

Taylorism and Ambidexterity – A Systemic Perspective on Integrating Exploration and Exploitation in Organizations

Raluca Zoltan
Romulus Vancea

"Ștefan cel Mare" University of Suceava, Romania

raluca.zoltan@usm.ro
romulus.vancea@usm.ro

Abstract

In this article we aim to depict a manner in which modern organizations could and should integrate their exploration and exploitation activities, the two different sides of ambidexterity, into new organizational settings that can provide them the necessary flexibility for viability in a changing socio-economic context. For this purpose and from a systemic point of view, we have proposed a model for reconfiguring some organizational structures in contrast to the Taylorist approach and we have highlighted some implications and consequences drawn from the comparison advanced.

Key words: ambidexterity, organizational structure, R&D, innovation, production

J.E.L. classification: D20, D29, D83, L23, M10, M19, O32

1. Introduction

Although it is a concept that has been explored in detail over the past two decades, ambidexterity has rarely been accompanied by somewhat straightforward prescriptions for the structural organization of companies that are concerned with simultaneous research, innovation and production activities (Hughes, 2018). In general, managers are familiar with classical models of organization and division of labor, such as the Taylorist model. It is less clear, however, how these managers would adapt a rigid structure – admittedly revolutionary at the time of its emergence – to the challenges of the modern economy.

Innovation, as a major component of ambidexterity, is a promise for achieving success today. But it is neither easy nor cheap, and there are no guarantees that it will lead to the desired results. Moreover, the issue is its integration as far as possible into all the organization's activities, at least in terms of incremental innovations such as continuous improvements along the entire value chain. Yet, this is the modern model of the so-called "Toyotist" organization (Dohse, Jürgens and Nialsch, 1985), based on the distinctive Japanese mentality. However, it is precisely this Japanese mindset, which is almost entirely different from the Western one, which prevents the successful Japanese model from being "copied" in countries with different cultural profiles. Under these circumstances, how can Western managers, and not only them, "reconcile" the two totally different facets of ambidexterity, exploration – which includes innovation, novelty, change – and exploitation – which includes standardized production, tradition, inertia? Through what organizational restructuring can they "shorten" the arduous path from mechanical, Taylorist organization to organic, modern organization? To solve this dilemma, at least from a structural standpoint, we propose a model for designing organizational structures in such a way as to ensure the flexibility needed for companies to "move" quickly, at the accelerated pace demanded by today's markets.

2. Literature review

The Taylorist model, followed by Fordism, which underpinned the industrial revolution (Uddin and Hossain, 2015), is increasingly less used in business organizations nowadays given the accelerated growth in the adoption of information technology which brings with it new ways of organizing work. In this context, ambidexterity, a concept that in fact covers the whole range of human work-related activities (Zoltan and Vancea, 2020a), brings new challenges for organizations in terms of how to separate or integrate the completely different activities involved in exploitation and exploration (Levinthal and March, 1993), the two sides of ambidexterity. This dilemma remains an issue for any organization that wants to survive or grow in a highly dynamic and complex market.

The concept of ambidexterity in organizational studies emerged in the 1990s from a relatively simple assumption: in order to survive and succeed, firms must strike a balance between two distinct types of competing activities, namely, exploration and exploitation (Hughes, 2018). In subsequent years until now, research examining ambidexterity and the exploration-exploitation balance has gained momentum, but the results of this research have created more confusion as "research into organisational ambidexterity is beset with problems to do with definition, conceptualisation, measurement and testing" (Hughes, 2018).

However, the most common definitions include:

- ✓ in exploration activities like: generation of new ideas (March, 1991), creativity (Pelagio Rodriguez and Hechanova, 2014), the use of new solutions (Fang, Lee and Schilling, 2010), innovation and the gathering of new knowledge (Lee et al., 2020);
- ✓ in exploitation activities like: implementation of ideas (Revilla and Rodríguez-Prado, 2018), production (Anderson, Potočník and Zhou, 2014), systematization (Pelagio Rodriguez and Hechanova, 2014), the use of known solutions (Fang, Lee and Schilling, 2010).

