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AND MANAGEMENT**

Editors:

Gordana Radosavljević

Katarina Borisavljević



**FACULTY OF ECONOMICS
UNIVERSITY OF KRAGUJEVAC**

**CONTEMPORARY ISSUES
IN ECONOMICS, BUSINESS
AND MANAGEMENT**

E d i t o r s

Gordana Radosavljević

Katarina Borisavljević

**FACULTY OF ECONOMICS
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FOREWORD

The Faculty of Economics, University of Kragujevac organized the Seventh biennial International Scientific Conference on Contemporary Issues in Economics, Business and Management (EBM 2022). The Conference gathered the largest number of participants so far, a total of 104 authors – 81 authors from higher education institutions in Serbia and 23 authors from abroad (Poland, Italy, Slovenia, Ukraine, Croatia). The introductory speakers at the conference were Zlatko Nedelko (Faculty of Economics and Business, University of Maribor, Slovenia) and Stanislaw Mazur (Krakow University of Economics, Poland). After the plenary talk, the Conference was organized through five parallel sessions. Simultaneously, within a separate session, a Symposium was held, as a result of cooperation between Faculties of Economics from Italy (Messina), Poland (Krakow), Ukraine (Kiev) and Serbia (Kragujevac). The papers which were presented belong to different thematic areas which include key challenges in management and marketing, globalization and regionalization, accounting and business finance, and applied informatics and quantitative methods in economics and management.

The Proceedings contains positively reviewed papers. It is important to emphasize that several papers were selected for publishing in the journals which supported the Conference: *Economic Horizons* and *Our Economy/Naše gospodarstvo*. The authors of two papers decided to submit their papers to the journal *Our Economy*, and the authors of two paper decided to submit the paper to the journal *Economic Horizons*. Therefore, the above-mentioned papers are not included in the Proceedings.

This Proceedings includes the thirty six papers accepted for presentation at the EBM 2022 Conference. First section referring to Key challenges of management and marketing, participants presented the papers which deal with aspects of strategic management, corporate management and sustainability, corporate social responsibility, management and marketing aspects, WOM concept, customer satisfaction, application of innovations in business, characteristics of doing business in the field of tourism (with special reference to the image of the destination and the experience of the consumers and guests in the hotel business) and similar. Within the second parallel session, Key challenges of management and marketing, participants presented the papers which cope with the problems of human resource management, leadership, internal satisfaction and loyalty, lifelong learning and business in the digital era, as well as the recruitment process and vertical communication in companies, along with the analysis of the tourist offer in crisis conditions, and entrepreneurship (start-up companies) and acquisition of companies. The session named Globalization and Regionalization was dedicated to the consideration of the current key economic challenges in the Republic of Serbia and the region, such as: economic development, macroeconomic stability, stability of the financial system, the state and perspectives of the development of the financial market, the effectiveness of economic policy as well as the concept of sustainable tourism. When it comes to the papers that were included in the session Applied informatics and quantitative methods in economics and management, the participants discussed the application of various methods, models and approaches, the concepts of business and

artificial intelligence, the impact of digitalization on business operations, the application of CRM software solutions and cloud-based digital platforms in business. Within the session Accounting and Business Finance, the participants discussed the areas of measuring business performance and profitability of companies operating in Serbia, primarily from the banking and pharmaceutical sectors, as well as higher education institutions. As for the scientific symposium entitled Contemporary Challenges in Economy, Business and Management, the following topics were discussed: international economy, internationalization of business, economic support to Ukraine in the post-war period, analysis of export opportunities and the economy of CEE countries. There is also a special review of the value-based management concept and analysis of start-up companies in the field of services.

The thirty six papers submitted represent a good indicator of the Conference success. We could state that EBM 2022 conference fulfilled its purpose providing a good basis for further research and consideration both in the academic community as well as in the general professional community.

Editors

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Faculty of Economics and Business, University of Maribor, Slovenia

**“SOCIALLY RESPONSIBLE BEHAVIOR OF MANAGEMENT
IN CONDITIONS OF ENERGY SCARCITY”**

Stanislaw Mazur,

Cracow University of Economics, Poland

**“THE GLOBOTICS TRANSFORMATION
AND ITS SOCIO-ECONOMIC CONSEQUENCES”**

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**KEY ISSUES IN MANAGEMENT
AND MARKETING 1**

MANAGEMENT CONTROL IN FUNCTION OF CORPORATE SUSTAINABILITY: A CYBERNETIC APPROACH

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University of Kragujevac, Faculty of Economics

Dejana Zlatanović

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Abstract: *The issue of corporate sustainability has become very significant in contemporary business environment. Nowadays, financial performance measures are not enough in order to completely evaluate the corporate efficiency and effectiveness, not to talk about predicting the future business success. Namely, aligned with the financial performance measures, the non-financial performance measures have become more relevant in order to predict and realize the business success in the long-term. This means that companies have to devote to the sustainability issues, which further implies that they should consider environmental, social and governance performance indicators. In that sense, the issue of management control has gained in its relevance. Hence, the purpose of this paper is to point out to the necessity of effective and efficient management control, generally, and integrating of management control system into the sustainability control system, based on Simon's levers of management control. Additionally, we aim to demonstrate how Viable System Model (VSM) as a relevant cybernetic tool can support analyzing the effectiveness of management control systems and sustainability control systems in a case company. Based on the Law of Requisite variety, VSM is consisted of the five subsystems representing the implementation, coordination, control, intelligence and identity functions. Applying VSM in the organization enables effectively dealing with increasing organizational and environmental complexity. Thus, we expect that the application of VSM in a case company would show that management control systems adequately balances the variety of the system and the environment, leading companies to effectively achieve the performance goals. The original contribution of the paper is reflected in the integration of management control systems with the sustainability control system using cybernetic tool.*

Keywords: *management control, sustainability, effectiveness, cybernetic tool, viable system model.*

JEL classification: *M10, M15*

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INTRODUCTION

The question of the sustainability of the company is gaining more and more importance in the modern business environment. Leading global business organizations are showing increasing interest in social and environmental issues (Beusch et al. 2022). The PricewaterhouseCoopers 23rd annual global CEO survey (PwC, 2019) concludes that the issue of sustainability has become imperative for general managers when defining the vision and strategic plan of the company. However, the dilemma remains how to include sustainability in corporate strategies (Gond et al. 2012) and how to operationalize sustainability strategy in practice (Battaglia et al. 2016; Lueg and Radlach, 2016). Namely, it is difficult to measure the impacts of sustainability, and often financial, environmental and social goals conflict with each other. Taking into consideration the sustainability issues requires strategic renewal and extensive organizational learning and change (Beusch et al. 2022).

In this sense, management control takes an important place in ensuring the sustainability of the company in the long term. An important approach to control is the cybernetic approach, which is based on feedback and involves defining performance standards, measuring performance, comparing performance with standards, identifying actual deviations from standard performance values, proposing measures to improve performance or redefining performance standards in the future (Krstić and Bonić, 2017, 237).

The subject of the research is management control in the function of the sustainability of the company. The purpose of this paper is to point out the necessity of effective and efficient management control, in general, and integrating of management control system into the sustainability control system, based on Simon's levers of management control. Additionally, we aim to demonstrate how Viable System Model (VSM) as a relevant cybernetic tool can support analyzing the effectiveness of management control systems and sustainability control systems in a case company.

According to the above, the paper is structured as follows: firstly, different approaches to management control have been considered; then, it is explained how the management control is incorporated in the sustainability issue, and finally, there is explained how the cybernetics could support the integration between management control and sustainability based on selected company in the Republic of Serbia.

APPROACHES TO MANAGEMENT CONTROL

The management control system is a set of mutually integrated individual control mechanisms. An important issue is the implementation of management control. Ineffective management control can negatively affect the reputation, financial and other performance of the company. Generally speaking, management control is achieved by "a wide range of both formal control mechanisms, such as performance measurement systems, budgets, corporate policies and rules, and informal mechanisms such as selection and training of employees, conduct rules and the like" (Domanović, 2021, 60). Management control is often explained based on mechanisms, such as: activity-based costing (Cooper and Kaplan, 1991), the Balanced Scorecard model (Kaplan and Norton, 1992) and four levers such as diagnostic and interactive control systems, beliefs and boundary systems (Simons, 2000). There are many attempts of integrating these control mechanisms, which positively affected the understanding of the complex phenomenon of management control. A holistic approach to the study of control mechanisms is gaining more and more importance. S. Goebel and E. B. Weißenberger

(2017) conclude that only "the combined application of formal and informal elements of control contributes to the improvement of company performance" (Domanović, 2021, 60).

In the modern business environment, which is extremely complex, heterogeneous, dynamic and unpredictable, it is necessary to respect the aims and demands of all stakeholders in order to sustain the company in the long term. Traditional management control systems are oriented towards the achievement of business and economic goals and are therefore considered limited for the consideration of environmental and social issues as well as for connecting them with financial goals (Gond et al. 2012, 208). In this sense, sustainability control systems have emerged to support corporate sustainability issues (Gond et al. 2012; Lueg and Radlach, 2016; Johnstone, 2019). According to the definition of L. Johnstone (2019, 34), the sustainability control systems are "management accounting tools that connect strategy with business activities in a given context, providing information and direction of action, as well as monitoring and motivating employees in order to continuously develop sustainable practices and procedures for future performance sustainability". The question arises as to how it is possible to integrate traditional control models into the corporate sustainability control model, given that corporate sustainability implies a balance between economic profit, environmental and social responsibility, and the demands of other stakeholders (Jiang et al. 2018, 625).

There are different models and approaches to explaining the management control system. One model consists of the control system core, organizational structure and organizational culture (O'Grady et al. 2016, 2). The core of the control system is a cybernetic structure consisting of four subsystems: planning, activities, measurement and evaluation-reward. The management control process includes: strategic planning and control, management control and task control. Strategic planning and control deal with the definition and realization of long-term goals and objectives and are focused on external issues. Task control is more of a routine process that ensures that daily activities are carried out effectively and efficiently (Anthony et al. 1989, 11). Management control connects these two elements. It is a process that ensures that strategy is translated into concrete tasks. Management control implies that "managers, at all levels, supervise employees in order to implement a defined strategy" (Anthony and Govindarajan, 2007, 4). This type of control ensures that the achieved results are in accordance with the strategically intended results in organizational units as responsibility centres in the company (Krstić and Bonić, 2017, 243). The control model is basically cybernetic. R. Simons (2000) defines management control systems as "formal, information-based routines and procedures that managers apply to maintain or change patterns of organizational activity". Management control also refers to the performance evaluation of middle line managers by managers at higher levels (Blocher et al. 2005, 723).

The classical approach to control from the mid-60s to the mid-80s of the 20th century, despite its plausibility and wide acceptance, has numerous serious limitations (Domanović, 2010, 2014; 2018). In essence, the classic control model emphasizes financial goals and budgetary control, which is short-term in nature. Little attention is paid to long-term goals and objectives. Given that it ignores issues such as the external environment and the competitive position of the company, the model is not suitable for long-term strategic planning and control, which is of existential importance for the company in the modern business environment. Strategic control basically means articulating people's behaviour in accordance with a predetermined strategy. K. Merchant and W. A. van der Stede (2007) make a distinction between management control and strategic control. Management control is linked to the behaviour of employees, while strategic control can be considered the control of strategy implementation, which includes evaluating the effects after the implementation of a certain strategy (Krstić and Bonić, 2017, 243). In addition, strategic control implies a systematic check whether the current strategy remains relevant in changing circumstances.

There are differences between strategic control and budgetary control. Strategic control requires more data from different sources, especially external, and is related to non-financial benchmarks and long-term outcomes. Hence, strategic control can be less precise and formal than budgetary control. In addition, it is more focused on determining the accuracy of the premises on which the strategy is based, than on quantitative deviations of the achieved results from the standard. Control processes such as these are thought to provide information to the top of the company that is necessary when adapting to strategy. O'Grady et al. (2016) analyze the completeness and effectiveness of the management control system using two cybernetic tools, the Viable System Model (VSM) and Variety Engineering (VE).

Management and Organizational Cybernetics has developed powerful theorems and models for the design of sustainable management control. We indicate the importance of two fundamental theorems for all aspects of management control – the Law of Requisite Variety and Conant/Ashby theorem which is comparable to the role of the laws of thermodynamics as a basis for engineering. The Law of Requisite Variety is originally formulated as "only variety can destroy variety" which has some implications for the control process (Ashby, 1966, 207). It further means that that a controller must have at least as much variety (complexity) as the controlled, i.e. the variety of control mechanisms must be at least equal to the variety of the controlled process.

In addition, Conant/Ashby theorem reads "every good regulator of a system must be a model of that system (Schwaninger, 2006, 212)". It implies that effective control of the system cannot be enabled without adequate model of the system, i.e. the results of a management control process are determined by the quality of the model on which that process is based. Therefore, in order for the control to be effective of relevant importance are cybernetic approaches to control, such as VSM. As a main methodological tool of Organizational Cybernetics, VSM is based on both the above theorems, but also on the principle of recursion. Recursion refers to the fact that systems are hierarchically arranged, i.e. they consist of the set of subsystems which have their own organization and regulation. At the same time, these systems are the part of the supra system, i.e. the higher order system and the subsystems also consist of the other subsystems and so on to the lowest levels (Beer, 1994a, 228).

S. Beer originally developed VSM within his trilogy on VSM (Beer, 1994a; Beer 1994b; Beer 1994c). This original model is researched and adapted by many scholars (Azadeh, 2012; Brocklesby and Cummings, Schwaninger, 2019; Zlatanović, 2016). However, VSM is always consisted of the following five subsystems:

- Subsystem S_1 that encompass the operational elements carrying on implementation function;
- Subsystems S_2 representing coordination function and enabling harmonizing the operational elements;
- Subsystem S_3 or control function along with additional part S_3^* or audit;
- Subsystem S_4 which is responsible for intelligence function and collecting information about strengths, weaknesses, opportunity and threats and
- Subsystem S_5 - identity function by which the purpose of the system is determined.

INTEGRATING SYSTEM OF MANAGEMENT CONTROL AND SUSTAINABILITY

A model that facilitates the interrelationship of different control systems and allows consideration of the sustainability control mechanisms beyond traditional feedback processes is Simon's model of four levers of control (LOC model). Hence, the LOC model emerges as a model that integrates management control systems and company sustainability control

systems. The LOC model includes four systems: belief systems, boundary systems, diagnostic control systems, and interactive control systems. Belief systems define, communicate and reinforce the company's basic values and direction of action. They are implemented through formal documents such as the mission and purpose statement of the company. Boundary systems set limits on employees' search for strategic opportunities. They are usually expressed in negative terms and communicated through documents such as conduct rules and executive orders. Diagnostic control systems compare performance against target values. The key feature of these systems is the development and analysis of key performance indicators. Interactive control systems include dialogue between top management and subordinates. These systems allow top management to become aware of strategic uncertainties that can be used to modify strategic plans, and subordinates can become aware of managerial intentions.

D. L. Arjali`es and J. Mundy (2013) and M. Rodrigue et al. (2013) show how it is possible to fit the sustainability control systems into the Simon's four levers of control. Sustainability in this context becomes part of the organization's belief system. Companies use boundary systems to manage risks related to sustainability. Boundary systems include identifying appropriate activities (for example, reducing carbon dioxide emissions) as well as prohibited behaviours (for example, supplies from suppliers that compromise environmental or employee regulations). Diagnostic control systems include the development of key performance indicators related to sustainability to measure the achievement of sustainability objectives. Interactive control systems enable the exchange of information about innovations and strategic uncertainties between operational and higher management levels. This activity leads to the transformation of business practices in support of sustainability initiatives. Interactive control systems also offer the opportunity for senior and operational management to discuss the assumptions underlying senior management's implementation plans, thus enabling adjustments to the intended strategy, if necessary. Sustainability strategy control might include monitoring the regulatory environment for changes that would require the reduction of negative effects of production process on the environment itself.

The company sustainability implies respecting the demands of all stakeholders: investors, customers, suppliers, governmental and non-governmental organizations, representatives of the local community. An example of a good technical integration of management control and sustainability control systems is the Balanced Scorecard sustainability model. SBSC looks for a causal relationship between sustainability issues and performance indicators from different perspectives (finance, customers, internal business processes and employee learning and development). However, this model has suffered significant criticism because it assumes a direct link between sustainability and financial performance and hence tends to favour short-term financial performance over long-term sustainability performance (Hansen and Schaltegger, 2016; Journeault, 2016). The semi-hierarchical SBSC model attempts to relax the assumption of causality between sustainability goals and financial performance and replaces the top-level financial perspective with a triple bottom-line perspective. Thus, we could say that there would be a technical integration when diagnostic and interactive control systems incorporate financial and sustainability metrics into performance measurement and strategic planning. These metrics may or may not be organized into a formalized SBSC model.

The integration of the management control system and the sustainability control system is a complex, multidimensional concept. We could observe cognitive, organizational and technical dimension of integration. The importance of integration dimensions can vary according to the four levers of control. For example, cognitive integration, or a shared understanding of sustainability among managers in different functional areas, is likely to be significant in the belief and boundary systems. Technical integration, in the form of a reporting system that

generates economic and sustainability data, is important for diagnostic control systems. All integration dimensions are likely to be relevant in an interactive control system. A reporting system with a high degree of technical integration is a prerequisite for intensive control by strategic and tactical managers. An interactive control system can also provide organizational integration if it facilitates dialogue between managers whose primary responsibility is sustainability and those working in other areas. An interactive control system can also enable cognitive integration by facilitating dialogue between managers who have different views on sustainability. Integration or disintegration of control system configurations is a complex, interactive process (Johnston, 2019). It depends on managers' cognitive frameworks about sustainability and contextual aspects such as stakeholder attitudes and economic conditions (Battalion et al. 2016; Daktilo and Lisa, 2016).

CYBERNETIC SUPPORT TO INTEGRATING MANAGEMENT CONTROL AND SUSTAINABILITY – A CASE STUDY

Although Simon's model offers a solution for integrating management control and sustainability, we indicate that we need more holistic framework for assessing control systems. It is the VSM as a main methodological tool of Organizational Cybernetics which enables more specific information flows between interacting components of the system as well as between levels. Effective control requires all above functions of VSM, effective communications between them as well as managing the information flows which inform the decision making processes necessary for effective regulation of an organization (O'Grady et al. 2016). As a valuable diagnostic tool, VSM can help to reveal structural weaknesses that produce control problems and prevent the organization from establishing effective control. We will compare the system under investigation with the structure specified in the VSM and thus identify some problems in control system in the company.

The subject of our research is the company "NIS a.d. Novi Sad" as one of the largest vertically integrated energy systems in the Southeast Europe, whose main activities are exploration, production and processing of oil and natural gas, circulation of a wide range of oil and gas derivatives, as well as the implementation of projects in the field of energy and petrochemicals. NIS headquarters and main assets are located in the Republic of Serbia, while representative offices and subsidiaries have been opened in several other countries of the world, primarily in the Balkan region. The most important resource of NIS group is a team of more than 11,000 employees. In the research, we will start from the company's main purpose. It is about the following: In challenging macroeconomic circumstances the company strives to enable new values for its shareholders, employees and community in which it operates. According to the purpose, the company formulates the following objectives: preservation of the main production indicators and the resource base, increasing the depth and efficacy of processing, increase in sales through the own sales channels and retail networks modernization, business diversification, construction of new capacities for production of electricity's energy and optimization of operational performance.

In the company's annual report from 2021 we can observe that company strives to function as one of the greenest company. Accordingly, sustainable development is one of the main strategic goals of the company. So, by researching management control in the company NIS in conceptual framework of VSM, we indicate the following recursive levels: recursive level 1- NIS as a whole; recursive level 0 – petroleum industry at Europe/world and recursive level 2 - the main (basic) activity, i.e. exploitation of natural petroleum and other activities, such as service activities related to forestry, exploitation of natural gas and exploitation of lignite and black coal.

By exploring the main documents of the company, we can present the company as a viable system consisting of the five basic functions, i.e. subsystems necessary for company's viability as well as their mutual relations and relations with the environment. It is presented in the Figure 1.

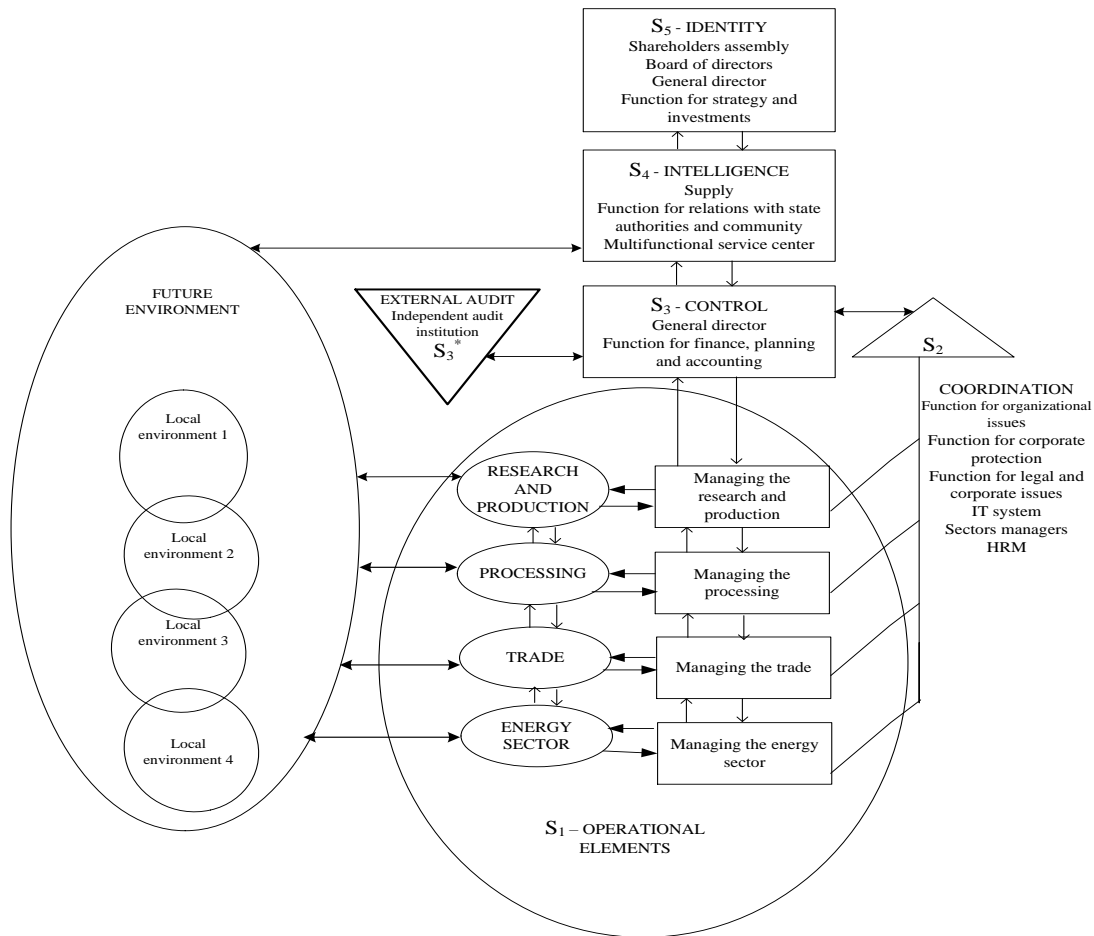


Figure 1. NIS in conceptual framework of VSM
Source: Authors

The next step is the diagnosing of the above subsystems. Taking into account that we focus on the control system in the company, we have conducted the diagnosing of control function and concluded the following. The control system of the company is complete and comprehensive in terms of the levers of strategic control systems, as apart from the dimension of strategic planning (planning and performance management based on a long-term plan - strategy) it also has a system for managing the risk performance. Budgetary control and the control system through financial performance measurement are very developed in the company. However, although the control system through nonfinancial performance measurement is visible in annual reporting, this system is not originally based on accounting and financial reports. So, the company is oriented towards sustainable development and it received numerous rewards for socially responsible behaviour. Also, in its annual report for 2021, we can observe that company monitor and control numerous aspects of nonfinancial performance, such as relations with external stakeholders, performance related to the health and safety at work, ecological performance (e.g. using renewable energy's sources, land protection and remediation, applying already used materials in the production, etc.), performance of energy's efficacy (waste and water management), social performance (cooperation with educational institutions, collaboration with local community), etc. As a part of nonfinancial performance

measurement is also business process control's realization. In the researched company, business processes are identified, classified, mapped and linked into integrated management system in accordance with international management standards, such as ISO 9001, ISO 14001, OHSAS 18001, ISO 50001, CAC/RCP 1.

Additionally, we concluded that the core of multidimensional control system based on Balanced Scorecard might be identified in the control system of "NIS", since it measures various financial and nonfinancial performance, which is necessary for effective managers' decision making. Control by compensations is another control mechanism oriented towards motivating the employees and determined by gross and net salaries calculations, while information about salaries of managerial structure is not represented in annual business report. Regarding administrative control which is carried out through management structure, organizational structure and numerous procedures, we indicate the following. Organizational and management structure is visible in the annual report for 2021, but it is not sufficient for assessing the adequacy of control system which should be done by depth analysis of organizational and management structure at all organizational levels. Finally, we emphasize that the company adopted the policy for struggling against corruption and ethics code.

According to the above, we can conclude that the special organizational unit dedicated to nonfinancial performance monitoring is not developed in the company. Such a function would contribute to the sustainable management control, i.e. viability of organization. In addition, in diagnosing the control function in the company we cannot conclude that interactive system control is developed in the company. It further implies that the company should improve communication system with all relevant stakeholders. Actually, of relevant importance for sustainable management control is to include adequate information from the environment and external stakeholders, but also from internal stakeholders. Their attitudes and values should be taken more into account in decision-making process. In conceptual framework of VSM, it implies their involvement in the subsystem S_5 which should represent the interests of all stakeholders. At the same time, increasing complexity of the environment, reflected in increased price of energy and disturbances in supply chains caused by pandemic and resulted in increasing inflation, particularly in undeveloped and emerging markets, requires timely and accurate information. It means that the company should involve boundary system control. We indicate that better linking control function with the segments S_4 and S_5 will contribute to decrease environmental variety and increase organizational variety, i.e. variety balancing and thus it will lead to sustainability and viability of the company. At the same time, we can observe from the Figure 1 the function for relations with state authorities and corporate communication and multifunctional service centre, as well as supply function conduct the activities within subsystem S_4 . However, intelligence function according to the VSM is not developed in the company. Therefore, company should develop such a function in order to effectively manage the increasing environmental and organizational complexity, i.e. in order to enable effective and sustainable management control. Also, better communication and coordination among operational elements are of relevant importance. It further means that the company should carefully develop appropriate information flows to cover specific problems in the functioning of the operational elements and to address threats and opportunities from the environment. To achieve cohesion, they should avoid direct orders and supervision and focus on monitoring the problems that operational elements are dealing with, how they are handled and the willingness of the operational elements to take risks. Thus, decentralization and delegation of responsibility, with continuous feedback mechanism and coordination are necessary to enable more efficient management of the internal complexity of the organisation.

CONCLUSION

The relevance of sustainable development is undoubtedly in contemporary circumstances characterized by increasing complexity, ambiguity and uncertainty. Sustainability issues have imposed new requirements for companies and other organizations. Thus, in this paper we indicate the importance of integrating sustainability issues in management control system and demonstrate how cybernetic tools can support this process.

Paper offers some theoretical-methodological and practical implications. In theoretical-methodological sense, paper's originality arises from consideration of management control system in conceptual framework of VSM as the main methodological tool of Organizational Cybernetics and contributes to expanding the body of knowledge related to cybernetic conceptualization of management control system. The findings gained from theoretical considerations and particularly from case study analysis can help managers in redesigning their management control systems. One can generally conclude that for the redesign of control system, of relevant importance is to respect the above cybernetic laws, such as The Law of Requisite Variety. VSM is a valuable methodological tool which can support the process of diagnosing and redesign the management control system.

Despite this, we emphasize some limitations. First of all, findings raised from case study cannot be generalized. Therefore, we should conduct multiple case study analysis within future research. Additionally, data were based on company's annual reports and other relevant documents of the company. In future research we can use survey in order to reveal employees' perceptions regarding management control and the results can be interpreted in conceptual framework of VSM.

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RECOMMENDATIONS - EWOM IN TOURISM DURING THE COVID-19 PANDEMIC

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Abstract: *Consumers often share their experiences and recommendations about tourist destinations, agency and hotel services, whose importance is emphasized primarily due to intangible characteristics. During the COVID-19 pandemic, tourism has been one of the sectors which suffered the biggest economic consequences. In line with that, businesses entities must explore the market due to particular importance. On the other hand, during the state of emergency, the Internet has expanded its already existing popularity to extreme limits. With the massive expansion of the use of digital systems, traditional WOM is giving increasing importance to the electronic system of consumer recommendations by word of mouth (eWOM). Therefore, the subject of this paper is eWOM in tourism, with special reference to the impact of the COVID-19 pandemic. The aim of this paper is to examine which profiles of tourist consumers most often use online recommendations in decision-making processes during the specific situation.*

Keywords: *eWOM; recommendations; tourism; COVID-19.*

JEL Classification: *Z33,M31*

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INTRODUCTION

Travel and tourism have been among the most popular subjects, because tourism products can hardly be evaluated prior to their consumption and thus the functionality of the entire industry depends on the intangible character of the distribution of tourism products and accurate and reliable information. In line with that, one of the most important information sources for travel planning is word of mouth - WOM (Kanten, Yesiltas, Turkeri and Adem Sop, 2013).

When word of mouth becomes digital, the large-scale nature of the Internet induces new ways of capturing, analyzing, interpreting, and managing online word of mouth (Litvin, Goldsmith and Pan, 2006). Implementation of technology in travel and tourism industry has triggered the emergence of Travel 2.0 concept. The main point of this concept refers to travel and tourism industry that new consumers are currently facing. Modern consumers are more information-literate because of the easy access to real experiences of other consumers. Tourism business is facing a new change, from business to consumer, to peer-to-peer business and communications form. Real evidence about these matters can be seen from the emergence of a traveler community, either offline-based or online-based in many social media and online platforms (Milano, Baggio and Piatelli, 2011).

The present COVID-19 pandemic has intensified the ongoing debates about what to communicate and how to design marketing messages to regain trust towards destinations in times of crisis (Aktan, Zaman, Farias, Hassan Raza and Ogadimma, 2022). Tourism is one of the sectors most affected by the COVID-19 pandemic and its consequences. It has brought about extraordinary changes and transformations in the planning and management of tourist destinations. Most destination organizations have changed their traditional business models to keep pace with the evolution of new technologies, emerging innovative advertising strategies, changing consumer markets, and increasing global competition (Formica and Kothari, 2008).

Therefore, the subject of the paper is eWOM in tourism, with special reference to the impact of the COVID-19 pandemic. The aim of this paper is to examine which profiles of tourist consumers most often use online recommendations in decision-making processes during the specific situation.

LITERATURE REVIEW

Travel and tourism are among the most promising sectors in the world, and information is extremely important to this industry. Nowadays, the way travelers utilize information throughout their travel decision-making process has changed (Dwityas and Briandana, 2017). Due to the fact that tourist services cannot be evaluated before the purchase, word of mouth has been recognized as an influential factor and a significant resource of information transmission in the travel decision-making process (Grubor, Lekovic and Tomic, 2019). Because a fundamental principle of consumer behavior is that consumers have the ability to exert powerful influences upon each other, it is only natural that marketers seek to manage interpersonal influence. With the spread of electronic technologies, it is not surprising that virtual interactions among consumers have proliferated (Litvin et al. 2006).

The Internet has changed the way of distributing travel related information to travelers who search the information before embarking upon a trip (Ghosh, 2019). Unlike traditional WOM, eWOM enables consumers to collect information from a large number of geographically dispersed and anonymous consumers (Park, Lee, 2009). Authors Jalilvand, Esfahani and Samiei (2011) define eWOM as a positive or negative statement made by potential, current or

previous users – consumers about a product, service or company, which is accessible to a wide audience through the Internet. Tourism marketers must be aware that their consumers are going online and that they are exposed to a huge number of other consumers who are spreading positive or negative impressions and experiences about places they had visited. In this manner, marketers must find the way not only to encourage consumers – tourists to spread and publish positive word of mouth, but also to use strategies to prevent them from spreading negative word of mouth (Grubor, et al 2019).

Tourists seeking knowledge can get virtual experiences of trips and trends for their destinations from travelling websites. It helps them to prepare their trips with confidence using subjective data that is unfiltered and free of marketing bias (Vrana and Zafiroopoulos, 2010). According to authors Dwityas and Briandana (2017), consumer's decision-making on tourism products are divided into three phases: before, during and after the travel. It can be explained as follows:

1. Pre-Trip Phase, i.e. the phase that someone faces before he/she does travelling. It consists of: (1) The introduction of demands/wants related to travelling, (2) The gathering of information and evaluation on the basis of product image and tourism activities as a whole, such as tourism destination, activities that can be carried out in the location, the best time to do traveling and how to reach the intended tourism destination, and (3) The travel decision-making, which includes the purchase of some products that should be undertaken before the travel, such as airline tickets, booking of hotel rooms.

2. During Trip Phase, i.e. the phase when the travelers undergo tourism experiences, which includes the consumption of products from the scope of tourism (accommodation, transportation, attraction, food, etc.) It also includes searching additional information related to tourism products when they are in one area.

3. Post-Trip Phase, i.e. the phase when a series of travel activities have been accomplished. In short, it can be considered as the phase when the travelers have returned home from their trip. In this phase their experiences are evaluated, and they can rate their satisfaction with products, activities and/or sources of info. The evaluation is going to influence the next tourism behavior. Depending on the satisfaction rate, the tourist consumers will save the memory of their experiences to do other travel activities in future.

During the COVID-19 pandemic, many community activities were restricted, including visiting tourist destinations and traveling abroad. This policy has had an impact on the management of tourist areas experiencing enormous losses (Yan Syah, Rianto Rahadi and Farid, 2021). The COVID-19 pandemic has ruined all the previous narratives on development. Lockdowns which were largest in human history were imposed by governments around the world to control the spread of the pandemic. The consequences of this pandemic could change many aspects of human life and business including tourism management as almost half of the global population adopted restrictions on movement at an unprecedented scale (Rahman, Gazi, Bhuiyan and Rahaman, 2021).

WOM communication becomes interesting in promoting a product and/or service because consumer behavior towards traditional advertising and communications is less responsive. During the COVID-19 pandemic, eWOM has been expanding its already existing popularity since it is a solution in conveying something without direct interaction with a consumer (Yan Syah et al. 2021).

METHODOLOGY

Social media usage is one of the most popular online activities. In 2021, over 4.26 billion people were using social media worldwide, a number projected to increase to almost six billion in 2027 (Statista, 2022). In line with that and pandemic distancing, a questionnaire was sent to respondents through social media sites "LinkedIn" and "Facebook". Research was conducted in the period from July to September 2022 on a convenience sample including 268 respondents of different age, education, and gender levels from the area of the Republic of Serbia.

The first section of the questionnaire consisted of questions related to socio-demographic characteristics of respondents and the second section consisted of Likert scale related to recommendations. Likert scale is applied as one of the most fundamental and frequently used psychometric tools in educational and social sciences research. The original Likert scale is a set of statements (items) offered for a real or hypothetical situation under study. Participants are asked to show their level of agreement (from strong disagreement to strong agreement) with the given statement (items) on a metric scale (Joshi, Kale, Chandel and Pal, 2015).

The questionnaire contained a modified scale originally created by Nilashi et al 2022. The first section of the research about eWOM during COVID-19 is presented in this paper. The aim is to examine which profiles of tourist consumers most often use online recommendations in decision-making processes during the specific situation. For the purpose of writing this paper, the convenience sample was narrowed down to respondents who had read online recommendations of the other tourists during the COVID-19 pandemic, i.e. from 2020 to 2022.

Table 1: Number of consumers that had read online recommendations during the COVID-19

"I had read online recommendations of the other tourists during the pandemic."					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	"Yes"	132	49.3	49.3	49.3
	"No"	136	50.7	50.7	100.0
	Total:	268	100.0	100.0	

Source: Author's research

In order to carry out the research, the following hypotheses were set:

- H₁: "Usage of online tourists' recommendations during the COVID-19 differs according to respondents' gender."
- H₂: "Usage of online tourists' recommendations during the COVID-19 differs according to respondents' age."
- H₃: "Usage of online tourists' recommendations during the COVID-19 differs according to respondents' education level."
- H₄: "Usage of online tourists' recommendations during the COVID-19 differs according to respondents' employment status."
- All of the established hypotheses represent socio-demographic characteristics of respondents.

RESULTS AND DISCUSION

Testing hypothesis H₁: "Usage of online tourists' recommendations during the COVID-19 differs according to respondents' gender." is presented in Table 2.

