the existing and potential negative impact.

Figure no. 6 Cluster 5 – Nonfinancial reporting



Source: Own processing

For the standardisation of financial and operational performance indices, their possible comparison, macro and micro modelling, it is proposed to identify the Performance Index, which is defined by the system of complex indices: index (indicator) to affect the economic indicators of the business entity, index (indicator) of ecological efficiency, index (indicator) of social efficiency. It was based on the need to calculate the evaluation of the quality coefficient in order to avoid

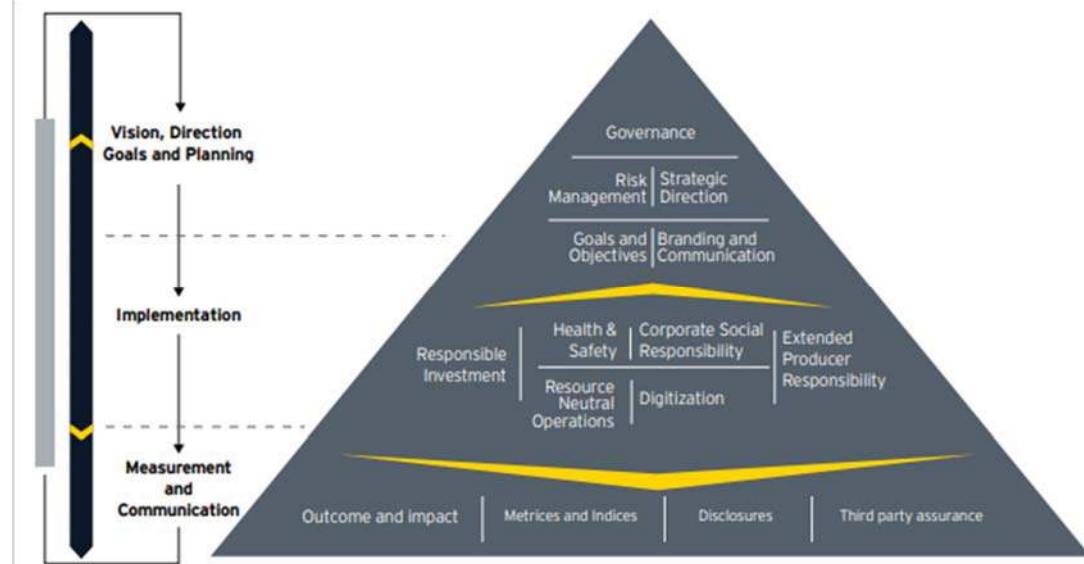
declarative achievement of the ecological and social efficiency indices, the quality of their performances (Levytska&co., 2018).

5. Conclusions

The non-financial reporting is approached in correlation with the actions carried out by companies to support sustainability; in the specialized literature are mentioned concepts such as CSR, social performance, environmental protection, resource regeneration. All these are brought together in the activity reports of companies intended for the general public.

The performance of companies from the standpoint of stakeholders, in the long run, is filtered through the prism of non-financial indicators in order to create long-term added value. Whether we are talking about the use/recycling of available resources, about reducing the carbon footprint or about preventing climate change, stakeholders are waiting to receive information comparable to other companies, but also information that can serve future decisions.

Figure no. 7 Sustainable by design



Source: EY research, accessed online on date of 29 November 2023

In their research, Ernest and Young proposes a model for achieving complex sustainability that brings together, besides the established objectives, the tools for achieving and the communication with the stakeholders. It is one of the models that focus on communication between company management and stakeholders. Thus, the company can ensure the commitment of its stakeholders to the future.

The non-financial performance of companies consists in achieving the sustainability objectives aimed at satisfying all citizens at a level that allows them to achieve prosperity and economic, social, technological progress does not counteract the environment.

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The Importance of Financial Profitability on the Activity of a Company

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Abstract

The financial rate of return is a financial analysis indicator with an important role in assessing the economic and financial performance of an enterprise. Thus, if the economic rate of return expresses the return on invested capital only from the point of view of the operating activity, the financial rate of return does nothing more than to quantify the return on capital. If we start from the consideration that the financial rate of return expresses the efficiency of the equity capital of an enterprise, we realize that it has a major importance for the shareholders of that enterprise because they can see the effect of the investments made in that enterprise, if these investments are profitable and if they will still be interested in participating in the development of the enterprise, even through new investments. The purpose of the paper is to highlight the importance of financial returns in various situations, as exemplified, and the impact on both the company and the shareholders.

Key words: financial profitability, profit, capital, total assets, income

J.E.L. classification: D24, G32, M41

1. Introduction

When assessing the performance of a company, it is essential to consider a number of indicators that can measure the financial and economic consequences of the investment, operating and financing decisions taken by managers. All these indicators must answer certain questions that shareholders may ask, namely whether resources are being used correctly, whether profits are in line with expectations, and whether financing options are being chosen correctly and, above all, prudently.

Different sets of indicators and standards may be used in internal assessments within the company, resulting in the disaggregation of decision components that may affect operational efficiency, total returns or expected outcomes for shareholders. These indicator systems function to highlight the connections and consequences of decisions on these aspects, rooted in financial profitability (Brasoveanu, 2013, 89).

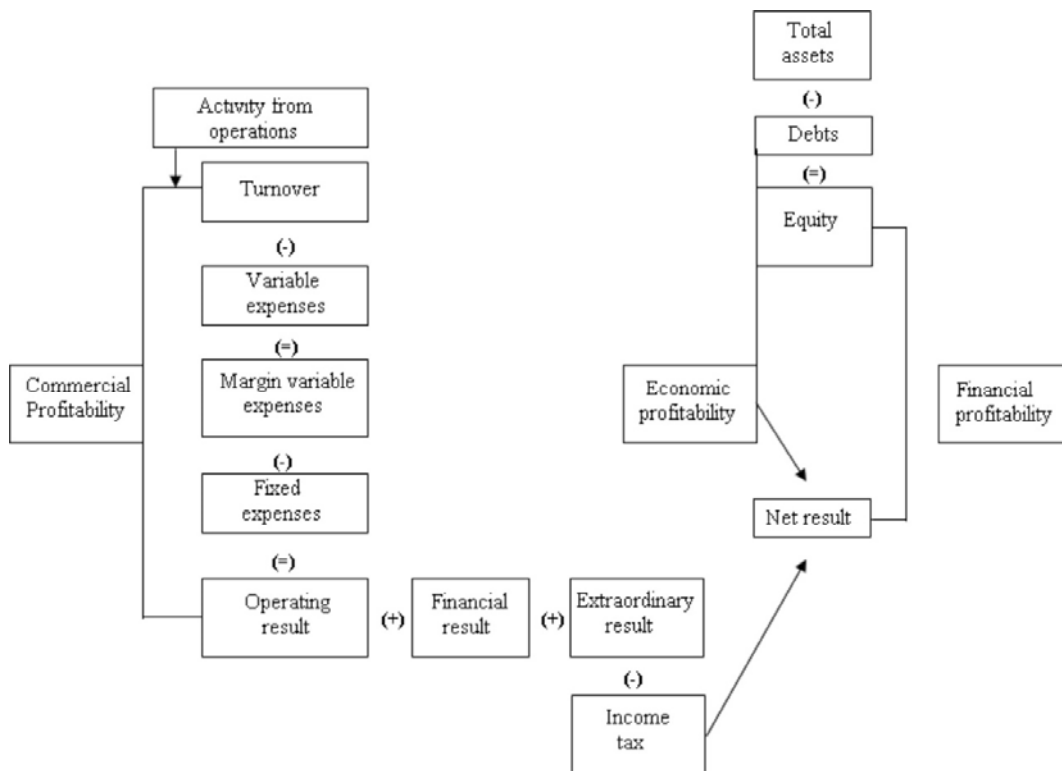
The analysis of a company's financial position, with particular emphasis on the significance and impact of financial profitability on its performance, focuses on the interplay between assets, liabilities, and capital. Assets are those items of property, plant and equipment that are controlled by the company, result from past events, and are expected to generate future economic benefits in the form of cash flows. Liabilities are defined as present obligations based on past events, the settlement of which will lead to a decrease in future benefits as evidenced by lower cash flows. Capital, alternatively referred to as net assets or the capital invested by shareholders, represents the shareholders' remaining interest in the enterprise after deducting liabilities from total assets (Aivaz et al., 2023).