Another distinction concerns the type of knowledge specific to exploration and exploitation respectively. Hence, explorative knowledge involves experimenting with new ideas and identifying opportunities for the future, while exploitative knowledge improves efficiency, production and marketing. (Kang and Lee, 2017).

In other words, exploration represents „the new”, the novelty, and exploitation represents „the old”, „the well-trodden” path, and the literature is abundant in highlighting the idea of incompatibility between these two. Thus, Hughes has made substantial efforts to systematize work on organizational ambidexterity, highlighting the tensions between exploration and exploitation in the form of trade-offs presented in the literature since the definition of ambidexterity in the organizational framework (Hughes, 2018). Theoretically, these trade-offs mainly refer to the competition between exploration and exploitation for scarce resources (March, 1991, He and Wong, 2004), but also to the different attention paid by the management to the strategic prioritization of one over the other (Knight and Cuganesan, 2020).

And yet, there are works that propose in one way or another the integration of exploration and exploitation as they represent "two phenomena that have clear overlaps" (Revilla and Rodríguez-Prado, 2018) and "going beyond the separation thesis, and move toward integrating rigid dualities into flexible polarities" (Papachroni, Heracleous and Paroutis, 2015) is both necessary and constructive. Beyond the ambiguity about the purpose of ambidexterity, that is, whether ambidexterity is a mean, an instrument for organizational objectives or a goal in itself (Zoltan and Vancea, 2020a), there is also the question of "how a firm can organise" ambidexterity (Hughes, 2018). We attempt to provide a possible answer to this question in the following sections.

3. Research methodology

As research methods, logical inference and comparative analysis constitute the main methodological support for this paper, along with a critical review of the literature, mainly that addressing ambidextrous organization and/or organizational ambidexterity on the one hand and Taylorism on the other. Modelling and graphical representation were also used as research tools. We have thus defined and analyzed ambidexterity in an organizational context and have refined the terminology used.

Also, we have described and graphically represented the essence of Taylorism in terms of separating research from production in time and space and highlighted the challenges it raises in the current context. Finally, we have proposed and explained a model for reconfiguring organizational structures of R&D and production in order to overcome the limitations imposed by the Taylorist model. Conclusions and future research directions are outlined at the end of the paper.

4. Findings

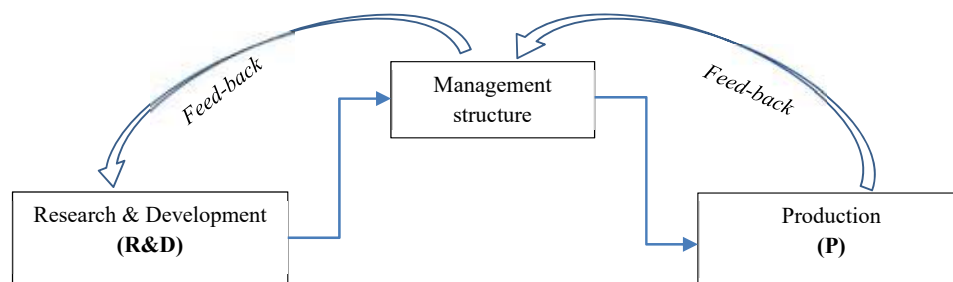
4.1. Moving beyond Taylorist organizational structure

In order to avoid conceptual confusion, we will first make a distinction not often made in the literature (because in English „organization” covers several meanings), namely:

- *ambidextrous organization*, as a type of organization, company, structure as a whole, with structural R&D departments/units;
- *organizational ambidexterity*, as an organization's ability to carry out and integrate both exploration and exploitation activities beyond or regardless of the boundaries of a functional, Taylorist organizational structure.