In decision-making processes during the specific situation, 62.1 percent of female and 37.9 percent of male respondents used online recommendations. Based on the results, hypothesis H_1 can be confirmed, i.e. usage of online tourists' recommendations during the COVID-19 differs according to respondents' gender since female respondents were the most predominant group.

Table 2: Testing independent variables: online recommendations and respondents' gender

Gender:				
		Percent	Valid Percent	Cumulative Percent
Valid	"Female"	62.1	62.1	62.1
	"Male"	37.9	37.9	100.0
	Total:	100.0	100.0	

Source: Author's research

Testing hypothesis H_2 : "Usage of online tourists' recommendations during the COVID-19 differs according to respondents' age." is presented in Table 3.

Table 3: Testing independent variables: online recommendations and respondents' age

Age:				
		Percent	Valid Percent	Cumulative Percent
Valid	"18 - 20"	4.5	4.5	4.5
	"21 - 30"	59.1	59.1	63.6
	"31 - 40"	18.9	18.9	82.6
	"41- 50"	14.4	14.4	97.0
	"50 +"	3.1	3.1	100.0
	Total:	100.0	100.0	

Source: Author's research

In decision-making processes during the specific situation, 4.5 percent of 18 - 20 year old, 59.1 percent of 21 - 30 year old, 18.9 percent of 31 - 40 year old, 14.4 of 41 - 50 year old and 3.1 percent of 50+ year old respondents used online recommendations. Based on the results, hypothesis H_2 can be confirmed, i.e. usage of online tourists' recommendations during the COVID-19 differs according to respondents' age since respondents from 21 - 30 age category were a predominant group.

Testing hypothesis H_3 : "Usage of online tourists' recommendations during the COVID-19 differs according to respondents' education level." is presented in Table 4.

Table 4: Testing independent variables: online recommendations and respondents' education level

Education level:				
		Percent	Valid Percent	Cumulative Percent
Valid	"High school diploma"	23.5	23.5	23.5
	"Bachelor's degree"	43.2	43.2	66.7
	"Master's degree"	22.0	22.0	88.6
	"Ph.D."	11.4	11.4	100.0
	Total	100.0	100.0	

Source: Author's research

In decision-making processes during the specific situation, 23.5 percent of respondents with high school diploma, 43.2 percent of respondents with bachelor's degree, 22.0 percent of respondents with master's degree and 11.4 percent of respondents with Ph.D. used online recommendations. Based on the results, hypothesis H₃ can be confirmed, i.e. usage of online tourists' recommendations during the COVID-19 differs according to respondents' education level since the respondents with bachelor's degree are the predominant group.

Testing hypothesis H₄: "Usage of online tourist's recommendations during the COVID-19 differs according to respondents' employment status." is presented in Table 5.

Table 5: Testing independent variables: online recommendations and respondents' employment status

Employment status:				
		Percent	Valid Percent	Cumulative Percent
Valid	"Student"	22.0	22.0	22.0
	"Employed"	65.2	65.2	87.1
	"Unemployed"	5.3	5.3	92.4
	"Retired"	.8	.8	93.2
	"Employer"	6.8	6.8	100.0
	Total	100.0	100.0	

Source: Author's research

In decision-making processes during the specific situation, 22.0 percent of students, 65.2 percent of employed, 5.3 percent of unemployed, 0.8 percent of retired and 6.8 percent of employer respondents had been using online recommendations. Based on the results, hypothesis H₄ can be confirmed, i.e. usage of online tourists' recommendations during the COVID-19 differs according to respondents' employment status since employed respondents were the predominant group.

According to the convenience sample, profile of tourist consumers that had been most often using online recommendations in decision-making processes during the specific situation are employed female tourists from 21 - 30 age group with bachelor's degree. In the second section of questions related to socio-demographic characteristics of respondents, this profile of tourist consumers is described as profile of unmarried females whose travel with their partners several times in a year. The profile had started using online recommendations 3 - 6 years ago.

Similar results have been presented by author Chiappa (2011) in analyses that show significant gender differences in terms of attitude in posting online reviews, videos and photos of travel destinations. According to the author, female respondents (67.3%) post online recommendations more often than male respondents (63.2%). Also, the majority of respondents can be considered as frequent travelers, since 56.3% of them travel four or more times per year. Most respondents reported being single (74.1%), while the number of people who reported being married was 25.9%. The largest age group was composed of travelers between 25 and 34 years of age. Only 16.5% were between 18 and 24 years of age, 19.3% were between 35 and 44 years of age, 6.4% were between 45 and 54 years of age, 1.7% were between 55 and 64 years of age, while 0.2% were 65 years of age or over. Most respondents have a university or postgraduate degree (57.3%) whereas 35% have a secondary school diploma.

Travel marketers should specifically pay attention to these profiles of tourist consumers since it can be concluded that they are valuable segments because of the volume of reading and posting online reviews.

CONCLUSION

Travel and tourism are among the largest industries all over the world. However, despite this strength, the hospitality and tourism industry is currently highly sensitive to significant shocks (e.g. COVID-19 pandemic). It is crucial to investigate how the tourism industry will recover from the effects of the COVID-19 pandemic. On the other hand, COVID-19 is a global phenomenon, so it may soon appear as an established external factor in curricula on strategic management for business performance and emerging tourism marketing (Rahman et al. 2021).

In order to achieve tourism recovery, word of mouth (WOM) has been presented as a powerful weapon. Although marketing managers in tourism strive to create a positive and attractive image of a destination, there are factors which are outside their control. One of those factors is manifested in the fact that consumers – users of tourist services interact with one another (Grubor et al. 2019). Prior to the Internet era, consumers shared each other's product-related experiences through traditional WOM. However, conventional WOM communication is only effective within limited social contact boundaries. Today, the Internet makes it possible for consumers to share experiences and opinions about a product via eWOM activity (Jalivand et al. 2011). There are several variables that measure the characteristics of eWOM messages such as its valence, quality, understandability, reliability, visual cues, volume etc. In addition, the source and sender characteristics also play important determinants affecting eWOM adoption (Harshavardhini, Nair, Dileep Kumar, Feston and Govindarajo, 2022).

Thus, it is equally important to analyze socio-demographic characteristics of tourist consumers. In this paper, 132 of total 268 respondents used eWOM during the COVID-19 pandemic, i.e. from 2020 to 2022. The most dominating profile was made up of the following socio-demographic characteristics:

1. Female consumers;
2. 21 - 30 age group;
3. Employed;
4. Bachelor's degree;
5. Unmarried;
6. Travelling with partners;
7. Travelling several times in a year.

The biggest limitation of this research is fairly simple statistics. Using the survey, it only describes which consumer profile most often uses the online recommendations,. For the future investigation, it could be expanded with analyzing the impact of these socio-demographic characteristics on travelers' decisions.

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INNOVATIONS AND NETWORKING: AN ELEVEN COUNTRY STUDY ON THE RELATIONSHIP BETWEEN NETWORKING AND INNOVATIVENESS OF SOCIAL ENTERPRISES

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Abstract: *The purpose of this paper is to explore the relationship between networking and the innovativeness of social enterprises based on the data drawn from an online survey conducted in eleven European countries. In this research, we examine whether networking affects the innovativeness of social enterprises, which forms of cooperation are most common in social enterprises, do different networking forms affects the innovativeness of social enterprises, does organizational age change the obtained results and why the impact of networking on innovativeness is different in the “old” and the “new” generation of social enterprises. The results showed that more than 90% of the surveyed organisations cooperate with other organizations and that networking does not affect the innovativeness of social enterprises. A more detailed analysis reveals that different networking forms have a different impact on innovativeness i.e. cooperation with other social enterprises affects the innovativeness of enterprises in the mode that innovative enterprises cooperate to a statistically greater extent with other social enterprises. Another interesting result showed that organizational age changes the obtained results about the influence of networking on innovativeness, that for we conducted a more detailed analysis of the impact of factors on innovation before and after 2000.*

Keywords: *innovation, networking, social enterprises*

JEL Classification: *O30, O35*

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INTRODUCTION

Travel and tourism have been among the most popular subjects, because tourism products can hardly be evaluated prior to their consumption and thus the functionality of the entire industry depends on the intangible character of the distribution of tourism products and accurate and reliable information. In line with that, one of the most important information sources for travel planning is word of mouth - WOM (Kanten, Yesiltas, Turkeri and Adem Sop, 2013).

When word of mouth becomes digital, the large-scale nature of the Internet induces new ways of capturing, analyzing, interpreting, and managing online word of mouth (Litvin, Goldsmith and Pan, 2006). Implementation of technology in travel and tourism industry has triggered the emergence of Travel 2.0 concept. The main point of this concept refers to travel and tourism industry that new consumers are currently facing. Modern consumers are more information-literate because of the easy access to real experiences of other consumers. Tourism business is facing a new change, from business to consumer, to peer-to-peer business and communications form. Real evidence about these matters can be seen from the emergence of a traveler community, either offline-based or online-based in many social media and online platforms (Milano, Baggio and Piatelli, 2011).

The present COVID-19 pandemic has intensified the ongoing debates about what to communicate and how to design marketing messages to regain trust towards destinations in times of crisis (Aktan, Zaman, Farias, Hassan Raza and Ogadimma, 2022). Tourism is one of the sectors most affected by the COVID-19 pandemic and its consequences. It has brought about extraordinary changes and transformations in the planning and management of tourist destinations. Most destination organizations have changed their traditional business models to keep pace with the evolution of new technologies, emerging innovative advertising strategies, changing consumer markets, and increasing global competition (Formica and Kothari, 2008).

Therefore, the subject of the paper is eWOM in tourism, with special reference to the impact of the COVID-19 pandemic. The aim of this paper is to examine which profiles of tourist consumers most often use online recommendations in decision-making processes during the specific situation.

LITERATURE REVIEW

Travel and tourism are among the most promising sectors in the world, and information is extremely important to this industry. Nowadays, the way travelers utilize information throughout their travel decision-making process has changed (Dwityas and Briandana, 2017). Due to the fact that tourist services cannot be evaluated before the purchase, word of mouth has been recognized as an influential factor and a significant resource of information transmission in the travel decision-making process (Grubor, Lekovic and Tomic, 2019). Because a fundamental principle of consumer behavior is that consumers have the ability to exert powerful influences upon each other, it is only natural that marketers seek to manage interpersonal influence. With the spread of electronic technologies, it is not surprising that virtual interactions among consumers have proliferated (Litvin et al. 2006).

The Internet has changed the way of distributing travel related information to travelers who search the information before embarking upon a trip (Ghosh, 2019). Unlike traditional WOM, eWOM enables consumers to collect information from a large number of geographically dispersed and anonymous consumers (Park, Lee, 2009). Authors Jalilvand, Esfahani and Samiei (2011) define eWOM as a positive or negative statement made by potential, current or

previous users – consumers about a product, service or company, which is accessible to a wide audience through the Internet. Tourism marketers must be aware that their consumers are going online and that they are exposed to a huge number of other consumers who are spreading positive or negative impressions and experiences about places they had visited. In this manner, marketers must find the way not only to encourage consumers – tourists to spread and publish positive word of mouth, but also to use strategies to prevent them from spreading negative word of mouth (Grubor, et al 2019).

Tourists seeking knowledge can get virtual experiences of trips and trends for their destinations from travelling websites. It helps them to prepare their trips with confidence using subjective data that is unfiltered and free of marketing bias (Vrana and Zafiroopoulos, 2010). According to authors Dwityas and Briandana (2017), consumer's decision-making on tourism products are divided into three phases: before, during and after the travel. It can be explained as follows:

1. Pre-Trip Phase, i.e. the phase that someone faces before he/she does travelling. It consists of: (1) The introduction of demands/wants related to travelling, (2) The gathering of information and evaluation on the basis of product image and tourism activities as a whole, such as tourism destination, activities that can be carried out in the location, the best time to do traveling and how to reach the intended tourism destination, and (3) The travel decision-making, which includes the purchase of some products that should be undertaken before the travel, such as airline tickets, booking of hotel rooms.

2. During Trip Phase, i.e. the phase when the travelers undergo tourism experiences, which includes the consumption of products from the scope of tourism (accommodation, transportation, attraction, food, etc.) It also includes searching additional information related to tourism products when they are in one area.

3. Post-Trip Phase, i.e. the phase when a series of travel activities have been accomplished. In short, it can be considered as the phase when the travelers have returned home from their trip. In this phase their experiences are evaluated, and they can rate their satisfaction with products, activities and/or sources of info. The evaluation is going to influence the next tourism behavior. Depending on the satisfaction rate, the tourist consumers will save the memory of their experiences to do other travel activities in future.

During the COVID-19 pandemic, many community activities were restricted, including visiting tourist destinations and traveling abroad. This policy has had an impact on the management of tourist areas experiencing enormous losses (Yan Syah, Rianto Rahadi and Farid, 2021). The COVID-19 pandemic has ruined all the previous narratives on development. Lockdowns which were largest in human history were imposed by governments around the world to control the spread of the pandemic. The consequences of this pandemic could change many aspects of human life and business including tourism management as almost half of the global population adopted restrictions on movement at an unprecedented scale (Rahman, Gazi, Bhuiyan and Rahaman, 2021).

WOM communication becomes interesting in promoting a product and/or service because consumer behavior towards traditional advertising and communications is less responsive. During the COVID-19 pandemic, eWOM has been expanding its already existing popularity since it is a solution in conveying something without direct interaction with a consumer (Yan Syah et al. 2021).

METHODOLOGY

Social media usage is one of the most popular online activities. In 2021, over 4.26 billion people were using social media worldwide, a number projected to increase to almost six billion in 2027 (Statista, 2022). In line with that and pandemic distancing, a questionnaire was sent to respondents through social media sites "LinkedIn" and "Facebook". Research was conducted in the period from July to September 2022 on a convenience sample including 268 respondents of different age, education, and gender levels from the area of the Republic of Serbia.

The first section of the questionnaire consisted of questions related to socio-demographic characteristics of respondents and the second section consisted of Likert scale related to recommendations. Likert scale is applied as one of the most fundamental and frequently used psychometric tools in educational and social sciences research. The original Likert scale is a set of statements (items) offered for a real or hypothetical situation under study. Participants are asked to show their level of agreement (from strong disagreement to strong agreement) with the given statement (items) on a metric scale (Joshi, Kale, Chandel and Pal, 2015).

The questionnaire contained a modified scale originally created by Nilashi et al 2022. The first section of the research about eWOM during COVID-19 is presented in this paper. The aim is to examine which profiles of tourist consumers most often use online recommendations in decision-making processes during the specific situation. For the purpose of writing this paper, the convenience sample was narrowed down to respondents who had read online recommendations of the other tourists during the COVID-19 pandemic, i.e. from 2020 to 2022.

Table 1: Number of consumers that had read online recommendations during the COVID-19

"I had read online recommendations of the other tourists during the pandemic."					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	"Yes"	132	49.3	49.3	49.3
	"No"	136	50.7	50.7	100.0
	Total:	268	100.0	100.0	

Source: Author's research

In order to carry out the research, the following hypotheses were set:

- H₁: "Usage of online tourists' recommendations during the COVID-19 differs according to respondents' gender."
- H₂: "Usage of online tourists' recommendations during the COVID-19 differs according to respondents' age."
- H₃: "Usage of online tourists' recommendations during the COVID-19 differs according to respondents' education level."
- H₄: "Usage of online tourists' recommendations during the COVID-19 differs according to respondents' employment status."
- All of the established hypotheses represent socio-demographic characteristics of respondents.

RESULTS AND DISCUSION

Testing hypothesis H₁: "Usage of online tourists' recommendations during the COVID-19 differs according to respondents' gender." is presented in Table 2.

In decision-making processes during the specific situation, 62.1 percent of female and 37.9 percent of male respondents used online recommendations. Based on the results, hypothesis H₁ can be confirmed, i.e. usage of online tourists' recommendations during the COVID-19 differs according to respondents' gender since female respondents were the most predominant group.

Table 2: Testing independent variables: online recommendations and respondents' gender

Gender:				
		Percent	Valid Percent	Cumulative Percent
Valid	"Female"	62.1	62.1	62.1
	"Male"	37.9	37.9	100.0
	Total:	100.0	100.0	

Source: Author's research

Testing hypothesis H₂: "Usage of online tourists' recommendations during the COVID-19 differs according to respondents' age." is presented in Table 3.

Table 3: Testing independent variables: online recommendations and respondents' age

Age:				
		Percent	Valid Percent	Cumulative Percent
Valid	"18 - 20"	4.5	4.5	4.5
	"21 - 30"	59.1	59.1	63.6
	"31 - 40"	18.9	18.9	82.6
	"41 - 50"	14.4	14.4	97.0
	"50 +"	3.1	3.1	100.0
	Total:	100.0	100.0	

Source: Author's research

In decision-making processes during the specific situation, 4.5 percent of 18 - 20 year old, 59.1 percent of 21 - 30 year old, 18.9 percent of 31 - 40 year old, 14.4 of 41 - 50 year old and 3.1 percent of 50+ year old respondents used online recommendations. Based on the results, hypothesis H₂ can be confirmed, i.e. usage of online tourists' recommendations during the COVID-19 differs according to respondents' age since respondents from 21 - 30 age category were a predominant group.

Testing hypothesis H₃: "Usage of online tourists' recommendations during the COVID-19 differs according to respondents' education level." is presented in Table 4.

Table 4: Testing independent variables: online recommendations and respondents' education level

Education level:				
		Percent	Valid Percent	Cumulative Percent
Valid	"High school diploma"	23.5	23.5	23.5
	"Bachelor's degree"	43.2	43.2	66.7
	"Master's degree"	22.0	22.0	88.6
	"Ph.D."	11.4	11.4	100.0
	Total	100.0	100.0	

Source: Author's research

In decision-making processes during the specific situation, 23.5 percent of respondents with high school diploma, 43.2 percent of respondents with bachelor's degree, 22.0 percent of respondents with master's degree and 11.4 percent of respondents with Ph.D. used online

recommendations. Based on the results, hypothesis H₃ can be confirmed, i.e. usage of online tourists' recommendations during the COVID-19 differs according to respondents' education level since the respondents with bachelor's degree are the predominant group.

Testing hypothesis H₄: "Usage of online tourist's recommendations during the COVID-19 differs according to respondents' employment status." is presented in Table 5.

Table 5: Testing independent variables: online recommendations and respondents' employment status

Employment status:				
		Percent	Valid Percent	Cumulative Percent
Valid	"Student"	22.0	22.0	22.0
	"Employed"	65.2	65.2	87.1
	"Unemployed"	5.3	5.3	92.4
	"Retired"	.8	.8	93.2
	"Employer"	6.8	6.8	100.0
	Total	100.0	100.0	

Source: Author's research

In decision-making processes during the specific situation, 22.0 percent of students, 65.2 percent of employed, 5.3 percent of unemployed, 0.8 percent of retired and 6.8 percent of employer respondents had been using online recommendations. Based on the results, hypothesis H₄ can be confirmed, i.e. usage of online tourists' recommendations during the COVID-19 differs according to respondents' employment status since employed respondents were the predominant group.

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DETERMINANTS OF STUDENT SATISFACTION WITH ONLINE LEARNING

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Abstract: *Research on the topic of determining success of online learning is on the rise. Defining the key success factors, i.e. determinants of online learning success, is extremely important, especially now that all higher education institutions have been forced to try their hand at teaching with the help of technology. Online learning systems are an open system of human entities – students and instructors, and non-human entities – learning management systems and information systems. The success of online learning is not easily explainable especially taking into consideration merely characteristics of isolated sub-entities. Thus a research of students' satisfaction with online learning was conducted. Students' satisfaction was modelled as dependent variable, while set of independent model variables included: student motivation, student self-regulation, dialogue (instructor-student, student-student), and course design. Research hypotheses were tested by analyzing data collected from the University of Novi Sad students. In order to collect data on the attitudes of users (students) of online learning, a structured questionnaire was employed. Respondents expressed their views (perception) about statements and valued them on 5 point Likert scale. The instrument was applied to a sample of 360 responses using PLS structural equation modelling for two reasons. The first is that PLS is suitable for application in the early stages of development of theory and testing, and the second and more important is that it is particularly suitable for researching the attitudes of respondents. The results of the presented research are very important from the aspect of contribution to the literature dedicated to identifying the key success factors of online learning. Additional contribution refers to the research conducted in Serbia, i.e. at the University of Novi Sad.*

Keywords: *online learning, success factors, student satisfaction, PLS modelling*

JEL classification: *M31, O31, P46*

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INTRODUCTION

Organizing classes online at higher education institutions became the focus of research in a large number of scientific disciplines with the outbreak of the pandemic (Kauffman, H., 2015; Gopal et al, 2021; Mo et al, 2021). Although online platforms for collaboration and knowledge exchange were in use before (Piccoli et al, 2001), with the covid-19 pandemic, all higher education institutions were forced to adapt to the new situation. Most of the teaching staff, technical support, as well as the students themselves in most cases had no previous experience, but during the two years of the pandemic, they were instructed to use technology as a mediator and assistant in sharing knowledge.

Distance learning could be defined as an interaction of human and non-human elements that engage in it through platforms in order to acquire knowledge and/or skills (Piaget, J., 1977; Eom and Ashill, 2016; Loderer et al, 2020; Wang et al, 2021). It is necessary to monitor the quality of distance learning, and the two most often emphasized learning goals listed in research papers are: distance learning outcomes (Kauffman, H., 2015; Kwok, D. 2015), and user satisfaction (Eom et al. 2006).

This paper presents the results of a survey on satisfaction with distance learning of students at the Faculty of Technical Sciences and the Faculty of Economics, University of Novi Sad, in which the same instrument was used as in the survey conducted in the United States (Eom and Ashill, 2016) based on previous research (Alavi and Leidner, 2001; Pintrich et al, 1993). Respondents expressed their views (perception) about the independent variables of the model, which included: student motivation, student self-regulation, dialogue (instructor-student; student-student) and course design, as well as dependent variable - user satisfaction. Research hypotheses were tested by analyzing data collected from a sample of 360 students from the University of Novi Sad.

Research hypotheses could be illustrated as in Figure 1.

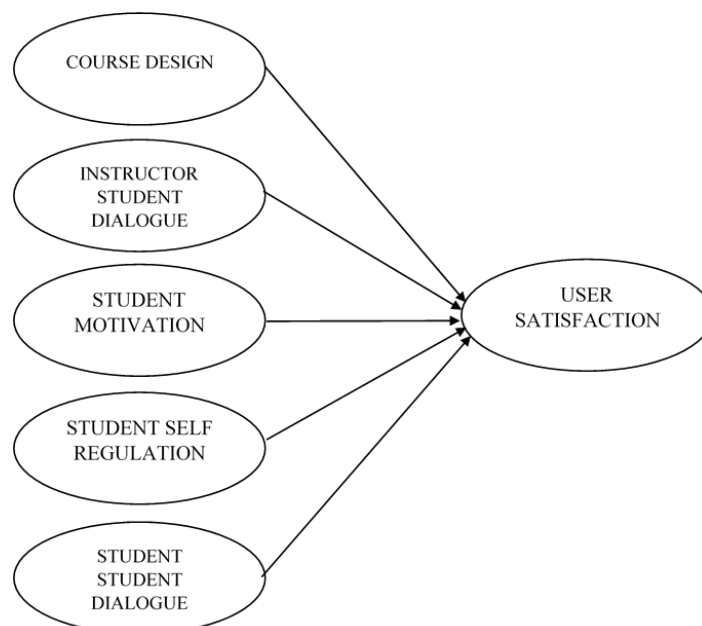


Figure 1: The research model

Main objective of the paper is determining student attitudes towards online learning and assessment of statistically significant relations with dependent variable - user satisfaction. Thus, research hypotheses were set as:

H1: Course design is positively associated with User Satisfaction,

H2: Instructor-Student Dialogue is positively associated with User Satisfaction,

H3: Student Motivation is positively associated with User Satisfaction,

H4: Student Self-Regulation is positively associated with User Satisfaction and

H5: Student-Student Dialogue is positively associated with User Satisfaction.

The research and data analysis led to acceptance of the hypotheses: H1, H3, H4 and H5, and rejection of the hypothesis H2.

FACTORS THAT CONTRIBUTE TO THE SUCCESS OF DISTANCE LEARNING

By changing the learning environment from face-to-face to distance learning (Panigrahi et al. 2021), students have a great deal of responsibility and must organize and motivate themselves better (Stevens et al. 2021), because they are moving from the role of passive to active learners. Self-motivation is a psychological construct and can be defined as the generation of energy that directs behavior towards a specific goal (Zimmerman, 2008). A detailed study of student characteristics that have a significant effect on satisfaction and learning outcomes (Bitzer and Janson, 2014) identified 31 attributes, such as: previous experience with e-learning, experience with using computers, self-efficacy, learning style, motivation (Schoor and Bannert, 2011), metacognition (Prins et al, 2006), and learning engagement. In this paper, the focus is on: motivation, self-regulated learning including metacognition, and learning engagement. Self-motivation could be defined as intrinsic, a psychological characteristic that causes an individual to carry out activities that will lead to personal satisfaction (Vrieling-Teunter et al, 2021). On the other hand, extrinsic motivation represents a psychological characteristic due to which an individual will undertake activities that will enable him to achieve a separable outcome such as a reward, or recognition. These two types of motivation are also two measuring instruments that are suitable for explaining self-motivation.

The basic premise of the constructivist school of learning is that learning is best done when things are discovered in one's own time and at one's own pace. Following that assumption, it is clear that students who are self-regulated and independent will achieve better success in an online learning environment. Students who are self-regulated can be said to be "metacognitively, motivationally, and behaviorally active participants in their own learning process" (Zimmerman 2008). This type of student takes the initiative for the beginning and pace of their studies, coordinates their involvement and does not wait for lecturers, parents, or some other agents to initiate and guide them.

Unlike face-to-face classes, which rely on lectures as the basic learning method, collaboration assumes that knowledge is constructed socially via shared understanding groups through different knowledge discovery models such as: social collaborative learning, interactive, and discovery learning (Saghafian and O'Neill, 2018). The term dialogue is used to describe substantive, constructive, and meaningful interaction valued by each group participant. Dialogue promotes learning through active participation and enables deep cognitive engagement with the goal of developing higher level knowledge.

Course Design is part of the instructor's formal role that represents the rigidity or flexibility of educational goals, teaching strategies, and assessment methods (Kim et al. 2021). It also describes the range in which the program can cover and respond to all requirements of the

participants. The basic categories that describe and can improve course design are: course overview and introduction, learning objectives, assessment and measurement, and instructional materials.

RESEARCH METHODOLOGY

INSTRUMENT

For this research, we used a Survey Instrument that was carefully developed and applied (Eom and Ashill, 2016). The instrument is based on the commonly administered IDEA (Individual Development and Educational Assessment) student rating system from Kansas State University, and the Motivated Strategies for Learning Questionnaire (MSLQ) authored by Pintrich et al. in 1993. Instrument itself was tested for suitability in Serbia (Petrov et al., 2022) and proved adequate.

The instrument itself is made up of 7 parts. The first includes general information about the respondents, such as: age, gender, faculty, types of study, level of study and experience in distance learning. The next block of questions is devoted to the constructs: Student Motivation; Student-Student Dialogue; Instructor-Student Dialogue; Course Design; Self-Regulation, and User Satisfaction. Respondents expressed their views (perception) about statements and valued them on 5 point Likert scale.

SAMPLE DEMOGRAPHICS

During the data collection, multiple available methods of communication with students in the regime of online teaching were used. Most students were contacted through previously formed teams on the MS Teams learning platform, but also via a database of student contacts on the Moodle platform. In total, over 2,500 students of the University of Novi Sad who were enrolled at the Faculty of Technical Sciences or the Faculty of Economics in Subotica were contacted.

During the one-month student survey, 360 valid and complete answers were collected. Response rate is about 14%, which is acceptable for this type of survey. Table 1 portrays demographic profile of the students.

Of the total number of respondents, 306 (85%) were between 18 and 22 years of age, 32 (8.9%) were between 23 and 26 years of age, 16 (4.4%) respondents were between 27 and 34 years of age, and 6 of them (1.7%) were between 35 and 44 years of age. When it comes to the gender of the respondents, 131 (36.4%) of them were male, and 229 (63.6%) were female.

Table 1: Demographics of the sample

	N of participants	% of participants
Gender		
Male	131	36.4
Female	229	63.6
Age		
18-22	306	85.0
23-26	32	8.9
27-34	16	4.4
35-44	6	1.7
Faculty		
Faculty of Technical Sciences	213	59.2

	N of participants	% of participants
Faculty of Economics	147	40.8
Type of education		
Vocational	35	9.7
Academic	325	90.3
Academic programme		
Bachelor	330	91.7
Master	30	8.3
Experience in attending online classes		
None	4	1.1
Insufficient	75	20.8
Sufficient	281	78.1
Total Sample Size (n) = 360		

In relation to the academic programme, the predominant number of respondents, 330 of them (91.7%) were from undergraduate/bachelor programs, while 30 of them (8.3%) were from master's programs.

Regarding the distribution of respondents from the aspect of the faculty where they studied, 213 of them (59.2%) were from the Faculty of Technical Sciences, while 147 (40.8%) were students from the Faculty of Economics. Additionally, 35 of them (9.7%) were enrolled in vocational studies, while 325 (90.3%) were enrolled in academic studies.

The last demographic characteristic concerns the experience in attending online classes. 4 (1.1%) of the respondents said that they had no experience in attending online classes, 75 (20.89%) had insufficient, and 281 (78.1%) respondents said that they had enough experience in attending online classes.

ANALYSIS AND RESULTS

All theoretical concepts used in this research have been taken from previous studies published in the scientific literature and they provide a theoretical framework for this research.

The instrument was applied to a sample of 360 respondents using the structural equation model-based PLS methodology for two reasons. The first is that PLS is suitable for application in the early stages of theory development and testing, and the second and more significant reason is that it is particularly suitable for researching respondents' attitudes.

The first step of data processing included model estimation and reliability checking. The composite reliability of the group of indicators that measure the construct is based on the Composite Reliability (CR) and Average Variance Extracted (AVE) indices.

Internal consistency was confirmed in all constructs measured by both indicators. If we take into account the Composite Reliability indicator, which represents the internal consistency of the test, i.e. the degree to which all test items covary with each other, with a limit of .7 as acceptable in Table 2, it is noticeable that for each construct the value of this indicator is in the range of 0.8 to 0.961. Application of this indicator is more frequent for Confirmatory Factor Analysis (CFA), unlike Cronbach's Alpha indicator, which is more suitable for Exploratory Factor Analysis (EFA). Average Variance Extracted is in the interval from 0.639 to 0.795, which is considered acceptable, i.e., more variance is covered by the construct than by measurement error. During the analysis, the indicator of multicollinearity embodied in the variance inflation factor (VIF) was also taken into account. As the VIF indicator values are

below 5, it can be considered that the observed independent variable is not highly correlated with another independent variable. The results are shown in Table 2.

Table 2: Reliability validation of the model

Construct	Factor Loading	α	CR	AVE	VIF
Course Design	0.822***	0.864	0.902	0.648	2.566
	0.858***				2.769
	0.817***				1.881
	0.773***				1.706
	0.752***				1.713
Instructor Student Dialogue	0.895***	0.901	0.931	0.770	0.891
	0.912***				0.91
	0.903***				0.901
	0.795***				0.807
Student Student Dialogue	0.764***	0.777	0.864	0.681	2.044
	0.864***				1.439
	0.844***				2.081
Student Self-Regulation	0.826***	0.813	0.876	0.639	1.778
	0.79***				1.792
	0.792***				1.767
	0.788***				1.485
Student Motivation	0.768***	0.767	0.860	0.673	1.846
	0.836***				1.338
	0.854***				2.023
User Satisfaction	0.787***	0.912	0.939	0.795	1.792
	0.919***				3.051
	0.925***				3.577
	0.927***				3.739

Notes: α (Crombach Alpha) CR (Composite Reliability); AVE (Average Variance Extracted); VIF (Variance Inflation Factor); *** significant at $p \leq 0.001$

Discriminant validity was tested with the use of the Fornell-Larcker criterion (Hair et al., 2012). In this regard, each construct's square root of AVE was higher than its correlation with another construct (Table 3), confirming the establishment of discriminant validity.

Table 3: Discriminant validity Heterotrait Monotrait Ratio HTMT

	Course Design	Instructor Student Dialogue	Student Motivation	Student Self Regulation	Student Student Dialogue	User Satisfaction
Course Design						
Instructor Student Dialogue	0.747					
Student Motivation	0.662	0.536				
Student Self Regulation	0.752	0.517	0.892			
Student Student Dialogue	0.707	0.816	0.405	0.425		
User Satisfaction	0.764	0.656	0.463	0.413	0.772	

In determining the predictive power of the model, percentage of variance explained for both dependent variables was determined in the form of R^2 statistics. For dependent variable User

Satisfaction 58.9% of variance is explained. The high percentage of variance explained implies satisfactory and substantive value and predictive power of the model.

ASSESSING THE STRUCTURAL MODEL

The causal relationship of the hypothesis was tested examining the structural model using Smart PLS software. The statistical significance of the hypothesized relationships was examined by bootstrapping procedure. The t-test for the standardized path coefficients and calculated p values were verified based on a two-tailed test with significance levels of 0.01 and 0.05.

Table 4: Hypotheses confirmation for dependent variable User Satisfaction

Path	Path coefficient	Hypothesis
Course Design -> User Satisfaction	6.835***	supported
Instructor-Student Dialogue -> User Satisfaction	0.727	not supported
Student Motivation -> User Satisfaction	1.92*	supported
Student Self Regulation -> User Satisfaction	2.574**	supported
Student-Student Dialogue -> User Satisfaction	7.63***	supported

Note: *** significant at $p \leq 0.001$; ** significant at $p \leq 0.01$; * significant at $p \leq 0.05$

Our results suggest the presence of a significant positive relationship between chosen constructs and dependent variable User Satisfaction.

To test our hypothesis we utilized partial least square-based structural equation modelling using SmartPLS software. A hierarchical latent variable model using reflective-formative type was used, as suggested by Becker et al. (2012). Based on the analysis, the evidence was obtained suggesting that User Satisfaction among students at University of Novi Sad could be explained by a second-order hierarchical model which is formatted by Course Design, Student Motivation, Student Self-Regulation and Student-Student Dialogue, as presented in Figure 2.

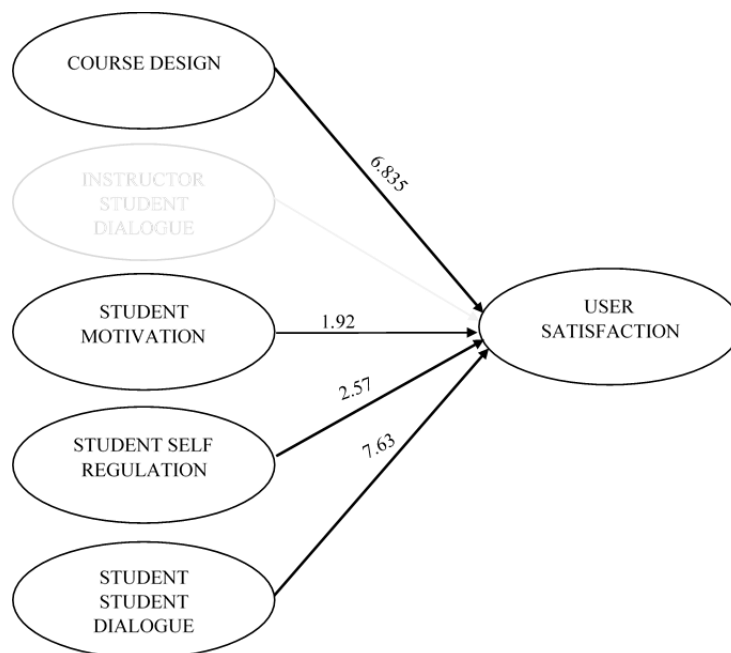


Figure 2: The research model – results

CONCLUSION

The results of the presented research are important from the aspect of contributing to the literature dedicated to identifying the key success factors of online learning. Additional contribution refers to the research conducted in Serbia, i.e. at the University of Novi Sad. The statistical analysis led to the revised measurement model, whose results provided support for the reliability, and convergent and discriminant validities of the measures used in the study. The high percentage of variance explained (58.9% variance) implies satisfactory and substantive value and predictive power of the model.

The results of this study have significant implications for lecturers. It is clear that the role of the lecturer, and course design are the cornerstones of the university online education. Improving the skills and knowledge of lecturers in the areas of: course structure preparation, discussions and interactions, technological solutions for collaboration during lectures or other types of student engagement, as well as motivation methods; would significantly affect the target variables - learning outcomes and user satisfaction.

One area for further research remains a more detailed analysis of the model itself and the possibility of finding the interdependence of constructs that affect perceived learning outcomes and user satisfaction.