2. Theoretical background

The financial profitability rate considers the origin of capital, being sensitive to the financial structure of the enterprise and, to a large extent, influenced by the level of debt of the enterprise. Profit, an important source of funding for business operations, represents a portion of the company's capital and primarily compensates shareholders through dividends. An increase in this indicator

reflects the efficiency of activities in terms of equity valuation. In determining the financial profitability rate of personal capital, the calculation method for depreciation and provisions, deductible and non-deductible expenses in determining the taxable profit base is considered (Munteanu & Mirea, 2023, 442). Economic and financial return rates are vital for users yet utilizing them comes with several challenges. The core issues arise from the form of the result or capital considered. The three types of profitability (financial, economic, and business) are linked in the following way:

Figure no. 1. The correlation of returns in the financial, commercial, and economic sectors.



Source: (Caruntu & Lapadusi, 2009, 101)

Calculating the financial profitability rate is crucial in evaluating a company, as it is one of the indicators of its 'health', information highly valuable to shareholders.

In addition to the dividends that these shareholders may receive, the company must be valued for transactional purposes (sale or purchase of the company, mergers, divisions and/or exchanges of ownership, capital increases, dissolution, reorganisation or even liquidation of the company, listing on the stock exchange, etc.) as well as for informational purposes (valuation for loan guarantees, taxation of company property, insurance of company property, recording the value of assets in the financial statements, but above all, informing shareholders or management). (Caruntu & Lapadusi, 2009, 102; Condrea et al., 2012, 2154).

3. Research methodology

For this paper, the analytical research method was employed.

The analytical method entails the collection of specific information about a topic, where the data collected is scrutinised either to test a hypothesis or to confirm a certain idea.

Utilizing the analytical method served the primary purpose of substantiating the ongoing research, enhancing its credibility, or fostering novel ideas on the subject. As part of this research methodology, a review of the existing literature on the topic was carried out by revisiting previously collected data related to the studied subject (Brasoveanu, 2023, 56).

Results obtained through the analytical research method are perpetually subject to change upon the acquisition of new data or data underpinning fresh research. This holds true to varying degrees across all scientific methods, with particular emphasis on the analytical approach.

The analytic method lacks this ability, unlike other tools such as the experimental method, which can establish causality and provide robust evidence about the causes of a phenomenon. Regardless of the amount of data accessible on the issue in question, it remains inherently incomplete (Rus, 2022, 1012).

4. Findings

This rate holds significant importance for business owners as it indicates the level of profitability of the shareholders' investment after paying amounts to remunerate other capital invested in the company (interest expenses).

$$Rf = \frac{\text{Net result}}{\text{Equity (average value)}} \quad (1)$$

The Du Pont System

The significance of the financial profitability rate has led to its factorial development, in the sense of a "breakdown" based on the main factors that determine its level. This development is often referred to as the "Du Pont system". (Anghel et al., 2010, 141)

Initially, the evolution took into account two direct factors, namely net profitability (net profit margin) and equity turnover:

$$Rf = \frac{\text{Income}}{\text{Equity}} \times \frac{\text{Net result}}{\text{Income}} \quad (2)$$

This mathematical relationship shows that a company can increase its financial profitability both by using its own capital more efficiently as well as by engaging in more profitable operating activities. (Anghel et al., 2010, 141).

It is clear that equity turnover is influenced by the capital structure. Specifically, a company can increase the turnover of assets by giving priority to debt in the financing of assets. We can observe this effect if we use the following equation:

$$\text{Revenue/Equity} = \text{Total Assets/Equity} \times \text{Revenue/Total Assets} \quad (3)$$

In a company, all assets are financed by a mix of debt and equity. The higher the "assets/equity" ratio, the higher the level of indebtedness of the firm. (Anghel et al., 2010, 142; Herciu et al., 2023, 319))

By combining the two previously presented relationships, the following expression can be formulated:

$$Rf = \frac{\text{Total assets}}{\text{Equity capital}} \times \frac{\text{Income}}{\text{Total assets}} \times \frac{\text{Net result}}{\text{Income}} \quad (4)$$

To illustrate the concepts discussed earlier, the following example is provided to verify the accuracy of the formulas. Assuming a company with the following values at the end of three financial periods (expressed in units of measurement - U.M.)

Table no. 1. Evolution of a company's indicators over 3 years

	Year N	Year N+1	Year N+2
Share capital	1.000,00	1.000,00	1.000,00
Fixed assets	4.000,00	3.500,00	3.500,00
Current assets	2.500,00	2.500,00	2.500,00
Total assets	6.500,00	6.000,00	6.000,00
Equity capital	7.500,00	7.000,00	7.000,00
Income	7.500,00	7.500,00	6.500,00
Expenses	6.500,00	6.500,00	6.000,00
Net result	1.000,00	1.000,00	500,00
Rf1 (%)	13,33	14,29	8,33
Rf2 (%)	13,33	14,29	8,33

Source: Author's processing

Financial profitability Rf1 was determined using equation (1), and the value of financial profitability Rf2 was obtained using equation (4). The results show that when the value of equity decreases but the net result remains the same, the financial profitability is higher. Conversely, if the value of equity remains constant and net income decreases, financial profitability decreases.

5. Conclusions

Financial profitability is a performance indicator whose value serves a dual purpose, informing both management and shareholders.

For the management, this holds significance as the profitability value plays a key role in securing their ongoing position. Furthermore, with the approval of the shareholders, the net result can be used for investments, material incentives for personnel and other purposes (Stan, 2019, 236).

For shareholders, this indicator is of importance as the reflected net result can be used either to make investments, thus eliminating the need for shareholders to financially support the company, or to pay dividends, thus allowing shareholders to recover their investment in financing the company (Stan & Vintila, 2021, 175).

The importance of equity should not be overlooked, as it indicates the financial health of the company and eliminates the need for significant borrowing. Where borrowing is necessary, it can be for a reduced amount and secured against components of equity, such as fixed assets.

It is essential to note that in an economic and financial analysis, it is not only the financial profitability indicator that is crucial, but also several others, such as economic profitability, immediate liquidity, general liquidity, and leverage. However, these indicators will be discussed in a future study.

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Fiscal Risk in the Activity of a Company

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Abstract

Fiscal risk can arise in countries where the government applies a tax system that has only one purpose, to bring revenue to the budget. If a country wants to attract investors from other countries, it must apply a proper tax system, without high taxes, because those investors will be tempted to migrate to other countries with a more permissive tax system, perhaps even to those countries considered tax havens. In addition to all this, an important role in implementing a tax risk-free tax system is also globalisation. Nor should we forget inflation, which can occur and lead to a high tax risk, which can result in an erosion of the income of enterprises and a decrease in profitability. The objective of the paper is to highlight the tax risk to which an enterprise is subject in various situations (inflation, globalisation) and their effects.

Key words: fiscal risk, inflation, globalisation, revenue, expenses

J.E.L. classification: D24, G32, M41

1. Introduction

Fiscal risk represents the likelihood that a company could be disrupted by changes in tax legislation or adjustments to a government's fiscal approach. These changes may include variations in tax rates, the introduction of new taxes or the removal of specific tax incentives. In addition, fiscal risk can affect financial planning and business strategies. Companies need to remain vigilant to potential changes in tax laws and, in response, adjust their strategies to mitigate any adverse impact on profitability.

Investors and individuals must consider tax risk when making investment decisions and managing their investment portfolios. Changes in tax legislation can affect investment returns and may influence investment decisions.

It is therefore necessary to pay close attention to the fiscal environment and to the regulations that may have an impact on financial planning and decision-making, both in investment and in corporate management. Seeking advice from tax and financial experts is critical to gaining a clearer understanding of tax risks and potential strategies (Aivaz *et al.*, 2023, 2070).

2. Theoretical background

2.1. Reasons for the emergence of fiscal risk

Tax risks may arise from a number of factors, which may vary depending on changes in tax laws, government policies and economic changes. Some of these factors include:

a) *legislative changes* – Changes in tax legislation can have a significant impact on companies. Governments may introduce new taxes, remove, or reduce tax incentives, adjust tax rates or change the rules on tax deductions. All of these changes can create uncertainty and affect existing tax strategies;

b) *economic instability* – The emergence of economic instability or financial crises may prompt governments to take fiscal measures to address these economic problems. Therefore, these

measures may result in increased taxes or the implementation of other fiscal measures to raise additional revenue or to encourage certain economic behaviours;

c) *globalisation* – In a globalised economy, the fiscal policies of governments can be influenced by the fiscal policies of other countries, and thus the fiscal competition created by globalisation may lead governments to adjust their fiscal policies in order to remain competitive and attract foreign investment;

d) *unexpected economic developments* Periods of recession or faster-than-forecast economic growth can also lead to changes in the fiscal policy, and governments may respond by adjusting taxes or spending to manage the economic impact of these two factors;

e) *tax fraud and tax evasion* – An increase in tax fraud and evasion may lead governments to take a number of measures to counter these practices. These measures may include tax audits, the introduction of new economic and legal regulations, in particular a tightening of tax sanctions.