This distinction is crucial in order to perceive the difference between organizational structures, which cannot be easily changed, on one hand, and organizational capabilities and skills (individual and collective), which can be identified and used to overcome structural boundaries when needed (for example, time-limited projects), on the other hand. Thus, strictly terminologically, we can say that ambidextrous organizations are also firms structured according to Taylorist principles (Figure no. 1), which means that they carry out both exploration and exploitation activities, which are strictly delimited on the principle of "specialization of function" (Witzel and Warner, 2015) with decisions belonging in every respect to management structures (Vancea, 2007), but this does not indicate their efficiency or success on the market. Therefore, what organizations now need has to do with varied skills, a well-articulated vision and flexible processes that allow them to adapt to dramatic changes in the external environment. In other words, and to keep the analogy with the human ability to be ambidextrous, organizations need to be able to "switch hands", which means to successively perform separations and integrations of exploration and exploitation activities, as we suggest in Figure no. 2.

Figure no 1. Taylorist model with permanently disconnected unites



Source: Authors' contribution

Because structure must follow strategy (Burciu et al., 2008, p. 268), companies must design their organizational structures in such a way as to ensure both that they have the necessary human resources, more specifically diversified skills, and that they have a clear vision of the links between activities and/or the various units that constitute the organization. This also applies to a Taylorist organization. But the Taylorist segmentation between R&D and production (figure no. 1), or what we now call exploration and exploitation, hinders both innovation and its propagation, and employee satisfaction, whereas strict discipline and routine are basic Taylorist principles which, however, can lead to lower performance and demotivation (Lykourantzou, Lionel and Barlatier, 2021).

Indeed, in order to achieve their objectives, organizations need to create structures that are self-contained and have specific tasks, but at the same time they need to ensure that there is sufficient flexibility to adapt to internal dynamics and, above all, to external fluctuations. To achieve this flexibility, organizations must design their activities so that their structures are as integrated as

possible, that is, the strict boundaries assumed by Taylorism must be diffuse, permeable to the flow of information between different organizational groups (Fang, Lee and Schilling, 2010). Flexibility can also be ensured through the versatility of organizational structures, through overlapping roles and functions, or departments and occupations (Sorge and Streeck, 2016). For this, identifying "linking pin" and "boundary spanner" roles prove to be of real use and sometimes even indispensable, as we will see in the next section.

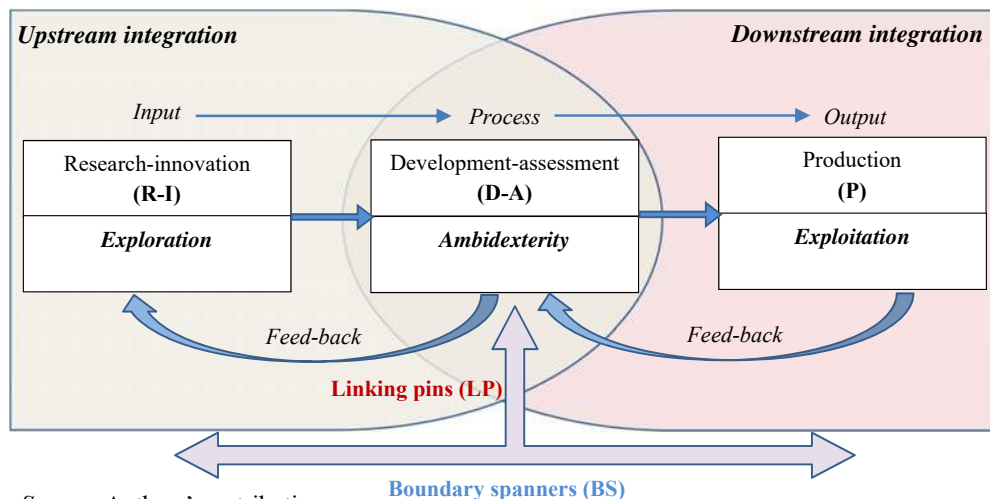
4.2. An integration model of exploration and exploitation

The systemic view of the organization has a well-defined place in the theory of the firm (Burciu et al., 2008, p. 42) and generally implies that the firm is an open system, which means that it has multiple links and exchanges with its external environment, with reciprocal influence. However, the systems perspective also offers the opportunity to understand the dynamics of the firm's internal processes, either at the level of units, departments or divisions, or at the level of the firm as a whole, or further at the level of a multinational company with numerous subsidiaries and branches.