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RELATIONSHIP BETWEEN EXTERNAL CORPORATE SOCIAL RESPONSIBILITY AND AFFECTIVE COMMITMENT IN SERVICE COMPANIES IN SERBIA

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***Abstract:** The increasing relevance of Corporate Social Responsibility (CSR) for contemporary organizations is widely demonstrated. As a concept consisting of two main dimensions – external and internal, CSR is the subject of numerous research. At the same time, commitment is one of the key prerequisites in building the long-term relationships between an organization and its employees. Accordingly, in this paper we focus on the relation between employees' perceptions of external social responsibility and their affective commitment in service sector in Serbia. Beside the fact that employees determine the success of the company, research on impact of social responsibility on employees is not sufficiently represented in literature. This research tried to fill that gap, by focusing on employees' perceptions about social responsibility and its impact on employees' affective commitment. The results showed positive correlation between perceptions about external social responsibility and affective commitment of employees' in service sector. These results could be used in the formulation of potential CSR strategies of companies which want to invest in socially responsible activities.*

***Keywords:** external social responsibility, affective commitment, employees*

***JEL Classification:** M14, M50, M54*

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INTRODUCTION

Despite the importance of the internal stakeholders (e.g. employees), research on micro-CSR have been conducted mainly on investors, costumers and potential candidates. In recent years there has been noticed growing interests in micro-level CSR research with focus on employees, which is important because enables deeper insight into the role of employees in achieving CSR goals and into the consequences of employees' perceptions of CSR, in sense of shaping the employees' attitudes and behavior. Although the most of researches treat CSR as a whole construct, there is a limited research about the effects of external and internal dimension of CSR (Chatzopoulou et al. 2022).

Employees are the most valuable asset of each company and they are key stakeholders when it comes to CSR, because they can shape public opinion about their employer's CSR (Kim et al. 2017). Their commitment to company's goals usually determines company's success, because they are often emphasized as the most important stakeholders. Understanding the relationship between CSR and employees is relevant, because employees are crucial to service delivery and customers' experience in service sector (Guzzo et al. 2022, Su and Swanson, 2019). Social responsibility could be a way for company to show its dedication to local community, especially to employees. Socially responsible activities directed towards employees and their well-being are part of internal social responsibility, while socially responsible activities directed towards external stakeholders are part of external social responsibility. Accordingly, the research studies are predominantly focused on the relations between internal CSR and employees' commitment. It is a research gap which we strive to overcome with this research.

Employees' perceptions about socially responsible activities of their company have significant role in the creation of positive attitudes towards the company. If employee perceive their company as socially responsible and if company's CSR goals and values align with the individual goals and values of employees, the relationship between employees and company could be significantly strengthen and improved. Service production demands direct contact between employee and customers in service companies, so employees' attitudes and behavior are crucial for business goals achievement. This research deals with the relation between perceptions about external social responsibility and affective commitment of employees in service sector in Serbia. The aim is to reveal the impact of external socially responsible activities on affective commitment in general, but in service sector in Serbia in particular.

Contribution of this research refers to filling the gap in current literature about the influence of social responsibility on employees' attitudes and behavior, especially in service sector and in the context of developing country. The results of this research could be used in the formulation of potential CSR strategies of companies which want to invest in socially responsible activities.

The paper was organized in the following way. Firstly, relevant literature review and hypothesis development was given. The next section was dedicated to the explanation of applied methodology and methods. The results were presented in the fourth section and after that there is a short discussion. The conclusions were given in the final section.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

SOCIAL RESPONSIBILITY IN SERVICE SECTOR

Research about the application of the concept of social responsibility in service sector around the world is increasing and significant research was done in the field of relation between social responsibility and business results in service sector. Research showed that service company's social responsibility activities lead to a positive impact on a firm's performance higher than a manufacturing company's (Jeon et al. 2020, p.3). The interest for this research is increasing because service sector has significant part in GDP creation, it creates large revenues and employs a lot of people. Service sector in Serbia contributed to GDP creation with 51,9% in 2020, 51,2% in 2019, 51% in 2018, and these results above 50% were achieved since 2011 (PKS, 2022). In general, prior research in the service industry showed that company's engagement in CSR is positively associated with customers' trust, customer satisfaction and loyalty, brand identification, financial performance, and positive work outcomes by service employees (Jeon et al. 2020, Su and Swanson, 2019, Raub and Blunschi, 2014).

Service and hospitality organizations should be engaged in CSR practices for at least two reasons (Guzzo et al. 2022). First, the mass consumption of various resources, like water, energy, food, and materials, urges these organizations to adopt environmentally friendly practices. Second, this industry is service- and labor intensive and that is why it is particularly meaningful to improve employee well-being. Service organizations which engage in CSR activities and make their employees aware of these activities can make significant benefits like positive job attitudes and behaviors and greater engagement in the organization and their job (Wang et al., 2020, Su and Swanson, 2019, Raub and Blunschi, 2014). When employees are aware of corporate engagement in CSR, they perceive that together with their organization, they can make a positive difference for other people and for the environment. And that can make them more committed to their organization.

EXTERNAL SOCIAL RESPONSIBILITY

Many scholars in their research made distinction between internal and external social responsibility (Brammer et al. 2007, Chatzopoulou et al. 2022, George et al. 2020, Story and Castanheira, 2019, Štrukelj et al, 2021, Damjanović, 2019, Zlatanović, 2015). External social responsibility refers to socially responsible activities which are directed towards external stakeholders (business partners and suppliers, customers, public authorities and NGOs representing local communities, environment), which have benefits from those activities. On the other hand, internal social responsibility refers to all activities directed towards internal stakeholders - employees, who benefit from these activities. External social responsibility encompasses corporate philanthropy and community contributions but also reflects the way in which the firm interacts with the physical environment and reflects a company's ethical stance towards consumers and other external stakeholders (Brammer et al. 2007, p.9).

Turker (2009) proposed a CSR model using four different groups of stakeholders which require different CSR approach. The first group of stakeholders were social and non-social stakeholders: local community, the natural environment, the future generations and the nongovernmental organizations which have common CSR goal to protect the environment. The second group were employees and CSR activities include all which are directly related with the physical and psychological working environment of employees (Turker, 2009, p.192). The third group were customers and CSR activities for these stakeholders include

efforts to provide disclosure of accurate information by firms, consumer rights, accurate and detail information related to products and high importance for superior customer service (Zaman and Nadeem, 2019). Finally, the fourth group was government and it describes CSR activities which are done in order for company to meet the legal requirements or pay its taxes, even though there are some contradictory views concerning this group, because CSR is often seen as activities which goes beyond the law (Turker, 2009). Employees are likely to form their opinions of external social responsibility on internal and external information sources including the media and their personal experience within the company (Brammer et al. 2007, p.9). So for the purpose of this research, the CSR concepts and measurement scale proposed by Turker was accepted, where three groups of CSR activities (the first focused towards social and non-social stakeholders, the third focused towards customers and the fourth focused towards authorities) formed external dimension of social responsibility while CSR activities focused on employees was considered as internal dimension of social responsibility. This research dealt with the impact of external social responsibility on internal stakeholders, on employees' affective commitment.

AFFECTIVE COMMITMENT

Organizational commitment is one of the most studied attitudes in managerial literature. Today, it is considered to be a central subject for human resources, organizational psychology, and organizational behavior research because of its various consequences for the company, such as the intention to leave, employee turnover, and performance at work (Bouraoui et al. 2020, p.3). Many authors gave different definitions of commitment. Definition of Meyer and Allen (1997) was accepted for this research. They formulated a three-component model of organizational commitment with affective, continuance and normative commitment (Meyer and Allen, 1997. p.11). Affective commitment explains how employee is emotionally attached to the organization, how he/she identifies with the organization and how he/she is involved in the organization (Meyer and Allen, 1997).

In this case, affective commitment explains why employee wants to stay in the organization. Continuance commitment, as the second component, shows that employee knows that if he/she leaves the organization it will cause some costs (Meyer and Allen, 1997) and that is why employee needs to stay in the organization. Finally, normative commitment explains that employee ought to stay in the organization because of the feelings of obligation towards the organization (Meyer and Allen, 1997). Findings of different researches demonstrated strong and positive correlation of affective commitment and employee-relevant outcomes (Youn et al. 2018, p.329, Zaman and Nadeem, 2019, p.708). It is the most powerful dimension of organizational commitment (Bouraoui et al. 2020, p.3) and the best predictor of performance compared to normative and continuance commitment (George et al. 2020, p. p.4). In service sector, affective commitment gives the most consistent results (Islam et al. 2018, p. 157).

HYPOTHESIS DEVELOPMENT

Many research dealt with the relation between internal social responsibility and its impact on different forms of employees' attitudes and behavior, but we have selected to focus on external social responsibility and its relation with affective commitment. That was the main reason why this research focused on external social responsibility. Dedication to local community improvement, building long-term relations with customers and doing business in accordance with legal obligations are parts of companies' responsibility which should influence employees' behavior, in this case affective commitment. Affective commitment was chosen for this analysis because it shows why employees want to stay in the organization and it is one of the crucial factors of the long-term relationship between an organization and its

employees. Similar research found positive correlation between perceptions about external social responsibility and affective commitment (Chatzopoulou et al. 2022, George et al. 2020, Story and Castanheira, 2019, Turker, 2009, Brammer et al. 2007). The subject of this research was the relation between perceptions about external social responsibility and affective commitment of employees in service companies in Serbia. The main hypothesis was that perceptions about external social responsibility had significant and positive impact on employee's affective commitment. The main goal was to show if there was a positive correlation between perceptions about external social responsibility and employees' affective commitment. Additional goals were to show if different parts of external social responsibility affected the level of affective commitment of employees and which of these variables influenced the most on affective commitment.

METHODOLOGY

The data were collected using questionnaire. It had three parts. First part was dedicated to general questions about respondents (sex, age, education, work experience, position in company, company size). The second part was dedicated to external social responsibility scale, which was adapted from Turker (2009). It was formed from ten items, from which six were dedicated to local community, two to government, three to customers. This scale was the most often used in similar research about external social responsibility. The third part of the questionnaire referred to the affective commitment. Affective commitment was measured using Meyer and Allen (1997) Affective Commitment Scale, as this is the mostly used scale in similar research for measurement of affective commitment. All items were rated on a five-point Likert-type scale ranging from strongly agree to strongly disagree. Data was analyzed through SPSS program.

Cronbach's alfa coefficient was done to test the reliability of variables. Factor analysis was done in order to test the appropriateness of items for selected scales. Descriptive statistics, correlation analysis and regression analysis were done.

The sample counted 100 respondents, from various service companies in Serbia. Table 1 presents the structure of respondents who participated in this research using different criteria. Women made up 70% of the sample, while male respondents were 30%. Considering age, the most respondents were 31-40 years old (42%). In case of education, majority respondents had bachelor (31%) degree and master degree (33%). Less than 5 years of working experience had 34% of respondents, but 27% of respondents had 11-15 and 23% had more than 16 years of working experience. Managers were 55% of respondents in the sample. Speaking about company's size, 61% of respondents worked in small company, 17% in medium company and 22% in large company. The sample structure was presented in Table 1.

Table 1. The sample structure

Characteristics	Criterion	% of respondents
Sex	Male	30
	Female	70
Age	20-30	20
	31-40	42
	41-50	20
	51-60	15
	>61	3
Degree of vocational education	Secondary school qualifications	16
	Two-year post-secondary school	15

Characteristics	Criterion	% of respondents
	qualifications	
	Bachelor	31
	Master of Science	33
	Magister	3
	PhD	2
Work experience	1 – 5 years	34
	6 – 10 years	16
	11 – 15 years	27
	> 16 years	23
Position in company	Managerial position	55
	Non-managerial position	45
Company's size	Small	61
	Medium	17
	Large	22

Source: Authors

RESULTS

Reliability analysis for external social responsibility scale was measured using Cronbach's alfa coefficient. When first it was measured, it suggested 0,881, but it showed that after three items were deleted the coefficient would be higher (it would be 0,901). But as the first calculated Cronbach' alfa coefficient passed the level of 0.8 which is considered to be the desirable value for this coefficient, the original structure of the scale was kept. Cronbach' alfa coefficient for affective commitment scale was 0,878. This analysis had proven good reliability and internal consent of scales for this sample.

Factor analysis was done in order to test the appropriateness of items for selected scales. All items of external social responsibility scale were subject of principal components analysis (PCA) in SPSS, version 20. Before PCA, data adequacy for factor analysis was estimated. The number of cases for each item was appropriate and there had been many correlation coefficients in correlation matrix with value above 0,3. The value of Kaiser-Meyer-Olkin Measure of Sampling Adequacy was 0,827, which was higher from recommended value of 0,6 and the Bartlett's Test of Sphericity was statistically significant at $p=0,000$. All conditions for factor analysis was fulfilled.

Principal components analysis found two components with characteristic values above 1, which explained 46,14% and 20,628% of variance. Scree plot showed obvious breaking point after second component. So decision was made to keep two factors, although the original scale suggests that there should be three factors, as there were differences between responsibility towards society, customers and government. First factor represents social responsibility towards society and the second factor represents social responsibility towards customer and government. This two factor solution explained 66,768% of total variance, while the contribution of the first factor was 46,14% and the contribution of the second factor was 20,628%. For better understanding of these factors, Direct Oblimin rotation was done. Both components had a lot of high factor loadings and all items gave high values to only one of two components. All items of the first component (external social responsibility towards society) gave high factor loadings only to component 1, and all items of the second component (external social responsibility towards customers and government) gave high factor loadings only to component 2. Between these two factors small positive correlation was found ($r = 0,244$). The results of this analysis supported the use of these items for external social responsibility scale, as it was suggested.

The results of descriptive analysis were presented in Table 2. The mean value for external social responsibility suggests that employees valued companies' efforts in this field, especially activities directed towards customers and government, as the mean value was 4,468. Results also suggests that employees were committed to their jobs, as the mean value was 3,6613, on the scale from 1 to 5, but it suggested that there was room for improvement.

Table 2. Descriptive Statistics

	N	Mean (1-5)	Std. Deviation	Variance
Affective commitment	100	3,6613	0,97106	0,943
External social responsibility	100	3,9240	0,73073	0,534
External social responsibility towards society	100	3,4483	1,13180	1,281
External social responsibility towards customers and government	100	4,4680	0,54251	0,294

Source: Authors

Correlation analysis was done using Pearson correlation coefficient. It was done in order to show if there is a relation between perceptions about external social responsibility and affective commitment among employees in service companies. Preliminary analysis were done in order to prove that all assumptions about normality, linearity and homogeneity of variance and these assumptions were satisfied. It showed that there was strong positive correlation between perception about external dimension of social responsibility and affective commitment, $r=0,511$, $n=100$, $p<0,000$, where high levels of perceptions about external social responsibility follows high affective commitment. Coefficient of determination, R^2 , was 0,2611, which showed that perceptions about external social responsibility explained 26,11% of variance in affective commitment.

When extracted factors of external social responsibility were considered, correlation analysis showed similar results. It showed that there was medium positive correlation between perception about social responsibility towards society and affective commitment, $r=0,407$, $n=100$, $p<0,000$. Coefficient of determination, R^2 , was 0,1656, which showed that perceptions about social responsibility towards society explained 16,56% of variance in affective commitment. Also, the results showed that there was medium positive correlation between perception about social responsibility towards customers and government and affective commitment, $r=0,473$, $n=100$, $p<0,000$. Coefficient of determination, R^2 , was 0,2237, which showed that perceptions about social responsibility towards customers and government explained 22,37% of variance in affective commitment. The results of correlation analysis were presented in Table 4.

Table 4. The results of correlation analysis

		External social responsibility	External social responsibility towards society	External social responsibility towards customers and government
Affective commitment	Pearson Correlation	0,511**	0,407**	0,473**
	Sig. (2-tailed)	0,000	0,000	0,000
	N	100	100	100

** . Correlation is significant at the 0,01 level (2-tailed).

Source: Authors

Regression analysis was done in order to examine the influence of independent variables (two extracted factors of external social responsibility) to affective commitment and to show which factor contributes the most to the explanation of affective commitment variance. In order to carry out the regression analysis, the preliminary analysis of assumptions compliance was tested and it is concluded that all data fulfil the conditions for regression analysis. The results of this analysis are presented in Table 3.

Table 3. The results of regression analysis

Model	Standardized Coefficients - Beta	t	Sig.	Semipartial correlations coefficient
(Constant)		-0,158	0,875	
Social responsibility towards society	0,267	2,883	0,005	0,248
Social responsibility towards customers and government	0,373	4,021	0,000	0,345

Source: Authors

Coefficient of determination R^2 is 0,285, which means that defined model, which consists from two independent variables (variable 1=social responsibility towards society and variable 2= social responsibility towards customers and government), explains 28,5% in total variance of affective commitment, $F(2, 97) = 19,348$, $p = 0,000$, which means that given model is statistically significant. Independent variable which contributes the most to explanation of affective commitment variance was social responsibility towards customers and government ($\beta = 0,373$, for $p = 0,000$), and its influence is statistically significant. Semipartial correlation coefficient for this variable is 0,345, which means that it explains 11,9% in total variance of affective commitment. The second independent variable which has statistically significant influence on affective commitment was social responsibility towards society ($\beta = 0,267$, $p = 0,005$). Semipartial correlation coefficient for this variable is 0,248, which means that this social responsibility towards society explains 6,1% in total variance of affective commitment.

DISCUSSION

The results of this research showed positive correlation between perceptions about external social responsibility and affective commitment. The findings are in accordance with similar researches which also found positive correlation between perceptions about external social responsibility and affective commitment (Chatzopoulou et al. 2022, George, Aboobaker and Edward, 2020, Story and Castanheira, 2019, Turker, 2009, Brammer et al. 2007). Story and Castanheira (2019) found positive correlation between perceptions about external social responsibility and affective commitment also, but they found that the relationship between internal CSR and affective commitment is stronger than with external CSR, but external CSR could be seen as motivator for exerting extra-efforts from employees. They suggested that although CSR as a whole makes employees more committed to their organizations, employees feel that this attachment is stronger when organizations invest on them versus on external stakeholders (Story and Castanheira, 2019, p. 1367). Chatzopoulou, Manolopoulos and Agapitou (2022) emphasized that internal CSR acts as a boundary condition for external CSR and the impact of external CSR on employees' work outcomes will be stronger than when the organizations focuses predominantly on external stakeholders. So, future research should be focused on the relation between internal social responsibility and affective commitment.

Positive correlation between social responsibility and affective commitment was found in similar research (Bouraoui et al. 2020, Wang et al. 2020, Zaman and Nadeem, 2019, Islam et al. 2018, Kim et al. 2017), but the focus usually was not only at external social responsibility, but on internal and external social responsibility together.

CONCLUSION

The findings of this research showed that perceptions about external social responsibility had significant and positive impact on employee's affective commitment. These results offer the following practical implications. Commitment has a positive effect on other employee outcomes, which might, in turn, contribute to larger overall organizational performance. Thus, managers should make efforts to understand how important socially responsible practices aimed at the external stakeholders are for employees and then communicate about those practices to employees and include them in these activities. At the same time, managers need to be very careful about the communication of external social responsibility practices because employees can easily see when organization is doing something only for publicity or marketing. Employees need to be able to understand why a company is engaging in the chosen initiative and how that initiative is contributing to the well-being of others in order to identify with and find meaning in CSR activities conducted by the company.

Despite the above contributions, the paper has some limitations. Limitations of this research refer to the sample size and method used to collect data, as the questionnaires were distributed online. Future research should include more respondents in order to get more reliable results.

Future research should explore the effect of internal social responsibility on employees' commitment, and why not, some other form of attitudes and behaviors. The research could be expanded to manufacturing industry, also, which could allow some comparison, and then provide with some new conclusions and practical recommendations.

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STRATEGIC APPROACH TOWARD MARKETING MANAGEMENT: CASE STUDY OF THE IKEA

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Abstract: *The broad field of marketing represents a balance between the subjectivity and individuality of needs and a wealth of approaches that master the art of attracting attention through strategies that succeed in winning over new customers. Strategic marketing is a process of the strategic analysis of factors related to the environment, competition, and business that affect business units and forecasts of future trends in business areas that are of interest to the company. The aim of this paper is to identify the characteristics that enabled the management of IKEA to build a community that successfully integrates all marketing components. The paper focuses on the analysis of the components that make up the comprehensive process from planning to implementation of the marketing mix strategy. The theoretical framework aims to understand the role and responsibility of marketing through the analysis of all its types, depending on the approach to innovations created to attract customers. The second part of the paper presents a situational analysis of IKEA, which has built a unique brand thanks to its ability to identify important spheres. The last part of the paper, based on the analysis of IKEA's marketing mix and the instruments of their strategy that ensures them first place in the market, provides concluding considerations and recommendations for other economic subjects.*

Keywords: *Strategic Marketing, Situational Analysis, SWOT Analysis, Marketing Mix, IKEA Case.*

JEL Classification: *M00, M310, M390*

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INTRODUCTION

This paper discusses the complexity of the process of marketing strategy creation in order to ensure a competitive position in the market. The topic is analysed from a fundamental theoretical stance, after which a study of a company's actual business and functioning is conducted, with a focus on the company IKEA, which is currently the most successful furniture and home decoration retailer.

The marketing field is fascinating and comprehensive because it is focused on the balance between the subjectivity and individuality of needs and the wealth of approaches that master the art of attracting attention through strategies for winning new customers. The goal is to determine key approaches that support the creation and development of a successful marketing strategy, both from a theoretical and a world-leading company's perspective.

This paper aims to find the characteristics that have enabled IKEA to build a community that successfully connects all marketing components. It will present the marketing problem and describe the different parts that make up the marketing mix strategy process, from planning to implementation.

Firstly, the paper presents a theoretical framework that indicates a better understanding of the role and responsibility of marketing. Within this segment, marketing will also be divided into three types, depending on the approach to innovation made to attract customers. Furthermore, the paper introduces the IKEA company by briefly describing its situational analysis and then analyses this furniture retailer's behaviour, allowing it to identify the essential spheres and enabling it to build a unique brand. Then will be explained the behaviours of this company naming the key characteristics and their importance in their strategy. We will conclude the chapter by studying IKEA's marketing mix and the instruments of their strategy that ensure their first place in the market.

THEORETICAL REVIEW OF THE MARKETING PLAN

A marketing plan is a formal written document or an outline used as a basis for all necessary marketing activities in a company or organisation that are described and explained (Pride & Ferrell, 1995). The marketing plan contains detailed marketing strategies and programs to achieve goals in a specific market, representing the main instrument for directing and coordinating marketing activities. It represents a road map for marketing activities for a certain period in the future.

The marketing plan serves several purposes:

1. It provides a "roadmap" for implementing the company's strategy and achieving goals.
2. It helps with management supervision and monitoring of the strategy's implementation.
3. It also informs new participants in the plan about their roles and responsibilities, stimulates thinking and improves the use of resources.
4. It assigns responsibilities, tasks, and time schedules, and
5. It lets participants know about problems, opportunities, and threats.

Bowie & Buttle (2004) explain that marketing plans can be classified according to the subject, period, and strategic focus.

- According to the subject, we differentiate marketing plans for strategic business units, product lines, individual products or brands, and individual markets.

- According to their cover period, marketing plans can be divided into short-term, medium-term, and long-term.
- According to the strategic focus, marketing plans can be divided into strategic, tactical, and operational.

Companies have many advantages if they have a marketing plan. It is vital for larger companies, but it is also needed for smaller companies. Often, in smaller companies, the marketing plan may exist only in the owner's mind, and the written document of the marketing efforts undertaken by the company does not exist.

In order to give clear direction to marketing operations, which are based on a systematic and written approach, it is usually used by both managers and employees of the company. In this way, everyone has a clear picture of the company's goal, and employees can actively be part of achieving that goal. It also removes confusion and misunderstanding and coordinates company resources (Cooper et al., 2008).

A marketing plan dramatically affects the company's profitability, and even though it does not guarantee success, it eliminates many risks and makes the company more prepared and less vulnerable. The lack of a marketing plan will result in a wide range of possible consequences. It could, for example, mean failing to take advantage of the potential of emerging markets and other new marketing opportunities and demand issues.

A wide range of components characterises the development of a marketing plan. These components provide a framework that analyses the company's current position, desired direction, and how it will get there. Only some components appear in every marketing plan (Bowie & Buttle, 2004).

The concept of marketing refers to the scope of long-term operations through which a company can achieve a competitive advantage by fulfilling the needs of clients and the wishes of interested parties. The fundamental ideas in marketing represent customers' needs, values, and desires, as well as the offer, communication, and established relationships. When a company desires to remain competitive in the global market for an extended period, marketing activities become crucial to its goal and the need to set a clear marketing strategy from the beginning. Indeed, the process does not end with choosing the most appropriate marketing strategy because when the company executes it, it becomes essential to monitor and evaluate it effectively and accordingly adapt it to the development of the market (Anderson, 1982).

Therefore, a marketing strategy can be considered an expression of strategic marketing ideas, which have been defined and analysed by academics and scholars over the years. The following table (Table 1) shows the development of some of the most relevant definitions of strategic marketing by different authors from 1982 to 2008.

Table 1. Marketing Strategy Definitions

Authors	Definition
Igman, 1982	Strategic marketing is one of the functional strategies that together make up the overall business strategy. However, the importance of the marketing strategy is very high over the entire business strategy, due to the control of key marketing relationships with the organisation.
Kolter, 2003	The strategy focuses on target customers. The company selects the market, divides it into segments. The company creates a marketing mix using the tools at its disposal: product, price, distribution, and promotion. In order for the company to choose the best marketing mix, it performs a marketing analysis of objectives and implements them.

Authors	Definition
Pranulis, 2008	A marketing strategy is a well-located and coordinated set of marketing actions aimed at determining long-term goals.
Baker, 2008	The strategic marketing plan is a model of the unit's position in its market in relation to its competitors and contains a definition of market needs and goals to be achieved.

Source: Authors' interpretation based on Vergassola, I. (2019). Prerequisites and outcomes of glocalisation of marketing strategies by international retailers: the case study of IKEA and home depot in China.

The marketing planning cycle consists of evaluating marketing opportunities and resources, establishing or revising marketing goals based on performance, revising or formulating a marketing strategy, establishing or revising a plan for implementation and control, and implementing the marketing plan. Planning is essential for the efficient and productive use of time and resources, the concentration of staff creativity and efforts, the maintenance of order and consistency, and the achievement, measurement, and evaluation of results. The plan is essential for accountability, transparency, and budget and personnel justification (Barber & Wallace, 2010).

SITUATIONAL ANALYSIS – IKEA

IKEA is the world's leading retailer for the design and assembly of furniture, appliances, and accessories. It was founded in Sweden in 1948, and since then, the number of stores has grown to 433 stores, with 211,000 employees and associates in 50 countries, generating annual sales of more than 41.3 billion euros in 2019. (IKEA, 2020). IKEA is the 39th leading global brand, with a value of 15.3 billion dollars (Forbes, 2020). IKEA adopts franchising, which gives the company the opportunity to develop internationally, maintain an entrepreneurial spirit, preserve the core concept, and serve its best interest and the interests of the people. The company owns and operates stores in only 24 countries, and the remaining stores are franchised for 3% of the franchisee's annual net sales (Shoulberg, 2021).

TECHNOLOGY AND INNOVATION

Wherever shopping is done in the world, in England, France, Japan, the USA, China, or any other country, a well-known brand name, such as IKEA, will be easily recognised as opposed to local ones. IKEA is focused on bringing innovation into the lives of its consumers through approaches found in traditional marketing. IKEA implements these approaches by innovating through product modification. This can be seen in the choice of materials, design concept, range of accessories and product simplification.

IKEA's vision is to improve the daily lives of the largest number of customers, which translates into its mission, which aims to offer a wide range of well-designed and functional furniture at prices so low that as many people as possible can afford them (IKEA, 2021).

The introduction of RFID technology in supermarkets and convenience stores has made the shopping experience more manageable while improving companies' shelf placement and product identification. Companies are using this technology more and more, coming up with variations of its use to give the customer a better shopping experience. For example, Argos introduced the provision of digital stores that allow customers to walk in and collect goods ordered online with little or no customer service interface (Pattairman, 2013).

Innovations dramatically reduce transport costs. Today, it is possible to transport tables, chairs, and other bulky items in an ordinary car. Even if the consumer does not have a car,

certain items, such as a drying rack, large storage boxes, or flowerpots, are prepared in a way that does not pose a problem when transporting them. The delivery service delivers other types of products as well.

The company pays much attention to saving electricity by using LED lights, so it is important to mention that the savings in the past year amounted to 3.3 billion kWh. IKEA also recycles PET bottles, of which 11 million were recycled last year.

POSITIONING

IKEA stores are located on the outskirts of major cities, making access by car the preferred mode of transportation for customers. Store formats are standardised and come in three different sizes, with different assortment sizes ranging from 7,500 to 10,000 items. The assortment varies slightly between the same store formats in different countries. The sales environment in stores should look the same in essential dimensions such as store layout and design, signage, displays, and colours, the same departments in stores, and the same level of service. This approach aims to provide the same shopping experience regardless of where the store is located. However, this does not mean that adaptation is not carried out in stores. For example, in different stores, IKEA adapts the premises to suit local living and living conditions rather than a centralised formula. This could mean smaller rooms in some countries and more fireplaces in British rooms than in Swedish ones, for example. Service levels are the same worldwide, and the staff is roughly the same everywhere.

SWOT ANALYSIS

IKEA uses SWOT analysis to achieve its goals. One of IKEA's main strengths is its strategic goal of using only the necessary materials for each product it produces. In addition, its product plans are designed to make the most of recycled materials and waste. One of IKEA's products, known as OGLA chairs, is made from wood waste collected from sawmills.

Other advantages of IKEA include its promise and delivery of a stable global brand that supplies products of consistent quality in its stores worldwide and ensures that the company has loyal customers. IKEA's concept is to offer its customers a range of well-designed products at low prices (Edvardsson & Enquist, 2011). IKEA ensures that all its products fit in all aspects. All products should be balanced in quality, design, function, and price. IKEA's vision to create a better life for many people is also a significant point in its favour as it attracts customers from all walks of life and further builds loyalty.

IKEA is socially responsible as well. IKEA's main goal is that businesses should always support charities worldwide. IKEA leads by example by supporting UNICEF, the World Wildlife Fund, and Save the Children. The company aims to diversify its workforce to provide opportunities to as many as possible. When it expanded to India, IKEA India noticed that only 20% of its workers were women. IKEA saw this as an opportunity to appeal to women to join their workforce. It encouraged women and supported them in their careers. This attracts customers to buy IKEA products to support a brand that aligns with their values. IKEA is very committed to creating and maintaining long-term partnerships with its suppliers. These relationships also help it to negotiate lower prices. It also utilises economy of scale because it buys all of its supplies in bulk (Daunfeldt et al., 2017)

IKEA products are delivered directly to IKEA stores from suppliers and saving business handling costs and reducing carbon emissions. IKEA uses new technologies to reduce its costs and the number of raw materials needed for its products (Edvardsson & Enquist, 2011). All successful companies use their strengths to take full advantage of the opportunities.

Using its sustainability agenda, IKEA is taking advantage of many diverse opportunities. These opportunities include trends in customers opting for lower-priced goods, a shift in customer demand towards greener products, and an increase in the number of consumers who prefer products that leave a low carbon footprint on the world (Wu, 2020). IKEA provides its customers with many environmentally friendly products and solutions to create more sustainable homes. They produce LED lamps, refrigerators, freezers, and washing machines that save energy and reduce water consumption in homes with their water-saving faucet (Edvardsson & Enquist, 2011).

IKEA has some weaknesses and threats that must be addressed before it can fully achieve its goals. These include its size and scale; the fact that IKEA is a global business always makes it difficult to control the quality and standards of its products. In some countries where IKEA products are manufactured, management only sometimes ensures that laws are enforced to control working conditions, which can affect how consumers view IKEA products. IKEA should produce cheap products. It may be challenging to provide quality and low prices, which is IKEA's main goal, while still needing to differentiate itself from its competitors. All of these goals can take time to meet and still make the business profitable. IKEA must constantly update its environmental projects. The size of the company makes it difficult to communicate with stakeholders, and IKEA chooses to use TV and radio to communicate with its stakeholders (Goel & Garg, 2018). A business must be open with all its stakeholders by having good communication with its workers, the press, consumers and opinion makers.

Threats include a decline in first-time homeowners, one of IKEA's main markets. Increased number of competitors producing home furniture at low prices. IKEA needs to stand out from this competition by always providing its customers with high-quality products and adhering to its environmentally conscious production methods. Economic factors, such as recession, reduce the disposable income available to consumers and thus reduce their consumption (Wu, 2020).

GOALS

IKEA's goals are aligned with its mission. It aims to provide a range of home furniture that is of good quality, well-designed and works well at low prices that are affordable to most people. To achieve this goal, IKEA uses strategies such as marketing its products to individuals rather than the masses, using a standardised selection of retailers and using country-specific management styles to optimise how IKEA stores are managed (Vergassola, 2019).

IKEA also strives to be diverse in its business. IKEA also offers a self-assembly feature that allows customers to assemble their furniture themselves, saving IKEA on shipping and labour costs.

IKEA is also highly environmentally conscious and aims to inspire as many people as possible to become more climate friendly (Hagberg & Sterner, 2019). It leads by example by using renewable and recycled materials, changing the design of its products to make them last longer, and switching to energy-efficient LED lighting.

This company is dedicated to the target consumers in their late 20's, early 30's, and mid-30s. It can be divided into single people, young couples without children, and mature families. The living situations of consumers can be divided into those who live with their parents, those who live alone in an apartment or rented apartment, and those who have their own property. Finally, consumers can be divided into the lower and middle classes based on income level.

IKEA'S MARKETING MIX

PRODUCT

IKEA provides 12,000 products, with almost 2,000 new and innovative products yearly. The wide portfolio of products means they can furnish a home from scratch. IKEA understood the needs of its target group. The company developed different options to satisfy customers, managed to keep them, and responded to their needs and demands, thus ensuring her popularity. Over time, the brand has developed a wide range of products so that it can offer the customer everything he needs while following the goals of its vision. Their catalogue offers everything from furniture and accessories to components that help organise a variety of furniture (Bhasin, 2018).

IKEA's main point of differentiation is its constant adaptation to the changing business environment. The main competitive advantage was the constant invention of fresh products that followed trends and developments. The primary goal was to enable everyone to build the space they wanted, regardless of class. Thus, furniture and objects of organisation and decoration are available to all classes (Zhurin, 2020). IKEA plans to be 100% circular by 2030, using renewable or recycled materials (IKEA, 2020). IKEA is also a service provider because it has restaurants and playgrounds.

PRICE

IKEA's business is based on cost leadership without compromising on quality. This is achieved through various cost reduction techniques such as economies of scale, smart design, top-down pricing, flat packaging, long-term supplier relationships, use of smart technology, research and development, and innovations (IKEA, 2020).

The price value is the basic principle of the company's business. This means that IKEA will do everything possible to ensure a low price without any additional payments (except for the delivery service, which is an additional service considering the furniture set concept). Therefore, all activities are carried out to preserve the low-price framework: product design, procurement of raw materials, production, distribution, and retail sale of products (Marketing Teacher, 2021).

The most crucial feature of IKEA's marketing pricing approach is consistency. Their principle is to keep costs manageable so that the brand can maintain the appreciation of its customers. However, the price will not be too high either so as not to suppress the forces of the corporate sector. This consistency has secured IKEA a secure place in consumer preferences. It is a good strategy considering that the brand has become a leader yet remains true to its values and vision (Bhasin, 2018).

PLACE

IKEA's operations place the main focus on distribution through its retail stores. Locations are outside the city or in the suburbs of large cities, usually near highways. The Company does not benefit from pedestrians in the city or nearby, so IKEA stores become the primary destination for its consumers (Marketing Teacher, 2021). IKEA stores are widespread in Europe, North America, Asia, and Australia (IKEA, 2020).

The shops themselves are large. Some stores even have a children's playground. In addition, it has over 1300 suppliers in 50 countries, which offers good inventory management and on-time product delivery. This added value could be one of the reasons for IKEA's worldwide recognition and success (Zhurin, 2020). Approximately 22% of the range is produced in

China (IKEA, 2020). IKEA also exists in the digital world through online shopping and social media.

PROMOTION

IKEA is one of the world's leading retail furniture brands. The brand itself is based on the concept of offering home furnishing products at the lowest possible prices that guarantee value. Their iconic yellow logo serves as brand support. Because of the famous brand name and price structure, the best promotions that get results are sales and business promotions. IKEA focuses the most on this (Gao, 2013).

The use of coupons, price discounts, festival promotions, and other marketing strategies helps the Company ensure that its customers regularly benefit from various offers (Bekh, 2016).

Another type of promotion is the structure of the stores themselves. A self-service warehouse is what the modern customer needs. Today, every IKEA furniture store is like a showroom. This way, the visitor can see how a certain piece of furniture will look in its interior so that the customer can make a decision on the spot and go to the self-service warehouse to find the product.