All these aspects only add to the complexity of the tax environment and create tax risks for taxpayers, especially companies (Brasoveanu, 2023, 88).

2.2. Fiscal risk generated by inflation

In addition to the previously mentioned elements that can create fiscal risk, inflation can also be a source of such risk. Thus, inflation can have a significant impact on fiscal risk, and the consequences can vary depending on how it affects the economy and fiscal policy. Below are some of the ways in which inflation can contribute to the fiscal risk:

1) *consumption power erosion* – Inflation leads to a general increase in the prices of goods and services, and this can implicitly erode the purchasing power of the currency, which can affect fiscal revenues. If inflation is not taken into account in the fiscal policy, budget revenues will be high in monetary terms but lower in real terms.;

2) *increase of fiscal costs* – The possibility previously mentioned arises because fixed costs, such as salaries, are included in the budget structure and these can increase due to inflation. The increase in expenditure can lead to budget deficits;

3) *the impact on public debt* – To cover deficits, governments borrow or issue bonds, and inflation can reduce the real value of the debt as the amounts owed remain constant even as the purchasing power of the currency declines. This is nothing more than a form of debt adjustment, which can also create risks related to confidence in government debt;

4) *fiscal policy adjustments* – As inflation rises, governments face the need to take measures to counter its effects on the economy and public finances, including changes in taxes and spending to maintain economic stability;

5) *tax revenue adjustment* – Inflation can lead to an increase in tax revenues, but this does not always translate into a real increase in purchasing power. Governments therefore need to manage this aspect carefully, as fiscal revenues are a consequence of raising taxes without actually achieving real income growth;

6) *the impact on the economic stabilisation policy* – It is well known that in times of high inflation, governments may take measures to reduce inflation, which may have fiscal consequences.

It is clear from these illustrations that inflation has the potential to create significant uncertainty and fiscal risks. In order to manage this situation effectively, it is crucial to implement fiscal policies that can respond flexibly to economic changes. Appropriate adjustments in fiscal policy play a crucial role in mitigating the fiscal risks associated with inflation (Brasoveanu, 2023, 55; Munteanu, 2021, 72).

2.3. Fiscal risk in the context of globalisation

Globalisation can lead to an intensification and amplification of fiscal risk, as companies operate in international markets and interact with different tax regimes. The following are some of the key aspects of tax risk in the context of globalisation:

a) *fiscal competition* – To attract foreign investment and capital, countries compete with each other by offering favourable tax regimes. This competition can lead to frequent changes in fiscal policy in order to maintain competitiveness. Companies wishing to enter different markets have to adapt firstly to the fiscal policies of these states and secondly to any subsequent fiscal changes that may occur;

b) *international tax planning* – Typically, multinational companies engage in multi-year budget planning to strategies their tax policies and maximise profits. This often results in the transfer of profits and activities to jurisdictions with more favourable tax regimes, posing challenges for the tax authorities in those jurisdictions to manage and regulate these practices, thereby creating tax risks;

c) *international tax treaty* – An increasing number of countries have entered into bilateral tax treaties to avoid double taxation and to establish rules for cross-border taxation. However, differing interpretations and legislative developments can lead to uncertainty and tax risks for companies and investors;

d) *transfer pricing regulations* – Transfer prices regulate transactions between the subsidiaries of a multinational company. Because of these transfer prices, tax authorities must monitor these transactions to ensure that they are conducted at market prices. If discrepancies are found, they can lead to tax disputes and even sanctions;

e) *changes in the international financial reporting* – International Financial Reporting Standards (IFRS) or Generally Accepted Accounting Principles (US GAAP) may affect how tax liabilities are recognised and reported. These standards are subject to change and these changes may affect how investors perceive tax risk;

f) *anti-evasion rules* - At a global level, there are various initiatives aimed at combating tax evasion and aggressive tax planning. The emergence of regulations such as BEPS (Base Erosion and Profit Shifting) proposed by the OECD (Organisation for Economic Co-operation and Development) and others can have a significant impact on how companies manage their tax risk;

g) *complexity of compliance* – To meet the tax requirements of multiple jurisdictions, companies must devote significant resources to ensure compliance and successfully avoid the risks associated with non-compliance in multiple jurisdictions;

h) *monitoring legislative changes globally* – One of the effects of globalisation is that legislative changes in one country can have both direct and indirect effects on taxpayers and businesses in other countries. Continuous monitoring of legislative changes around the world is essential to anticipate and manage tax risks.

In the face of these challenges, strategic tax planning and collaboration with tax specialists are essential to manage tax risk in the context of globalisation and to ensure compliance with various tax regulations (Munteanu et al., 2023, 217).

3. Research methodology

In this scientific paper, the analytical research method was used.

The primary aim of the analytical method is to uncover relevant information about a particular topic. To achieve this, initially available data related to the subject were gathered. Once collected, this data was examined to test a hypothesis or support a particular idea.

The analytical method was used primarily to find supporting evidence for ongoing research, to make it more reliable or to form new ideas about the topic.

In the framework of this research, a review of the existing literature on the topic was used. Thus, in order to achieve this, data previously collected on the subject studied were reviewed.

One of the most important aspects of the analytical method of research is that its results are always subject to change as new data, or data on which new research is based, is obtained. This is true to a greater or lesser extent of all scientific methods, but it is particularly true of this one.

The problem is that while other tools, such as the experimental method, enable one to assert causality and thus obtain solid evidence about what causes a phenomenon, the analytical method does not. No matter how much data is available on the subject under investigation, it will always be incomplete (Rus, 2022, 1012).

4. Findings

Having presented the reasons for the emergence of fiscal risk and its manifestations in different situations, it is natural to outline some of the consequences of fiscal risk, consequences that can have a certain impact on companies and the economy:

- *reduction of profitability* – An increase in taxes or the introduction of new tax obligations can lead to a reduction in the profitability of companies due to a reduction in their revenues;
- *investment downturn*– Fiscal risk can lead to caution on the part of investors and companies regarding investments, and uncertainty about fiscal policy can discourage long-term investments and innovation;
- *reorientation of economic activities* – In the case of high tax risk, companies may be tempted to relocate their operations or headquarters to jurisdictions with more lenient tax regimes in order to find a more favourable tax environment;
- *affecting competitiveness* – Fiscal changes can play a crucial role in the competitiveness of a country or region, because if taxes become too high or the government's fiscal policy becomes uncompetitive for the business environment, companies may be inclined to move their activities to other countries or regions;
- *increase in tax evasion* – As noted above, high tax risk can lead companies to seek ways to avoid or reduce tax payments, which can lead to increased tax evasion. This can affect the overall tax collection rate;
- *fiscal litigation* – Changes in tax legislation can lead to disputes between taxpayers and government authorities. These disputes can result in significant costs and complicate the resolution of tax issues;
- *impact on financial markets* – Fiscal changes can have a significant impact on financial markets, as investors may react to these new regulations, causing significant fluctuations in the prices of stocks and other financial instruments;
- *decline in public confidence* – Frequent changes in fiscal policy, which may result in apparent fiscal injustice, can undermine taxpayers' confidence in government and the tax system it promotes, potentially leading to social and political discontent;
- *social and economic issues* – Fiscal risk can have social and economic consequences, such as increased poverty and inequality among individual or corporate taxpayers, if new fiscal policies adversely affect the more vulnerable segments of society;
- *the need for adaptation and compliance* – Businesses and individual taxpayers need to adapt to tax changes and ensure compliance with new rules, but this adaptation can be costly.

All of these consequences of tax risk indicate that it must be managed through careful planning and monitoring, which requires collaboration with tax and legal experts to minimise negative impacts and enable effective adaptation to any tax changes (Paraschiv & Stan, 2023, 176; Stan, 2019, 235).

5. Conclusions

Fiscal risk cannot be neglected, as it has implications and consequences ranging from changes in tax legislation to the adaptation of business activities in the face of globalisation, variable inflation and more.

For a business, it is crucial that tax rules do not create tax risk, as this can lead to the erosion of revenues and expenses, affecting the profitability of the business. Not all companies can relocate to countries with more permissive tax regimes.

At the same time, high fiscal risk can lead to tax fraud and evasion, which is undesirable for both the company and the government.

Every government has the tools to implement a tax system that generates revenue for the budget through the tax system, but does not result in businesses paying new or higher taxes.