In line with the view that exploration and exploitation are complementary, rather than substitutable, modalities oriented towards the same goal, i.e. the survival and prosperity of the system (Blaschke and Schoeneborn, 2006), we propose a model of the separation and integration of exploration and exploitation activities from a systemic perspective. Hence, separation means reconfiguring classic R&D (Research & Development) to meet the requirements of integrating exploration and exploitation. Figure no. 2 shows a purely conceptual Input-Process-Output (IPO) model in order to illustrate how highly diverse activities such as research and production can be integrated in such a way that the well documented tensions between them ((Lavie, Stettner and Tushman, 2010, O'Reilly III and Tushman, 2004) are, if not eliminated, then significantly reduced.

Thus, exploration activities constitute the inputs (for instance, a new product idea), ambidexterity, the transformation processes (the evaluation of the new product idea and development of a prototype), and exploitation, the outputs (the launch into production of the new product). There are two feedback loops since, following the same example, P may consider that the prototype developed by D-A requires modifications to be mass produced and/or D-A may consider that the idea (project) developed by R-I also requires improvements (for example, it is too expensive to produce or requires too many changes to the production line).

Figure no. 2. Integrating exploration and exploitation from a systemic perspective



Further, the conditions necessary for such a flow as the one proposed in Figure no. 2 mainly concerns who handles the circulation of information as well as the necessary resources between R-I, D-A and P on one hand, and how strict are the boundaries between these activities, on the other.

To answer the first requirement, a solution was suggested since the 1960s by Rensis Likert who proposed the term "linking pin" (Likert, 1967). "Linking pins" (LP) are people who maintain connections between different structural units because they belong simultaneously to several groups positioned in hierarchical proximity; in other words, LP have a group where they come from, but they also belong to the immediately above hierarchical group (Zoltan, 2012).

The concept of LP has meaning and usefulness in the configuration proposed by Likert, specifically, an organizational structure consisting of partially overlapping and integrated units, horizontally coordinated (Likert, 1967, p.160). As such, LP will seek to satisfy the interests of both hierarchical groups to which they belong, therefore enabling leadership support and harmonization of divergent interests on the basis of communication and interpersonal connections with members of both groups (Zoltan, 2012).

With regard to organizational boundaries, the literature describes so-called "boundary spanners" (BS); a "boundary spanner" is the "contact man" who mediates "the paradox caused by external forces demanding flexibility and internal ones requiring orderliness and efficiency" (Dollinger, 1984). BS play an important role in connecting the organization with its environment and they need to address non-routine problems to generate creative and innovative results in addition to considering routine problems (Wang, Liu and Liu, 2019), in other words, they need to have both explorative and exploitative knowledge (Kang and Lee, 2017).

Although, to the best of our knowledge, the distinction between LP and BS is not mentioned in the literature, we note that LP will mainly ascertain that the internal tensions inherent in any organization do not exceed reasonable limits, so that the system (organization) is not undermined. As for the BS roles, they are more concerned with the firm's relationship with its external environment, but, in the same idea of partial overlapping of functional structures, the BS can also act internally. In reality, organizations have human resources with the role of LP or BS – although they do not hold an official status and are not labelled as such – who act informally to facilitate internal negotiations and information dissemination between the various functional units of the organization.