In 2000, IKEA realised how important internet advertising is for consumers, so it introduced online shopping to its customers, primarily in Sweden and Denmark. Since this innovation, many IKEA stores have also launched online shopping in many other countries (Daunfeldt, 2017).

The IKEA catalogue has been the primary promotional tool from the beginning. It is renewed once a year and offers a new experience. The Company's complete new line is designed like a magazine for interior designers. The customer can therefore use this catalogue as inspiration (Bhasin 2).

IKEA uses media such as newspapers, television, and digital media. IKEA's print ads are known to be clever in attracting customers' attention. Since they are present in different geographical areas, communication differs from company to company. Attention is paid to communication that is close to the local community so that they can connect with consumers. (Ikea, 2021).

It can be seen that IKEA's marketing strategy has secured a stable position in the minds of its consumers. The practical application of theoretical principles such as flexibility, innovation, affordability, the ability to try products before buying them, and the challenges associated with the assembly and functionality of products has shown success, and the level of brand preference among customers is still high. The availability of products, either in-store, which is a showroom, or on the website, as well as home delivery, allows consumers to save time and money, so it is a clear indicator of the effectiveness of this strategy and embodies a strategy for the future that guarantees consumer loyalty.

CONCLUSIONS AND RECOMMENDATIONS

In this paper, we have shown that developing a marketing strategy is a very complex process. The marketing strategy affects the company's behaviour. It is necessary to know the environment that the company can influence, such as activities related to customer needs and satisfaction with products and corresponding services. The theoretical framework allowed us to understand the marketing plan and strategy creation process, which is undertaken by companies that want to achieve success in the future and create an adequate and high-quality marketing strategy that is developed and based on actual consumer expectations. The main

thing is to find needs that the offer on the market has yet to fulfil or that the consumer himself has not recognised. After that, it is necessary to get to know the market in order to be able to create the goals and vision of the business, that is, to define the target group of consumers, who will represent potential customers who are most interested in the product.

Given the various components of the creation and specification of product features, we follow a marketing mix strategy. It determines the concept of the product, its price, its distribution from the place of production to the final consumers, and the means of promotion to familiarise the consumer with the product or service and create purchase opportunities. It is vital to develop innovations that will adapt the product or service to market trends.

IKEA has decided to create a sustainable way of working as a global organisation. The Company taught vendors to understand how and why sustainable manufacturing is vital. This contributed to differentiation from competitors, which suppliers and consumers see as responsible businesses and companies they can trust. The paper aimed to study the main characteristics and approaches of marketing and their application in practice. However, there is always a significant number of new strategies, especially in the case of IKEA, that could be considered.

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JOB AUTONOMY AND INNOVATIVE WORK BEHAVIOR: THE CASE OF SERBIAN HEALTHCARE SECTOR

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Abstract: *Innovation is key determinant of survival and growth in the contemporary business environment. Precondition for innovation is active participation of employees, therefore it is very important for business success to study organizational behavior encouraging employee innovativeness. Under the pandemic conditions, the need for introducing real life creativity and innovations in the health sector becomes imperative for survival. Accordingly, research of various organizational assumptions, motivation and approaches to management support for the innovative behavior of employees in healthcare organizations becomes paramount. The employees' innovative behavior refers to new ideas generation, but also implementation of new ideas in performing tasks, using new technology, working procedures or processes. Within the framework of understanding motivation and compensation system that can stimulate or discourage employee innovation, work autonomy has a significant role. Job autonomy can be defined as the degree to which the task given to the employee provides freedom, independence and discretion to independently determine work procedures or methods. It can also be understood as the degree to which an employee has the freedom to decide how to perform tasks. Our paper aims to investigate the effects of work autonomy on management support for innovative behavior of employees in healthcare organizations. Empirical research was conducted on the sample of healthcare organizations in the Republic of Serbia during pandemic 2022. Primary data was collected by distributing questionnaires to employees and managers. The results of the pilot study show that employee engagement and job autonomy have a positive effect on managers' support for the innovative behavior of employees in the health sector. The implications of the obtained results point to the conclusion that the innovative behavior of employees can be encouraged through adequate support from managers.*

Keywords: *job autonomy, innovative work behavior, management support to innovation, healthcare sector*

JEL Classification: *J53, M54*

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INTRODUCTION

In today's extremely dynamic business environment, the organizations' abilities to continuously create, innovate and renew themselves is a necessary prerequisite not only for growth but also for survival. Organizations that can survive in high-risk environments create and develop new products/services or technologies, improve work processes, and increase their efficiency and effectiveness. The process of generating ideas and putting them into action becomes critical for gaining a competitive advantage, which cannot be achieved without employees who have the right knowledge, skills, and abilities, as well as the necessary mental and cognitive capacities. Employees seem to be essential for the formation, development, and implementation of new ideas, not new ideas themselves, which is why innovative work behavior (IWB) is given special attention in theory and practice.

IWB involves activities aimed at generating new ideas for performing tasks, such as new product ideas, the application of new technology, work procedures, or work processes, as well as activities placing new thoughts into action (Nijenhuis, 2015). If the organization seeks to be innovative, it must be able to motivate employees within human resource management to achieve a high level of innovation performance, which is why IWB is the organization's fundamental innovative capacity. Despite its significance, the understanding of IWB and how it can be supported is insufficient and inconsistent. Organizations' ability to innovate may be reduced because they do not know how to motivate and inspire employees in a way that encourages innovative behavior. For this reason, gaining a more comprehensive understanding of the factors that influence IWB is critical, since it enables the development of appropriate management support for employees' innovative behavior. Furthermore, it contributes to the development of appropriate organizational culture and climate.

Work autonomy (WA) is a significant factor in the context of the need for a better understanding of the motives that can help stimulate employee innovation. Work autonomy is defined as the degree to which a job allows an individual significant freedom, independence, and discretion in planning work and determining procedures for completing assignments. In other words, WA is the freedom an employee has in performing tasks, which is determined by the degree of autonomy assigned and the manager's support. The way work is designed can have a significant impact on how much creativity and innovation employees exhibit. Moreover, numerous studies have found a link between WA and IWB. Despite the foregoing, empirical research on the relationship between WA and management support for innovative behavior in public sector organizations, particularly in healthcare organizations, is scarce. The observed research gap served as the basis for conducting empirical research on the example of healthcare organizations in the Republic of Serbia during 2022. Primary data was collected by distributing questionnaires to employees and managers in healthcare organizations.

The purpose of this study is to investigate the impact of work autonomy on management support for innovative behavior in healthcare organizations. The paper is structured into 5 parts. The introduction is followed by an overview of the previous research. The following section describes the methodology and sample characteristics, and then we present the research results and their discussion. The final section contains the main conclusions, implications, and future research directions.

THEORETICAL BACKGROUND

JOB AUTONOMY

Job autonomy is initially formalized in Job Characteristics theory by Hackman & Oldham (1976,162) as “the degree to which the job provides substantial freedom, independence, and discretion to the individual in scheduling the work and determining the procedures used in carrying out”. Autonomy is the degree of freedom of employees and control rendered to a person to conduct various activities of a work (Shahzad et al., 2018). It is closely related to the freedom, flexibility, and opportunity to initiate entrepreneurial activities (Lumpkin et al., 2009). It is paramount for taking advantage of the unutilized potentials of the organization, identifying opportunities outside the core competence, and new venture development. Entrepreneurial initiatives are often driven by the autonomy of employees who are positioned at lower levels of the hierarchy. They enable creative ideas and are very fruitful in problem-solving beyond the cognitive and organizational patterns (Erić Nielsen et al., 2022). The employee will be more committed to the organization if they feel free to determine the procedure or method for achieving the goal of the firm (Siregar et al., 2021).

There are numerous research studies investigating the relationship between job autonomy and employee performance (Bizzi & Soda, 2011; Bogler & Somech, 2004; Nesheim et al., 2017; Khoshnaw & Alavi, 2020; Sørli et al., 2022), commitment (Sisodia & Das, 2013), employee engagement and developing trust relation with top management (Lu et al., 2017). Wu et al. (2015) emphasize that job autonomy is affected by organizational culture. Internal organizational climate affects entrepreneurial initiative and behavior in health organizations through management support, work discretion, rewards/compensation, time availability, and organizational boundaries (Erić Nielsen et al., 2022). Saragih (2011) argues on its positive effect on employees and eventually the firm’s performance due to increasing satisfaction, self-efficacy, and mitigating job stress. Job autonomy is enhancing workplace creativity, critical to the success of individuals and organizations (e.g. Liu, Chen, & Yao, 2011), but also presents a double-edged sword due to the fact that participants in the high-autonomy condition were more likely to behave unethically because they felt less constrained by rules (Lu et al., 2017).

Work autonomy is an important component of job design, giving individual sufficient independence and the possibility to decide how he goes about doing his work (Swaroop & Dixit, 2018). Job design can significantly affect the way in which employees engage in creative and innovative behaviors. Individuals with little control over their work are likely to be more dependent on organizational procedures and rules. Studies on job design and innovation indicate that individuals who can exert control over their work and engage in a variety of challenging and complex tasks exhibit greater levels of innovativeness (Scott & Bruce, 1994; Axtell et al., 2000). Autonomy can provide flexibility in looking for opportunities and implementing ideas. When the employee experiences greater control over his work, he is more willing to engage in complex tasks (Urbach & Ahlemann, 2010).

Some research studies indicate that public healthcare organizations, as relatively bureaucratic and hierarchical may obstruct participatory decision-making (Rainey, 2009) and personal latitude. In healthcare organizations, the extent of staff members’ job autonomy is related to their job satisfaction, intent to transfer and intent to leave, controlling the staff members’ personal and working status (Lin et al., 2011).

MANAGEMENT SUPPORT TO INNOVATIVE WORK BEHAVIOR

Innovative work behavior of an employee refers to all activities related to the generation of new ideas at work, including new product ideas, the use of new technology, procedures, or

processes (Nijenhuis, 2015). Building on the work of Kanter (1988) and Scott and Bruce (1994), innovative work behavior is conceived as a multi-dimensional concept, having two dimensions: idea generation, identifying problems and innovative solutions, and idea implementation, proposing, defending and actually implementing the innovation in the workplace (Spiegelaere et al., 2014). Individual innovation can be seen as new and potentially useful products or working processes developed and applied in a particular work context in solving problems at work (Messmann & Mulder, 2012). Employees initiate innovations because they are in close daily contact with politics, procedures, processes, and products. They have the potential to detect improvements and opportunities for new developments, but innovation only occurs if employees actively engage in generating and implementing ideas (Bos-Nehles, A., Renkema, M., & Janssen, M., 2017). Innovative work behavior involves also the implementation of ideas at work.

Management support is crucial for encouraging employees' innovativeness (Erić Nielsen, Stojanović-Aleksić, & Zlatanović, 2019). The managerial perceptions of the environment and the frequency of providing support for entrepreneurial innovations vary depending on the hierarchical level (Hornsby et al., 2009). The interdependence between managerial support and the frequency of entrepreneurial activities is stronger at higher organizational levels. Top, middle, and operational management have different responsibilities and roles in initiating and implementing entrepreneurial activities (Floyd & Lane, 2000). At the strategic level, managers are putting effort to identify effective ways to create new or redefine existing business. When top management clearly promotes an entrepreneurial strategic vision, employees will have more courage, orientation, and moral justification to behave entrepreneurially (Ireland, Covin, & Kuratko, 2009). There must be a consensus about dominant logic, implying consent about expectations, signaling which opportunities are important, which behaviors are appropriate, and which results are valued (Dess et al., 2003). The middle management proposes and develops entrepreneurial ideas aiming to improve the organization's competitive position. Operational management is focused on how an organization's core competence can be used in the process of opportunities exploitation (Erić Nielsen, Stojanović Aleksić & Zlatanović, 2019).

METHODOLOGY

The empirical research was conducted on a sample of public healthcare organizations in the Republic of Serbia. The survey method was used to collect primary data, and the questionnaire is divided into three sections. Job autonomy and management support for innovative ideas and initiatives were measured with ten items each and all the statements were derived from the *Corporate Entrepreneurial Climate Instrument (CECI)*. Initially developed by Kuratko, Montagno, and Hornsby (1990), this instrument attempts to assess the efficacy of critical internal organizational factors influencing innovative activities and behaviors. Statements for measuring job autonomy and management support in this research were adapted from the work of Hornsby, Kuratko, & Zahra (2002). The 5 – point Likert scale was used to indicate how much respondents agree or disagree with each of the statements (1 – strongly disagree; 5 – strongly agree). The third part of the questionnaire was designed to gather information about participants' demographic characteristics. Data were analyzed using the techniques of the *Statistical package for social sciences (SPSS) 26.0*. Reliability analysis, descriptive statistics, and regression analyses were carried out on the final sample which counts 84 respondents. The sample structure is given in Table 1.

Table 1. Sample structure

Variables		Frequency	%
Gender	Male	23	27.4
	Female	61	72.6
Age	20 – 30	12	14.3
	31 – 40	11	13.1
	41 – 50	41	48.8
	51 – 60	18	21.4
	over 60	2	2.4
Education level	Elementary school	2	2.4
	High school	47	56
	College	11	13.1
	Bachelor	24	28.6
Work experience	1 – 5	15	17.9
	6 – 10	7	8.3
	11 – 20	14	16.7
	21 – 30	35	41.7
	over 30	13	15.5
Work type	Medical	71	74.5
	Unmedical	13	15.5
Position	Management	12	14.3
	Other	72	85.7

Source: Authors

The frequency analysis according to gender shows higher participation of females in the sample. Regarding the age structure, the majority of respondents are between the ages of 41 and 50. The largest number of healthcare workers in the sample have a high school diploma, followed by respondents with bachelor's degrees. The dominant group in the sample are respondents with over 20 years of work experience. The sample is primarily composed of medical personnel, while 15% of the total number of respondents belong to healthcare organizations' support staff. Approximately 14% of the respondents work in management.

RESULTS AND DISCUSSION

Reliability analysis of the scale was measured using Cronbach's alpha coefficient. According to Nunnally (1978), the variable is reliable if Cronbach's alpha coefficient value is higher than 0.7. The results shown in Table 2 indicate the very high reliability of both subscales.

Table 2. Cronbach's alpha coefficient values

Variables	Cronbach's alpha coefficient
Job autonomy	0.843
Management support	0.940

Source: Authors

Descriptive statistic analysis was performed to analyze the characteristics of the sample based on mean values and standard deviations for the statements which measure job autonomy and management support for innovative ideas and initiatives. The results are presented in Table 3.

Table 3. Descriptive statistics

	M	SD
Job autonomy		
1. I can freely decide at work, without the obligation to consult with anyone.	2.65	1.32
2. Harsh criticism and punishment result from mistakes made on the job.	2.76	1.31
3. The workplace allows me to try new ideas.	2.85	1.38
4. This organization provides freedom to use my own judgment.	3.21	1.44
5. This workplace allows me to express my abilities.	3.38	1.44
6. I decide independently what I will do at work during the day.	2.81	1.49
7. I am responsible for the way I do my job.	3.79	1.28
8. I almost always get to decide what my work tasks are.	2.88	1.37
9. I have much autonomy and rely mostly on my own strength.	3.37	1.25
10. I have to follow the same work methods/procedures every day.	2.76	1.32
Management support for innovative ideas and initiatives		
11. Organization easily and quickly applies new solutions initiated by employees.	3.06	1.46
12. Employees who come up with new ideas and initiatives are more likely to be promoted sooner.	2.86	1.42
13. Employees who come up with an innovative idea easily get the support of managers for its implementation.	3.04	1.34
14. Many managers express creativity themselves.	3.24	1.30
15. There are usually enough resources (financial) to implement new ideas.	2.64	1.32
16. Employees whose innovations are very successful receive rewards outside of the standard reward system.	2.50	1.37
17. There are several options within the organization for employees to get support for idea realization	2.87	1.34
18. Employees are encouraged to take moderate risks.	2.75	1.31
19. Risk-taking is seen as a desirable trait within the organization.	2.60	1.24
20. Management supports small experimental ideas (projects), although some of them might fail.	2.82	1.32

M – mean

SD – standard deviation

Source: Authors

The results of the descriptive statistical analysis show a relatively low to moderate degree of job autonomy and management support for innovative ideas and initiatives. The highest degree of agreement among respondents is present in the statements *I am responsible for the way I do my job* (M=3.79) and *This workplace allows me to express my abilities* (M=3.38), which measure the job autonomy of employees. The lowest ratings are for statements *Employees whose innovations are very successful receive rewards outside of the standard reward system* (M=2.50) and *Risk-taking is seen as a desirable trait within the organization* (M=2.60), which also has the lowest standard deviation (SD=1.24). The greatest heterogeneity of responses was with the statement *I decide independently what I will do at work during the day* (SD=1.49).

Table 4. Simple linear regression (Dependent variable: Management support)

Variable	R ²	β	Sig.
Job autonomy	0.309	0.556	0.000***

***p<0.01

Source: Authors

The simple linear regression was performed for the purpose of hypothesis testing. According to the results, the coefficient of determination in this model was 0.309, which indicates that 30.9% of the management support variability is explained by the observed independent variable. Job autonomy has a statistically significant positive impact on management support for innovative ideas and initiatives in the Serbian healthcare sector (p<0.01; β=0.556). In

other words, work autonomy has been shown to impact the amount of manager support for innovative work behavior. Healthcare employees have greater management support for launching innovative initiatives in organizations when the culture encourages greater autonomy at work. Furthermore, the results can be associated with the fact that employees who have a sense of control over their work are more likely to express creativity and innovative behavior, and seek support from their managers. This is how an employee-management innovation support network is formed.

CONCLUSIONS AND RECOMMENDATIONS

The findings of the pilot study show that job autonomy has a positive effect on managers' support for the innovative behavior of employees in the healthcare sector. According to the research results, work autonomy enhances management support and their combination leads to greater innovative work behavior. This study provides certain theoretical implications, which are reflected in clarifying the relationship between the two constructs. The findings suggest that more attention should be paid to work autonomy in hospitals, as it was identified as the key driver of management support for innovative ideas and initiatives.

The practical implications of the findings are captured in the creation of guidelines for managers on how to encourage employees' innovative behavior through adequate management support, including an employee reward system. Besides the reward system, support for innovative work behavior can be provided through training programs and certain performance management strategies. Management support can be improved by instituting policies that encourage employee creativity, along with enabling bonuses based on innovative ideas shared by hospital employees. According to these findings, enabling high work autonomy can be an effective strategy for improving management support for innovative behavior in healthcare organizations. Employees who are given more freedom to make decisions in their work are more likely to receive management support for innovative initiatives. Besides, managers themselves are more likely to provide support for the innovative behavior of the employees when they are empowered to make choices without the interference of their superiors.

As this study was limited only to the Serbian healthcare sector, we suggest investigating the same relationship in other contexts. Future research should also address other antecedents of management support for innovative work behavior. Another limitation of the study refers to the sample structure. The study was carried out on a sample that included both managers and employees. Therefore, performing an analysis by segments in relation to the level in the hierarchy would allow insight into the nature of the relationship between work autonomy and managerial support separately in the groups of employees and managers.

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**KEY ISSUES IN MANAGEMENT
AND MARKETING 2**

CONSULTATIVE LEADERSHIP STYLE AND EMPLOYEE LOYALTY: AN ALTERNATIVE VIEW ON EMPLOYEE RETENTION

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Abstract: *This paper aims to broaden current knowledge on how patterns of consultative leadership behaviour influence employee loyalty and consequently employee retention. Using Likert's approach to leadership styles we have covered a sample of 461 employees from companies across different sectors in Croatia. Out of the total sample, we have identified 96 employees whose superiors exhibit consultative leadership behaviour. Concerning those respondents, we have conducted a second survey focused on employees' level of belonging and long-term attachment to the organization. By correlating this obtained evidence we try to shed light on the question of how consultative leadership styles influence employee loyalty and retention. Our results provided support that within the teams where consultative leadership patterns were present organizational loyalty is positively correlated to reward system satisfaction and satisfaction with the institutionalized practice of employee retention. By focusing on the turnover reasons, levels of organizational loyalty, satisfaction with the reward system and institutionalized practices of employee retention this paper argues the benefits of consultative leadership style for employee retention.*

Keywords: *consultative leadership style, employee loyalty, employee retention*

JEL Classification: *J53, M54*

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INTRODUCTION

This study aims to investigate the influence of the consultative leadership style on employee loyalty and consequently their turnover intentions. We argue that this leadership style which involves motivation based on reward and where the leader exhibits a high level of expectations concerning the responsibilities of each organizational member is an adequate approach to foster employee loyalty and serve as a powerful tool for employee retention.

Past research in the field was mainly focused on the connection between the transformational and transactional leadership dichotomy and organizational loyalty (Kara et. al., 2013; Birasnav, et.al., 2015) as well as with the dichotomy between task-oriented and goal-oriented leadership behaviours and organizational loyalty (Northouse, 2019; Yukl and Mahsud, 2010; Firth et.al., 2004; Tang et.al., 2000). On the other hand, studies focused on leadership styles derived from Likert's Management systems (exploitative authoritarian, benevolent authoritarian, consultative, and participative) primarily examined the relationship between these specific patterns of leadership behaviour and employee job satisfaction (Rad et. al., 2008; Pardo del Val and Lloyd, 2003; Pardo del Val et.al., 2012). Overall, the previous studies don't provide consistent findings regarding the relationship between leadership styles and employee loyalty. Therefore, to get a more comprehensive understanding of how a leader's behaviour influences employee retention we have focused the scope of our paper on the consultative leadership style and employee loyalty. More precisely, we seek to investigate whether consultative leadership style bears any influence on employee retention by examining the turnover reasons, levels of loyalty, levels of employee satisfaction with the reward system, and levels of satisfaction by the institutionalized practice of employee retention.

Answering this question is important because employee retention in Croatia as well as in other countries of Central and Eastern Europe is one of the burning issues for a significant number of companies. After joining the European Union job mobility and voluntary job changes in Croatia began to increase dramatically. Organizations have experienced competition for their most valuable employees both locally and globally. In that situation, employers found themselves in need of developing and implementing employee retention mechanisms.

Our findings contribute to the body of knowledge on the relation between consultative aspects of a leader's behaviour and employee retention by observing how employees who are exposed to this pattern of leadership behaviour view loyalty to their organization.

THEORETICAL BACKGROUND

PATTERNS OF LEADERSHIP BEHAVIOUR

Leadership styles are often conceptualized within behavioural domains varying from non-leadership, or laissez-faire, to transactional leadership, which hinges on rewards and punishments, to transformational leadership based upon attributed and behavioural charisma (Kelly and MacDonald, 2019; Sudha et. al., 2016; Bass and Avolio, 1993). Although the discipline of leadership recognizes multiple theoretical approaches to the subject (Northouse, 2019), our research employs one of the best-known frameworks, described by Likert (1967). Likert (1967) argued that the employee-manager relationship is one of the most important determinants of corporate success. To capture the dynamics of roles, behaviours, and interaction patterns in this relationship he identified four leadership styles: (1) exploitative authoritative, (2) benevolent authoritative, (3) consultative, and (4) participative.

The first leadership style in Likert's system, exploitative authoritative, is characterized by highly autocratic leadership behaviour and a lack of trust in subordinates. Other distinct characteristics are top-down communication patterns, centralized decision-making, and a high level of bureaucracy (Gonos and Gallo, 2013; Wehrich and Koontz, 1993). In such an environment, employees' opinions and ideas are often ignored. Under the benevolent-authoritative leadership style, certain decisions may be delegated to lower organizational units but the leader's behaviour is mostly highly authoritative (Gonos and Gallo, 2013). Leaders show interest in subordinates' opinions therefore communication is not one-sided (Wehrich and Koontz, 1993). Leaders demonstrate conditional trust to employees - they often motivate them through rewards and rarely choose to punish them. Leaders demonstrating participative leadership demonstrate complete trust in their subordinates (Gonos and Gallo, 2013). Employees are welcome to share their ideas as communication patterns allow bottom-up information flow. Thus, in this environment, employees are included in the decision-making process taking place on higher organizational levels (Wehrich and Koontz, 1993) and are rewarded for their contribution. Finally, the consultative leadership style represents a pattern of leader's behaviour where the leader doesn't unconditionally trust his subordinates but rather builds his relationships based on openness and mutual understanding. Consultative leaders are willing to consider opinions and proposals made by employees from lower organizational units. To motivate their subordinates, consultative leaders will reach for different reward options but can also introduce practices to sanction misbehaving (Gonos and Gallo, 2013).

The patterns of consultative leadership actions are argued to be crucial for understanding a large set of important affective job-related behaviours. With that, the theoretical framework within this study rests on the proposition that consultative leaders are in a position to significantly impact the levels of employee commitment and loyalty as presented in the next section.

ORGANIZATIONAL LOYALTY

The concept of organizational (employee) loyalty is gaining momentum in organizational studies. The concept has captured the interest of organizational and management scholars concerned with both employee work behaviours and their influence on company-level outcomes (Rodriguez et.al., 2019; Dhir et.al., 2020). The growing interest in this concept stems from propositions placing organizational loyalty as a strong antecedent to organizational effectiveness.

As noted by Guillon and Cezanne (2014) many authors have sought to define the concept of organizational loyalty. In a broader sense, loyalty is defined as devotion or a connection to a specific object, person, group, ideal, or obligation. Kanter (1968) was among the first to provide a consistent definition arguing that loyal employees are those who are devoted to investing their energy into organizational activities. As he further noted, loyal employees are attached to organizational relations that give them a self-actualization opportunity. A rather similar definition was provided by Hall, Schneider and Nygren (1970) suggesting that organizational loyalty is a state of individual and organizational goal convergence. Loyal employees are thus those who strive to achieve organizational goals, as they reflect their interests as well. Some of the emergent states of organizational loyalty include a strong sense of interdependence, intention to remain part of a group (organization), need for taking responsibility, a sense of trust, and adherence to organizational rules and procedures (Adler and Adler, 1988).

Recent literature acknowledges the complexity and multidimensionality of the organizational loyalty concept. Seen as a one-dimensional construct, organizational loyalty is considered to be an affective state - a sense of belonging followed by trust and adoption of organizational values. However, Allen and Meyer (1991) take a more comprehensive view and develop a three-component loyalty model. In their model, organizational loyalty consists of (1) affective, (2) instrumental, and (3) normative dimensions. The affective dimension includes social identification and participation in organizational activities. Further, instrumental loyalty refers to an employee's perception of the possibility of leaving the organization and explains that employees need to remain a part of the collective. Finally, the normative dimension describes that employees stay in the organization because they believe it is their moral obligation. Taken all together, these three dimensions help us understand how employees build relationships with their organizations.

Organizational loyalty is recognized as a strong factor in influencing psychological contracts organizations hold with their employees (Guillon and Cezanne, 2014). Scholars generally agree that organizational loyalty leads to many favorable organizational-level outcomes. To explain such a relationship they place organizational loyalty as a core concept predicting desirable work behaviours such as task commitment and organizational citizenship behavior. As such behaviours are considered crucial for ensuring company survival and growth, by enhancing such behaviours organizational loyalty contributes to company performance. Several studies provided solid empirical evidence supporting such propositions. Members demonstrating higher levels of organizational loyalty showed to be more task and goal-oriented, feel less fatigue during working hours and have lower absenteeism rates (O'Leary-Kelly and Griffin, 1995). A study conducted by Yee et.al. (2010) in Hong Kong high-contact service shops demonstrated that loyal members provide more quality customer service which influences consumer satisfaction and consequently the shop's business performance.

In a business environment of ever-increasing complexity, tensions, and uncertainties, organizations are in need of effective practices for employee retention. Both scholars and practitioners turn to the very concept of organizational loyalty in their attempts to understand how to achieve low turnover rates. It is argued that when the psychological contract between the organization and its employees is weak, i.e. when that contract lacks a sense of loyalty, employees will easily decide to look for other job opportunities (if any are available) or will emotionally distance themselves from the organization (Shirbagi, 2007). Porter et.al. (1979) presented interesting empirical evidence on this relationship: (1) employees that left their jobs demonstrated a lower level of loyalty when they started working for the company compared to those who didn't leave it, (2) loyalty levels of employees who would eventually leave gradually declined over time, and (3) difference in the loyalty of those who intend to leave and those who intend to stay increases as a day of their leaving is closer.

Arising from the above is the question concerned with finding ways to strengthen employee loyalty. Predictors to the employee can be examined at both an individual and group and organizational level. Previously examined individual-level predictors include member socio-demographic attributes, past experiences, tenure, and job satisfaction. At the group and organizational level predictors such as organizational size, degree of decentralization, different aspects of organizational culture, and trade union influence (Lok and Crawford, 1999; Brewer and Wilson, 1995).

In addition to the above, patterns of leadership behaviour (leadership styles) are recognized as a predictor of strong explanatory power when it comes to organizational loyalty. Previous studies in the field were mainly focused on transformational leadership style, transactional leadership as well as different aspects of leader ethical behaviour (Avolio et. al., 2004; Tseng

and Wu, 2017). Presented empirical evidence for example suggests that transformational leaders influence employee loyalty by encouraging them to think critically, recognizing their core competencies, and encouraging them to engage in the decision-making process (Avolio et. al., 2004). Further, Sabir et.al., (2011) argue that transactional leaders influence employee loyalty through their motivation practices. According to Bass and Avolio (1994), transactional leader motivation techniques include contingency reward, managing exceptions, and demonstrating laissez-faire leadership behaviour.

Presented theoretical propositions and empirical evidence suggest that the consultative leadership style includes patterns of leader behaviour and actions having the potential to influence levels of organizational loyalty experienced by his subordinates. Such actions above all include the presence of trust in a leader-subordinate relationship, openness to subordinates' opinions and proposals, willingness to include subordinates in the decision-making process, and development of rules and procedures that are to be applied in case of inappropriate work behaviour.

SAMPLE AND METHODS

A questionnaire survey was employed to determine the intensity of employee loyalty. Our study focused on the employees who were subordinated to managers who reported consultative leadership style on Likert Management System (1967) scale. Using Likert's approach to leadership styles we have covered the sample of 461 middle managers from companies across different sectors in Croatia. The respondents were from different industries and from organizations that varied from small to large multinational companies. The first segment of the research was to identify organizations that are led by leaders who exhibit consultative patterns of behaviour. Over two intervals of surveying that took place during the middle of 2019 and early 2020, our research efforts identified 96 employees with this kind of experience.

To the organizational members that reported experience with consultative leadership style, a three-part questionnaire was distributed. The first part of the questionnaire contained questions on their demographic characteristics, previous work experience, and experience in the current workplace. The second part of the survey contained two sets of questions: about satisfaction with institutionalized employee retention efforts and satisfaction with the reward system in their current job. Since an organization's compensation policy for exceptional performance is one of the determinants of job satisfaction, the question on whether the companies reward them for outstanding performance was included in this part of the analysis. Besides the responder's satisfaction with the reward system, we have also asked them to describe whether they feel they have the opportunity to grow within the organization and whether the training and development efforts are satisfactory concerning job challenges. Finally, the last part of the questionnaire contained questions that made it possible to determine the intensity of organizational loyalty and possible reasons why respondents plan to leave their current job if they have such tendencies. Organizational loyalty was observed through three elements: (1) person-job fit, in terms of one's competence for job requirement and the question of whether the responder "loves his job"; (2) work environment, in terms of comfort and safety and (3) allegiance to the organization viewed as the willingness to recommend the company as a good workplace and willingness to stay in the organization even if other companies might offer a better wage. All questions were based on a 5-point scale (very rarely = 1; frequently = 5). The validity of measures was evaluated using confirmatory factor analysis. All items yielded high scores of internal consistency with Cronbach alpha

scores for each measurable construct being greater than 0.8 (Hair et. al., 1992; Nunnally and Bernstein, 1994).

Our final sample was heterogeneous concerning the respondents' demographic characteristics. There were 66.67% women and 33.33% men in the sample. Most respondents in the sample were less than 30 years old (60.42%). Other respondents ranged in age from 30 to 39 years (29.17%) and 40 to 49 years (10.42%). The sample consisted of 20.83% of respondents with a high school degree, 54.17% of respondents with an undergraduate degree, and 25.00% of respondents with a graduate degree. Most respondents had up to five years of work experience (62.50%), followed by 5 to 10 years (25.00), 11 to 15 (8.33), and 21 to 25 (4.17). The sample consisted of 66.67% of respondents with permanent employment, 14.58% of temporary employees, and 18.75% of respondents employed on a student contract. The average working experience of our respondents was 2.47 years (min=1 year, max=8 years). Most of the respondents previously worked in three different companies (33.33%), followed by four companies (20.83%) and, two companies (16.67%).

FINDINGS & DISCUSSION

This section summarizes our key findings. We start our analysis by looking at descriptive indicators of respondents' satisfaction with the institutionalized practices of employee retention (HRM practices and reward system) and employee organizational loyalty (Table 1).

Table 1. Descriptive Statistics

	N	Min	Max	M	SD
HRM	96	1.00	4.00	2.60	0.81
REWARD	96	1.00	5.00	3.15	1.14
LOYALTY	96	2.00	5.00	3.69	0.79

Source: Authors

Overall, the results indicate a medium-level intensity of organizational loyalty among our respondents (M=3.69, SD=0.80). Further, the observed levels of satisfaction with HRM practices (M=2.60; SD=0.81) and reward system (M=3.15; SD=1.2) were noticeably lower.

We then examined how the observed variables were correlated (REWARD, HRM and LOYALTY). Pearson correlation coefficient was used to determine the direction and strength of the correlation between the variables (Table 2).

Our results confirm a statistically significant correlation between variables. First, the Person coefficient indicated that organizational loyalty was moderately positively correlated to both reward system satisfaction ($r = .47$; $p = .000$) and HRM practices satisfaction ($r = .39$; $p = 0.001$). Further, reward system satisfaction and HRM practices satisfaction were shown to be moderately positively correlated as well ($r = .43$; $p = 0,000$).

Table 2. Correlation

		REWARD	HRM	LOYALTY
REWARD	Pearson Correlation	1	.425**	.466**
	Sig. (2-tailed)		.000	.000
	N	96	96	96
HRM	Pearson Correlation	.425**	1	.390**
	Sig. (2-tailed)	.000		.001
	N	96	96	96

		REWARD	HRM	LOYALTY
LOYALTY	Pearson Correlation	.466**	.390**	1
	Sig. (2-tailed)	.000	.001	
	N	96	96	96

** . Correlation is significant at the 0.01 level (2-tailed).

Source: Authors

Driven by these results we took a deeper look at how respondents perceive the institutionalized practices of employee retention in their companies. We observed that a relatively small percentage of respondents (35.24%) feel that their company rewards them for putting above-average effort in completing their work tasks. Despite that, the majority of respondents feel (83.33%) that there are growth and promotion opportunities within their companies.

A great majority of our respondents expressed their intention to remain in their current jobs in the coming period (72.92%). Among the respondents who decided to resign from their jobs (27.08%), we identified the main drivers (motives) of such a decision (Table 3). The respondents were allowed to select one, the most influential resignation motive.

Table 3. Resignation Motives

	Motive	%
1.	Reward system dissatisfaction	16.37
2.	Work task dissatisfaction	8.33
3.	Better job opportunity	8.33
4.	Work environment dissatisfaction	2.08

Source: Authors

The results show that reward system dissatisfaction was the main driver of turnover intention among our respondents (16.37% of respondents listed it as their motive for resigning). Other identified motives included dissatisfaction with work tasks (8.33%) and work environment (2.08%).

Finally, we performed a descriptive analysis of the relationship between employee turnover intentions and (1) institutionalized practice of employee retention and (2) organizational loyalty. Table 4 shows the intensity of organizational loyalty, HRM satisfaction, and reward system satisfaction between two sets of respondents: (1) respondents that expressed turnover intention, and (2) respondents among which such intention was not expressed.

Table 4. Institutionalized Practices of Employee Retention and Organizational Loyalty by Employee Turnover Intention

	LOYALTY				HRM				REWARD			
	M	Min	Max	SD	M	Min	Max	SD	M	Min	Max	SD
Turnover intention	3.15	2.00	5.00	0.78	2.23	2.00	4.00	0.91	2.08	2.00	4.00	0.93
No turnover intention	3.89	2.00	5.00	7.71	2.74	3.00	4.00	0.74	3.54	4.00	5.00	0.94

Source: Authors

Although our sample size limited our ability to prove a statistically significant relationship between the observed variables, our findings provided interesting descriptive results on these relations. First, the observed descriptive findings indicated higher levels of organizational

loyalty among respondents with no turnover intentions. The same findings apply to the observed institutionalized practices of employee retention, both HRM practices, and reward system.