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Exploring the Dynamics of Digital Assets through Vector Autoregressive Modeling (VAR): Implications for Fintech and Financial Systems

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Abstract

This study aims to explore the applicability of the VAR model in digital asset analysis, focusing in particular on Bitcoin and Ethereum, two of the most prominent and influential cryptocurrencies in the digital world. Our analysis aims not only to identify and interpret the dynamic relationships between these assets, but also to try to better understand their implications in the broader framework of financial technologies and systems. By adopting a multidisciplinary perspective, combining economic theory, statistics and digital finance, our study aspires to contribute to the existing literature and provide new insights and understanding in this fascinating and evolving field.

Key words: (Vector Autoregressive Modeling VAR), Digital Assets Analysis, Cryptocurrencies (Bitcoin and Ethereum), Fintech and Financial Systems, Time Series Analysis

J.E.L. classification: C32, G23, G41, E44, L17

1. Introduction

In an era dominated by rapid technological innovation, finance has been profoundly transformed by the emergence and evolution of digital assets such as cryptocurrencies. These new forms of assets, emblematically represented by Bitcoin and Ethereum, have not only reshaped the traditional investment perspective, but have also posed significant challenges in terms of analysing and predicting their market behaviour. In this context, financial technologies (fintech) have played a crucial role in the development and implementation of innovative analytical systems and models aimed at providing a better understanding of the dynamics of these digital assets.

One such analytical tool, the Vector Autoregressive Model (VAR), is an advanced statistical methodology that allows the examination of complex relationships between multivariate time series. Due to its flexible nature and ability to model interactions between various economic and financial variables, VAR proves to be particularly suitable for the analysis of digital finance, where the market is characterised by volatility and rapid interdependencies.

Vector Autoregression (VAR) is a statistical model used to capture the relationship between several quantities as they change over time. VAR is a type of stochastic process model. VAR models generalize the single-variable (univariate) autoregressive model by allowing multivariate time series. VAR models are often used in economics and natural sciences.

As an autoregressive model, each variable has an equation that models its evolution over time. This equation includes the lagged (prior) values of the variable, the lagged values of the other variables in the model and an error term. VAR models do not require as much knowledge about the forces influencing a variable as structural models with simultaneous equations. The only prior knowledge required is a list of variables that can be assumed to affect each other over time.

2. Literature review

Zhao, L. (2021) highlighted the crucial role of cryptocurrencies in fintech, highlighting how they reduce the dependence of financial transactions on intermediaries and contribute to the growth of the digital economy. The papers collected in the special issue of the journal Financial Innovation explore the new challenges that cryptocurrencies bring to the financial market and discuss the role of specific

data processing technologies in the fintech context. In particular, Bitcoin, as a relatively mature cryptocurrency, has sparked extensive discussion in academia, with studies focusing on its market dynamics and relationships with other financial assets.

VAR models provide a consistent and reliable approach to data description, forecasting, structural inference and policy analysis. These models differ from simultaneous equation systems in that they do not require internal-external distinction of variables in any economic theory. In addition, the presence of lagged values of dependent variables in VAR models makes it possible to make strong predictions for the future (Kumar et al. 1995). When examining the relationship between variables, it is first necessary to determine whether the variables are internal or external. Granger and Newbold (2014), examining causality between variables, suggest that when two time series cause each other, causality creates a mutual and feedback relationship Granger and Newbold (2014).

According to Watson and Teelucksingh (2002) VAR models have three basic principles:

- (a) there are no internal and external presuppositions in the system;
- (b) there are no zero constraints;
- (c) there is no rigorous underlying economic theory on which to base the model.

The main purpose of VAR modelling is not only to determine the unidirectional relationship between variables, but also to reveal the link between intermediate lag variables (Kearney and Monadjemi, 1990).

Kinal and Ratner (1982) highlight the advantages of this method of econometric analysis:

- (a) the method is simple; it is not necessary to determine which variables are internal and which are external. All variables in the VAR are endogenous;
- (b) prediction is simple; i.e. the usual LS method can be applied to each equation separately;
- (c) the estimates obtained by this method are in many cases better than those obtained from more complex models of simultaneous equations.

3. Research methodology

The first step in estimating the VAR model starts with identifying the types of variables: stationary or non-stationary. This distinction is essential in time series analysis, because for the VAR model to be built, the variables must be stationary. To check stationarity, the Dickey-Fuller test, a statistical test based on the assumption that the time series has a unit root, indicating non-stationarity, is applied. If the null hypothesis is rejected, it is concluded that the time series is stationary, which excludes significant trends or changes over time.

Next, the Dickey-Fuller test is applied to the variables ETH, BTC, RETH and RBTC to determine their stationary or non-stationary nature. The test results provide p-values for each variable, where the p-value represents the probability of obtaining a statistic under the null hypothesis. A small p-value indicates statistical significance, allowing the rejection of the null hypothesis in favour of an alternative hypothesis.

The initial calculation of a 2-lagged VAR model is essential to investigate lagged relationships between variables. It provides insight into the past influences of one variable on others, highlighting interdependencies and dynamic patterns in the observed data.

The chi-square distribution plays a crucial role in testing the autocorrelation and overall significance of the VAR model. The chi-square test for overall significance compares the test statistic with the value of the chi-square distribution at a specific degree of freedom to determine whether the model is a good fit for the data. If the test statistic exceeds the critical value from the chi-square distribution for a given significance level, the null hypothesis (that the model is not significant) can be rejected, indicating that the model has significant predictive power.

The selection of the optimal number of lags is performed using criteria such as likelihood ratio (LR), Akaike information criterion (AIC), Hannan-Quinn information criterion (HQIC), and Bayesian Schwarz information criterion (SBIC). These criteria, based on log-likelihood and number of parameters, help to find a balance between fit to the data and model complexity.

The 1 lag VAR model is used to analyse and model the relationships between endogenous variables in the system. This model requires regressing each endogenous variable on its prior and the values of the other variables.

Determining the stability of the VAR model is crucial and involves controlling for unit roots, assessing the consistency of the estimated relationships and using appropriate data. Residual analysis provides insight into model errors, and the autocorrelation test and Granger causality test are essential for assessing and quantifying dependencies between variables.

The Cholesky decomposition and Johansen test for cointegration are used to clarify the order of causality and identify long-run equilibrium relationships between variables in the system. Finally, these steps and analyses provide a sound scientific basis for interpreting the results obtained from the VAR model.

For the VAR analysis, a database downloaded from the Yahoo Finance archive was created, containing weekly closing prices for Bitcoin and Ethereum from the beginning of 2016 to the fourth week of 2023. The selection of 2016 as the starting point is motivated by two significant aspects. First, July 2016 saw the second Bitcoin halving event, an event that influences the supply and demand of the coin. Second, in 2016, Ethereum gained notoriety with the introduction of smart contracts, paving the way for various applications based on blockchain technology and increasing interest in cryptocurrencies.

Figure no. 1 Evolution of Bitcoin and Ethereum prices



Source: Author processing according to applied methodology

In the analysis, we opted for weekly data to gain a broader perspective on long-term price trends, eliminating the excessive volatility of daily data. Weekly data reduces the noise caused by temporary events by focusing on significant and sustainable price movements. They allow filtering out minor technical noise and identifying significant levels and patterns. We also assign specific variable names to represent Bitcoin prices (BTC), Ethereum prices (ETH), Bitcoin yields (RBTC), and Ethereum yields (RETH). This standardization helps track and compare price fluctuations and yields between the two cryptocurrencies, making it easier to interpret the results.

4. Findings

Table no. 1 Dickey-Fuller test for the ETH variable

Dickey-Fuller test for unit root		Number of obs = 375	
Test Statistic	1% Critical Value	5% Critical Value	10% Critical Value
Z (t)	-1.600	-3.450	-2.875
MacKinnon approximate p-value for Z(t) = 0.4837			

Source: Author processing according to applied methodology

The Dickey-Fuller test statistic for the ETH variable is -1.600. Comparing it with the critical values at 1%, 5% and 10% significance levels, we observe that (-1.600) is higher than these (-3.450 at 1%, -2.875 at 5%, -2.570 at 10%). Thus, we cannot reject the null hypothesis of the existence of a unit root in the ETH variable. The p-value for Z(t) is approximately 0.4837, indicating that there is not enough statistical evidence to reject the null hypothesis. The conclusion of the Dickey-Fuller test is that the ETH variable is non-stationary and exhibits a unit root.