The fundamental idea that we are trying to emphasize is that of a reconfiguration of the rigid boundaries of the classical, Taylorist model of structural organization inasmuch as "Taylorism is very adaptable" and abandoning it altogether "requires a lot of energy" (Pruijt, 2000). Considering the huge volume of information and of influencing factors that characterize today's socio-economic environment, it is no longer possible that only managers or people invested with various forms of authority to be responsible for the integration and coordination, instead BS and LP are also needed for the proper functioning of organizations. By exercising their functional authority as well as their counselling and servicing roles (Vancea, 2015), both LP and BS bring the "vital fluidity" to the organizational processes by simplifying organizational structure and shortening communication channels, which means saving resources (human, financial and time), that is, efficiency. In this way, decentralized communication inherent in "permeable" structures that enable organizational ambidexterity will lead to increased employee satisfaction (Zoltan and Vancea, 2018) in contrast to the centralized communication networks specific to the Taylorist model. Finally, the collaboration and complexity of the tasks to be performed by integrating exploration and exploitation either downstream or upstream (Figure no. 2) can be a strong intrinsic motivator (Zoltan and Vancea, 2020b) for the employees involved, and primarily for LP and BS.

Additionally, in any current organizational settings, the basic and common tools for achieving intra- and inter-organizational communication goals are those provided by or related to the Internet. These tools tremendously facilitate the circulation of information, ideas and knowledge, making possible the integration of exploration and exploitation at a level impossible before the existence of the Internet. This mention is important because the LP and BS attributions today are hard to imagine as possible in a world before the Internet and information technology.

5. Conclusions

The Taylorist model, which requires a very clear delineation of the firm's activities and an equally precise separation of organizational structures, remains an "unbeatable" model for any firm producing mass goods and services (Pruijt, 2000). However, although productivity and the fragmentation of workload through strict specialization are Taylorist principles that remain the

foundation for repetitive, standardized, routinised activities (Ndaguba et al., 2018), they are undergoing changes as market dynamics require companies to adapt rapidly to customer requirements and competitors' strategies.

Even if there is no consensus in the literature on exactly how exploration and exploitation should be integrated or even what types of activities each includes, it is certain that any organization needs an overview of the whole process of production or service delivery, as well as an understanding of the interconnections between activities in order to survive and eventually grow in the current economic context. Thus, whether it creates separate units with people or teams that are linked together (Likert, 1967, pp.156–188), or find its own formula for designing its activities, any organization needs to bear in mind that the Taylorist model, with its particular stringency, was and remains a great step forward in terms of organizing productive activities. But on Taylorist model processes need to be reconfigured and competences reorganized to ensure the organization's continuous adaptation to frequent changes coming from both its external and internal environment.

Furthermore, the use of LP and BS brings into focus other topics widely debated in the literature, namely autonomy, informality and decentralization. These, in turn, may raise other issues, but nevertheless one thing remains certain: without them a firm can hardly evolve and adapt to the turbulence in the external environment. In any case, future research will be able to deepen these concepts and better clarify the roles of the two categories, including the use of teams to fulfil these roles. It would also be interesting to investigate the extent to which LP and BS resort to explicit and implicit knowledge, since we live *de facto* in a knowledge economy (Zoltan and Vancea, 2011) where the "stock" of knowledge held by organizations is an important source of competitive advantage (Burciu and Kicsi, 2015).

Conceptual skills and abstract thinking are more important today than ever before, so the model proposed in this paper may prove useful in identifying the multiple links between various structures and activities within an organization. Ambidexterity should for this reason be seen as an organization's ability to create value and can be addressed from a systemic perspective along the exploration-exploitation continuum (Lavie, Stettner and Tushman, 2010) as a process of transforming abstract ideas (exploration) into tangible products (exploitation).