CONCLUSION

The presented results provided us with a more comprehensive understanding of the relationship between consultative leadership style and employee loyalty. To begin with, our results confirm that the observed satisfaction with the organizational reward system, institutionalized practices of HRM, as well as employee loyalty, represent concepts that companies should acknowledge as important mechanisms of employee retention. A positive correlation between both reward system satisfaction and satisfaction with the institutionalized practice of employee retention in teams led by leaders who exhibit consultative leadership style, as well as a positive correlation between reward system satisfaction and satisfaction with the HRM practices, focused on employee retention in such teams, shows how consultative leadership approach can balance different segments of employee satisfaction. Also, our results indicate that employees with different turnover intentions express different levels of organizational loyalty and satisfaction with institutionalized HRM practices focused on employee retention. Further, the research results indicate that consultative pattern of leadership behaviour increases employee perception of growth and promotion opportunities even if they find the current reward system suboptimal. This is an indication that a higher level of employee satisfaction and loyalty could be derived from working with a consultative leader.

These results contribute to the understanding of determinants and consequences of employee turnover which poses an especially important question for organizational competitiveness. Retaining valuable employees within the organization is a paramount part of a leader's role. This issue is additionally emphasized by the fact that employee retention is especially important for emerging economies since the most valuable employees can seek job opportunities in more developed countries and hence widening the economic gap.

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INTRODUCTION TO SCALING UP OF STARTUPS: PRE-INCUBATION AND INCUBATION PHASE

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Abstract: *Small and medium-sized enterprises are the types of economic units that are still responsible for creating jobs and gross domestic product. The role of micro-entrepreneurs in the context of globalization is undergoing change, as micro-enterprises increasingly perceive their environment more broadly from the moment they are established and even before they formally begin operations than they did before. Changing perceptions of the environment as a result of increasing globalization also have an impact on changing perceptions of planning the operation of microenterprises. The issue of ensuring adequate planning aimed at dynamic development concerns the phase before the establishment of the company as well as the early phases of its operation. According to the literature and practice, a similar type of operational planning refers to startups, and in the case of high-tech commercialization companies - to techno starters. Thus, it is important to pay attention to microenterprises and also to the issue of risks and uncertainties accompanying their survival, especially in the current conditions of the socio-economic environment, which have already gone even beyond the turbulent. The main problem, therefore, is the still insufficient knowledge of the functioning of startups, especially in the context of increasing globalization, which means increased dynamics of changes in the environment. The purpose of this article is to discuss the initial stages of startup creation and development, especially in the context of the progressive globalization changes, taking into account how important it seems to be to prevent possible economic recession scenarios.*

Keywords: *startup, innovation, entrepreneurship, management, scaleup*

JEL Classification: *M13, M15*

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INTRODUCTION

Micro, small and medium sized enterprises play an important role in the economy (Szuszkiewicz-Idziaszek A., 2021) as they are all generators of workplaces and have a great influence on the GDP (Borowiecki & Kusio, 2016). SMEs are responsible worldwide for creation of above 3 million new jobs annually and 7 million net jobs, half of which are establishment births, while deaths account for a net loss of 4 to 8 million jobs, which are large flows for the content of steady job creation of 3 million startup jobs. Startups are the specific kind of SMEs and people who are responsible for starting up “the start uppers” are recognized as key actors in the creation of a knowledge-based economy (Karakaya et al., 2014; Rogers, 2003). Although the importance of startups seems for the governments and for society be out of discussion (Głodek, 2018; Appelo, 2019) nevertheless the total value of entrepreneurial ventures is about 582 million globally and about 22.5% of small businesses fail within a year.

One of the reasons for start uppers’ failing is the poor planning which leads to unsuccessful performance and finally low rate of startup survival (Sopha and Kloeckner, 2011; Ozaki, 2011). The second problem refers to complicated legal procedures which differ between the countries however are evidenced among important barriers of obtaining the early stage of development. The lack of financial resources is the next reason why small companies fail at the beginning. As evidenced, the first 24 months of successful microcompany operations, its survival rate at further stages of its development rises significantly, which often depends on the human factor. People with financial and moral support from their families are for example more psychologically stable and are better decision makers that make them the successful entrepreneurs. They are risk takers and can survive even in the worst conditions (Gadenne et al., 2011; Hansla et al., 2008; Buryk et al., 2015). Entrepreneurial attitudes and preparation seem, thus, to have an impact on the survival rate of start-ups (Ek, 2005), which is particularly relevant to the first phases of the formation and operation of startups.

Given that the more open the global economy becomes (Bogdanienco, 2006; Siuta-Tokarska & Borowiecki, 2016), the higher level of SMEs domination seems to be noticeable, which from the central management perspective (governmental) and their effective policy in order to increase the survival rate of startups is essential. The ecosystems of new businesses are often based on triple helix idea (cooperation of academic sector, public administration entities and businesses located in one region). Diversity of regional settings, spaces and cultures need to be acknowledged when assessing university-industry-government interactions. Some evidence is also about the rising importance of society and societal entities like associations. This fourth actor (society) allows to define the quadruple helix. This results from the commercialization issues (Głodek, 2018; Zlatanovic et al., 2020) when public and research entities may financially support the idea of commercialization of research outputs to become successful businesses and also to be business supported entities. What seems to be also important is the cooperation between the actors in order to create the businesses that otherwise would never come to the reality.

The role of triple helix actors is significant due to firstly creating conditions for setting up startups and secondly for making the possibility to increase the survival rate of other startups. The importance of triple helix actors refers to the possibility of providing funding for the startups providing consultancy as well as generally increasing survival rate of the startups. Universities, as crucial academic representatives in triple-helix, have become essential players in the generation of knowledge and innovation. Through the commercialization of technology, they have developed the ability to influence regional economic growth. This institutional perspective of startup creation is especially important while contributing to the idea of

knowledge economy (Pukała, 2018), which in the post-pandemic period has become even more important.

In addition to the problem of surviving in the market, another important concern for startups is the need to grow, in line with the imperative to change. A dynamically growing startup is defined as a scale up. The very definition of scale up can be interpreted as setting up a business with dynamic growth in mind. Thus, it incorporates into the concept of materializing an idea at once the issue of competitive growth in line with the ongoing globalization.

The startup may be generally defined as a venture that is initiated by its founders around an idea or a problem with a potential for significant business opportunity and impact. A startup differs from the scaleup though as evidenced both definitions are often used substantively. Startup, as the practice shows, is discussed rather when underlining the issue of starting the business and surviving. Discussion beyond just the stage of micro company and the one referred to the obvious stage of its development concerns the stage of scaling up. Therefore while analyzing startups - they are characterized by invalidated business models compared to validated ones of the scaleups. Scaleups, as previously indicated are entities of higher growth ambition compared to this lower one as attributed to startups. Therefore apart from the significant, though discussable definitional difference, the use of both terms is based on fungibility, underlining the processivity. This perception of the differentiating between the startup and scaleup might be based on the two dimensions: financial and consulting. As the startup, to become institutionalized, needs at the beginning more consultancy, the scaleup in the process of rapid development will need the stronger financial support. This does not mean that both developmental perspectives of the emerging company refers to the need of consultancy and money to grow. As a company grows it evolves and major changes are often observed in its internal organization.

Company's growth and evolution is determined by financial requirements to be reached before moving to the further financial stage. Startups are financed through a series of staged investments. Each stage of investment, also defined as "milestone", is designed to carry the venture to a higher level of achievement and validation. Staged investments help investors minimize risk while increase the validation of the firm. A prerequisite for the transition from the founding phase to development is the creation of environmental and institutional stimulators conducive to innovative entrepreneurship through:

- education,
- training,
- promotion of entrepreneurial attitudes,
- facilitating access to sources of risk financing,
- incentives for knowledge absorption and technology transfer.

The question is to what extent are the advising services needed at each stage of microcompany's development and also how important are the financial issues crucial in terms of the scalability. What is also important is the issue of post-pandemics situation especially when it comes to the willingness of setting up the startups and commercializing the ideas taking into account the online method of communicating and operating in companies as well as making the direct business contacts more distant.

The first advisory context refers to the sense or pre-incubating the concept and pre-registration of the business whereas the second one to the development of a company. The main problem, therefore, is the ongoing insufficient knowledge of the functioning of startups, particularly in the context of progressive globalization, which means an increase in the dynamics of changes in the environment.

The objective of the paper is to discuss the initial stages of the creation and development of a startup, especially in the context of the progressive globalization changes. In order to achieve the goal of the study, the reasoning will be carried out also in a way for the material to be utilized as the educational one.

THE PRE-INCUBATION STAGE: THE IDEA

Disseminating information and training people to promote self-employment may be emphasized as a concept (A Skilled Workforce..., 2010). This helps in understanding the entrepreneurial essence of programs, courses and discussions about the self-engagement. In addition to training programs co-curricular and academic activities at the institutional level also create awareness in young entrepreneurs globally. Self-motivation, family support and peer influence, indicated previously as individual factors positively affecting personality characteristics, defining entrepreneurial skills and propensity to take risks and innovativeness on one hand, but also the institutional programs aimed at minimizing risk in the decision to start operating business on the other hand, are instruments to support the pre-incubation of the startup (Herrera et al., 2016). Their outputs should initially be concepts and ideas to possibly shape how the business might function and at the same time raise motivation and self-engagement for scaling up. The ideas for startups may be sourced from (Van Voorhis et al., 2013):

- experiences from former workplaces,
- experiences from the family home,
- direct education,
- profitable hobby,
- valuable suggestions and a sense of observation,
- copy of excellence,
- a novelty on the market.

The sources of ideas for a startup are contained in the period before the establishment of a business, in which it is also possible to take advantage of institutional support, which is contained, among other things, in the idea of the triple-helix. There are support programs for creative thinking: preparation for implementing planned ventures in life. There are also support programs aimed at encouraging entrepreneurial initiative. What can result from activities that prepare for the establishment of a successful business, in a highly competitive environment, is true innovation along with motivation and creative thinking skills. This means that the analysis of competencies and interests are key elements of finding the proper concept for the future entrepreneur. What, from individual perspective is also a key, is to look primarily for ideas in areas that the person is familiar with and that is of her/his interest. Without expertise and any experience it is difficult to respond to customer needs in any area. Other areas of educational support aimed at getting an idea concept in a future entrepreneur are: analyzing changes in markets, business opportunities and gaps (niches), inventing a new product or service, adding value to existing solutions, comparing markets: local to regional, then national and even international ones, making research on customers' needs.

The factors to be considered as important in the process of “startuppering” - idea conceptualization of what is desired to present to the market may be defined in internal and external contexts. The internal one is that determined by the entrepreneur himself and the external one refers to factors determining the entrepreneur and out of his control. Among the internal factors self-confidence has been considered as one of the most crucial (Draper, 2022).

The external factors refer to incentivisation by the triple-helix actors such as universities, PA bodies and are about to lead interested individuals to conceptualize the idea to the stage of decision to register the company (Kusio, 2021). All the encouraging and business idea supporting activities are defined as the pre-intubation phase and as initially described may be of the individual and institutional nature. After the idea is initially described, the planning stage appears and this planning business phase covers the following areas: financial, organizational, technical, marketing.

Business planning is not reduced to the four listed spheres of business design, allowing to specify in more details the concept of business functioning. Design thinking process consists of five stages: empathizing which refers to: interviews, shadowing, seeking to understand with no-judging, defining, ideation which refers to sharing ideas and prioritizing them, prototyping, testing (Kumar et al., 2020).

Business planning is the step that precedes the startup itself, while referring to the issue of obtaining an answer to the question of the financial and market viability of the planned business. Further at this stage, the originator is reviewing the business idea and, as a consequence, may result in a detailed concept for the operation of the startup. Also, at the time of verifying the market-financial assumptions, the need for changes of a technical nature may arise - if the business idea concerns techno starters. Business planning helps determine what type of business modeling will be most applicable to the proposed business, enabling direct reference to the scale up model (Śliwiński & Puślecki, 2022).

The difficulty in deciding which of the ideas is the best for the entrepreneur should be solved by the individual decision, but may be supported institutionally, for example by means of pre-incubators' offers. Despite the self-engagement, financial factors matter as well. This could easily be evidenced while EU programs offer of startups financial support.

THE PRE-INCUBATION STAGE: FINANCIAL PERSPECTIVE

The first barrier that the young entrepreneur may face is the financial resources issue. Money may be the challenge for many entrepreneurs, but as practice shows setting up a company is in many areas not the issue of the willingness to get rich but it is the instrument to realize the dreams (Halik et al., 2012). The two main financial streams for starting up a company are internal and external funding. The starting point for the decision-making process is to analyze defining factors in terms of finding the appropriate funds (Kusio, 2006). One of them is a financial structure of the implementation strategy and the second is the answer on how will the owner prioritize the sources of funds. The most appropriate financial structure will be the result of measuring the risks of internal and external funding. In cases of possible subsidizing when the risk is very minimized, the decision might not be so difficult to undertake. The subsidies or public donations are for many entrepreneurs the best method of funding and this is the category of external sources. However as is evidenced internal funding is a primary and most important source of funding at the stage of establishing the company (Teczke & Kusio, 2007). At further stages of company development the internal funding will include profits, assets and depreciation and this is just to underline those sources while discussing internal funding sources. For young entrepreneurs who just initiate the entrepreneurial activities these are options for the future.

Among external funding sources which can be divided between the public and private ones, the following can be listed: shares, private equity, credits, leasing (Kusio, 2009). Alongside the aforementioned sources of funding for startups, one popular source, particularly with respect to funding a business launching innovative solutions, is fundraising, or crowd funding

based mainly on collections via the Internet. In this era of globalization, this particular form of startup fundraising seems particularly interesting, as it offers the opportunity to obtain funds for ideas that would otherwise be unachievable. In turn, sources of public funding include: donations, subsidies, loans, structural funds (EU), other public instruments.

The most common way of financial engagement at the start-up phase for the entrepreneur is obviously the private sources, own sources, which means the money one possesses or the money that are possible to organize by an entrepreneur such as loans for example from relatives, colleagues, family members.

What drives negatively future entrepreneurs in terms of external funding is its rate uncertainty (Kusio, 2011). Against the private funds with rather high credit rates subsidies and loans of public origin are offered to potential founders. The money provided by the state are offered with lower risk as they are not required to be paid back. EU funds are the primary source of such funding especially if the funding purpose is to set up innovative companies.

The goal of the innovation policy is to initialize the entrepreneurial activity with the lowest possible risk in order to increase the propensity to get self-engaged and self-employed. Funding is a very important factor in the potential founder decision-making process, especially at its initial stage and this factor may be the most important driver to start up.

The pre-start-up phase in the context of organizing funds, or rather, identifying potential financial sources, is the stage that can be referred to as directly preceding the decision to start a business. Once the entrepreneur, through both his own preparation and the receipt of advisory support, is capable of defining the idea, as well as designing its effective implementation, the question of securing assurances for its financial implementation can provide sufficient impetus for formal activities and full commitment to the establishment of a startup. A supportive activity is the so-called incubation phase, which is particularly important in terms of increasing the survival rate of such a start-up.

THE INCUBATION STAGE: FINANCING AND MARKET PERSPECTIVE

Business incubation is a support process that accelerates the successful development of startup and fledgling companies by providing entrepreneurs with an array of targeted resources and services. These services are usually developed or orchestrated by incubator management and offered both in the business incubator and through its network of contacts. A business incubator's main goal is to produce successful firms that will leave the program financially viable and freestanding. These incubator graduates have the potential to create jobs, revitalize neighborhoods, commercialize new technologies and strengthen local and national economies (Mian et al., 2021).

Modern incubation approach means operationalized through numerous incubation mechanisms such as business incubators, technology incubation, innovation centers, accelerators, science parks, co-working and maker spaces, startup garages, technology parks, industry parks, machinery parks, technology transfer centers and also virtual incubation. The phase of startups where the incubation process is crucial relates to the first stage of operations immediately after the company is registered and starts functioning. Although institutional so-called pre-incubation support includes business planning involving sales programming and even preliminary contracts and agreements for the sale of the finished product or service, the actual contact with the market only brings about real difficulties and revealing risks. This is also why institutional support seems so important.

The reference indicates that the most important drivers of sustainable entrepreneurship are behavioral factors and business factors (Klimczuk & Tomczyk, 2020). Startups are often assisted by commercial projects which aim to assist their development as well as to provide the individuals working on these projects with development of the competencies. For these startup programs (incubators) the focus is on developing key competencies that are important for the functioning of the business and for achieving success. Among the activities that incubators offer the following may be listed: coaching, co-working space, providing venture capital, making competitions, networking, accelerating, organizing workshops and seminars, extra business support.

The offer of substantive support in the first months of startup companies increases the survival rate of these enterprises. A large part of highly innovative companies originate from universities, so-called spinoffs, and for this reason the location of the incubator there also has its justification (Kusio, 2015).

The reason for existence of incubators or accelerators especially in higher education facilities refers to the range of activities: education and counseling support for innovation, cooperation, social benefits in the context of efficient management and the use of technology, strengthening the development of monitoring and information systems should be a priority for all businesses, especially startups.

Most of the first definitions of incubators considered a business incubator as a physical place for startups with attributes. One of the first European definitions of the business incubation indicates that the business incubator is a place where newly created firms are concentrated in a limited space and which is aimed at improving the chance of growth and rate of survival of these enterprises by providing them a modular building equipped with all the necessary utilities (telephone, fax, computer) as well as with managerial support and backup services. Business incubation is interpreted as a dynamic business development process which helps to reduce the failure rate of early stage companies and speed their growth. From that perspective it may be concluded that one of the main functions, if not the most important of them, is to decrease the failure rate of newly established companies (Best Practice..., 2000).

In addition to expert support aimed at obtaining, sustaining and increasing the market share of a spinoff enterprise, incubators also offer assistance in identifying and obtaining access to funding. The most elementary division of funds, as mentioned when discussing the pre-incubation phase, is their classification into internal and external, as well as public and private. Sources of a public nature with regard to European countries refer to EU funds, most of which are generally administered by government entities, so incubation for start-ups often involves a public aspect - there are public incubation programs (Kusio, 2009).

The idea of triple helix when incubating includes: the common goal of universities, industries and government is to develop an innovative environment, fostering and creating a general climate of entrepreneurship, setting up spin-off companies from universities, technology transfer offices and licensing agreements, partnerships between innovators and large corporations to develop their business units, various trilateral university-industry-government combinations – triple helix - will generate a dynamism that promotes and creates an equilibrium between the different systems (Kusio, 2016).

As part of the operation of incubators and the professional support they offer, networking is a distinctive feature. Incubates can utilize two kinds of networks: internal and external. Internal networking is a service provided by the incubator that fosters the relationships among companies inside the incubator. Such interactions help address the liability of newness that all incubator firms experience, through the exchange of resources and knowledge. External

networks, however, are also crucial to incubates as they link companies with external agents, such as potential partners, customers, employees, university researchers and financiers.

CONCLUSIONS

Small and medium-sized enterprises should be considered key players in building socio-economic prosperity. In addition to the fact that employment grows due to them and the principles of commercialization and innovation are realized, in addition they make an invaluable contribution to the creation of gross domestic product. Startups are defined as those small businesses whose emergence is associated with innovation, and often radical innovation, affecting changes in the demand structure in local, regional, but also national and international markets. Dynamism, which in the concept of a startup is supposed to lead to rapid growth and development, defines the next level, which is scaleup.

Despite the debate over the legitimacy of policies to support the creation and development of startups, certainly activities in this area have a positive impact on the level of startup survival. Support measures concern the pre- and post-startup phases and are defined as pre-incubation and incubation. It is difficult to make distinctions in prioritizing which phase is more significant. It seems that the mere forecasting of future business that is included in pre-incubation has a greater impact on the creation of a business model that will lead to more dynamic scaling. At this stage, support activities relate to consulting, but also to the offer of business financing. The more the ideas originate and relate to universities, the greater the expected level of innovative radicalism. Therefore, also the greater interest in financial support of both public and private nature.

The post-pandemic period, which is characterized by a reduction in the dynamics of economic growth, caused, among other things, by lockdowns, does not at all imply a change in the dynamics of globalization. In fact, it can be argued that the opposite is actually true - the global nature of the pandemic has deepened the global perception of the socio-economic environment. This may also imply a deepened perception of the environment as global by future entrepreneurs. Thus, it seems that this may bear interesting guidelines for pre-incubation and incubation of future startups. Indeed, a deeper perception of the market as global may not only pertain to the characteristics of markets for startups, but also to the startup market itself.

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ANALYSIS OF ACCOMMODATION OFFER IN CRISIS CONDITIONS

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Abstract: *In the last three decades, there has been an intensive development of tourism in the world. However, with the onset of the corona virus pandemic, the development of the tourism sector has slowed down significantly. The global crisis that followed during 2020/21 has caused restrictions on travel and a drop in the number of international arrivals, which consequently had a negative impact on the overall business of all business entities in tourism (airlines, hotel and restaurant companies, travel agencies, public transport, sports, cultural and other events, etc.). The crisis has also caused the reduction of occupancy rate of accommodation capacities, which led to the repositioning of the offer as a whole, the introduction of new types of accommodation and additional elements in accordance with measures for the prevention of the pandemic of the virus. The subject of the paper is the analysis of the attitudes of users of accommodation services and the factors/elements that influence the choice of the type of accommodation in crisis conditions. The aim of the research is to observe user preferences from the aspect of tangible and intangible elements of the accommodation offer, such as: price, quality of service, competence and friendliness of the staff, security, image, location, comfort, interior, food and drink, online business, ratings and reviews on Tripadvisor or other platforms, etc. In crisis conditions, the demand for online booking is increased, along with security, safety and cleanliness of rooms, lower hotel prices, etc. Moreover, an increasing number of users opt for non-boarding accommodation as a safer type of boarding, which additionally provides them with a certain degree of privacy. One of the most represented platforms in the world, Airbnb, has recorded a significant increase in the number of users in the last year, but this can have a negative impact on the hotel business. The subject of consideration in the paper are supply factors which influence users' preference for private rather than hotel accommodation in crisis conditions. In relation to this, the question arises whether, for example, a lower price, security, a pleasant and homely atmosphere influence a higher degree of occupancy of private facilities. Through the analysis of hotel and private accommodation, the key elements of the offer in which additional investment should be made were pointed out, and thus proposed measures to improve the performance of tourist companies and their faster way out from the crisis situation, both in the world and in our country.*

Keywords: *crisis, hotel business, private accommodation, offer*

JEL Classification: Z30, Z32

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INTRODUCTION

Tourism is one of the sectors which has been affected the most by the pandemic of the virus, since it implies the highest degree of interaction among people. WHO data showed that there has been a significant drop in the number of international arrivals, by about 80% in 2020/21, as compared to previous years (Gössling, et al, 2021). Global health crisis did not only affect the development and sustainability of tourist industry, but it affected the changes in attitudes, preferences and tourist behavior as well (Zhang, et al., 2022). A great deal of research (García-Milon, et al, 2021) has shown a significant impact of crisis on the degree of perceived risk of traveling, tourist intentions and changes in their lifestyle, as well as an increasing development of virtual tourism. There is a long-term change of models of behavior and an introduction of new forms of tourist practice, such as: increasing number of cancelled trips and last-minute bookings, decreasing number of people who use public transportation, reducing activities which require a higher level of human contact, preferring outdoor activities and paying attention to hygiene and cleanliness when booking accommodation (García-Milon, et al, 2021).

The continuous development of technology leads to the innovation of the tourist offer and new ways of booking accommodation. In the conditions of the crisis, there is a significant increase in online bookings, both of traditional hotels and private accommodation. Moreover, an increasing focus on digital accommodation platforms that allow users to search, research, compare, book and pay for accommodation worldwide via the Internet is present. Generally, bookings can be made through the hotel's website, when it comes to hotels of higher categorization, or through OTAs, i.e. online travel agencies which offer a complete package deal that, in addition to accommodation, also includes airline tickets, insurance, car rental, etc. When analyzing the booking of accommodation via the Internet or agencies, experts pointed out the key factors which influence tourists when booking their accommodation online, such as: simplicity and speed of booking, finding relevant information about travel and the lower price of booking via the Internet. The advantages of online agencies in booking accommodation are based on: possessing the knowledge and experience of the staff, the ability of agencies to offer a complete package of arrangements adapted to each traveler, social interaction and relationship with agents, security when performing financial transactions through agencies, etc. (Seočanac, et. al, 2019).

In the conditions of the pandemic, there is an increasing number of users who book their accommodation via online platforms, as well as those users who prefer shorter stay in their destination and types of accommodation with lower prices. Most of the bookings of hotel accommodation is carried out via *Booking*. This platform includes over 30 million of accommodation units, in over 150 000 destinations in 228 countries (Booking.com) and it is intended for smaller and independent hotels, mostly. But the importance of web platforms that focus on renting out accommodation (rooms, apartments, houses, flats, etc.) that are owned by individuals is growing, which represents the development of the so-called C2C business model. Tourists who use these online platforms belong to a group of younger and educated users, (Seočanac, et. al, 2019) and they are also the fastest growing segment on the global tourist market since it is predicted that by 2025 (according to data from the World Tourism Organization) there will be about 500 million young tourists in the world.

However, according to the latest data, the tourism sector and thus the hotel business are achieving a significant recovery and return to the level before the pandemic in 2019. Although this is predicted to happen by 2025, the World Tourism Organization states that the number of international arrivals has doubled in 2022 compared to the previous year. The biggest

recovery was recorded in Western Europe, while the fastest recovery of tourism was achieved in China and the Mediterranean part of Europe.

The subject of consideration in the paper focuses on the key supply factors which influence users' preference for private (rather than hotel) accommodation in crisis conditions. In relation to that, research questions are asked regarding the influence of tangible and intangible elements of the offer on the choice of accommodation type, i.e., if factors such as lower price, security, privacy or physical distance in crisis conditions affect the higher demand for private accommodation, compared to a hotel type of accommodation. Through a comparative analysis of different types of accommodation, we pointed out key aspects of the offers in which additional investment should be made and suggestions for a faster exit of tourist companies from the crisis.

ACCOMMODATION MODELS IN CRISIS CONDITION

The COVID-19 pandemic has influenced the rapid development of new forms of accommodation on the one hand and changes in tourist preferences and intentions on the other (Bresciani et., al, 2021). An increase in the trend of the so-called "peer to peer travel" can be observed, which is part of the shared economy concept. This concept is based on using the Internet and mobile technology in order to rent things and services without taking ownership of them (Guttentag et al., 2018). The philosophy of the so-called "peer to peer travel" is based on online booking of "a unique travel experience with the help of an insider". Half a million of Europeans earn billions of dollars by applying this concept. During 2020, the trend of additional earnings (about 25%) from tourist travelers in the world who use this type of accommodation reservation was recorded.

This model is based on the short-term rental of accommodation for free or for a certain fee and there was the highest growth of this type of accommodation in the world in the period of the so-called lockdown. The most famous online platforms for booking this type of accommodation include Airbnb, HomeExchange, Couchsurfing, HomeAway and others (Tussyadiah, et al., 2016). Gradually, this accommodation model takes over market share from traditional hotels, because it offers new services with a focus on providing a unique experience, social and physical interaction with the local population, thus ensuring a higher degree of trust between guests and hosts, but also lower prices of accommodation (Bresciani et.al, 2021).

In the last few years, the use of Airbnb as the most successful platform, which has more than 2 million announcements of offers in more than 34,000 cities and 190 countries, has significantly increased in the world, and includes mainly renting out apartments, houses (57%) and private rooms (41%)(Burešová et al., 2019). The value of Airbnb exceeds 10 billion dollars, which is more than the value of the most famous hotel chain in the world, such as Hyatt. Airbnb's business model is based on lower costs and opportunities to provide a local experience to tourists who make direct contact with hosts or local residents (Tussyadiah, et al., 2016). Unlike hotels which have to be built according to the requirements of the local government or urban plan, Airbnb offers apartments or private rooms in any location and destination around the world (Gutierrez, et al, 2017).

By establishing direct contact between hosts and guests, accommodation provides an additional authentic experience along with experience of local culture, but at lower prices. Studies which analyzed the impact of hotel and private accommodation factors on user satisfaction and loyalty showed that experiencing an authentic experience during their stay is of great importance (Birinci, et al., 2018). Having in mind that hotels are mostly located in the

city centers or in the main tourist locations, Airbnb offers private accommodation in remote locations or outside the city in order to provide tourists with various benefits such as: the possibility of visiting local places, organizing cooking classes, dancing, folklore, pottery, gardening or cycling tours organized by accommodation owners (Birinci, et al., 2018). Guests develop close relationships with the hosts and learn a lot from them about local traditions, culture and numerous interesting and attractive destinations. Guests can make real friendships during their stay and feel a real homely atmosphere. Given the expressed degree of empathy, guests are less inclined to leave negative online reviews or comments about the accommodation. Because of this, Airbnb has a lower number of negative reviews or accommodation ratings than Booking. Positive reviews on digital platforms have a great influence on the choice of accommodation, as more than 80% of travelers read accommodation reviews before making a final decision, and more than 50% of them do not want to book accommodation which does not have any reviews (Pera et al., 2019).

However, Airbnb has been criticized for its lack of quality standards, low levels of trust, and the uncertainty of leaving personal information when booking. Hotels have quality standards which depend on the type of service they provide and professional staff trained to provide high quality services in implementing the standards. The process of booking a hotel is simpler than private accommodation because guests have more confidence in hotels that provide additional information about accommodation. Information about the offer of private accommodation which is often published via online platforms tends to be incomplete. The question of the security of booking through Airbnb leads to a greater mistrust among users who reluctantly leave their personal information this way. However, even with all these potential problems, millions of users in the world still decide to book private accommodation rather than hotels (Birinci, et al., 2018).

Regardless of the fact that there is distrust about this way of renting private accommodation, i.e. staying in a house or apartment of unknown individuals/owners, Airbnb has built a high degree of trust between the host and the guest, mainly due to creating a profile of the owner of the accommodation units on the site or through LinkedIn, Facebook or other social networks. In this way, Airbnb provides users with the necessary information about accommodation, price and location, availability of accommodation, check-in and check-out times, as well as accommodation photos, ratings, guest comments and experiences, and other benefits.

Apart from Airbnb, other (P2P) short-term vacation rental platforms (STVR) are being developed, which were established by large travel companies (such as Expedia, Priceline, and TripAdvisor). Airbnb is popular with tourists who book individual trips and who opt for more urban and well-known destinations, for vacation or work. They mostly belong to the group of younger and technologically educated tourists with an adventurous spirit. However, other platforms (like Homeaway) are more oriented towards family travel which implies that almost 90% of their travelers travel with their family members. In this case, tourists choose destinations for their vacation outside the city and book functional types of accommodation with more rooms, which are separate (for instance two or three bedrooms) (Soh, Seo, 2021).

There are many experts who disagree that digital platforms (intended for booking private accommodation) have a negative impact on hotel business (Soh, Seo, 2021). Namely, the group of users with higher income levels will rather opt for the hotel type of accommodation, regardless of the big difference in price compared to some private accommodation. Therefore, the influence of the profile of tourists and specific factors (such as health and safety) on the choice of type of accommodation in crisis conditions can be analyzed.

The subject of the analysis in the paper focuses on the elements of the offer which determine the choice of the type of private accommodation in crisis situations. Safety and security factors are also included in the analysis, but primarily the need of tourists to have physical and social distance. The increase in demand for private accommodation is a consequence of users' need for physical distancing during the pandemic, which also implies changes in social habits, i.e. patterns of tourist behavior (Bresciani et. al, 2021). On the other hand, the presence of physical distance encourages social and physical interaction. In order to achieve social interaction, tourists prefer to rent apartments rather than individual rooms within an apartment or house (Bresciani et., al, 2021). Previous studies have confirmed that apartments provide a higher level of physical distance compared to other types of private accommodation, so tourists are more likely to opt for them in conditions of a virus pandemic crisis.

METHODOLOGY AND RESEARCH RESULTS

The subject of the research is the analysis of the attitudes of users of accommodation services and the factors/elements that influence the choice of the type of accommodation in crisis conditions. The goal of the analysis is to observe user preferences from the aspect of tangible and intangible elements of the accommodation offer, such as: price, quality of service, competence and friendliness of the staff, security, location, comfort, interior, food and drink, online business, ratings on *Tripadvisor* or other platforms.

In crisis conditions, the demand for online booking, security, safety and cleanliness of rooms, lower hotel prices, etc. increases. In addition, an increasing number of users choose non-serviced accommodation as a safer type of stay, which additionally provides them with a certain degree of privacy. *Airbnb* records a significant increase in the number of users in the world and in our country. However, this can have a negative impact on the hotel business. The paper examines supply factors that influence users' preference for private rather than hotel accommodation in crisis conditions. We start from certain research questions related to evaluating the influence of the elements of the accommodation offer on the choice of the type of accommodation. The importance of factors influencing the choice of different forms of private accommodation in crisis conditions is analyzed in particular.

The survey research was conducted on the basis of a convenience sampling of 402 respondents, during May 2022, on the territory of two cities in Serbia (Kragujevac and Belgrade). The results of descriptive statistics showed that the majority of respondents (around 71%) have stayed in private accommodation, while 29% of them have chosen hotels when traveling. About 52% of respondents travel once a year, and about 41% travel two or three times a year. The majority of respondents are women (about 60%), and the largest percentage of them have secondary (42%) and higher education (37%). The age structure of the respondents mainly refers to the working population aged between 20 and 40 (about 64%). As for the amount of monthly income, respondents who have the lowest income - up to 50,000 RSD (35%) and those who have the highest income - over 100,000 RSD (33%) are equally represented in the sample.

Based on the binary logistic regression analysis which was carried out and which includes a large number of tangible and intangible elements of the offer, the results of the analysis show the most significant factors which determine the probability of choice of private accommodation (table 1). In addition, the impact of different user profiles on the choice of private accommodation is also analyzed.

Table 1: Analysis of elements of an offer which influence the choice of accommodation

	B	S.E.	Wald	Sig.	Exp(B)
quality of services	-.224	.294	.582	.445	.799
comfort	-.012	.274	.002	.966	.988
staff	-.446	.318	1.962	.161	.640
interior/ambience	.330	.269	1.511	.219	1.391
location	-.205	.259	.631	.427	.814
cleanliness	.940	.252	13.970	.000	2.560
education	-.346	.253	1.869	.172	.708
online reviews	2.358	1.067	4.880	.027	10.569
accommodation privacy	.421	.179	5.565	.018	1.524
price	.886	.407	4.740	.029	2.426
income	-.455	.195	5.460	.019	.634
age	.062	.157	.156	.693	1.064
frequency of traveling	-.619	.280	4.887	.027	.538
gender	-.022	.216	.010	.919	.978
constant	-.592	1.668	.126	.723	.553

Source: Author's calculation

The results of the regression analysis have confirmed that the most important elements of the accommodation offer are the lower price of the accommodation, privacy and homely atmosphere during the stay, as well as the maintenance of hygiene and cleanliness in the accommodation. The probability that they will choose private accommodation is two and half times higher if there is a high degree of hygiene and cleanliness. It is also important to provide the possibility of online reservations and reviews of private accommodation, which confirms the importance of digital platforms which are intended for this type of accommodation. The data show that if there are positive online reviews, users will more often (more than ten times) choose private accommodation. Tourists choose private accommodation since in that type of accommodation they have privacy and security when it comes to their health during the pandemic. As for the analysis of different user profiles, there is an influence of income level on their decision to stay in private accommodation that is logical considering the low price of this type of accommodation. With increases in accommodation prices the probability of choosing private accommodation is two and half times higher in relation to the choice of hotel accommodation. Also, the frequency of tourists' trips affects their choice of private accommodation. Namely, the more they travel during the year, the more likely they will choose a hotel rather than a private accommodation (the probability will increase for 1.85 times).

Table 2: Analysis of factors which influence the choice of different types of private accommodation

	B	S.E.	Wald	Sig.	Exp(B)
social interaction	.257	.150	2.947	.086	1.293
accommodation safety	-.141	.143	.980	.322	.868
physical distance	-.269	.155	3.027	.082	.764
accommodation functionality	.009	.112	.007	.934	1.009
constant	.218	.591	.135	.713	1.243

Source: Author's calculation

In addition to the analysis of the influence of tangible and intangible elements of the offer, an analysis of the influence of certain factors on the choice of a different type of offer in private accommodation was carried out and the results are presented in table 2. Namely, the majority

of users (about 57%) decide to book apartments rather than separate rooms or suites within a specific accommodation unit (apartment, building or house) during the pandemic. The results of the logistic regression showed that tourists prefer to rent apartments or houses, because this ensures greater physical distance, but also enables social interaction during their stay in this type of accommodation. The interesting fact is that if the social interaction is higher the probability of choosing apartments is higher. But, if there is high need for physical distance the probability of choosing individual rooms will be higher. In relation to that, the assumption that private accommodation has a negative impact on hotel business in pandemic conditions has been confirmed, since private accommodation provides a greater degree of physical distance, which also encourages physical and social interaction between tourists.

CONCLUSION

The analysis of the advantages and disadvantages of a certain type of accommodation indicated the key elements of the offer in which additional investment should be made in order to improve the tourist offer in crisis conditions. The research results confirmed the importance of the price of accommodation when choosing the type of accommodation (private or hotel). Also, it has been shown that it is necessary to have additional investment in the privacy and security of accommodation, as well as impeccable cleanliness in crisis conditions. The moment of interaction of a host with guests is also important, but at the same time ensuring physical distance and social interaction when choosing a type of private accommodation is significant as well.