Table no. 2 Dickey-Fuller test for the BTC variable

Dickey-Fuller test for unit root		Number of obs = 375	
Test Statistic	1% Critical Value	5% Critical Value	10% Critical Value
Z (t)	-1.449	-3.450	-2.875
MacKinnon approximate p-value for Z(t) = 0.5586			

Source: Author processing according to applied methodology

The Dickey-Fuller test statistic for the BTC variable is -1.449. Compared to the critical values at 1%, 5% and 10% significance levels, (-1.449) is higher than these (-3.450 at 1%, -2.875 at 5%, -2.570 at 10%). Therefore, we cannot reject the null hypothesis of the existence of a unit root in the BTC variable. The p-value for Z(t) is approximately 0.5586, indicating that there is not enough statistical evidence to reject the null hypothesis. The conclusion of the Dickey-Fuller test is that the BTC variable is non-stationary and exhibits a unit root.

Table no. 3 Dickey-Fuller test for the RETH variable

Dickey-Fuller test for unit root		Number of obs = 374	
Test Statistic	1% Critical Value	5% Critical Value	10% Critical Value
Z (t)	-17.594	-3.450	-2.875
MacKinnon approximate p-value for Z(t) = 0.0000			

Source: author processing according to applied methodology

The Dickey-Fuller test for the RETH variable shows a statistical value (Z(t)) of -17.594. This is much lower than the critical values (-3.450 at 1%, -2.875 at 5%, -2.570 at 10%), indicating the possibility of rejecting the null hypothesis of the existence of a unit root. The p-value for Z(t) is 0.0000, providing sufficient statistical evidence for rejecting the null hypothesis. Therefore, the results indicate that the RETH variable is stationary without a unit root, suggesting no significant changes over time in its time series.

Table no. 4 Dickey-Fuller test for the RBTC variable

Dickey-Fuller test for unit root		Number of obs = 374	
Test Statistic	1% Critical Value	5% Critical Value	10% Critical Value
Z(t)	-18.617	-3.450	-2.875
MacKinnon approximate p-value for Z(t) = 0.0000			
Source: author processing according to applied methodology			

The Dickey-Fuller test for the RBTC variable shows a statistical value (Z(t)) of -18.617, much lower than the critical values (-3.450 at 1%, -2.875 at 5%, -2.570 at 10%). This suggests rejection of the null hypothesis of the existence of a unit root in RBTC. The p-value for Z(t) is 0.0000, providing sufficient statistical evidence to reject the null hypothesis. Therefore, the results indicate that the RBTC variable is stationary without a unit root, suggesting no significant changes over time in its time series.

Table no. 5 VAR model with 2 lags
Vector autoregression

Sample:	2016w4 - 2023w12	No. of obs	=	373
Log likelihood	= 515.0293	AIC	=	-2.707932
FPE	= .0002286	HQIC	=	-2.666184
Det (Sigma_ml)	= .0002166	SBIC	=	-2.602796

Equation	Parms	RMSE	R-sq	chi2	P>chi2
reth	5	.141415	0.2174	103.6404	0.0000
rbtc	5	.105864	0.0042	1.554463	0.8170

	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]
reth					
reth					
L1.	.0163298	.0513668	0.32	0.751	-.0843473 .1170069
L2.	.0777722	.04595	1.69	0.091	-.0122883 .1678326
rbtc					
L1.	.6733837	.0693155	9.71	0.000	.5375277 .8092397
L2.	.0895873	.0773186	1.16	0.247	-.0619544 .241129
_cons	.0090209	.0074086	1.22	0.223	-.0054997 .0235414
rbtc					
reth					
L1.	.007687	.0384534	0.20	0.842	-.0676803 .0830543
L2.	.0060011	.0343984	0.17	0.862	-.0614185 .0734207
rbtc					
L1.	.0319393	.0518899	0.62	0.538	-.0697631 .1336416
L2.	.0462187	.0578811	0.80	0.425	-.0672261 .1596635
_cons	.0096289	.0055461	1.74	0.083	-.0012412 .0204991

Source: author processing according to applied methodology

The 2-lag VAR model was estimated based on 373 observations between week 4 of 2016 and week 12 of 2023. The results show a log-likelihood of 515.0293 and an AIC of -2.707932, indicating a moderate fit. The FPE and HQIC values are 0.0002286 and -2.666184, and the determinant of the estimated covariance matrix, Det(Sigma_ml), is 0.0002166. SBIC is -2.602796. The model includes equations for RETH and RBTC, each with 5 estimated parameters. For RETH, RMSE is 0.141415, and R-sq is 0.2174, with a significant chi-square test (p-value: 0.0000). For RBTC, RMSE is 0.105864, and R-sq is 0.0042, with an insignificant chi-square test (p-value: 0.8170). Coefficients for each lag are present, with associated standard errors, z-scores, and p-values.

Table no. 6 Selection of the number of lags

Selection-order criteria								
Sample: 2016w4 - 2023w12						Number of obs	=	373
lag	LL	LR	df	p	FPE	AIC	HQIC	SBIC
0	468.889				.00028	-2.50343	-2.49508	-2.4824
1	512.572	87.366*	4	0.000	.000227*	-2.7162*	-2.69116*	-2.65312*
2	515.029	4.9144	4	0.296	.000229	-2.70793	-2.66618	-2.6028

Endogenous: reth rbtc

Exogenous: cons

Source: author processing according to applied methodology

In the process of selecting the number of lags for the VAR model (373 observations between week 4 of 2016 and week 12 of 2023), three options were considered: 0 lags, 1 lag and 2 lags. For the model without lags, log-likelihood is 468.889, FPE is 0.00028, and AIC, HQIC and SBIC are -2.50343, -2.49508 and -2.4824. For the 1 lag model, log-likelihood is 512.572, LR indicates a value of 87.366 (p-value: 0.000), and AIC, HQIC and SBIC are -2.7162, -2.69116 and -2.65312. For the 2-lagged model, log-likelihood is 515.029, LR indicates a value of 4.9144 (p-value: 0.296), and AIC, HQIC and SBIC are -2.70793, -2.66618 and -2.6028. The 1 lag model seems the best fit, with the lowest AIC, HQIC and SBIC, indicating better fit and potentially better predictive ability.

Table no. 7 VAR model with 1 lag

Vector autoregression

Sample: 2016w3 - 2023w12			No. of obs	=	374
Log likelihood = 512.6263			AIC	=	-2.709231
FPE = .0002283			HQIC	=	-2.684235
Det (Sigma_ml) = .0002211			SBIC	=	-2.646275

Equation	Parms	RMSE	R-sq	chi2	P>chi2
reth	3	.142463	0.2042	95.96229	0.0000
rbtc	3	.105573	0.0024	.8868155	0.6418

		Coef.	Std. Err.	z	P> z	[95% Conf. Interval]
reth	reth					
	L1.	.0510894	.0463212	1.10	0.270	-.0396986 .1418773
	rbtc					
	L1.	.6709248	.0699435	9.59	0.000	.5338381 .8080116
	_cons	.0116217	.0074213	1.57	0.117	-.0029238 .0261673
rbtc	reth					
	L1.	.0217434	.0343264	0.63	0.526	-.0455352 .089022
	rbtc					
	L1.	.0329696	.0518318	0.64	0.525	-.0686187 .134558
	_cons	.009797	.0054996	1.78	0.075	-.0009821 .020576

Source: author processing according to applied methodology

The table reveals significant results for the time series analysis of the RETH and RBTC variables. The VAR model with 1 lag indicates a log-likelihood of 512.6263 and an AIC of -2.709231, reflecting a moderate fit to the data. The FPE and HQIC values are 0.0002283 and -2.684235, and the determinant of the covariance matrix, Det(Sigma_ml), is 0.0002211. SBIC has a value of -2.646275, providing clues to the quality of the model fit. With two separate equations, for RETH and RBTC, the model indicates a significant relationship between RETH and the explanatory variable,

while the relationship for RBTC is weaker or insignificant, evidenced by the low coefficient of determination (0.0024) and chi-square test with large p-value (0.6418).