6. References

- Anderson, N., Potočník, K. and Zhou, J., 2014. Innovation and Creativity in Organizations: A State-of-the-Science Review, Prospective Commentary, and Guiding Framework. *Journal of Management*, 40(5), pp.1297–1333. <https://doi.org/10.1177/0149206314527128>.
- Blaschke, S. and Schoeneborn, D., 2006. The Forgotten Function of Forgetting: Revisiting Exploration and Exploitation in Organizational Learning. *Soziale Systeme*, 12(1), pp.100–120. <https://doi.org/10.1515/sosys-2006-0107>.
- Burciu, A. and Kicsi, R., 2015. Knowledge as a Distinctive Resource of Competitive Advantage. *EcoForum*, 4(Special Issue 1), pp.9–14.
- Burciu, A., Prelipcean, G., Bostan, I., Hapenciuc, V., Chaşovschi, C., Roman, C., Popescu, M., Vancea, R., Dîmbu, D. and Năstase, C., 2008. Introducere în management. *Editura Economică, Bucureşti*.
- Dohse, K., Jürgens, U. and Nialsch, T., 1985. From 'Fordism' to 'Toyotism'? The Social Organization of the Labor Process in the Japanese Automobile Industry. *Politics & Society*, 14(2), pp.115–146. <https://doi.org/10.1177/003232928501400201>.
- Dollinger, M.J., 1984. Environmental Boundary Spanning and Information Processing Effects on Organizational Performance. *Academy of Management Journal*, 27(2), pp.351–368. <https://doi.org/10.2307/255929>.
- Fang, C., Lee, J. and Schilling, M.A., 2010. Balancing Exploration and Exploitation Through Structural Design: The Isolation of Subgroups and Organizational Learning. *Organization Science*, 21(3), pp.625–642. <https://doi.org/10.1287/orsc.1090.0468>.
- He, Z.-L. and Wong, P.-K., 2004. Exploration vs. Exploitation: An Empirical Test of the Ambidexterity Hypothesis. *Organization Science*, 15(4), pp.481–494. <https://doi.org/10.1287/orsc.1040.0078>.
- Hughes, M., 2018. Organisational ambidexterity and firm performance: burning research questions for marketing scholars. *Journal of Marketing Management*, 34(1–2), pp.178–229. <https://doi.org/10.1080/0267257X.2018.1441175>.