Given that the majority of tourists in crisis situations prefer private accommodation (renting apartments in most cases), the issue of improving the offer of hotels in order to survive on the market in the period after the end of the pandemic also arises when traveling. Namely, the results of the research can offer guidelines for hotel managers or owners on how to improve the quality of their offer, provide an authentic experience and develop a greater degree of socialization with their guests. Hotels should provide a local experience to guests during their stay in a particular destination. This can be realized through cooperation with local organizations or by supporting local events. Regardless of the cost of accommodation, hotels should ensure privacy and security for guests. That is why more and more hotels are introducing the so-called concept of "clean and safe", which represents compliance with standards in ensuring cleanliness and health safety during the stay of guests in pandemic conditions.

The analysis of private and hotel accommodation in the paper indicated the key elements of the offer as well as the factors in which additional investments should be made in order for the tourism sector in the world and in our country to recover as soon as possible after the end of the crisis caused by the pandemic.

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EMPLOYEE READINESS FOR LIFELONG LEARNING IN DIGITAL AGE

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Abstract: Continuing professional development and participation in lifelong learning are not only important, but necessary conditions in the era of rapid changes. The beginning of forth industrial revolution, digitalization as well as rapid technological progress have caused gaps in employee skills. Greater interaction between humans and machines enabled by new technologies will raise labor productivity but require different and often higher skills. In order to answer to demands of new working conditions, an employee is expected to have strong cognitive skills, basic information and communication technology, and analytical skills, as well as a range of non-cognitive skills such as creativity, problem-solving, critical thinking, and communication. Thus, there is a doubt how to overcome the identified gaps and which training programs and courses should be implemented. The purpose of this paper is to investigate employee readiness level for participating in learning process at working place. The sample consisted of 137 employees from diverse public and private enterprises in Serbia. In order to test the employee readiness descriptive statistical analysis is conducted, while one way ANOVA test is used to test the significant difference among employees at various educational levels. The obtained results can be used to develop new directions of lifelong education policies and to highlight fields in which enterprises should upgrade their employees' readiness for new industrial era.

Keywords: lifelong learning, digitalization, digital age, digital transformation, education

JEL Classification: I2, M2, O3

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INTRODUCTION

In a wider perspective, education is explained as a process that begins with a birth and continues throughout life, such as attending in formal teaching programs, non-formal trainings and informal way of acquiring new knowledge and skills (Allen & Kelly, 2015). The 21st century announced the beginning of rapid changes and transformations that have changed life and working conditions, highlighting the importance of lifelong learning (LLL) (Karataset al., 2021). This changes in educational system have affected the development of the knowledge, skills, abilities and characteristics required for effective LLL as a basic life skill for each individual (Yuksel et al., 2016). The definition of LLL proposed by The European Lifelong Learning Initiative is “an ongoing supportive process that encourages individuals to acquire all the knowledge, values, skills and understandings they need throughout their lives and to apply them with confidence, creativity and joy in all roles, conditions and environments” (Watson, 2003). Bearing in mind that in the the 21st century the knowledge and experiences learned at school are not sufficient in the individual’s life and won’t assure achieving professional success, LLL programs consider ”all common, natural and continuing learning activities for the development of knowledge, skills and competencies related to personal, social or professional perspective” (European Commission, 2000).

According to Parisi et al. (2019) LLL presents continuous learning, where the individual has an opportunity to acquire new knowledge and experiences by using and improving the previously acquired knowledge, skills and gained experiences. Therefore, UNESCO proposed lifelong learning as main strategy in combating unemployment (Fischer, 2001). The job market has changed, and contemporary trends have influence on employers’ needs. It is expected that in future it will increase the demand highly skilled workforce that have talent, creative and critical thinking. In accordance, PricewaterhouseCoopers (PwC) identified that the most employees are interested in training programs related to the improvement of digital skills, but that soft skills that cannot be automated by machines, such as creativity, critical thinking, flexibility (PwC, 2018).

The presented challenges in business activity have caused changes in educational system. Teachers and lectures should adjust to new context in order to satisfy the needs of their students. Due to the Covid 19 outbreak, different applications have been implemented in education, such as remote learning, blended learning, online courses etc. These are some of the programs that were underpinned by digital technology, that have impact on teaching staff, who have to become lifelong learners. Teachers should have a solid worldview and have to be familiar with contemporary educational trends in order to be successful in implementation of different programs (Karatatas & Arpaci, 2021).

Apart from the impact on educational system, lifelong learning has been analyzed in business context (Buang et al., 2019; Russell et al., 2022). Employers are now looking for employees who habitually improve their knowledge and skills to meet workplace demands. According to Buang et al. (2019), LLL Programs is perceived as a platform that can be useful for employees to improve their competencies level, and thus to increase their performance. In order to ensure the maximum involvement of employees in the defined LLL programs, it is necessary to identify their readiness to take part in learning process. In literature it is known Index of Readiness for Digital Lifelong Learning (IRDLL) for the European Union (EU)’s 27, which calculates the readiness at national level. At organizational level, there are studies that have explored different scale for measuring employee readiness (Candy et al., 1994; Kirby et al., 2010; Knapper & Cropley, 2021), highlighted the role of the government, as well as, the problem with funding options for LLL programs (Bakar et al., 2014; Buang et al., 2019)

Thus, in order to answer to the current issues in the job market and to overcome the identified gaps, employer should plan training programs and courses for their employees, that are in accordance to their current competences. Therefore, the purpose of this paper is to investigate employee readiness level for participating in learning process, and to identify if there is any difference between the employees with different educational background. This paper is structured as follows. After the introductory part, the literature review was given, within which the key theoretical assumptions were explained, as well as the results of previous studies, In addition, the research methodology was presented, followed by an overview of the results of the conducted analyses. At the end, a conclusion in which the implications and limitations of the research were presented.

LIFELONG LEARNING IN DIGITAL AGE

The 21st century announced the beginning of rapid changes and transformations that have changed life and working conditions. New reality has caused changes in educational system and learning practice, providing new models and approaches (Reigeluth, 2012; Scott, 2015). First of all, teachers should have a solid worldview and have to be familiar with contemporary educational trends in order to be successful in implementation of different programs (Karatas & Arpaci, 2021). In this context, teaching process and learning programs have to be flexible, in order to meet the diverse interests and expectations of students (Avis, 2019), and to reveal their talents (Tomlinson, 2014).

In the light of these developments, new approaches to learning process have been developed, such as constructivist approach, STEM education brain-based learning, differentiated teaching, blended learning, cooperative learning, etc. (Badriyah et al., 2020; Evcili et al., 2020). The common feature of all these programs is that students as self-managed individuals have the responsibility of learning. Therefore, 21st century announced the beginning of new area of knowledge, highlighting the importance of LLL (Karatas et al., 2021)

Apart from students, it is important for teachers to develop themselves professionally, to become more flexible and open for improvements (Avis, 2019; Karatas et al., 2021). They are responsible for effectiveness of implemented learning programs, so it is expected to follow contemporary educational practices. Teaching staff is one of the main factors that influence the success of the implementation of scientific and technological innovations that have inevitably changed learning practice (Ates & Alsas, 2012).

For businesses, employers are now looking for employees that are interested in permanent improvement of knowledge and skills (Dunlap & Lowenthal, 2013; Buang et al., 2019). Bearing in mind that contemporary challenges have affected situation in job market, in order to provide better position, employees have to be ready to engage with existing technologies and to retain a commitment to LLL programs. Apart from satisfying present-day qualification requirements, attending LLL programs will have impact on organizational performance, such as productivity and viability (Buang et al., 2019). As a result of attending LLL programs, employers will have a more competitive employees, that are more creative and competent for decision making process (Dosunmu & Adeyemo, 2018).

Employers are responsible for creating a learning culture, that include organizing both inhouse and outside LLL training for their employees (Thongmak, 2021), while they should concrete on learning methods and courses that are compatible with the needs and interest of employees. In order to provide appropriate LLL programs, employers have to analyze and measure employee readiness for their engagement in current learning programs and to analyze the level of their competences.

The Industrial Revolution 4.0 that has announced the emergence of smart factory, artificial intelligence, Internet of things, augmented reality affect the situation in job market (Said, 2017). Employers have to be ready to provide future skills, that are required in accordance with the current technology trends (Yunos & Din, 2019). To measure the current situation of digital learning at national level it is developed Index of Readiness for Digital Lifelong Learning only used for the European Union countries. The information that are provided using these measures are used by policymakers, social partners, and the public, that are used to rank countries and compare their standing (Beblavý et al., 2019).

At organizational level, there are several instruments available to measure adoption of LLL skills (Candy et al., 1994; Kirby et al., 2010; Knapper & Cropley, 2000). Each of the given scale has its shortcomings. The general conclusion is that the lack of information and skills learning among have impact on employees' interests in participating in LLL programs (Buang et al., 2019). According to Nabil Fikri and Roswani (2014), it is stated that academic qualification, professionals, high fees and others way or support have impact on employees' readiness to participate in LLL programs, Unappropriated measurement system for assessing LLL readiness, and the lack of cooperation between government and academicians has affected the current funding opportunities, which is one of the reasons for insufficient level of satisfaction among lectures and participants (Bakar et al., 2014).

In order to overcome identified weakness in LLL implementation, it is necessary to develop the scale that will be useful in assessing employees' readiness and to provide the answer to following questions:

RQ1: What is the level of readiness of employees to get involved in LLL programs?

RQ2: Is there any difference in the level of readiness between employees with different educational background?

METHODOLOGY

For data collection, a questionnaire was used, which was specially designed for this research. The statements are formulated in accordance with the scale developed by Kirby et al. (2010), which were translated and adjusted to the features of given national context. The questionnaire included the 13-item scale, whereby respondents expressed the extent of agreement on the 5-point Likert scale (1- absolutely disagree; 5- absolutely agree). The given items considered several dimensions of LLL: (1) goal setting; (2) acquisition and application of new knowledge and skills; (3) self-efficiency; (4) information literacy; and (5) learning strategy adaptation. Sample items include: "I like to learn because of the personal feeling of well-being.", "I easily find my way in unexpected situations and quickly find a solution to the problems that arise."

We have randomly selected 77 private and public enterprises operating in Republic of Serbia. The invitations to potential participants were sent via email with a link to the web-based survey questionnaire. The key informants in selected enterprises were asked to distribute the questionnaire to their employees. A total of 156 surveys were received, and after removing incomplete surveys, the final study sample was 137 SMEs.

The data analysis was conducted in SPSS - statistical package for social sciences. First, reliability analysis was performed, presenting the value of the Cronbach's alpha coefficient. Second, descriptive statistical analysis was performed, which involves calculating the arithmetic mean and standard deviation for each statement separately, in order to determine the level of information literacy of the respondents. Finally, analysis of variance (ANOVA

test) was conducted to determine the difference in the extent of employee readiness for lifelong learning between different groups of respondents.

RESULTS AND DISCUSSION

In first step reliability analysis was conducted, whereby Cronbach's alpha coefficient is 0.730, which indicates that the assumption of internal consistency of given statements is proven (George & Mallery, 2003). Second step represents performing descriptive statistical analysis that is used to make a conclusion about the level of respondents' agreement with defined items. Based on the obtained results, it is evident that the lowest degree of agreement is identified in case related to availability of necessary information, while the highest level is noted considering awareness of functional knowledge, as well as the ability to acquire new knowledge.

Table 1. Descriptive Statistics

ID	Mean	Std. Deviation
I1	2,9708	1,23635
I2	3,9635	,86099
I3	3,6715	1,05795
I4	3,5912	,91197
I5	2,7299	1,42201
I6	3,5620	1,03513
I7	2,9270	1,26976
I8	4,2044	,90861
I9	4,2409	,87888
I10	2,7737	1,29474
I11	4,3796	,76822
I12	4,2774	,78337
I13	4,2920	,82391

Source: Authors' research

Thirdly, ANOVA test was conducted, whereby the level of education of employees is used as a grouping variable. The significant difference isn't proven in the case of all statements. According to the results given in previous table, it can be concluded that in case of goal setting in uncertain time, but also in items related to self-efficacy, it is identified the significant difference among employees. In other words, there is significant difference in the level of readiness to deal with uncertainty among employees with different level of education. The same result is in case of the extent of self-efficacy. The results of the Post-hoc Sheffe test indicate that employees with lower level of education show a greater willingness to learn when it comes to statements related to goal setting in uncertain times, while in terms of self-efficacy the employees with higher education have shown the high level of readiness.

Table 2. Results of ANOVA test

ID	F	Sig.
I1	.100	.905
I2	2.905	.057
I3	5.828	.004
I4	.067	.935
I5	5.594	.004
I6	3.421	.035

ID	F	Sig.
I7	.226	.798
I8	3.805	.024
I9	1.417	.245
I10	1.063	.347
I11	.916	.402
I12	.778	.461
I13	1.420	.244

Source: Authors' research

Table 3. Results of ANOVA test – Post-hoc Scheffe test

Items	SE ^a vs. CE ^b	CE vs. UE ^c	SE vs. UE
I1	-.01111	-.09484	.08372
I2	-.33611	.01628	-.31984
I3	.19722	.62226*	.42504
I4	-.00833	.05665	.04832
I5	.31111	.47606	.78717*
I6	-.30278	-.12582	-.42860*
I7	-.12778	.00219	-.12559
I8	-.30278	-.10548	-.40826*
I9	-.27500	.20282	-.07218
I10	.08333	.22692	.31025
I11	-.10000	-.07293	-.17293
I12	-.17222	.04351	-.12872
I13	-.26111	-.15689	.10423

^a Secondary education, ^b College or some type of specialization, ^c University education

Source: Authors' research

The obtained results are in line with previous results that state that there is not unique scale for measuring readiness for LLL (Candy et al., 1994; Kirby et al., 2010; Knapper & Cropley, 2000). It is confirmed that in some cases education has impact on LLL readiness (Nabil Fikri and Roswani, 2014), but still employees are not aware of the importance of engagement in LLL process, especially in case of employees with the highest educational attainment. This requires exploring other demographic characteristics of employees that will affect their self-efficacy.

CONCLUSION

Rapid changes and transformations in science and technology have influenced educational system and employees' needs, providing different approaches of organizing teaching process and opportunities for improving their competences. The various educational strategies have been developed, which primarily aim to achieve the best possible production and economic effects. All forms of education (formal, non-formal and informal), as well as all educational strategies (permanent education, continuous professional education, lifelong learning, etc.) become not only an integral part of human capital, but also a necessary precondition for its growth and development.

Previous studies have highlighted the impact of the potential of data, artificial intelligence (AI), automation, internet of things and services, cybersecurity, cloud computing, data

analysis on different areas of work and life (Yunos & Din, 2019; Lasi et al., 2014; Schuster, Groß, Vossen, Richert, & Jeschke, 2016). Bearing in mind contemporary challenges and their impact on businesses, in this paper we have investigated the level of employee readiness for attending LLL programs. Respecting different dimensions of LLL, it is concluded that not all of them are the same perceived from the perspective of all employees. Considering the level of education, it is proved that there is difference in the level of readiness to deal with uncertainty and in the level of self-efficacy. The results of conducted research indicate that dealing with uncertainty is one of the key assumptions for the survival in the market, thus it is considered as a part of employees readiness for attending different educational programs and trainings. The other important dimension is self-efficacy as a kind of self-awareness, that presents employees' believes to be successful in attending different educational program in order to improve their competences.

These results have important implications for members of the academic and professional public. The obtained results can be useful for creating a framework for development of effective educational system. It is proved that educational level has impact on employee readiness, thus the implemented scale for measuring is considered as first stage in LLL program implementation. The implications for the education system are in favor of the newly emerging circumstances caused by the COVID-19 pandemic. A greater focus on forms of remote learning has influenced the quality of learning process, but it should be useful for the implementation of LLL programs, i.e., when the participant are individuals in geographically dispersed units.

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TECHNOLOGICAL ACQUISITIONS AND PERFORMANCE: EMPIRICAL ANALYSIS OF ACQUIRED COMPANIES IN THE REPUBLIC OF SERBIA

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***Abstract:** In recent years, the technology sector has become one of the most active sectors for the implementation of acquisitions. Technological acquisitions are specific types of acquisitions focused on acquiring knowledge, technical expertise, employee skills, and specific new technologies. The acquisitions of technology companies allow acquiring companies to reconfigure their resource portfolios using the knowledge and capabilities of the acquired companies. By selling a majority stake in large companies, technology companies are seeking to increase their presence in the global market. Hence, technological acquisitions can be win-win events that benefit both parties. This paper aims to investigate the effects of technological acquisition on the performance of acquired companies. The research was conducted on the example of technology companies that were taken over by multinational companies in the process of international acquisitions. The effects of technological acquisitions on performance were measured using accounting performance measures: operating income, EBITDA margins, return on sales - ROS, return on assets - ROA and return on equity - ROE. The assessment of the performance of technological acquisitions was performed by comparing the accounting indicators two years after the acquisitions with the value of the indicators achieved two years before the acquisitions (-2, + 2). Data were collected from the official financial reports of the analyzed companies. The research results show that technological acquisitions do not lead to an increase in profitability (except for certain indicators of small-sized companies), but they lead to higher operating income. The research results show that technological acquisitions do not lead to an increase in profitability (except for certain indicators of small-sized companies), but they lead to higher operating revenues in the period after the acquisitions.*

The study has significant theoretical and practical implications. First, the results of the study theoretically and empirically expand the knowledge base on the effects of technological acquisitions on performance since such research is limited. This creates a basis for comparison with the results of research in developed market economies. Second, the study provides a deeper analysis of the performance of acquisitions by analyzing various profitability indicators in the period before and after acquisitions. The paper has practical implications for business people, as it indicates that technology companies that are unable to continue growing independently should strive to integrate with larger companies.

Keywords: technological acquisitions, technology companies, innovation, performance

JEL Classification: L25, M21, O16

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INTRODUCTION

In recent years, technological trends, such as digitization and artificial intelligence, have become the main drivers of global acquisitions, leading to a growth in the number and value of technological acquisitions. Regardless of the COVID-19 pandemic, which, especially during 2020, slowed down the mergers and acquisitions in a large number of industries, the technology sector recorded strong development (Kooli and Lock Son, 2021), both in the world and in the Republic of Serbia. In the last few years, the Serbian technological sector has had significant acquisitions, where large international companies appeared as buyers. Technology companies by joining with large multinational companies seek to achieve growth in the global market. Growth in the global market is an integral part of the continued success of technology-based companies, which are “born to be global”, financed with external capital, and must demonstrate continuous growth in sales and profits to remain attractive to investors (Amor et al., 2014). The highest value transactions in the technology sector are the acquisition of Mainframe by Nutanix, the American software cloud company, and the acquisition of Nordeus, the gaming company, by the American company Take Two Interactive Software. Technological acquisitions are aimed at taking over the knowledge base, technology and specific capabilities of the target company. Businesses pursue technological acquisitions to bridge the gap between the current state and what they would like to achieve in terms of innovation and performance (Cefis and Marsili, 2015).

Looking at the effect of technological acquisitions on performance is an important and current research area. A review of the literature shows that the largest number of studies investigate the effects of technological acquisitions on innovation (Jo et al., 2016; Han et al., 2017), a smaller number of studies analyze the effects of technological acquisitions on performance, measured by market performance measures, looking at whether technological acquisitions create value for shareholders (Benou and Madura, 2005; Lusyana and Sherif, 2016), while studies that monitor the effects of technological acquisitions on performance, measured through accounting performance measures, are very scarce (Viveiros Franco, 2018). This study seeks to overcome this research gap by investigating the effects of technological acquisitions on the accounting performance of the acquired firm.

The paper is structured as follows. First, a review of literature on technological acquisitions and the effects of technological acquisitions on performance is given, thus creating a basis for formulating a research hypothesis. Second, the research methodology is described. Third, the research results and discussion are presented. At the end, concluding considerations are given, limitations and directions for future research, as well as theoretical and practical implications of the paper.

REVIEW OF LITERATURE

TECHNOLOGICAL ACQUISITIONS

Technological acquisitions represent a specific type of acquisitions focusing on acquiring knowledge, technical expertise, employee skills, as well as specific new technologies of the target company (Savović, 2018). Acquisitions of technology companies are seen as a way to shorten innovation development time. Instead of the acquiring company developing internally, hiring new personnel to train and enable them to develop innovative solutions and adopt new technological trends, the company can make a strategic decision to take over an existing technological company, adopting the practice of open innovation, i.e. acquiring knowledge, skills and competencies from outside. A technology company's motives for

integrating with a large company are related to obtaining financial support to achieve global growth. Technology companies represent companies that are “born to be global”. Such companies operate independently for 5 to 6 years, after which global growth, presence on the world market and continuous development of technology require significant financial support from a larger company (Andersson and Hiao, 2016). The acquisition by a large company with a developed distribution network that is present around the world allows the technology company to gain access to the world market, rapidly increasing the customer base. Hence, technological acquisitions can be win-win events, benefiting both the acquiring company and the acquired technology company.

ACQUISITION PERFORMANCE MEASURES

Acquisition performance measures can be divided into broad groups: measures in a financial domain (market performance measures and accounting performance measures) and measures in a non-financial domain (innovativeness, customer satisfaction, subjective performance measures). Market performance measures are aimed at looking at changes in stock prices in the period of the announcement of the acquisition transaction. Specifically, researchers are trying to determine whether acquisitions bring “abnormal returns”, i.e. higher value of the shares compared to the one were there no acquisition (Sudarsanam, 2003). These studies can be short-term, looking at price changes in the days or months surrounding the acquisition announcement, and long-term, looking at stock price movements over a long period of time, usually several months or years after the acquisition (Thanos and Pappadakis, 2012). Accounting performance measures are based on information in official financial reports and the calculation of various financial indicators in the period before and after the acquisition. The most commonly used indicators are: net profit, operating profit, return on assets (ROA), return on equity (ROE), return on sale (ROS) (Healy et al., 1992; Dickerson et al., 1997, Martinova et al., 2006; Guest et al., 2010). In measuring acquisition performance, the use of financial indicators prevails. Taking financial performance into account is based on the fact that a certain acquisition is successful if it maximizes the company return in the form of an increase in the value of shares or an increase in profits. Non-financial performance measures, on the other hand, emphasize the importance of non-financial measures, such as innovation, customer satisfaction and other performance indicators, which are significant for improving financial performance in the long term. The application of subjective performance measures means that managers and experts who are familiar with the acquisition evaluate the financial and non-financial performance of the target after the realization of the transaction (Papadakis and Thanos, 2010). Subjective performance measures are important when researchers have the problem of obtaining data for the application of objective performance measures (Savović, 2016).

EFFECTS OF TECHNOLOGICAL ACQUISITIONS ON PERFORMANCE

Literature related to technological acquisitions abounds in studies on the effects of technological acquisitions on innovation (Jo et al., 2016; Han et al., 2017). Certain studies look at the effects of technological acquisitions on performance, measured by market performance measures, that is, by looking at the value of CAR (Benou and Madura, 2005; Lusyana and Sherif, 2016). Studies on the effects of technological acquisitions on performance, measured through accounting performance measures, are scarce (Viveiros Franco, 2018, Amor et al., 2014).

Investigating the effect of technological acquisitions on the innovation of the acquiring firm, Jo et al. (2016) show that acquisitions of small technology firms have a positive impact on the innovation of the acquirer. J. Han et al. (2017) analyze 192 acquisitions by 162 high-tech companies in the period 2001-2009 to confirm the positive impact of acquisitions on the degree of innovation after the acquisition. Benou and Madura (2005) investigate technological acquisitions in the USA during the period 1980-2001 and follow the effects of these acquisitions on the value for shareholders. The research results show that the acquirers achieve positive returns in the period around the announcement of the acquisitions with an average value of cumulative abnormal return (CAR) of 0.35%. Investigating 1078 technological acquisitions in the period 2007-2014 in the USA, Lusyana and Sherif (2016) show that in the short term, the acquirers achieve positive and statistically significant returns, with an average value of CAR of 0.23%. In the long term, three years after the acquisition, the results show that the companies achieved a negative CAR of 0.09%.

Viveiros (2018) uses accounting indicators in assessing the effects of technological acquisitions: ROA, asset turnover, as the ratio of sales and assets (sales/assets) and EBIT Margin (gross profit margin, as the ratio of operating profit and revenue from sales (EBIT/sales)). The sample includes 61 technological acquisitions, and to assess the success of the acquisitions, he compares the accounting indicators three years after the acquisition with the value of the indicators achieved in the year before the acquisition (-1,+3). The results of the study show that in the three-year period after the acquisition, the average indicators decrease. Research by Callahan (2004) shows that technological acquisitions increase the rate of profitability. The results show that large acquirers achieve a significant increase in the profit margin (ROS).

Amor et al. (2014) trace the effects of technological acquisitions on the performance of companies in Israel by tracking changes in sales as well as changes in profitability (operating profit, net profit, ROE) during the period 2000-2009. The results of their study show that companies are unable to create significant synergies. The results show that technological acquisitions do not lead to an increase in profitability, but they do lead to an increase in sales.

Based on the literature review, a research hypothesis is formulated that assumes that technological acquisitions have a positive effect on the performance of the acquired company. Thus the research hypothesis is:

H1: Technological acquisitions have a positive effect on the performance of acquired companies.

RESEARCH METHODOLOGY

The research focuses on three IT companies, of different sizes, taken over by multinational companies in the process of international acquisitions. In terms of size, one company is small, another is medium, and the third is a large company. According to the acquirer's country of origin, two companies are acquired by American companies, while one is acquired by a French company. The performance of the start-up company is measured through accounting performance measures and the following indicators: operating income, EBITDA margins, return on sale (ROS), return on assets (ROA), return on equity (ROE). The EBITDA margin is determined as the ratio of the EBITDA indicator and the total operating income. EBITDA is determined as operating profit increased by the amount of depreciation. The ROS rate is measured as the ratio of net profit and operating income, the ROA rate is measured as the ratio of net profit and the value of total assets, and the ROE rate as the ratio of net profit and equity. In order to identify the effects of changes in business performance, the change in the

average value of indicators is measured two years before the acquisition, compared to the same average two years after the acquisition. The data needed to calculate the financial indicators is taken from the official financial reports (balance sheet and profit and loss account) of the analyzed company, available on the website of the Business Registers Agency of the Republic of Serbia).

Table 1. Review of analyzed companies

Acquired company	Acquiring company	Country of acquiring company	The name of the acquired company after acquisitions	Year of acquisitions	The percentage of ownership taken over	The size of the acquired company
Mainframe	Nutanix	SAD	Mainframe2 Niš	2018	100%	Small
3Lateral	EPIC games	SAD	3Lateral Novi Sad	2019	100%	Medium
DMS NS	Schneider Electric	France	Schneider Electric DMS NS	2019	100%	Large

Source: Authors based on information from annual reports on company operations

RESULTS AND DISCUSSION

TECHNOLOGICAL ACQUISITION 1: MAINFRAME-NUTANIX

The start-up Mainframe, founded in 2013, is taken over by Nutanix from the USA. It is one of the leaders in the field of cloud software and provides everything needed to run applications smoothly in the cloud. Nutanix is a software cloud computing company founded in 2009. In 2018, Nutanix acquires Mainframe for 165 million dollars, which until the acquisition of Nordeus was the technological acquisition of the highest value in the Republic of Serbia.

Table 2 presents the financial performance of Mainframe in the period 2016-2020. All values are in thousands of RSD. Operating income is continuously growing, year after year. A more significant increase in operating income compared to the base year is achieved in the year of acquisition. In the first year after the acquisition, operating income decreases by 30% compared to the previous year. However, in the later period operating income grows significantly. In 2020, three times higher operating income is achieved compared to the previous year. This increase in operating income is the result of market expansion and the fact that Mainframe, after the acquisition, is present in more markets.

It can be observed that in the year of acquisition, all profitability rates are significantly higher compared to the period before the acquisition. If the entire analyzed period is observed, that is, if the EBITDA margin indicators are compared in the period two years after the acquisition with the period two years before the acquisition, this rate tends to increase after the acquisition. The ROS rate also records growth in the post-acquisition period. The ROA rate decreases, while the ROE rate remains at approximately the same level after the acquisition compared to the pre-acquisition period. Figure 1 shows the dynamics of profitability indicators (EBITDA margin, ROS, ROA and ROE) of Mainframe in the period 2016-2020.

Table 2. The financial performance of Mainframe in the period 2016-2020

	2016	2017	The year of acquisition	2019	2020
Operating income (u 000 RSD)	98.145	172.995	449.997	322.356	932.805
EBITDA margin	2,5%	2,3%	8,8%	3,8%	10,1%
ROS	1,2%	1,5%	5,8%	5,8%	4,8%
ROA	13,8%	8,3%	35,7%	8,9%	9,5%
ROE	42,5%	47,6%	95,6%	40,6%	49,4%

Source: Authors' calculation on the basis of data from official financial reports available on the website of the Agency for Economic Registers

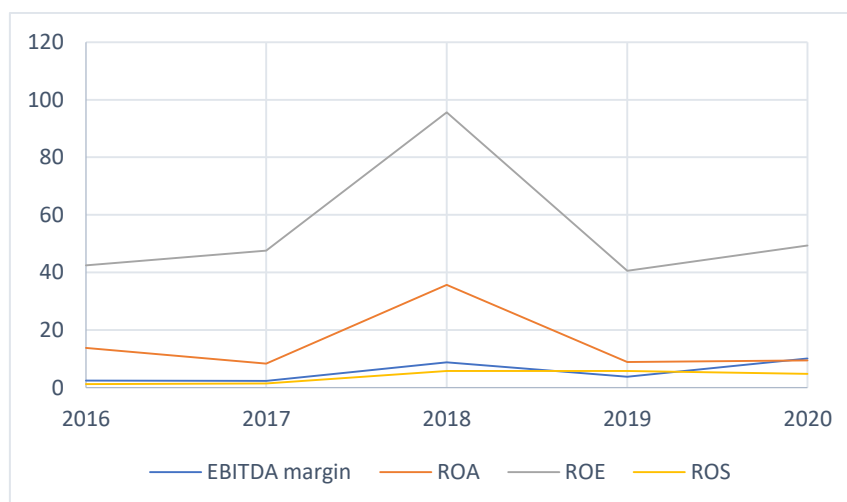


Figure 1. Dynamics of profitability indicators (EBITDA margin, ROS, ROA and ROE) of Mainframe in the period 2016-2020

Source: Authors' calculation on the basis of data from official financial reports available on the website of the Agency for Economic Registers

Table 3. Comparison of financial indicators of the company Mainframe before and after the realization of the technological acquisition

	Operating income (in 000 RSD)	EBITDA margine	ROS	ROA	ROE
The average value of indicators before acquisitions	135.570	2,40%	1,35%	11,50 %	45%
The average value of indicators after acquisitions	627.580	6,95%	5,30%	9,20%	45%
Change	Increase	Increase	Increase	Decrease	Neutral

Source: Authors' calculation on the basis of data from official financial reports available on the website of the Agency for Economic Registers

If the average value of indicators is compared in the period before and after the acquisition (Table 3), it can be concluded that the average EBITDA margin increases in the period after

the acquisition, as well as the average rate of ROS, while there is a decrease in the average rate of ROA. The average rate of ROE remains at the same level in the period after the acquisition and is 45%.

TECHNOLOGICAL ACQUISITION 2: 3LATERAL – EPIC GAMES

One of the largest gaming companies in the world, Epic Games from the USA bought the start-up 3Lateral. The 3Lateral develops innovative technologies that enable the digitization of human appearance and movement. The company is recognized as a pioneer and innovator in the gaming industry. In 2019, Epic Games took over 100% of the ownership of 3Lateral.

Table 4 presents the financial performance of 3Lateral in the period 2017-2021. The company's operating income increases significantly in the year of acquisition and in the post-acquisition period compared to the pre-acquisition period. Compared to 2017, five times higher operating income is achieved in 2020 and more than six times higher operating income in 2021. The increase in operating income of 31% in 2021 compared to 2020 is the result of a higher volume of work and services for and on behalf of the parent company, Epic Inc. After the acquisition, all profitability indicators decrease compared to the period before the acquisition. In 2021, ROS, ROA and ROE have negative values. The reason for achieving negative profitability indicators is a negative net result (net loss) due to a significant increase in costs compared to the previous year. Specifically, operating expenses increase by 57% in 2021 compared to 2020. The costs of wages and salary (by 44%) and the costs of depreciation and provisions (by 78%) increase significantly. In the structure of operating expenses, the largest share is the cost of wages and salary (78.6%), while the share of other costs ranges from 0.1% to 9%. Figure 2 shows the dynamics of profitability indicators (EBITDA margin, ROS, ROA and ROE) of 3Lateral in the period 2017-2021. The negative values of these indicators in 2021 are the result of high salary costs and cost of employee benefits, which do not increase significantly due to the increase in the number of employees, but due to high cost of employee benefits. The parent company, Epic Games Inc., has an established employee share payment program ("share reward plan"), which grants share rights to employees who qualify. Eligible employees include employees, management members, and consultants who are employed or contracted to work for subsidiaries and affiliates of parent company, Epic Games Inc. The Board of Directors of Epic Games Inc. defines the conditions for awarding shares, i.e. rights to shares (Notes to financial statements, 3Lateral Novi Sad). Also, within the depreciation and provisioning costs, provisioning costs for employee benefits significantly increase in 2021 compared to the previous year, contributing to a significant increase in operating expenses, reflected in operating loss and net loss in the short term. Hence, in the long term, profitability indicators are expected to improve.

Table 4. The financial performance of 3Lateral in the period 2017-2021

	2017	2018	The year of acquisition	2020	2021
Operating income (in 000 RSD)	511.045	860.313	3.348.965	2.479.708	3.259.805
EBITDA margin	53,9%	64,7%	41,7%	22,9%	10,0%
ROS	38,2%	50,5%	32,1%	13,8%	-9,4%
ROA	29,5%	39,6%	28,8%	11,4%	-7,83%
ROE	37,3%	45,3%	52,9%	14,4%	-12,05%

Source: Authors' calculation on the basis of data from official financial reports available on the website of the Agency for Economic Registers

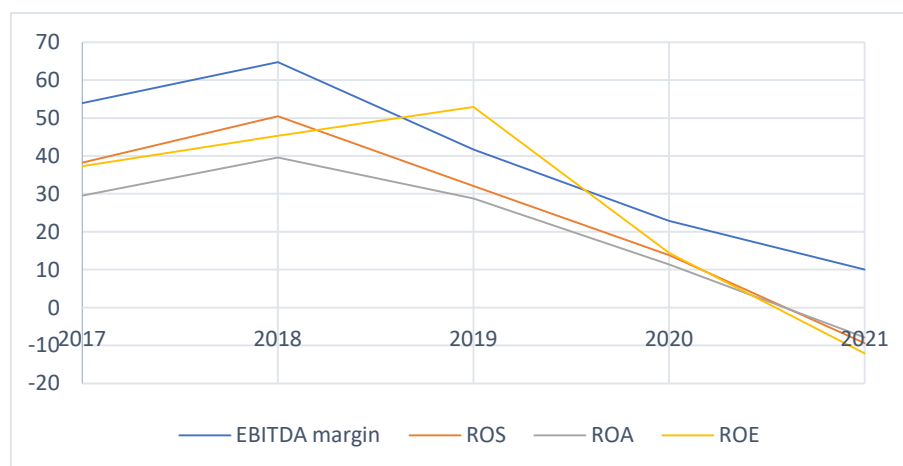


Figure 2. The dynamics of profitability indicators of 3Lateral in the period 2017-2021

Source: Authors' calculation on the basis of data from official financial reports available on the website of the Agency for Economic Registers

Table 5. Comparison of financial indicators of the company 3Lateral before and after the realization of the technological acquisitions

	Operating income (in 000 RSD)	EBITDA margin	ROS	ROA	ROE
The average value of indicators before acquisition	685.679	59,3%	44,35%	34,55%	41,3%
The average value of indicators after acquisitions	2.869.756	16,45%	2,2%	1,79%	1,18%
Change	Increase	Decrease	Decrease	Decrease	Decrease

Source: Authors' calculation on the basis of data from official financial reports available on the website of the Agency for Economic Registers

By comparing the average value of indicators in the period before and after the acquisition (Table 5), it can be concluded that only the average value of operating income increased in the period after the acquisition, while the average values of all profitability indicators decreased.

TECHNOLOGICAL ACQUISITION 3: DMS NS – SCHNEIDER ELECTRIC

DMS NS operates in the field of information technologies, promotion, marketing and licensing of software products and delivery of software solutions for electrical companies, as well as turnkey projects. The company develops modern technologies and solutions for managing energy and processes in a safe, reliable, efficient and sustainable way. It leads the digital transformation of energy management and automation in homes, facilities, data centers, infrastructure and industrial sectors. Their main product, DMS software, includes various analytical functions for the calculation and optimization of the work of electric distribution companies, and they also provide the tools necessary for effective monitoring, management, design and optimization of distribution systems. Schneider Electric from France took over 100% ownership of DMS NS in 2019.