Table no. 8 VAR model stability

Eigenvalue stability condition

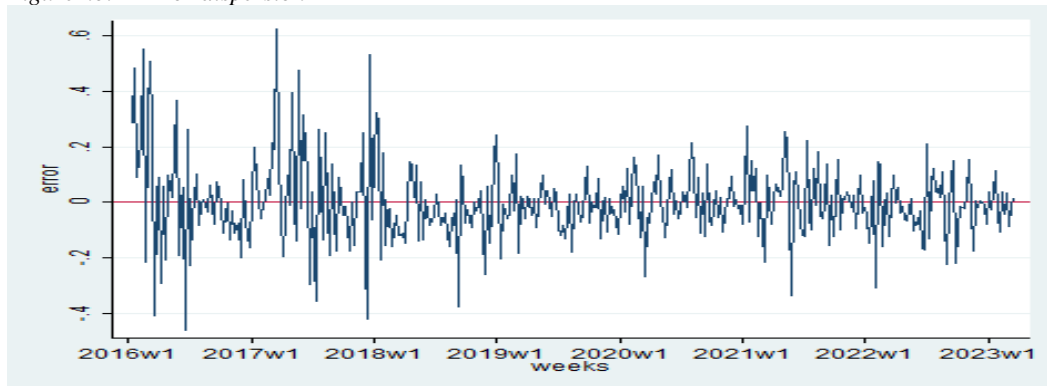
Eigenvalue	Modulus
.1631504	.16315
-.07909147	.079091

All the eigenvalues lie inside the unit circle.
VAR satisfies stability condition.

Source: author processing according to applied methodology

The stability of the VAR model is confirmed by examining the eigenvalues: 0.16315 and 0.079091. Both are below 1, indicating that all eigenvalues are within the unit circle. Therefore, the VAR model is stable and suitable for time series analysis and forecasting of the variables involved.

Figure no. 2 Error dispersion



Source: author processing according to applied methodology

The graph shows that the model residuals are mainly concentrated around zero, reflecting significant accuracy in predictions. The moderate dispersion of the residuals shows a uniform distribution with no significant fluctuations or outliers, indicating reliability and performance in accurately predicting the results.

Table no. 9 Residue diagnosis

Variable	Obs	Mean	Std. Dev.	Min	Max
error	374	-4.73e-11	.1420806	-.4602357	.6258661

Source: author processing according to applied methodology

The VAR model residual diagnostics show a mean close to zero (-4.73e-11) and a standard deviation of 0.1420806. The residuals values are centered around zero, with moderate dispersion and no significant outliers or deviations. These results suggest a good fit of the model to the data, indicating no undesirable patterns or structures that would affect the interpretation and forecasting of the variables.

Table no. 10 Lagrange autocorrelation test

Lagrange-multiplier test

lag	chi2	df	Prob > chi2
1	3.3543	4	0.50038
2	3.2946	4	0.50979

H0: no autocorrelation at lag order

Source: author processing according to applied methodology

The autocorrelation test using the Lagrange-multiplier method showed chi-square statistics of 3.3543 and 3.2946 for the first and second lag, with degrees of freedom of 4. The associated probabilities are 0.50038 and 0.50979. Even though there is insufficient evidence to reject the null hypothesis, which supports the absence of autocorrelation at these lag orders, the test did not identify significant autocorrelation in the VAR model. This argues that the model residuals are independent and show no significant autocorrelation, validating the model in this respect.

Table no. 11 Granger causality tests

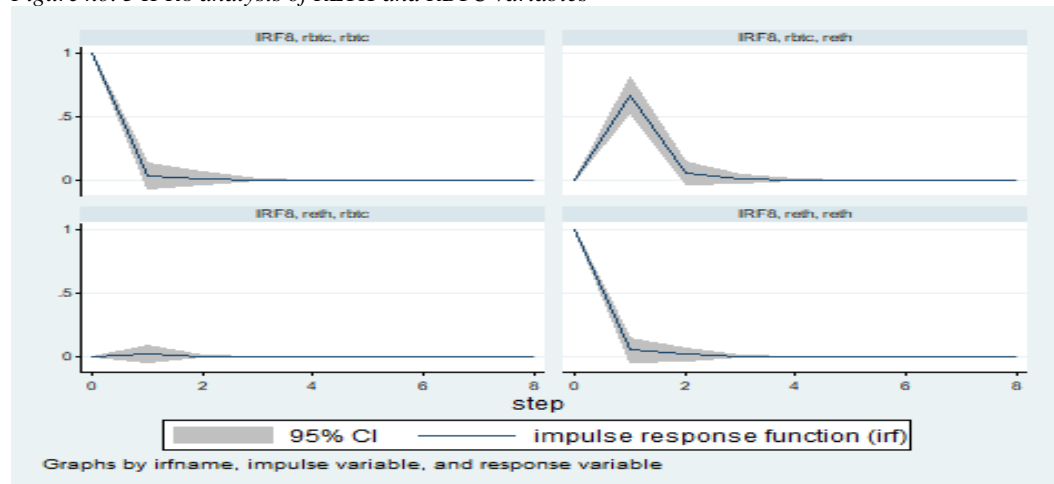
Granger causality Wald tests

Equation	Excluded	chi2	df	Prob > chi2
reth	rbtc	92.014	1	0.000
reth	ALL	92.014	1	0.000
rbtc	reth	.40123	1	0.526
rbtc	ALL	.40123	1	0.526

Source: author processing according to applied methodology

Granger causality test results indicate a significant one-way causal relationship between RETH and RBTC variables in the VAR model. According to these results, RBTC significantly influences RETH, suggesting that Bitcoin price movements can affect Ethereum prices. In contrast, there is no significant causal relationship from RETH to RBTC, indicating that Ethereum prices do not have a significant impact on Bitcoin prices.

Figure no. 3 IFR8 analysis of RETH and RBTC variables



Source: author processing according to applied methodology

In the graph, IFR8 provides insight into the influence of exogenous variables on endogenous variables. The RBTC variable manifests a dominant and constant response with a significant influence, while the RETH variable has a minor impact on it. The results indicate that the RETH variable mainly explains its own response, with little contribution from the RBTC variable.

Table no. 12 Cholesky decomposition - response of the RETH variable
Results from IRF8

step	(1) fevd	(2) fevd
0	0	0
1	1	0
2	.804232	.195768
3	.803188	.196812
4	.803127	.196873
5	.803126	.196874
6	.803126	.196874
7	.803126	.196874
8	.803126	.196874

(1) irfname = IRF8, impulse = reth, and response = reth

(2) irfname = IRF8, impulse = rbtc, and response = reth

Source: author processing according to applied methodology

The results in the above table, based on IRF8 (Impulse Response Function), analyze how the RETH variable responds over time to perturbations introduced in the RETH and RBTC variables. Each time step shows the proportion of the response explained by each variable. For example, at step 0 there is no response, at step 1 100% of the response is attributed to the RETH variable, and the RBTC variable does not contribute. The proportions then change, with approximately 80% of the response explained by the RETH variable and 20% by the RBTC variable at step 2, continuing the same trend for subsequent steps.

Table no. 13 Cholesky decomposition - response of the RBTC variable
Results from IRF8

step	(1) fevd	(2) fevd
0	0	0
1	.006881	.993119
2	.007893	.992107
3	.007905	.992095
4	.007906	.992094
5	.007906	.992094
6	.007906	.992094
7	.007906	.992094
8	.007906	.992094

(1) irfname = IRF8, impulse = reth, and response = rbtc

(2) irfname = IRF8, impulse = rbtc, and response = rbtc

Source: author processing according to applied methodology

The results in the above table, based on IRF8 (Impulse Response Function), assess how the RBTC variable responds over time to a perturbation introduced in the RETH variable and in RBTC. Each time step shows the proportion of the response explained by each variable. At step 0, there is no response, and at step 1, approximately 99.3% of the response of the RBTC variable is explained by it, with a negligible contribution from the RETH variable. This trend persists at step 2, where almost 99.2% of the response is explained by the RBTC variable. The percentages stabilise and remain constant thereafter.