- Kang, J. and Lee, J.Y., 2017. Performance effects of explorative and exploitative knowledge sharing within Korean chaebol MNEs in China. *International Journal of Technology Management*, 74(1/2/3/4), p.70. <https://doi.org/10.1504/IJTM.2017.10004271>.
- Knight, E. and Cuganesan, S., 2020. Enabling organizational ambidexterity: Valuation practices and the senior-leadership team. *Human Relations*, 73(2), pp.190–214. <https://doi.org/10.1177/0018726718823247>.
- Lavie, D., Stettner, U. and Tushman, M.L., 2010. Exploration and Exploitation Within and Across Organizations. *Academy of Management Annals*, 4(1), pp.109–155. <https://doi.org/10.5465/19416521003691287>.
- Lee, J.Y., Taras, V., Jiménez, A., Choi, B. and Pattnaik, C., 2020. Ambidextrous Knowledge Sharing within R&D Teams and Multinational Enterprise Performance: The Moderating Effects of Cultural Distance in Uncertainty Avoidance. *Management International Review*, 60(3), pp.387–425. <https://doi.org/10.1007/s11575-020-00416-9>.
- Levinthal, D.A. and March, J.G., 1993. The myopia of learning. *Strategic Management Journal*, 14(S2), pp.95–112. <https://doi.org/10.1002/smj.4250141009>.
- Likert, R., 1967. *The human organization: its management and values*. The human organization: its management and values. New York, NY, US: McGraw-Hill.
- Lykourantzou, I., Lionel, R. and Barlatier, P.-J., 2021. Unleashing the Potential of Crowd Work: The Need for a Post-Taylorism Crowdsourcing Model. [online] <https://doi.org/10.7302/3751>.
- March, J.G., 1991. Exploration and Exploitation in Organizational Learning. *Organization Science*, 2(1), pp.71–87.
- Ndaguba, E.A., Nzewi, O.I., Ijeoma, E.C., Sambumbu, M. and Sibanda, M.M., 2018. Using Taylorism to make work easier: A work procedure perspective. *South African Journal of Economic and Management Sciences*, [online] 21(1). <https://doi.org/10.4102/sajems.v21i1.2120>.
- O'Reilly III, C.A. and Tushman, M.L., 2004. The Ambidextrous Organization. *Harvard Business Review*. [online] 1 Apr. Available at: <<https://hbr.org/2004/04/the-ambidextrous-organization>> [Accessed 4 June 2022].
- Papachroni, A., Heracleous, L. and Paroutis, S., 2015. Organizational Ambidexterity Through the Lens of Paradox Theory: Building a Novel Research Agenda. *The Journal of Applied Behavioral Science*, 51(1), pp.71–93. <https://doi.org/10.1177/0021886314553101>.
- Pelagio Rodriguez, R. and Hechanova, Ma.R.M., 2014. A Study of Culture Dimensions, Organizational Ambidexterity, and Perceived Innovation in Teams. *Journal of technology management & innovation*, 9(3), pp.21–33. <https://doi.org/10.4067/S0718-27242014000300002>.
- Pruijt, H., 2000. Repainting, modifying, smashing Taylorism. *Journal of Organizational Change Management*, 13(5), pp.439–451. <https://doi.org/10.1108/09534810010377417>.
- Revilla, E. and Rodríguez-Prado, B., 2018. Bulding ambidexterity through creativity mechanisms: Contextual drivers of innovation success. *Research Policy*, 47(9), pp.1611–1625. <https://doi.org/10.1016/j.respol.2018.05.009>.
- Sorge, A. and Streeck, W., 2016. *Diversified quality production revisited the transformation of production systems and regulatory regimes in Germany*. MPIfG Discussion Paper.
- Uddin, N. and Hossain, F., 2015. Evolution of Modern Management through Taylorism: An Adjustment of Scientific Management Comprising Behavioral Science. *Procedia Computer Science*, 62, pp.578–584. <https://doi.org/10.1016/j.procs.2015.08.537>.
- Vancea, R., 2007. *Managementul viitorului*. Bucuresti: Editura Didactica si Pedagogica.
- Vancea, R., 2015. Groups and Teams from a Managerial Perspective. *Ecoforum Journal*, [online] 4(2). Available at: <<http://www.ecoforumjournal.ro/index.php/eco/article/view/211>>.
- Wang, G., Liu, X. and Liu, Y., 2019. Role overload, knowledge acquisition and job satisfaction: An ambidexterity perspective on boundary-spanning activities of IT employees. *The International Journal of Human Resource Management*, 30(4), pp.728–757. <https://doi.org/10.1080/09585192.2018.1494027>.
- Witzel, M. and Warner, M., 2015. Taylorism Revisited: Culture, Management Theory and Paradigm-Shift. *Journal of General Management*, 40(3), pp.55–70. <https://doi.org/10.1177/030630701504000305>.
- Zoltan, R., 2012. The role of teams as organizational structures in a global organizational context. *"Ovidius" University Annals Economic Science Series*, XII(1 /2012), p.1249.
- Zoltan, R. and Vancea, R., 2011. Rationality, Intuition and Flair in Entrepreneur's Configuration - an Epistemological Approach. *Ovidius University Annals, Economic Sciences Series*, XI(1), pp.2352–2358.

- Zoltan, R. and Vancea, R., 2018. Group Communication, Performance and Satisfaction in Organizations. *Ovidius University Annals, Economic Sciences Series*, XVIII(1), pp.428–433.
- Zoltan, R. and Vancea, R., 2020a. An Insight into Organizational Team Ambidexterity. *Ovidius University Annals, Economic Sciences Series*, 20(2), pp.793–799.
- Zoltan, R. and Vancea, R., 2020b. Individual Motivation in Work Team Context–An Empirical Research on Romanian Consulting SMEs. *Ovidius" University Annals, Economic Sciences Series*, 20(1), pp.819–827.