Table 6 presents the financial performance of DMS NS (Schneider Eclectic) in the period 2017-2021. After the acquisition, there is an increase in operating income. The EBITDA margin after a negative value in the year before the acquisition and the year of the acquisition

recovers and records positive values of 5.1% and 4.1% in 2020 and 2021, respectively. Profitability indicators ROS, ROA and ROE achieve negative values in the entire observed period (except in the initial year of observation – 2017). The reasons for the negative value of the ROA, ROS and ROE indicators are the realized negative net result. Specifically, the company made a negative net profit (net loss). The net loss was due to high depreciation costs. The company has written down intangible assets. As stated in the 2020 Annual Business Report, based on current projected sales and corresponding cash inflows, “it was determined that intangible assets related to self-developed software represent a cash-generating unit and that assumption was applied when determining the recoverable amount”. The Report also emphasizes that the company will continue to perform asset impairment checks on an annual basis, as well as whenever there are indications that the value of the company's intangible assets cannot be recovered (by looking at projected cash flows and discounting them to their present value). Also, the company has significant financial expenses based on relations with related legal entities. Figure 3 presents the dynamics of profitability indicators (EBITDA margin, ROS, ROA and ROE) of DMS NS (Schneider Electric) in the period 2017-2021.

Table 6. The financial performance of DMS NS (Schneider Electric) in the period 2017-2021

	2017	2018	The year of acquisition	2020	2021
Operating income (in 000 RSD)	4.815.919	3.304729	3.291.066	4.249.218	6.626.841
EBITDA margin	30%	-3,4%	-10,9%	5,1%	4,1%
ROS	6,2%	-33,1%	-35,1%	-22,3%	-19,8%
ROA	3,6%	-12,6%	-12%	-8,3%	-11,47%
ROE	4,5%	-15,5%	-19%	-18,3%	-34,01%

Source: Authors' calculation on the basis of data from official financial reports available on the website of the Agency for Economic Registers

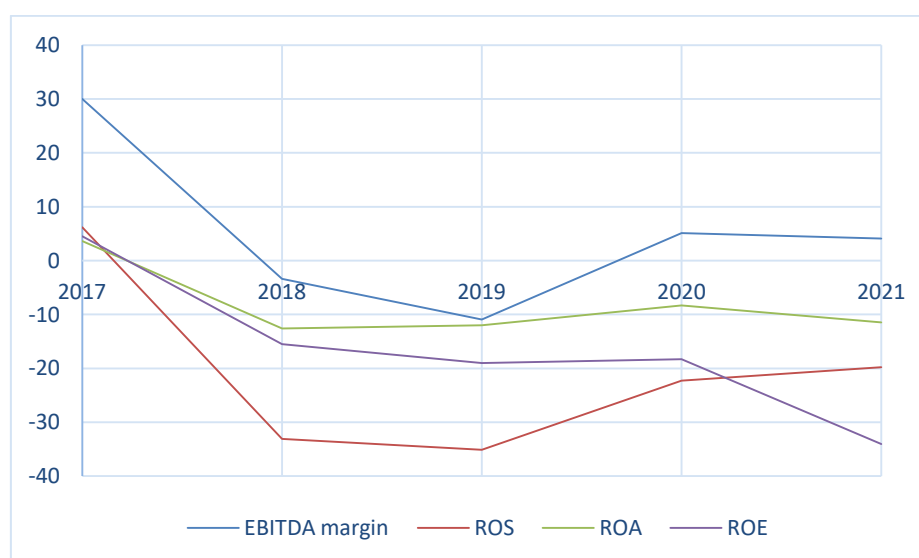


Figure 3. The dynamics of profitability indicators of DMS NS (Schneider Electric) in the period 2017-2021

Source: Authors' calculation on the basis of data from official financial reports available on the website of the Agency for Economic Registers

Table 7. Comparison of financial indicators of the company DMS NS (Schneider Eclectic) before and after the realization of the technological acquisition

	Operating income (in 000 RSD)	EBITDA margin	ROS	ROA	ROE
The average value of the indicators before acquisitions	4.060.324	13,1%	-13,45%	-4,5%	-5,5%
The average value of indicators after acquisitions	5.438.029	4,6%	- 21,05%	-9,89%	-26,16%
Change	Increase	Decrease	Decrease	Decrease	Decrease

Source: Authors' calculation

By comparing the average value of indicators in the period before and after the acquisition, (Table 6), it can be concluded that only the average value of operating income increased in the period after the acquisition, while the average values of all profitability indicators decreased.

CONCLUSION

The era of knowledge has brought about significant changes on global and local markets. The generation and application of new ideas, technologies and knowledge are fundamental prerequisites for the development of a sustainable competitive advantage (Duksaite and Tamošuniene, 2009). The ability to create new knowledge, take over and improve other people's existing knowledge and implement knowledge into new innovative solutions is of key importance for achieving long-term profitability. Hence, large companies accelerate the process of access to knowledge and key competences by taking over existing technology start-up companies. In this way, through the open innovation system, the company increases its innovative potential. Technology start-up companies, on the other hand, see their interest in joining large companies, which is reflected in attracting a significant amount of capital for further innovation and achieving global growth.

The research, carried out on the example of technology companies in the Republic of Serbia taken over by multinational companies, shows that after the acquisitions, all analyzed companies increase the average value of operating income. The results show that two companies (medium and large companies) decrease the average value of profitability indicators, while in a small company there is an increase in the average value of EBITDA margin and ROS, while the average value of ROA decreases and the average value of ROE remains unchanged in the post-acquisition period. The research results show that technological acquisitions do not lead to an increase in profitability (except for certain indicators of small-sized companies), but they lead to higher operating revenues in the period after the acquisitions. The results of the study are in line with the results of certain studies (Amor et al., 2014; Viveiros, 2018) that reach similar conclusions. Based on the research results, the research hypothesis can be partially accepted.

The theoretical implications of the paper are reflected, first, in expanding the knowledge base on the effects of technological acquisitions on performance, since research, especially measuring these effects on accounting indicators, is relatively limited. Second, the study provides a deeper analysis of acquisition performance by analyzing various profitability indicators in the pre- and post-acquisition period. The paper has practical implications for business people, as it indicates that technology companies that are unable to continue growing on their own should seek acquisition by larger companies with which to integrate.

The study limitation is related to the sample size. The reason why the sample is small is the relatively small number of transactions in the technology sector in the previous period. Specifically, the intensification of acquisition transactions in the technology sector has occurred in recent years. The largest number of technological acquisitions has been in the past two years. As measuring the effects of an acquisition requires a certain period of time to elapse from the moment the acquisitions, and the largest number of technological acquisitions have marked the past two years, this limited the analysis. However, future research will look at the effects of a larger number of technological acquisitions on the performance of acquired technology companies, which can create a basis for drawing more general conclusions. In addition, it is possible to analyze and compare the performance of technological acquisitions realized in the Republic of Serbia and in countries in the region. Future empirical research may include monitoring the effects of technological acquisitions on performance, measured through accounting and other performance measures (subjective performance measures, non-financial measures, such as innovation, etc.).

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CORPORATE REPUTATION AS AN ANTECEDENT OF EMPLOYEES' INTENTION TO STAY: THE INTERVENING ROLE OF JOB SATISFACTION

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***Abstract:** Contemporary companies embrace a variety of human resource management (HRM) strategies to recruit and retain top talent. Among the factors which are primarily expected to attract the most skilled candidates, bus also might contribute to positive work attitudes of existing employees, modern HRM practice highlights the corporate reputation. This study aims to explore the link between corporate reputation, job satisfaction, and employees' intention to stay with their current employer. The structured questionnaire was used to collect data from 98 companies operating in the Republic of Serbia. To test hypotheses, correlation and regression analysis were applied. The findings show that corporate reputation has a statistically significant positive impact on employees' intention to stay and this relationship is partially mediated by job satisfaction. The paper attempts to shed light on the complex connection between these constructs and to assist HR managers in creating sustainable employee retention strategies. By strengthening the company's reputation managers can achieve a higher level of employee satisfaction, which eventually leads to decreased turnover rates.*

***Keywords:** reputation, job satisfaction, intention to stay*

***JEL Classification:** M14, M21, J26*

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INTRODUCTION

The growing competition in the employers' market has imposed new challenges on HR managers. Employee turnover has proven to be one of the most serious issues facing modern businesses. The concern for employee retention rate emerges from its impact on the company's efficiency, competitive advantage, and sustainability (Biason, 2020). A higher turnover rate implies higher costs for recruiting and training new employees, which has a direct impact on the company's performance. Furthermore, an employee's resignation increases the likelihood that critical information about the business will be leaked to competitors (Bharadway & Yameen, 2020). In today's volatile environment, the issue of employee retention is becoming even more acute. The employees' needs, expectations, and aspirations are constantly changing and leading to the necessity for innovating the current practice of human resource management. While deciding whether to stay in the company or not, employees tend to evaluate multiple factors, namely work conditions, interpersonal relations, opportunities for growth, and rewards. However, this group of factors also includes those that are less expected to influence employees' intention to stay, such as corporate reputation.

Corporate reputation includes aspects like those of well-known and high-quality products and services, as well as the organization's reputation among employees and their friends (Schlager et al. 2011). It is defined as a stakeholders' collective assessment of an organization that goes beyond their actual knowledge (Van Der Merwe & Puth, 2014; Casimiro Almeida & Matos Coehlo, 2018) and refers to the company's prestige (Khoshnevis & Gholipour, 2017). Initially studied as a tool for attracting job market candidates (Sivertzen et al., 2013; Cable & Turban, 2003), recent research has shifted to determining its effects on existing employees. Many aspects of work life are influenced by a company's reputation. Company with better reputation also has more favorable position when negotiating about salary, compared to companies with poor reputation (Khoshnevis & Gholipour, 20147). Reputation also carries important implications on work attitudes.

Employees who are dissatisfied with their jobs frequently intend to leave them (Olusegun, 2013; Liu et al., 2019). Job satisfaction and employees' intention to stay are complementary constructs. Satisfaction is an assessment of how well a job meets the individual's expectations and values (Coomber & Barriball, 2007). When people believe their jobs do not meet match their goals and aspirations, turnover intention develops (Aburumman et al., 2020). Therefore, turnover intention has been studied as an outcome of job satisfaction among different sectors (Thakur et al., 2022).

The purpose of this study is to look into the impact of a corporate reputation on employees' intentions to stay with their current employer. Furthermore, it aims to explore the intervening role of job satisfaction in this relationship in the sample of companies operating in the Republic of Serbia. The paper consists of five connected parts. Following the introduction, we provided an overview of the existing literature on this subject, which served as the foundation for developing research hypotheses. The following section describes the methodology used to conduct empirical research and provides a brief analysis of the sample structure. The fourth section presents and discusses the research findings. The conclusion and theoretical and practical implications are included in the final section.

LITERATURE REVIEW

Although it is commonly assumed that a company's reputation only affects external stakeholders, it also has an impact on its employees' behavior. In the context of HRM, it was primarily studied as a determinant of employer attractiveness; however, recent studies have revealed that corporate reputation can have a positive impact on existing employees' work attitudes. Furthermore, Schlager et al. (2011) emphasized the reputational value of the employer brand as an important determinant of employees' work attitudes, as well as its close relationship with perceived external prestige, which creates a strong sense of employee identification with the employer. The effects of reputation on existing employees come from the sense of pride that employees feel as a result of belonging to an organization that has built a good reputation (Biswas & Suar, 2014; Schlager et al., 2011). The benefits of a positive corporate reputation for employees' work attitudes are explained by the postulates of social identity theory proposed by Tajfel and Turner (1986, as cited in Leaper, 2011). According to this theory, an individual develops a social identity as a result of belonging to certain groups. Correspondingly, affiliation with a reputable company influences employees' social identity and increases their job satisfaction; moreover, employees who work for more prestigious companies are less likely to quit their jobs, because leaving a highly reputable company would harm their self-image (Arikan et al., 2014). Therefore, a positive perception of corporate reputation can indirectly reflect on job satisfaction and employees' intention to stay. These constructs are linked by a feedback loop. If employees are dissatisfied with their current job or the company as a whole, they will look for other opportunities in the job market. Furthermore, if they discuss their negative experience with the employer in public, it can harm the company's reputation and cause serious damage to profits and relationships with partners. As a result, corporate reputation is regarded as an important intangible asset that can influence a company's value in the eyes of various stakeholders (Alniacik et al., 2011; Deniz, 2020).

The development of a corporate reputation is one component of the employer branding strategy (Tanwar & Prasad, 2016; Khoshnevis & Gholipour, 2017; Chacko & Zacharias, 2020) used by companies to provide a high-quality workforce. According to Sokro (2012), an organization's employer brand is influenced not only by its reputation as a business or service provider but also by its reputation as an employer. As a segment of corporate identity, reputation contributes to better employee retention. A few studies have looked at the relationship between corporate reputation and employee's intention to stay. By examining the link between employer brand dimensions and employee retention, Khoshnevis and Gholipour (2017) found that brand and reputation are significant positive predictors of retaining employees in the banking sector. Findings of the research conducted by Sokro (2012) indicate that employees prefer to work for a company that has a great reputation and is widely publicized. The negative relationship between perceived corporate reputation and intention to leave was also found in the private healthcare sector (Deniz, 2020). These findings were used to develop the first research hypothesis:

H1: Corporate reputation has a statistically significant positive impact on employees' intention to stay.

Job satisfaction is one of the most researched constructs in management and organizational behavior. However, it provides multiple benefits to organizations. Employees who are satisfied with their jobs are more productive and deliver better results. Furthermore, when an organization is in crisis, the likelihood of an employee leaving the organization is lower when there is a high level of job satisfaction (Primadini and Syaebani, 2017). Among different organizational and personal factors, employee satisfaction is influenced by corporate

reputation (Walsh & Sulkowski, 2009). While corporate reputation has a direct significant negative impact on turnover intention, it positively affects job satisfaction in the study conducted by Arikan et al. (2014). Yang et al. (2015) found a positive correlation between corporate reputation and job satisfaction in small and medium-sized enterprises in China. According to Helm (2012), a positive reputation is important in managing voluntary turnover and is tightly linked to employee pride and satisfaction. On the basis of previous research we developed the second hypothesis:

H2: Corporate reputation has a statistically significant positive impact on employees' job satisfaction.

Corporate reputation, job satisfaction, and intention to stay are intercorrelated concepts. In the study conducted by Alniacik et al. (2011) corporate reputation was positively related to job satisfaction and negatively to turnover intention in the high-education sector. Job satisfaction was identified as a significant factor in employee turnover intention in a study conducted by Faridah et al. (2022). Moreover, employee satisfaction is considered the most important driver of employee retention by Wheeler et al. (2006) and Allen et al. (2010). Chavadi et al. (2021) revealed a negative relationship between job satisfaction and turnover intention in the sample of millennial employees. Bangwal and Tiwari (2018) found that the intention to stay was influenced by job satisfaction in the hospitality industry. A significant correlation between job satisfaction and turnover intention was established in the research conducted by Bello and Steil (2020). Similarly, Thakur et al. (2022) found that job satisfaction has a significant influence on the intention to stay among Millennials working in the IT sector. Intention to stay interacts with high levels of the company's reputation, i.e. the longer employees stay with a company, the more pride they take in their membership and the less likely they are to leave their jobs (Helm, 2012). Based on previous research that linked corporate reputation with employees' satisfaction and retention, the third hypothesis was developed:

H3: Job satisfaction mediates the relationship between corporate reputation and intention to stay.

Figure 1 presents the research model.

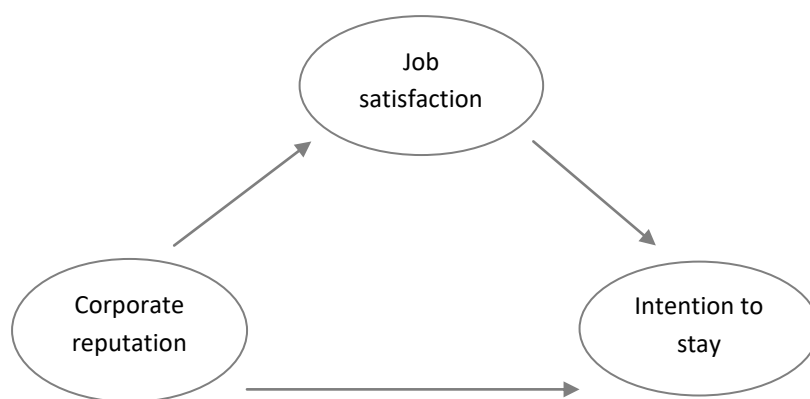


Figure 1. The research model

Source: Authors

METHODOLOGY

The survey method was used to collect primary data, and the questionnaire was divided into four sections. The first subscale consists of 5 items that assess corporate reputation (Schlager et al., 2011; Tanwar & Prasad, 2016). The following section measures job satisfaction using 6 items which were developed based on research conducted by Lepold et al. (2018) and Sharma (2017). The last 6 items, adapted from the research of Kyndt et al. (2009), Zopiatis et al. (2014), and Abeyesekera (2007), were used to assess the employee's intention to stay. On a five-point Likert scale, respondents expressed their agreement with the stated items. The last section of the questionnaire collects data about companies and respondents.

The techniques of the Statistical package for social sciences (SPSS) 26.0 were used for data analysis. Following the analysis of the sample structure, we carried out reliability analysis, descriptive statistics, correlation, and simple and multiple linear regression. The research sample includes 98 companies operating in the Republic of Serbia. The largest part of the sample consists of companies with 250 or more employees (41.8%) and those who count between 50 and 249 staff members (30.6%). Companies that employ between 10 and 49 employees are the smallest group in the sample (27.6%). The share of the production companies in the sample is larger compared to service enterprises. Frequency analysis according to gender shows that men and women participate in the study in roughly equal numbers. Almost half of all respondents are between the ages of 26 and 35. Near 64% of the respondents have a bachelor's or master's degree. Approximately 40% of the sample has been with their current employer for more than three years.

RESULTS AND DISCUSSION

The measurement scale's reliability was examined, and the results are shown in Table 1. If Cronbach's alpha coefficient is greater than 0.7, the variable is considered reliable (Nunnally, 1978). According to the results, all the variables show high levels of internal consistency and reliability.

Table 1. Results of reliability analysis

Variables	Cronbach's alpha coefficient
Corporate reputation	0,896
Job satisfaction	0,915
Intention to stay	0,905

Source: Authors

Descriptive statistics were applied to examine the mean values and standard deviations of each individual item. Among statements measuring corporate reputation, the highest mean value was recorded for the item *The company produces high-quality products and/or provides high-quality services* (M=4.07). In the scale that measures job satisfaction, respondents expressed the highest degree of agreement with the item *I am satisfied with the collegiality at work* (M=3.97). The highest standard deviation was identified for the item *If I received an*

offer from another company for the same job position, I would not accept it (SD=1.53) within the scale that assessed intention to stay.

Table 2. Correlation matrix

Variable	1	2	3
Corporate reputation	1	0.754**	0.705**
Job satisfaction	0.754**	1	0.710**
Intention to stay	0.705**	0.710**	1

** Correlation is significant at the level of 0.01.

Source: Authors

The correlation analysis results are shown in Table 2. All of the variables are highly correlated and the strongest relationship exists between corporate reputation and job satisfaction. The mediator effect is tested using three regressions, according to Baron and Kenny (1986): the first regression is performed to confirm the direct influence of the independent variable on the dependent variable; the second regression examines whether the predictor affects the potential mediator, and the third regression tests the joint effects of the predictor and the potential mediator on the dependent variable.

Table 3. Simple linear regression

Variables	Model 1 Dependent variable: Intention to stay			Model 2 Dependent variable: Job satisfaction		
	β	Sig.	R ²	β	Sig.	R ²
Corporate reputation	0.705	0.000**	0.492	0.754	0.000**	0.564

** p < 0.01

Source: Authors

The results of a simple linear regression are presented in Table 3. According to the findings, corporate reputation has a significant positive impact on the intention to stay (Model 1). The coefficient of determination in Model 1 is 0.492 indicating that the observed independent variable explains 49.2% of the intention to stay variability. In the second model coefficient of determination is 0.564, which means that corporate reputation determines job satisfaction in 56.4% of cases.

Table 4. Multiple linear regression

Variable	Model 3 Dependent variable: Intention to stay			
	β	Sig.	R ²	VIF
Corporate reputation	0.394	0.000**	0.563	2.316
Job satisfaction	0.414	0.000**		

** p < 0.01

Source: Authors

Table 6 shows the results of multiple linear regression. Multicollinearity was tested to ensure that regression analysis is justified. Multicollinearity was not an issue in this regression model because the variance inflation factor was less than 5. The joint impact of corporate reputation and job satisfaction on intention to stay was tested. Although both corporate reputation and

job satisfaction have a significant positive impact on intention to stay, including satisfaction in the regression model significantly reduces the impact of reputation when compared to Model 1. Based on these results, it is noted that job satisfaction has a partial mediation effect in the relationship between corporate reputation and intention to stay.

Thus, the analysis shows that corporate reputation has a significant positive effect on the intention to stay, confirming hypothesis H1. This is consistent with the findings of Deniz (2020) and Khoshnevis and Gholipour (2017). The obtained result demonstrates the predictive power of corporate reputation in assessing employees' intention to stay. However, the obtained result is not in line with the findings of Alniacik et al. (2011). In their research corporate reputation was negatively related to turnover intention in the analysis of the predictor's independent effects, but it had a positive impact on turnover intention in the analysis that included joint effects of reputation, satisfaction, and affective commitment. The findings also support hypothesis H2, which means that corporate reputation is a statistically significant antecedent of employee satisfaction. This result is in line with the research conducted by Arikan et al. (2014), Tanwar and Prasad (2016), and Helm (2012). It is partially consistent with the findings of the study by Walsh and Sulkowski (2009). The mediating role of satisfaction in relation to the analyzed variables was tested to determine whether and to what extent satisfaction changes the strength of the relationship between corporate reputation and intention to stay. The result indicates that job satisfaction partially mediates the given relationship confirming hypothesis H3.

CONCLUSIONS AND RECOMMENDATIONS

The research has shown that corporate reputation is an important predictor of employees' intention to stay and job satisfaction. According to these findings, employees who have a higher level of job satisfaction remain loyal to their current employer rather than seeking new opportunities outside the company. The study fills the gap by analyzing the mediation role of job satisfaction in the relationship between the two observed constructs. It explains how a company's reputation leads to employees' intention to stay with the company. The results of this research indicate that reputation management should become an essential priority for HR managers. Being a part of a human resource strategy, a strong corporate reputation may enhance employee satisfaction. Therefore, practices for building a more reputable organization should be encouraged by managers.

This paper attempts to shed light on the interrelatedness between analyzed constructs and to support HRM in developing long-term employee retention strategies. Managers can achieve a higher level of employee satisfaction by building a strong company reputation, which eventually translates into lower turnover rates. Therefore, managers are encouraged to engage in activities that will help the company's reputation, such as being involved in social networks and creating appealing advertising to lift community knowledge and familiarity with their products and services. Companies should also work to improve the reputational value of the employer brand. Management efforts should be directed toward improving all of the work-life aspects. Thus, the company's positioning as an attractive employer creates a positive experience for employees that they share with their network of acquaintances. Besides, the sense of belonging to a reputable organization will reinforce positive work attitudes in employees, who will engage with improved performance and loyalty.

The research conducted faces certain limitations. Because the study was limited contextually to companies operating on the territory of the Republic of Serbia, the derived conclusions cannot be generalized to those operating in other cultural and socio-legal frameworks.

Therefore, the same research model should be applied to companies in various regions. To obtain a more complete picture of the effects of corporate reputation on employee attitudes and behavior, the mediating influence of other variables should be tested. Although this study only addressed reputation as a broad concept, there may be multiple dimensions, such as products and services, governance, and the workplace. These dimensions' individual effects on satisfaction and intention to stay should be assessed in future research.

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PROBLEMS AND CHALLENGES IN LAST MILE DELIVERY

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Abstract: Last mile delivery (LMD) is considered one of the biggest challenges in B2C e-commerce and represents a more critical logistics process. In the era of e-commerce, the “last mile” delivery service (LMDS) is an important challenge of logistics service performance. In the last few years, the e-commerce industry has grown exponentially, where many companies have enabled their customers to get the products they need with a “few clicks”, which means that e-commerce came through for the need to buy and sell goods, products, or services online. The number of consumers who buy online is growing more and more. That change in consumer behavior has re-vitalized the practice of home delivery, as consumers increasingly prefer their homes over other delivery solutions. In recent years, the online-commerce, especially the mobile commerce, provides a visual, convenient, personalized and diversified shopping experience to customers. Last mile delivery refers to the last step of the delivery process when the package is moved from the transport hub to the final destination. Recent research shows that experience in the last mile delivery process plays a vital role in the user experience of online shopping. Additionally, in many studies last mile delivery is mentioned as the most important transport activity and is considered the biggest challenge in B2C e-commerce. The “last mile” is synonymous with the activities that take place in the last segments of delivery and the most critical step in the delivery process, meaning, the one that businesses and customers want to be as fast and efficient as possible. The last mile is the most expensive, slowest, and most inefficient part of the supply chain. When planning e-commerce, business managers must keep its complexity in mind. Depending on the delivery model, the costs of the last mile amount from 13% to 75% of the total costs in the supply chain. The paper will present the key steps in the last mile delivery process, the problems and challenges that are most common in this part of transport, as well as the ways in which problems can be solved and the challenges of last mile delivery can be overcome.

Keywords: Last mile delivery, Delivery, Logistics, Customer

JEL Classification: P46, M31

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INTRODUCTION

In the last few years, the e-commerce industry has grown exponentially, where many companies have enabled their customers to get the products they need with a "fewclicks", which means that e-commerce came through for the need to buy and sell goods, products, or services online. The number of consumers who buy online is growing more and more. That change in consumer behavior has re-vitalized the practice of home delivery, as consumers increasingly prefer their homes over other delivery solutions (Buldeo Rai, Verlinde et al., 2021).

In online commerce, a product can be found, ordered, and paid for very quickly in a virtual environment, regardless of where the manufacturer, seller, and consumer are located. Only, it cannot be delivered virtually to the end consumer. It needs to be packed, transshipped, stored, transported, and physically delivered to the final destination. Logistics is a key factor in successful online sales, and consumer satisfaction with this type of trade largely depends on the efficiency of logistics operations. Today, the customer who buys online wants to track the ordered product at any time, from the moment he clicks the button to buy, until the moment the package arrives at his home address. Therefore, the organization of the delivery process becomes more and more complex, because the delivery warehouse locations are no longer physical stores, but are the addresses of end users or physical points for picking up goods at user locations (Zhou et al., 2020).

Last mile delivery refers to the last step of the delivery process when the package is moved from the transport hub to the final destination (Mangiaracina et al., 2019; Zhou et al., 2020) – which is usually a personal residence or a retail store. It is a place where companies meet directly with users of products or services and have the opportunity to influence their satisfaction. The last mile routes are on average between a few and a hundred kilometers, and the main goal of this can be stated to be more complete, more efficient, cheaper, and faster delivery (BM Joerss et al., 2016). Although this seems like a simple process, last-mile logistics are increasingly complex and expensive, given the vast amount of coordination required to guarantee on-time delivery. From dozens of routing options to external factors, such as weather and traffic, a lot goes into running successful delivery operations (Vakulenko et al., 2019).

Recent research shows that experience in the last mile delivery process plays a vital role in the user experience of online shopping (Xiao et al., 2017). Additionally, in many studies last mile delivery is mentioned as the most important transport activity and is considered the biggest challenge in B2C e-commerce (Savelsbergh & Van Woensel, 2016). The "last mile" is synonymous with the activities that take place in the last segments of delivery (Petar et al., 2020) and the most critical step in the delivery process, meaning, the one that businesses and customers want to be as fast and efficient as possible. The last mile is the most expensive, slowest, and most inefficient part of the supply chain. When planning e-commerce, business managers must keep its complexity in mind. Depending on the delivery model, the costs of the last mile amount from 13% to 75% of the total costs in the supply chain (Aized & Srai, 2014).

Last mile delivery service represents an important challenge to the performance of logistics services. In recent years, mobile commerce has provided users with a visual, practical, personalized, and diverse shopping experience. This paper will present the key steps in the last mile delivery process, as well as the problems and challenges that are most common in this part of the transport.

STEPS IN THE LAST MILE DELIVERY PROCESS

When ordering a product online, the customer's web browser or mobile app communicates with the seller or the e-commerce provider's server. The order is then sent to a centralized order management system, which confirms stock availability and provides the customer with the option to pay online. Afterward, the request is sent to the warehouse to deliver the product to the end customer. This represents the moment when the last mile process begins. The shipper sends a logistics provider to pick up the customer's item from the warehouse. The logistics provider loads the package into its vehicle and delivers it to the desired address. Therefore, the steps in the last mile delivery process are (<https://onfleet.com/blog/what-is-last-mile-delivery/>):

- Step 1

Orders are digitally entered into a centralized system. This is the step where orders and requests are tracked by both the sender and the final receiver, who tracks the status of their delivery via a tracking number.

- Step 2

Orders arrive at the transportation hub and await delivery to the final recipient. This is where the last mile delivery process begins – businesses need to ensure that the order gets from the transport hub to the customer as quickly as possible.

- Step 3

Orders are assigned to logistics providers based on routes and recipient addresses. Strategic sorting and targeting of packages for delivery are essential for an optimized and cost-effective logistics solution for last-mile delivery.

- Step 4

Orders are scanned before being loaded onto delivery vehicles. This updates the status of the order for the sender, as well as for the final recipient, who is tracking the shipment. Thus, the risk of the packaged goods being lost on the way is reduced.

- Step 5

Orders successfully reach the final recipients and proof of delivery is obtained. At this stage, the package has reached its final destination. The delivery staff then updates the tracking information to confirm that the delivery has been completed.

ISSUES AND CHALLENGES IN LAST MILE DELIVERY

The last mile is an essential part of the delivery process and usually accounts for about 53% of the total cost of a shipment, and it is not unusual for it to account for half of the total cost of delivery, so it represents a process in the supply chain that needs to be optimized (Buldeo Rai, Broekaert, et al., 2021; Kohli et al., 2020). However, to optimize last mile logistics, an organization must understand what the challenges are, and how they affect the business. If the process is not optimized, inefficiency can lead to excessive costs. More precisely, it leads to high overhead costs, followed by a decrease in the company's profit. Customer expectations are getting higher. They want an efficient last mile delivery process, as well as faster and free shipping, which is the most expensive and time-consuming part of the shipping process. Given how easy it has become for customers to find an alternative place to shop, e-tailers are being forced to find ways to overcome the challenges of last-mile delivery. It is necessary to meet all customer expectations, as 55% of customers consider switching to a competitor that

offers faster delivery services (Buettner, 2017). Last mile delivery can significantly affect customer loyalty and satisfaction and is slowly becoming a bottleneck that limits the development of the online shopping economy (Jiang et al., 2022). From global enterprises to small e-commerce retailers, the last mile delivery experience affects the overall customer experience and business performance (Peralta, 2022). Presented below are some of the challenges in the last mile delivery process.

- Same-day delivery

According to research, more than 25% of customers are ready to pay more for faster delivery, and meeting such expectations is the biggest challenge for last mile delivery (BM Joerss et al., 2016). Inefficient routing practices and mismanagement of third-party logistics providers (3PLs) pose a challenge in changing delivery times and the entire delivery process. Another challenge is ensuring the optimal use of vehicle capacity. Same-day delivery involves small packages. Therefore, the chances of fully utilizing the vehicle capacity become a problem.

- Inadequate route planning

Inadequate route planning is one of the reasons why delivery delays, increased customer dissatisfaction, and high costs occur. It can be said that route planning is one of the most challenging parts of shipping planning, as it depends on many factors.

- Delivery to the correct address

Customer-related issues can also hamper the last-mile delivery process. An example of this is when the customer does not specify the correct address information, where the delivery person has a problem finding the customer's location, which takes time from delivering other packages. Thus, the result is additional costs.

- Real-time tracking

Outdated technology can also be a problem in last mile delivery. Issuing tracking codes to check the status of packages is not enough for customers who expect full real-time tracking of their packages' location. Real-time tracking of shipment delivery is becoming imperative to achieve customer loyalty. Increased transparency and real-time visibility can only be achieved through the help of dedicated delivery management software. This software could enable customers to track packages from shipment to doorstep.

- Failed first delivery

The main challenge of last mile delivery is the failure of delivery on the first attempt due to the unavailability of customers. Customers prefer home delivery over other delivery options, regardless of the likelihood that they will not be home at the delivery time. This results in a failed delivery, which creates additional costs for logistics service providers and e-tailers. Research shows that 2% to 60% of home deliveries fail (Buldeo Rai, Verlinde, et al., 2021), while major logistics service providers in the delivery market report first delivery failure rates ranging from 15% to 50% (Norman, 2015). Namely, customers are often not at the address they specified, causing additional costs for returning the package. Delivery failure has negative effects on all stakeholders who are part of the last mile delivery process, logistics providers, e-tailers, consumers, as well as society as a whole (Van Duin et al., 2016). For logistics service providers (LSPs) and e-tailers, first delivery failure is associated with re-processing costs, communication costs, and re-delivery costs (McLeod et al., 2006). The main problems of logistics providers are additional costs due to repeated deliveries (the fact is that about 2% to 50% of deliveries need to be repeated) and the impossibility of delivering products (about 2% of products cannot be delivered). Most of the courier services (logistics providers) are often not precise at the time of the delivery. They inform the customers about

the estimated delivery time, which is the time when most of them are at work (Allen et al., 2007, Buldeo Rai et al. , 2019). This hinders customers from arranging delivery times and creates additional inconveniences. A UK survey found that 8% of customers stopped shopping online due to a lack of accurate delivery time information (Buldeo Rai, Verlinde, et al., 2021). For shipments that fit PO boxes, this may not be a problem, while for most it indicates a failed delivery.

(Visser et al., 2014) pointed out key problems from the perspective of customers as well as logistics providers. The main problems for customers are not only delivery at the wrong time, but also high delivery fee and long delivery time. Also, buyers and providers of logistics services face problems depending on the areas in which the end users are located: (Boyer et al., 2009).

- 30% of households are in central urban areas with a high population density that provides the highest level of efficiency in terms of delivery per kilometer and efficiency of delivery routes, but there is a higher risk of theft of packages that are left unattended (e.g. when the recipient is not at home and cannot personally pick up the package at a certain moment);
- 46% of households are located in suburban areas that could be safer for unattended packages, but have increased unpredictability of routes and stops, reducing the opportunity for logistics providers to quickly optimize routes or package travel distance, resulting in greater inefficiency of the route and higher costs;
- 34% of households are in rural areas, which may be the safest for unattended packages, but they require the longest distances between deliveries, have very inefficient routes, and are very difficult to implement and at the same time be economically justified.

LOGISTICS SOLUTIONS AND THE FUTURE IN LAST MILE DELIVERY

Logistics, like many industries, is facing groundbreaking changes. Every change brings many risks and at the same time opportunities for development, such as new business models, new technologies, and new market participants. The application of new technologies is one of the ways to improve the home delivery of goods. Given the previously mentioned problems and challenges with last-mile delivery, many authors (Wang et al., 2019; Wang et al., 2018; Wang et al., 2018; Yu, n.d., Edwards et al., 2010) propose several solutions that would make delivery much more efficient.

Pick up and drop off (PUDO) - Parcel locker, is a technology that has developed under the influence of the increasing growth of e-commerce. PUDO technology makes it possible to reduce the number of failed deliveries since shipments are delivered to parcel machines located in places where the largest number of users using the service are covered. Users of PUDO technology register online or at the provider's points of sale, where they are assigned a user code. When they order a shipment, they register, and then instead of the location of their home address, they choose the PUDO location that suits them best. After placing the order, Kosinik is sent a reference number for picking up the shipment and a notification (via e-mail or SMS) when the shipment arrives at the appropriate location. When the shipment arrives at the agreed location, the user has the option to collect within a certain period. PUDO technology creates synergy between e-tailers, logistics providers, and customers. From a customer's perspective, they have the opportunity to choose a location where they can pick up or send a package at a time that suits them with the confidence that their packages are safe. From the perspective of logistics providers, centralized unloading locations can increase efficiency while reducing environmental pollution and air emissions. From the e-tailers'

perspective, they can gain customer loyalty by offering them multiple delivery options and embracing the concept of personalized logistics. This delivery method is beneficial to logistics providers (better optimization of delivery routes, financial savings, and delivery success) and to customers who can plan the time of picking up the package (Wang et al., 2018).