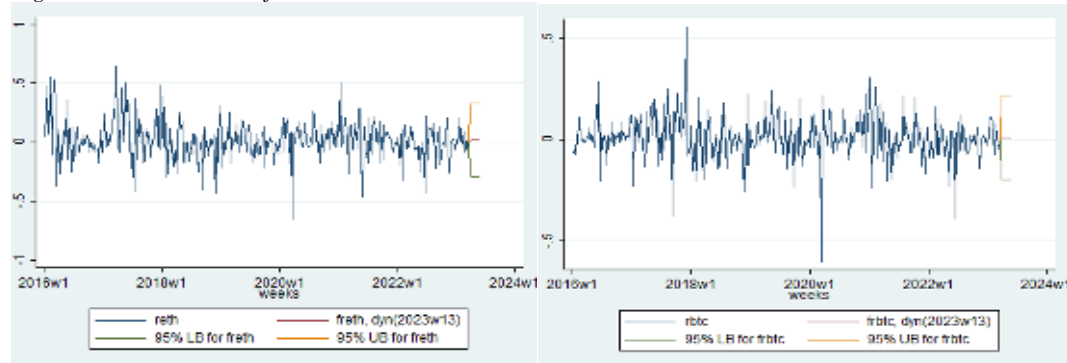
Table no. 14 Johansen tests for cointegration

Johansen tests for cointegration					
Trend: constant			Number of obs =		374
Sample: 2016w3 - 2023w12			Lags =		1
maximum				trace	5%
rank	parms	LL	eigenvalue	statistic	critical
0	2	238.5893	.	548.0740	15.41
1	5	424.15514	0.62929	176.9423	3.76
2	6	512.62628	0.37694		

Source: author processing according to applied methodology

Johansen tests for cointegration, based on 374 observations and a lag of 1, show that at a 5% significance level, the maximum cointegration test indicates a rank of 0, suggesting no cointegration between variables. However, at a maximum rank of 1, the results show cointegration, indicated by a trailing statistic of 176.9423, exceeding the critical value of 3.76. Thus, there is a cointegrating relationship between variables, at least to a limited extent, at a lower significance level. The tests indicate the possibility of the existence of a stable relationship and a long-standing link between variables.

Figure no. 4 Prediction of RETH and RBTC variables



Source: author processing according to applied methodology

The future predictions for the RETH and RBTC variables, shown in the graph above, include separate confidence intervals. The interval for RETH is narrower, reflecting higher certainty, while for RBTC it is wider, indicating a higher level of uncertainty. Although based on careful analysis of the historical behaviour of these variables, these forecasts cannot provide absolute certainty in their future evolution. They provide an informed perspective while recognising the inherent unpredictability of financial markets.

5. Conclusions

Our study demonstrated the effectiveness of the Vector Autoregressive Model (VAR) in analyzing the complex relationships between Bitcoin and Ethereum. We found that although cryptocurrencies are often perceived as highly volatile and unpredictable, the use of the VAR model allows for a deeper understanding and more accurate prediction of their behavior.

The research contributes significantly to the fintech field by showing how traditional financial analysis methodologies can be applied to digital assets. Through this study, we aim to lay the foundation for a better understanding of the cryptocurrency market by integrating knowledge from diverse fields such as economics, finance and statistics.

The results highlight the need for a prudent and informed approach to cryptocurrency investment and trading. This is crucial for investors and practitioners as it provides a solid basis for decision-making in a market environment characterized by rapid change and high volatility.

Although the VAR model provided valuable insights, our study acknowledges some limitations. Cryptocurrencies are subject to complex external influences, and the VAR model cannot always fully encompass these dynamics. Thus, it is essential that future research continues to explore and improve predictive models for these digital assets.

The study paves the way for further research in fintech, with a particular focus on cryptocurrencies. There is an ongoing need to explore new models and analytical approaches to keep pace with the rapid evolution of this sector. It is also important to investigate the impact of macroeconomic and regulatory factors on cryptocurrency markets.

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Analysis of Investment Projects by Discounting Methods

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Abstract

Investments are how the medium and long-term development of the enterprise is fixed. For each investment project, it is necessary to calculate and compare the resources invested with the results obtained. This research paper aims to analyse the efficiency of investment projects using discounting methods. Some highlights on the analysis of investment projects are presented, identifying the main outflows of funds and inflows of funds that are considered in the analysis of investment projects. Investment selection indicators are analysed: net present value and profitability index. The theoretical presentation is accompanied by a case study of an economic entity in Romania. The results of the research can be used by any economic entity to support investment projects.

Key words: capital, discount, investment, net present value, profitability index

J.E.L. classification: G11, M10, M41

1. Introduction

The investment decision is a strategic decision and is an integral part of the firm's overall policy. In investment decisions, there is a relatively long period between advancing funds and receiving the benefits from the funds spent. Because of this time lag, investment decisions are affected by the opportunity cost, which reflects the interest that could be earned by placing the money in the capital market.

The financial effects of the investments will be experienced over several years. The role of the accountant and management controller is to collect the necessary data from various sources, identify the financial and fiscal implications, analyse the data collected using one or more techniques and present it to the decision-maker. In other words, the accountant and management controller must provide managers with the information needed to support the investment decision.

The objective of this scientific work is to create added value by conducting a study in the field of management control and investment management aimed at analysing the efficiency of investment projects using discounting methods. Discounting is a method of quantifying the influence of the time factor on investment efficiency. This makes it possible to compare cash flows existing at different dates by equating future cash flows with their present value.

The formulation of the research hypothesis complements the definition of the proposed objective. In order to answer the objective pursued in the research paper we proposed the following hypothesis: „The time lag between the time of advancing funds and the time of obtaining the benefits from the invested funds requires the use of discount indicators in the analysis of investment projects”.

2. Theoretical background

The term investment has been defined by many authors over the years. Investment is a permanent (often indefinite) allocation of capital, in the acquisition of physical and/or monetary assets, to enable profitable activities (Năstase, 2011). Investments are considered „resources committed in the hope of achieving benefits over a long period” (Mieilă, 2009) or money, or other resources spent in the hope of receiving more money or other benefits in the future.

The investment policy must be based on universally recognised and accepted criteria in project selection (Mieilă, 2012). The most common types of decisions involving investment in the production sector are decisions concerning development investments, the aim being to increase production capacity (establishment of new enterprises, expansion or development of existing enterprises etc.); decisions concerning replacement investments, the aim being to replace existing fixed assets due to their wear and tear; decisions concerning the choice between renting, buying or leasing; decisions concerning modernisation investments (their role is to achieve a reduction in costs and thus an increase in productivity); decisions concerning social expenditure for staff employed in production units etc.

A feasibility study is required to make the investment decision. It provides a technical, economic and financial basis for such a decision. Combining different methodologies to develop the feasibility study can lead to better decision-making results (Zamfir, 2017). For each investment project, it is necessary to calculate and compare the resources invested with the results obtained. The analysis of an investment decision depends, in particular, on four key parameters: outflows, inflows, lifetime and discount rate.

Depending on the nature of the investment project, the main types of outflows that are taken into account concern (De Rongé *et al.*, 2009): the amount of capital invested in fixed assets (intangible, tangible and financial), which are most often incurred at the beginning of the investment project; the amount of change in the working capital requirement generated by the investment, which may vary over the life of the investment; maintenance and repair costs over the life of the new investment; additional operating costs caused by the new investment.

The main types of cash inflows considered in the analysis of investment projects (De Rongé *et al.*, 2009), refer to: the additional revenue streams that are generated by the new investment; the reduction of costs caused by the operation of the new investment; the residual value of fixed assets at the end of the life of the investment; the recovery, at the end of the investment project, of the additional working capital needs incurred over the life of the project.

The analysis of investment projects is carried out through a series of indicators that can provide details for the quantitative and qualitative characterisation of the use of resources. Indicators can be static indicators and discount indicators. Appropriate financial ratios should be used to reflect value creation and modern indicators within value-based management offer a good alternative currently (Vasilescu, 2011). One of the most commonly used cash flow valuation methods in valuation practice is called *discounted cash flow* (DCF) (CECCAR, 2019).

3. Research methodology

The data for this research were obtained from the current records of an economic entity in Romania. Some of the information needed for the research was obtained by interviewing staff working in the economic entity's accounting and management control departments where the research was carried out. In addition to interviewing staff, we used financial accounting documents and statistical data that were necessary for the study. Documentary theoretical research was essential to the scientific approach. The applied research undertaken complements the theoretical approach by conducting a study on the analysis of an investment project using discounting methods.

In the analysis of investment projects, a limitation of static indicators is that they do not take into account the influence of time. Even if the investments and effects resulting from the commissioning and operation of the objective are used up and achieved in different periods, the static indicators do not take into account this time lag between the two processes (Mieilă, 2009).

The analysis of investment projects involves being able to compare cash flows available at different dates and being able to equate a flow that will be realised in the future with its present value. Discounting is based on the following reasoning: 1 leu available in a year has a value less than or equal to $(1+i)^{-1}$, i being the discount rate. In other words, 1 leu available in n years is today only $(1+i)^{-n}$ lei (Leclerc *et al.*, 2000).

Updating is done using a *discount rate*. The discount rate is a given constant of the economy at a given point in time and represents the expression of a certain type of societal behaviour (Mieilă, 2009). There are several views on the choice of discount rate. It depends on the investor's financial situation, the growth rate of the economy, the market interest rate and inflation. The discount rate

reflects the economic environment, which changes over time. Its choice must take into account its predictable evolution.

In the work „Investment management (2009)”, Mielă M. considers that if the project is financed at a fixed interest rate, the size of the discount rate is given by the size of the interest rate and a risk coefficient, and if the project is financed at a variable rate, the size of the discount rate will take into account the average interest rate forecast for the execution and operating period, plus a risk coefficient and the inflation rate, if applicable.

The discount rate represents the potential return of the alternative option that was given up for the realisation of the investment project, or in other words, the discount rate is based on the opportunity cost of capital.

Discount calculations can be performed at any time. The main milestones in the economic life of an objective are (Prelipean, 2008): when the investment decision is taken; when the investment work starts; when the investment is put into operation; when the loan repayment starts; and when the fixed assets are retired. Between these milestones, various specific activities take place: between the adoption of the investment decision and the start of the work is the period of preparation of the technical and economic documentation of the investment objective, including obtaining the necessary approvals and consents. This is followed by the period of execution of the investment work on the site, which lasts until the fixed assets are commissioned. Economic entities may benefit from a grace period before the start of repayment of loans received. The effective operating life of the investment objective is from commissioning to decommissioning of the fixed assets.

The *net present value* is calculated from the present for each subsequent period until the end of the life of the investment. It takes into account the annual income and expenditure as well as the annual net cash flow generated by this investment (cash flow).

Net cash flow is calculated for each period:

Gross operating result - Income tax = Net operating result

Net operating result + Depreciation = Cash flow CF

The net present value is determined as the sum of the discounted cumulative net cash flows over the effective operating period of the investment objective, according to the relationship:

$$NPV = \sum_{h=1}^D CF(1+i)^{-h}$$

in which:

D - the number of effective periods of operation of the objective;

h - period;

i - discount rate.

The present value of future cash flows is calculated using what is called the cost of capital (or minimum required profitability ratio) as the discount rate (Shim *et al.*, 2008). The reference moment for calculating the total present value of the investment and the cash-flow is the moment when the work starts (n = 0). When the execution of the works is short, less than one year, and the exploitation of the investment starts immediately, the net present value is calculated according to the formula:

$$NPV_{tp} = -I_t + \sum_{h=1}^D CF(1+i)^{-h}$$

in which:

NPV_{tp} - total net present value;

I_t - the total investment.

If the duration of the work is more than one year, the formula becomes:

$$NPV_{tp} = - \sum_{h=1}^d I_{hp} + \sum_{h=1}^D CF_{hp} = - \sum_{h=1}^d I_h(1+i)^{-h} + \sum_{h=1}^D CF_h(1+i)^{-h}$$

in which:

I_h - value of investment in year h;

I_{hp} - present value of the investment in year h;

CF_h - cash-flow in year h;

CF_{hp} - present value of cash-flow in year h;

d - the number of periods of execution of investment works on site;
D - the number of effective periods of operation of the target.

If $NPV < 0$, the investment is not profitable. Even if the company has the capital to carry it out, it is advisable to abandon the investment project and invest it in another project. If $NPV > 0$, the investment is profitable. A positive net present value means that the economic activity carried out will generate more value than the capital invested, ensuring the ability to repay loans and the related interest when they fall due.

However, net present value also has its limitations (Prelipcean, 2008): it does not show the relative, comparative importance of the contribution of the project in question; it does not allow decision problems to be resolved when projects have different economic lifetimes; it does not take into account the size of the payback period; it depends on the size of the discount rate used in the calculations, which means that particular attention must be paid to its choice.

Another indicator used in the analysis of investment projects is the *profitability index*, which expresses the ratio between the net present value and the funds allocated to the project. Initial investments (I_t) or their present value (I_{tp}). Expressed in percentages.

$$P_i = \frac{NPV}{I_t} \times 100 \quad \text{or:} \quad P_i = \frac{NPV}{I_{tp}} \times 100$$

The profitability index allows us to select the efficient project variants where $P_i > 0$ and to rank them by its decreasing value. Under equivalent, comparable conditions, the higher the profitability index, the more efficient the projects will be. The project for which the profitability index is higher will therefore be chosen.

4. Findings

To demonstrate the usefulness of using the two indicators, we carried out research on an economic entity that wants to make an investment (to purchase production equipment) worth 260.000 lei. The investment allows for 4 years of activity and can be used from the first year. After the four years, the residual value of the equipment is expected to be 80.000 lei. The income tax rate is 16% and the discount rate taken into account is 15%. The expected operating revenues and expenses for the four years are shown in Table 1.

Table no. 1 Estimated income and expenditure (lei)

Year	Income	Depreciation	Other expenses
1	390.000	65.000	260.000
2	520.000	65.000	325.000
3	585.000	65.000	390.000
4	260.000	65.000	156.000

Source: Information provided by the economic entity

As the purchase of the equipment allows it to be used from the very first year, the NPV is calculated according to the formula:

$$NPV_{tp} = -I_t + \sum_{h=1}^4 CF(1+i)^{-h}$$

Indicators are calculated for each period:

Gross operating income $GOI = \text{Revenue} - \text{Expenditure}$

Tax = $GOI \times 16\%$

Net result = $GOI - \text{Tax}$

The calculation of the cash flow is shown in Table 2. It is considered that depreciation does not imply cash flows.

Cash-flow $CF = \text{Net result} + \text{Depreciation}$

Table no. 2 Cash-flow calculation (lei)

Period N	Income	Expenditure	GOI	Tax	Net result	Cash-flow
1	390.000	325.000	65.000	10.400	54.600	119.600
2	520.000	390.000	130.000	20.800	109.200	174.200
3	585.000	455.000	130.000	20.800	109.200	174.200
4	340.000	221.000	119.000	19.040	99.960	164.960

Source: processing based on information provided by the economic entity

Discounted cash flow is calculated in Table 3. The discount coefficient (c) is:

$$c = (1+0,1)^{-h}$$

$$\text{Discounted cash flow} = CF(1 + i)^{-h}$$

Table no. 3 Discounted cash-flow calculation

Period N	Cash-flow (lei)	Discount coefficient	Discounted cash-flow (lei)
1	119.600	$(1+0,15)^{-1} = 0,869565$	104.000
2	174.200	$(1+0,15)^{-2} = 0,756144$	131.720
3	174.200	$(1+0,15)^{-3} = 0,657516$	114.539
4	164.960	$(1+0,15)^{-4} = 0,571753$	94.316

Source: processing based on information provided by the economic entity

$$NPV_{tp} = -260.000 + 104.000 + 131.720 + 114.539 + 9.4316 = 184.576 \text{ lei}$$

$$P_i = \frac{NPV}{I_t} \times 100 = \frac{184.576}{260.000} \times 100 = 70,99\%$$

Since the net present value and the profitability index have positive values, the investment is considered profitable. The economic activity undertaken will yield a value that is greater than the value of the capital invested. This ensures that the loans and the related interest are repaid when due.

After discounting expenditure and revenue (table no.4), another efficiency indicator can be calculated, namely the ratio of discounted revenue to discounted expenditure (Gomoi, 2021):

$$R = \frac{\text{Discounted revenue}}{\text{Discounted expenditure}}$$

Table no. 4 Discounted income and expenditure (lei)

Period N	Income	Expenditure	Discounted income	Discounted expenditure
1	390.000	325.000	339.130	282.609
2	520.000	390.000	393.195	294.896
3	585.000	455.000	384.647	299.170
4	340.000	221.000	194.396	126.357
Total			1.311.368	1.003.032

Source: Author work

$$R = \frac{1.311.368}{1.003.032} = 1,3$$

In our case, the ratio of discounted revenue to discounted expenditure is overunity, which again shows that the project is cost-effective.

Based on the results obtained by calculating the three indicators, we can conclude that the investment project is characterised by a high degree of viability.

5. Conclusions

Investments are the means by which the medium and long-term development of the enterprise is fixed. The investment decision is a strategic decision and is an integral part of the firm's overall policy. An investment programme sets out the objectives, actions and means to achieve the objectives, performance and how the means are to be combined and used. The time lag between the time when the funds are advanced and the time when the benefits of the invested funds are obtained requires the use of discount indicators in the analysis of investment projects, thus validating the research hypothesis on which the study was based.

In the analysis of investment projects, it should be noted that no single indicator can be considered the most relevant in assessing the value of a project. In addition to economic criteria, other criteria are often used in economic practice to make decisions on investment projects.

Valuation using the discounted cash flow method also has some limitations which relate to: the actual estimate of expected cash flows; the estimate of the residual value; the estimate of the weighted average cost of capital or the discount rate. In spite of these limitations, through the advantages that discounted cash flows offer, the method remains the most widely used today in the analysis of investment projects.

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