Autonomous vehicles - (Edwards et al., 2010) estimate that by 2025, 80% of all deliveries in the world will be made by autonomous vehicles. Customers are increasingly demanding and are putting pressure on e-commerce and logistics providers for ever-faster delivery. The application of unmanned aerial vehicles (drones) is of great importance in solving problems in last mile delivery. Users are very open to the use of autonomous vehicles, including drone package delivery. Research shows that 60% of users are in favor of drone delivery (M. Joerss et al., 2016). The advantages of using drones to deliver packages are as follows: drones can work constantly and can reach specific destinations faster than road vehicles. From an environmental point of view, they have the potential to replace old (mainly diesel) means of transport and enable better and faster delivery for people who live in rural areas and do not fear an increase in the volume of traffic. Among the companies testing drones, deliveries are UPS, Amazon Prime Air, Google, and Hermes. The market potential is assessed as high. The director of Amazon claims that one-day drones will be as common as trucks (Series, 2019).

CONCLUSION

Along with the development of technology and the increasing transition to online shopping, many companies and end users face challenges in last mile delivery, such as delivery delays, traffic jams, and inefficiently planned routes. The most common problem is failed first delivery, resulting in additional costs. Hence, this paper lists some solutions that would improve the delivery process and lead to maximum efficiency in the last mile delivery process. Future research should be aimed at identifying the main sources of growth in productivity and competitiveness in logistics companies.

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DIGITAL TRANSFORMATION OF STRATEGIC PROCUREMENT

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Abstract: *Technological changes that occur affect the development and digital transformation of procurement. Previous activities in the digitalization of procurement have been focused on transaction activities and documentation management, ie the procurement segment that belongs to operational procurement. Operational procurement is characterized by transaction activities in the purchase activities, order creation, administering invoices, lower-value purchases, and working with pre-approved vendors. In this way, activities are automated and interconnected, and the level of manual work is reduced. E-procurement is not focused on strategic activities and cannot give any serious support to strategic procurement. However, there remains a segment of strategic procurement that has been unjustifiably neglected and needs to be digitally transformed. Traditional e-tools have limited opportunities for the digital transformation of strategic procurement. Procurement 4.0 has more opportunities for strategic procurement than e-procurement. AI for example offers some new dimensions in managing strategic procurement. Procurement strategy development, procurement category management, key vendor management, and risk management are activities that are often not even formalized in the procurement departments. In some cases, digital transformation of strategic procurement has limitations based on a predefined process in procurement. Traditional procurement does not know strategic procurement in all dimensions. With the digital transformation of strategic procurement, significant improvements can be expected in redesigning procurement processes. This paper will present three cases of companies that implemented digital solutions to manage strategic procurement. These examples are based on advanced e-tools for the guided creation of procurement strategies. Software solutions had a consultancy role during implementation giving knowledge based on good practice. Presented cases show that digital solutions in strategic procurement allow the procurement strategy to be dispersed regardless of company size or geographic distribution. With the digital transformation of strategic procurement, the visibility of spending increases, and the quality of defining procurement categories improves. All stakeholders are actively involved in the creation of the procurement strategy and have the opportunity to participate in the realization of the set goals. Based on the presented cases, it can be concluded that the benefits of the digital transformation of procurement can be expected in different concepts of the procurement organization, as well as in different industries. Also, a different set of targets can be realized through the digital transformation of strategic procurement, and a range of goals can be realized without limitation. The digital tools of strategic procurement do not exclude other options within Procurement 4.0, but instead, fit in and raise the level of results.*

Keywords: *Digital procurement transformation, Procurement 4.0, Strategic procurement*

JEL Classification: *M10, M15*

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STRATEGIC AND OPERATIONAL DIMENSION OF PROCUREMENT

Since the paradigm that procurement will become supply management (Kraljic, 1983), procurement has had accelerated development, bearing in mind that procurement has not explored too much before the Kraljic's matrix. Early literature considered procurement to be an auxiliary activity in the traditional supply chain (Miocevic, 2011). Over time, however, procurement gains its strategic role, but it still has to fight for its position in the organizations. With the arrival of new technologies and Industry 4.0 procurement has a co-ordinated role in companies. At the same time, the Procurement 4.0 concept is created, which, using new tools, enables procurement to have an accelerated digital transformation.

The digital transformation so far has mainly involved in operational procurement and somewhere in tactical procurement. Strategic procurement was digitised to a lesser extent, it was even thought that it could not be digitised and that a nature of strategic procurement is like it could not be digitised.

We can divide the procurement into three levels: operational procurement, tactical procurement and strategic procurement (Bensch, S. 2012, Troje, D. and Andersson, T. 2021). Operational procurement is characterized by transaction activities in the purchase activities, order creation, administering invoices, lower-value purchases, working with pre-approved vendors. Tactical procurement takes over the space between operational and strategic procurement and often the definitions are very different. What is common is that it represents a procurement process, which has more steps than an operational procurement and less than a strategic procurement. There is also the value of this procurement in the space between these two levels of procurement. In some companies, tactical procurement can include risk management, supplier approval, supplier rating, complaint management. However, it can be practice in some companies that tactical procurement does not exist. Even SAP in the materials management module, in the procurement part, knows only operational and strategic procurement. According to SAP, operational procurement is a transactional procurement, and the strategic one deals with the reporting and approval of transactions.

Strategic Procurement is tasked with creating procurement strategies, risk management strategies, managing procurement categories and managing strategic suppliers, as well as managing strategic procurement projects that exceed certain value boundaries.

It is clear from this that it was much easier to deal with operational procurement in the digital transformation process. Transactional data and forms were much easier to import into the e-procurement system and digital framework. However, strategic procurement is much more demanding, and it has this dimension of prediction that requires additional elements for decision-making. On the other hand, automation of transactional activities quickly improves indicators in terms of shortening the time of the process and reducing the need for procurement employees (Nicoletti, B. 2020).

IMPACT OF PROCUREMENT 4.0 ON DIGITAL TRANSFORMATION

Autonomous and automated processes in Industry 4.0 do not replace the procurement function. Procurement 4.0 strategically engages in the dynamic environment of Industry 4.0 in rapidly changing organizational boundaries with appropriate contractual solutions and instruments for increasing performance relative to the supply chain (Glas & Kleemann, 2016, Tripathi, S., & Gupta, M. 2021) .

The strategic procurement process has more potential to influence new technologies. In the process of strategic Procurement 4.0, co-creating specifications, automated pre-qualifications and parameter-based negotiations are some expected changes. In the process of operational Procurement 4.0 is expected to reduce transaction costs, reduce uncertainty, costs of search of information, negotiation ... (Gottge et al., 2020, Chandrasekara, S., Vidanagamachchi, K., & Wickramarachchi, R. 2020).

At the operational level Procurement 4.0 represents intelligent determination of requests and processing of individual procurement while promoting cooperation with suppliers and availability of all relevant information at the strategic level. The main goal of tactical and operational procurement is to minimise all costs incurred in the procurement process. Procurement 4.0 supports this goal by automating these activities (Klunder et al., 2019, Lorentz, H., Aminoff, A., Kaipia, R., & Srai, J. S. 2021).

Digital procurement is the application of disruptive technologies that enable strategic sourcing (Sourcing, S2C) to become predictive, transactional procurement (P2P) becomes automated, and supplier management (SM) becomes proactive (Deloitte, 2017., Ustundag, A., & Cevikcan, E. 2018).

Companies have shown greater readiness for digital transformation of operational procurement, and this can be determined by the number of electronic tool bidders for operational procurement than for strategic procurement. Now we come to an absurd situation, that operational procurement activities are conducted more quickly with less effort, and if there are many more than strategic procurement activities. Under this model, strategic procurement would be unjustifiably burdened by manual labor and the result would be influenced by subjective influence.

We will give justification and the need for digital transformation of strategic procurement through three examples of implementation of the Cirtuo digital solution for strategic procurement.

WALMART

Walmart has approximately 10,500 stores in 24 countries and eCommerce websites. In the company works 2.3 million people worldwide and nearly 1.6 million in the U.S. alone. Walmart's Procurement Team consist from over 500 employees, operating in 8 key markets with a global Indirect Material Spend of over \$45B (<https://cirtuo.com/walmart/>).

The implementation of digital solution for strategic procurement is link to Walmart's Digitalization strategy. Through the use of the Guided Strategy Creation in Cirtuo, Associates realize the following benefits: around 50% productivity improvement in developing Category Strategies, reporting process and automation of charts and graphs and repurposed time for more diverse procurement initiatives (<https://cirtuo.com/walmart/>).

Walmart use digital solution for training, auditing, educating, and sharing best practices on global level. Additional benefits also include: strategy visibility and Procurement engagement across all markets, AI mitigates missed strategy opportunities due to human error, accelerated pace of strategies supporting Procurement KPIs (<https://cirtuo.com/walmart/>).

Use of Artificial Intelligence advances Walmart in its Digitalization goals. Digital solution allows real-time "refresh-ability" of strategies due to changes in market dynamics or internal business requirements. The solution improves the way of thinking and enforces appropriate governance.

Digital solution enables driving a top-down approach to working on the right initiatives for that category. As a result, Walmart become more attractive for procurement professionals to join their procurement team.

NOVARTIS

Novartis employing more than 100.000 people of more than 140 nationalities working worldwide. The Global Procurement Team is located in more than 40 with around 900 associates, and manages spend of more than 15 bn USD. The procurement team has decided to efficiently co-create impactful category strategies and implement initiatives with their stakeholders to enable company growth and smart reallocation of resources (<https://cirtuo.com/novartis/>).

But, there are some challenges that they looking to include: Different ways of working, different levels of alignment with stakeholders and within Procurement Knowledge management, improvement of spend data quality, no technology solution leading to inefficient use of Excel & PowerPoint, no integrated external market data.

Before use of digital solution, there was a category strategy-management process, but it was manual and time-intensive. Category Managers had to spend much time gathering the data, formatting it, and then putting them on slides. Digital solution helped the organization standardize, speed up, positively challenge & improve category strategy creation, making it a more collaborative effort per its Category Strategy Framework (<https://cirtuo.com/novartis/>).

Procurement team has dramatically improved consistency and transparency, allowing high-quality output. Category Managers have made good progress in managing spend, generating value for the business & patients, and creating a competitive advantage by delivering value beyond savings, including risk management, digital & technology strategy, innovation & sustainability, which are just a few hallmarks of every strategy created (<https://cirtuo.com/novartis/>).

By deploying a digital Category Management solution, the Procurement team can align better and orchestrate and collaborate with the business and other functions.

The collectively accumulated know-how and facts are all captured on a single digital platform and accessible to all users and stakeholders within the company. All key stakeholders are actively engaged and will see their strategic needs and business requirements adequately reflected in the developed category strategies.

The analysis is no longer limited only to internal knowledge available within the organization. Integrated access to external market intelligence quickly provides valuable insights and connects the dots between strategic business goals/needs and supplier market/most capable suppliers.

Benefits of Cirtuo Guided Strategy Creation™ solution which are identified: standard way of working, higher level of collaboration, higher level of understanding of the category, structured category strategies, use of knowledge management, change of existing category strategies, improved supplier relation management, more effective and impactful category management (<https://cirtuo.com/novartis/>).

BT GROUP

BT Sourced is a recently formed, standalone procurement company within the BT Group (BT), established to change traditional way of buying goods and establish new partnership approach to suppliers. Based in Dublin, Ireland, team of 95 category managers control a

£13bn annual spend. A large portion of their procurement volume is spent on fiber cables and infrastructure to help BT Group roll out full fiber, 4G, and 5G services across the United Kingdom (<https://cirtuo.com/bt-sourced/>).

BT Sourced's mission is to redefine procurement from top to bottom and build a more digital, socially inclusive, diverse, and sustainable business model to kick-start BT Sourced's ambitious transformation goals. By using the latest advancements in blockchain, AI, robotics, and machine learning, BT Sourced aims to draw on technical innovations and new, partnership-led solutions to streamline BT's global sourcing and procurement capabilities (<https://cirtuo.com/bt-sourced/>).

One of BT Sourced's key objectives was to establish itself as 'procurement as a service provider within the BT Group that receives remuneration-based on its success. Given the objective of playing a significant role in BT Group's transformation, BT Sourced needed to upskill its category managers to become more "sales-like" and strategic in their thinking.

Key Requirements for digital solution for strategic procurement are: flexibility (easy to use software and fast learning with minimal training), improved transparency and communications between stakeholders, standardization of process, better business metrics, and central system of record of all value creation initiatives.

Digital platform uses machine learning technology to uncover sophisticated data-driven insights into its specific challenges. The benefits of these insights, stored on a central system of record, are helping the organization better collaborate with stakeholders in creating high-quality category strategies that convert into impactful and actionable savings (<https://cirtuo.com/bt-sourced/>).

BT Sourced is leveraging Cirtuo's AI-powered software to automate category strategy creation for faster decision making. All records and activities are now adequately maintained and completely visible to key stakeholders — irrespective of their geographic location (<https://cirtuo.com/bt-sourced/>).

Initially, solution was implemented for BT Sourced as a financial control and workflow visibility tool that has now improved efficiencies far beyond its intended use case as a category management platform.

As a result, BT Group now has a much clearer understanding of its business metrics and more detailed insight into BT Sourced's day-to-day category management operations. Much like Salesforce, procurement team build better relationships, increase collaboration, generate savings, and increase their bottom line across the board (<https://cirtuo.com/bt-sourced/>).

CONCLUSION

These three examples suggest that the benefits of digitising strategic procurement can be expected in different industries. We had the example of a large retailer, a manufacturing company and a procurement service company. In common with all three companies is that they have a large volume of spent and operate in several countries. In the first two examples we have large procurement teams, and in the third the whole team are professionals dealing with strategic procurement. All three examples want to raise efficiency, transparency, to reach the level of centralisation, and to achieve concrete measurable results. In all three examples, results were achieved, even specific goals were realized.

It must be noted that there are three different procurement concepts and the process itself is different. Therefore, the digitisation of strategic procurement does not depend on the type of

company and procurement procedure. We have also seen in the example that the inclusion of a digital solution for strategic procurement does not exclude other tools belonging to the Procurement 4.0 tool set or the tools that apply to operational procurement.

Digital transformation of strategic procurement improves communication with stakeholders but also within procurement teams. This makes it easier to work with complex purchase teams located in multiple states and multiple continents in different time zones.

By digitizing strategic procurement, the procurement function is associated with the company's digitization strategy. This also ensures the compliance of the procurement strategy with the company's strategy, which is extremely important to ensure a strategic role in the organization.

The advantage of this solution is easy use and there is minimal need for training. This also enables easy sharing of knowledge among members of the purchase team. And most importantly, this digital solution for strategic procurement enables the strategy to have a usable value, which is measurable, not just another document in the sequence, which is created and archived.

The question remains why, with all the advantages and benefits we have seen in these three examples, the digitisation of strategic procurement is not in greater use. Knowing that in these examples the value of procurement was high, it raises the question of whether organizations with smaller total purchases can have benefit from the digitization of strategic procurement. And, of course, whether the price of this technology is a crucial factor in making a decision. For this, each individual company would have to make their own cost benefit analysis and say if it was worth it.

A potential barrier is both the level of skills among procurement employees and the level of understanding of strategic procurement. This may be a key reason companies do not opt for digital procurement transformation.

However, we can conclude from our examples that in the future more attention will be paid to the digital transformation of strategic procurement.

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THE IMPACT OF VERTICAL COMMUNICATION ON THE TALENT MANAGEMENT PROCESS IN COMPANIES

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Abstract: *Today's way of doing business is significantly different from the past when there was a much stronger connection and sense of employee loyalty to an organization. Given the major changes in the labor market, such as skilled labor shortages and significant changes in workplace, companies face great challenges in attracting and retaining a talented workforce. New circumstances in the business environment pose completely new challenges to managers. Therefore, the aim of this research is to investigate to what extent vertical communication, as one of the important components of internal communication, impacts attracting, developing and retaining talent in companies. The empirical research was conducted on a sample of 170 companies that belonged to the category of medium-sized or large companies in the Federation of Bosnia and Herzegovina. The basic assumption was that vertical communication has an impact on talent management in companies, in that improvements in vertical communication can be recognized by existing employees and through them by potential talent in the market who are still considering where to work. The empirical part of the research used methods that included primary data collection through a research questionnaire, and various statistical methods for processing the collected data. The summary of the responses given by the managers of these companies confirmed that vertical communication did have a positive impact on the talent management process. The results obtained through this empirical research study largely support the findings indicated by previous research, however, it was not possible to find any previous confirmation in companies from the Federation of Bosnia and Herzegovina.*

Keywords: *Internal communication, vertical communication, talent management*

JEL Classification: *J24, J50, M54*

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INTRODUCTION

The study of vertical communication in a company has garnered significant interest as it is an integral part of internal communication aimed at informing and communicating with employees. Given the major changes in the labor market, such as a shortage of skilled labor and significant changes in the workplace, companies face major challenges in attracting and retaining a talented workforce. New circumstances in the business environment present completely new challenges to managers. The aim of this research is to show to what extent vertical communication, as one of the important components of internal communication, impacts the attraction, development and retention of talent in companies.

The importance of the behavior and competence of the management in an organization has been the subject of research by numerous authors. The important role of management in internal communication is emphasized by Tomić and Jugo (2021, 343), defining internal communication as "the planned use of communication actions to systematically influence the knowledge, attitudes and behavior of current employees - emphasis on management - in relation to the employee." Since the role of internal communication is "building and nurturing employee relations, establishing trust, providing timely and reliable information and thus contributing to general motivation, especially in times of change and stress" (Dolphin, 2005, 171), the role of managers in this whole process is more than clear. The position of manager implies extensive knowledge and a whole series of skills in order to be successful in management, and the job is considered an interdisciplinary function for a reason (Nadrljanski, 2010) because it is the manager's task to engage others by motivating them, and not to perform tasks independently (Buble, 2010). It is the manager who needs to create an environment in which communication will be effective (Holtz, 2007; Garača and Kadlec, 2011; Tafra-Vlahović, 2012). The influence of managers on a perceived organizational reputation has also been recognized (Dowling, 2004), which further leads to a positive relationship between organizational attractiveness and the decision to apply for a specific job (Chapman et al., 2005; Turban et al., 2001). Although internal communication takes place on two levels "between colleagues in the same department or at the same hierarchical level, and between superiors and subordinates" (Skoko, 2006, 260–261), this paper is focused more on vertical communication. The main reason for this originates in the results of previous research studies, which focused on communication with superiors in measuring employee satisfaction. The important role of leaders as catalysts for information and the most reliable sources of information has been confirmed (De Vries et al., 2010; Men and Stacks, 2013). Men (2012, 80) believes that "leadership communication represents one of the main components of the organization's internal communication system, and it can be argued that the leadership style that prevails in the organization affects the characteristics of internal communication in the organization." Bushra et al. (2011) concur that successful management of employees largely depends on the quality of leadership in organizations. Certain studies have also pointed to the role of the direct superior as more important than that of senior management, since direct superiors are the preferred sources of information (Larkin and Larkin, 1994; Whitworth, 2011; Šulentić et al., 2017) because upward communication and feedback are sought directly from direct superiors. Furthermore, research conducted by Therkelsen and Fiebich in 2003 (as interpreted by Mishra et al., 2014, 188) found that the direct supervisor is the key to employee organizational engagement. When employees perceive greater support from their superiors, they become more engaged.

The study of the concept of talent management accelerated after the publication of the "War for Talents" and the emphasis on their critical role in competitiveness and goal achievement.

Major macroeconomic changes, new forms of organizations and demographic changes provide an additional stimulus for research and understanding of this phenomenon. As pointed out by Jaganjac et al. (2018, 184), "talent is mobile and employee value development strategies are important for companies whose competitiveness depends on employee knowledge and innovation. Talent management is of vital and crucial importance, not only for individuals to demonstrate their potential and contribution to positive changes in the organization, but also for the survival and sustainability of companies." During recent years, numerous studies have recognized talent management as an important factor in raising the productivity and motivation of employees. In this paper, the talent management process is empirically observed and measured through three steps: attracting, developing and retaining talent. This structure of the process is in line with the theoretical understanding of numerous authors that talent management is a deliberate and structured corporate approach to recruiting, retaining and developing talented individuals within an organization (Stahl et al., 2007; Tarique and Schuler, 2010; Davis et al., 2016).

OVERVIEW OF THE HYPOTHESES

Vertical communication is an essential element of internal communication. Numerous authors have dealt with the role of communication between management and employees. Given that leadership is considered to be a process of influencing employees (Yukl, 2006; Whitworth, 2011; Men and Stacks, 2013), leaders are those who play an important role in achieving organizational goals by influencing attitudes through their communication, motivation and behavior of employees, shaping the organizational climate and culture, and thus forming the main component of the internal communication system. As explained in the previous section, the two parts of vertical communication can be observed separately: communication with senior management and direct superiors. Accordingly, this paper defines it as two indicators for measuring variables of vertical communication.

The model is based on the basic assumption that vertical communication in a company has a positive impact on talent management. The research paper has postulated three hypotheses, which will be investigated and empirically proven.

H1: Vertical communication in a company has a positive impact on talent attraction.

H2: Vertical communication in a company has a positive impact on talent development.

H3: Vertical communication in a company has a positive impact on talent retention.

The expected *connection between vertical communication and attracting talents* is based on previous studies which have argued that management competence and behavior can influence public relations outcomes, such as perceived organizational reputation and quality relationships (Dowling, 2004). Chong (2007) found that a focus on face-to-face dialogue between management and staff, where they could discuss various topics, helped the airline deliver its brand promise to customers through its employees. Earlier analyses have confirmed that there is a strong relationship between organizational attractiveness and a job applicant's decision to accept a job (Chapman et al., 2005, 930; Turban et al., 2001). In this paper, the variable "talent attraction" to a company is measured by three indicators: talent identification, employer brand, and talent attraction methods and techniques.

The expected *connection between vertical communication and talent development* is based on previous studies, which have confirmed that "overall employee development is an integral part of the talent management process, top management support is needed to value and build employee competencies to survive in a dynamic business environment" (Tiwari et al., 2015,

209). According to Myers and Sadaghiani (2010, 229), "Millennials seek support from their managers through close relationships and frequent feedback." According to studies conducted by Hall (2016), the extremely important role of managers in shaping the work environment has been proven. This is also supported by the results of research conducted on Millennials, "using the question of what they are looking for from their permanent employment, the largest number of answers related precisely to answers such as 'good communication between colleagues and managers,' 'respect and a professional working environment,' 'a good guidance support system' and 'good governance'" (Hall, 2016, 35). The variable "talent development" in a company is measured by two indicators: performance and motivation management and the types of education provided by the company.

The expected *connection between vertical communication and talent retention* is based on previous studies, which have confirmed that poor leadership quality is considered an important reason why people leave an organization (Kouzes and Posner, 2002; Clampitt, 2005). A large number of authors have studied the characteristics of Millennials, and many of them (Mayers and Sadaghiani, 2010; Piper, 2012) agree that the generation is used to encouragement and being encouraged to do anything, therefore, recognition and feedback from superiors are important to them. In this paper, the variable "talent retention" in a company is measured by five indicators: rewards and recognition, modern work design, balance between work and private life, management support, employer's reputation.

RESEARCH INSTRUMENT AND METHODS

The research sample included 170 companies operating in the Federation of Bosnia and Herzegovina, which by size belonged to the group of large or medium-sized companies. Only one manager in each company responded to the questionnaire. The empirical research for this paper was based on a detailed, self-prepared questionnaire. The survey questionnaire was constructed using previous empirical and theoretical research conducted in the field of vertical communication and talent management. The questionnaire included several questions from previous research (Men, 2012; Behnke, 2010; Kalani and Hayase, 2009; van Zyl et al., 2017; Ullrich, 2010; Stahl et al., 2007), comprising just small part of the overall list of questions in the research. Data collection for the research was carried out in the second half of 2021. With the help of a market research agency, the responses to the questionnaire were collected via telephone conversations with respondents. Considering the large number of questions, approximately 30 minutes were needed to collect all the necessary responses for each interview with company management. The total duration of data collection was one month. For each indicator in the survey, the answers to the questions were defined as closed type with the application of a Likert scale with 5 degrees of intensity according to the following interpretation: 1 - not at all to 5 - completely.

The variable "vertical communication" was measured by two indicators: senior management communication and direct superior communication, with a total of 17 statements. The variable "talent attraction" to the company was measured by three indicators: talent identification, employer brand, and talent attraction methods and techniques, with a total of 18 statements. The variable "talent development" in the company was measured by two indicators: performance and motivation management and the types of education provided by the company, with a total of 17 statements. The variable "talent retention" in the company was measured using five indicators: rewards and recognition, modern work design, balance between work and private life, management support, and employer's reputation, with a total of 20 statements. The Cronbach alpha reliability coefficient was >0.7 for statements from each variable expressing vertical communication, talent attraction, talent development and

retention, which means that all these statements can be aggregated into each individual variable to which it is assigned.

The empirical research used different statistical methods to process the collected data: graphical representations, descriptive statistics, structural analysis, the Kolmogorov-Smirnov test to verify whether the distribution of the analyzed variable meets the assumption of normality, the Mann-Whitney U test for two independent distribution samples that do not meet the assumption of normality, the Kruskal-Wallis test for more than two independent distribution samples that do not meet the assumption of normality, correlation analysis, and hierarchical multiple regression models.

For the constructs that express vertical communication and talent management, the final constructs were calculated as averages of the subconstructs. In addition, the gradual introduction of independent variables and their contribution to the model was monitored through hierarchical regression.

INTERPRETATION OF RESULTS

When observing the results of this research in the context of sample and the industry to which the company belongs, the largest share of companies was engaged in the processing industry (28.2%), followed by companies engaged in wholesale and retail trade (25%) and construction (11%), which corresponds to the industrial structure of companies at the level of the Federation of Bosnia and Herzegovina. According to the gender structure of managers, the results showed a relatively evenly distributed sample. There is a slightly higher proportion of female managers (58%), which gives the selected sample representativeness in the context of gender structure. Managers in the companies that responded to the questionnaire were at the level of lower, middle or top management in the proportion 7:46:47. The age structure of respondents/managers from the sample was also heterogeneous. The managers were predominantly from the age group of 25 to 39 (55%), which is an interesting category because this age group corresponds to the Millennial generation. The variable of seniority that the managers acquired in their respective company was also analyzed. The sample was heterogeneous in terms of its structure, with the highest proportion of managers working in the company for 10 years or more (43%), while the lowest proportion were those who have been in the company for up to one year (6%).

The Mann-Whitney non-parametric test was used to test differences between male and female managers regarding vertical communication, talent attraction, development and retention. The Kruskal-Wallis non-parametric test was used to test the differences between managers of different age groups, different positions of managers and different seniority of managers regarding attitude to vertical communication, attraction, development and retention of talent.

- The results of the conducted research showed that there was no statistically significant difference between the mean values for the variables that express **vertical communication** in the subsamples according to gender ($p\text{-value } 0.839 > 0.05$) and position of the manager ($p\text{-values } 0.784 > 0.05$). The attitude to vertical communication partially depended on age ($p\text{-values } 0.070 < 0.05$), as the $p\text{-value}$ was less than 0.05 only for the variable "vertical communication of direct superior," while for "vertical communication of top management" the $p\text{-value}$ was 0.445. Finally, in terms of the seniority of the manager ($p\text{-value } 0.003 < 0.05$), the results confirmed that the attitude to vertical communication depended on the seniority of the manager in the company.

- For the **talent attraction** variable, the results showed that the attitude towards talent attraction partially depended on age ($p\text{-value } 0.057 < 0.05$), where only one construct

"activities undertaken by the company in terms of methods and techniques of talent attraction" had a p-value lower than 0.05, and seniority of the manager (p-value 0.328>0.05), where only one construct "activities undertaken by the company in the field of employer brand development" had a p-value lower than 0.05. There was no statistically significant difference between gender (p-value 0.873>0.05) and position (p-value 0.58>0.05).

- For the **talent development** variable, the results of the conducted research showed that there was no statistically significant difference between the mean values for the variables that express the development of talents according to gender (p-value 0.268>0.05), age (p-value 0.698>0.05), seniority (p-value 0.766>0.05), or manager's position (p-value 0.57>0.05).

- For the variable **talent retention**, the research results showed that there was no statistically significant difference between the mean values for the variables that express talent retention according to gender (p-value 0.202>0.05), age (p-value 0.254>0.05), seniority (p-value 0.237>0.05), position of the manager (p-value 0.816>0.05).

In order to present the results of this research, a correlation matrix was created, which shows the connection between vertical communication as an independent variable and talent management in the company as a dependent variable.

The calculation was based on constructs calculated as average means. The values of the constructs were calculated as an **arithmetic mean (average)** for the values of the original variables from the questionnaire that made up that construct.

Table 1: Correlation matrix - variable averages

		Attracting talent	Development talent	Retention talent
Vertical communication	Partial correlation coefficient	0.275***	0.275***	0.371***
	P-value	0.0	0.0	0.0

(*p < 0.1, **p < 0.05, ***p < 0.01)

Source: Research results

According to the results presented in Table 1, it can be concluded that:

- there is a statistically significant connection between vertical communication and talent attraction (partial correlation coefficient is 0.275)
- there is a statistically significant connection between vertical communication and talent development (partial correlation coefficient is 0.275),
- there is a statistically significant connection between vertical communication and talent retention (partial correlation coefficient is 0.371),

Hence, all three hypotheses, H1, H2 and H3 have been confirmed.

The variables "vertical communication averages" and "enterprise talent management" were further modeled using hierarchical regression analysis. Dummy variables for the socio-demographic characteristics of the respondents were included as control variables (gender – dummy variable 1 for female and 0 for male; age – dummy variable 1 for managers aged up to 39 and 0 for managers aged 40 or more; seniority – dummy variable 1 for managers with up to 9 years of experience and 0 for managers with 10 or more years of experience; manager position – dummy variable 1 for top management and 0 for middle and lower management).

In subsequent blocks, in the model in which the constructs for talent management were considered dependent variables, an independent variable – the constructs "averages for vertical communication" was gradually included. Demographic characteristics were not significant in any model.

Table 2: Hierarchical regression analysis (variable averages) – Attracting talent as a dependent variable

Model	Attracting talent (average)			
	1	2	3	4
Constant	3.651	0.926	0.425	-0.068
Gender <i>dummy</i>	-0.003	0.044	0.045	0.019
Age <i>dummy</i>	0.21	0.217	0.206	0.173
Seniority <i>dummy</i>	0.085	0.033	0.063	0.063
Position <i>dummy</i>	0.092	0.073	0.079	0.095
Vertical communication (average)		0.632***	0.342***	0.312***
R ²	0.037	0.344	0.389	0.625
ΔR ²	/	0.307	0.045	0.236

(*p < 0.1, **p < 0.05, ***p < 0.01)

Source: Research results

In the regression analysis for the dependent variable "talent attraction" presented in Table 2, it can be concluded that vertical communication achieved a statistically significant connection with talent attraction. Based on the results, it can be concluded that hypotheses H1 has been confirmed.

Table 3: Hierarchical regression analysis (variable averages) – Talent development as a dependent variable

Model	Development talent (average)			
	1	2	3	4
Constant	3.84	0.968	0.536	0.146
Gender <i>dummy</i>	-0.126	-0.076	-0.074	-0.095
Age <i>dummy</i>	0.141	0.148	0.139	0.113
Seniority <i>dummy</i>	0.036	-0.019	0.007	0.007
Position <i>dummy</i>	-0.027	-0.047	-0.041	-0.029
Vertical communication (average)		0.666***	0.416***	0.393***
R ²	0.02	0.318	0.347	0.476
ΔR ²	/	0.298	0.029	0.129

(*p < 0.1, **p < 0.05, ***p < 0.01)

Source: Research results

In the regression analysis for the dependent variable "talent development" presented in Table 3, it can be concluded that vertical communication achieved a statistically significant connection with talent development. Based on the results, it can be concluded that hypotheses H2 has been confirmed.

Table 4: Hierarchical regression analysis (variable averages) – Talent retention as a dependent variable

Model	Retention talent (average)			
	1	2	3	4
Constant	3.848	0.817	0.589	0.338
Gender <i>dummy</i>	-0.134	-0.082	-0.081	-0.094
Age <i>dummy</i>	0.117	0.125	0.12	0.103
Seniority <i>dummy</i>	0.199	0.142	0.156	0.155
Position <i>dummy</i>	0.053	0.032	0.035	0.043
Vertical communication (average)		0.703***	0.571***	0.556***
R ²	0.038	0.373	0.381	0.435
ΔR ²	/	0.35	0.008	0.054

(*p < 0.1, **p < 0.05, ***p < 0.01)

Source: Research results

According to results of the regression analysis for the dependent variable "talent retention" presented in Table 4, it can be concluded that vertical communication achieved a statistically significant connection with talent attraction. Based on the results, it can be concluded that hypotheses H3 has been confirmed.

H1: Vertical communication in a company has impact on talent attraction. Through the model calculated as variable averages, a statistically significant connection was attained with a partial correlation coefficient of 0.275. In addition, according to the hierarchical regression model, vertical communication showed an impact on talent attraction (p with vertical communication less than 0.01). In this part of the research, a positive relationship was expected as earlier studies showed the importance of management in the process of attracting new talent through the experiences of current employees. Therefore, with the increase in the development of vertical communication, the attractiveness of a company as an attractive employer for talent also increases. Considering the presented results, it can be concluded that they support the first hypothesis, so H1 is accepted.

H2: Vertical communication in a company has impact on talent development. The research results showed that there was a significant connection between vertical communication and talent development. Through the model calculated as variable averages, a statistically significant connection was attained with a partial correlation coefficient of 0.275. Furthermore, according to hierarchical regression models, vertical communication showed impact on talent attraction (p with vertical communication less than 0.01). Nowadays, companies endeavor to be places based on knowledge and present themselves thus on the market, but the question arises to what extent their active plans and modern techniques provide employees with what they need for their development. The main role here is played by the manager who, in direct contact with the employee, can recognize and encourage development, and the role of senior management is to provide the framework and resources for the implementation of the talent development program. So, with the increase in the development of vertical communication, the role of the company as a knowledge company also grows. Considering the presented results, it can be concluded that they support the second hypothesis, so H2 is accepted.

H3: Vertical Communication in a company has impact on talent retention. The research results showed that there was a significant connection between vertical communication and talent retention. Through the model calculated as variable averages, a statistically significant connection was realized with a partial correlation coefficient of 0.371. Furthermore, according to the hierarchical regression model, vertical communication showed an impact on talent

attraction (p with vertical communication less than 0.01). Disagreement with a superior is often the main reason for leaving a company, which has already been proven in previous research. Insufficient communication or bad communication does not lead to a desired effect and creates conflict situations. Therefore, it is very important primarily to have appropriate managers with appropriate competencies for the position they hold. As previous research has confirmed, communication skills are one of the basic competencies that every manager must have. So, with the increase in the development of internal communication in the vertical communication part, the role of the company as an employer that knows how to retain talent and create a long-term relationship with employees grows. Considering the presented results, it can be concluded that they support the third hypothesis, so H3 is accepted.

CONCLUSION

The basic functions of communication differ according to individual authors, but each emphasizes the importance of management and its attitude and behaviour. For example, Bahijarević-Šiber (2008, 97-98) enumerate six types of communication functions: information function, motivational function, coordination and control function, persuasion function, educational function of communications, emotional function of communications. The basic functions of communication according to Robbins (2009, 368-369) include four main categories: informing, emotional expression, motivating and controlling. In fact, the main task of internal communication is to achieve commitment and engagement, all with the ultimate goal of achieving the desired effect on business results (Gruman and Saks, 2011).

Talents, as the most important strength of a company in creating strategic value, must be carefully selected, developed for the skills the organization needs, adequately rewarded and motivated to stay. A properly implemented talent management process in companies should enable the systematic implementation of all these steps, with the ultimate goal of achieving a competitive advantage on the market. This process should follow the employee's entire work cycle, so it must be a thoughtful, long-term talent review, development and success planning. The role of senior management (management and executive directors) is extremely important, as their supervision and evaluation are vital for the entire process to be successfully implemented (Slizer and Dowell, 2010).

Empirical research was conducted on a sample of 170 companies that belong to the category of medium-sized or large companies in the Federation of Bosnia and Herzegovina. The summary of the responses given by the managers of these companies confirmed that vertical communication as an independent variable and talent management as a dependent variable had a positive impact. When a company develops and strengthens its vertical communication, it positively affects the attraction, development and retention of the talent it needs. In this case, companies understand and implement in their business strategy the role of employees as an important component in public relations and the overall image of the employer's brand.

The results obtained in this empirical research largely support the guidelines indicated by previous studies, but it was not possible to find any previous confirmation in companies from the Federation of Bosnia and Herzegovina. In a theoretical sense, this paper allows for the possibility to implement the conceptual model in new research and use the results for comparison and reaching new conclusions; the results of this research study can be added to previous theoretical knowledge.

A limitation of the study is that the research was applied only to companies that have their headquarters in the Federation of Bosnia and Herzegovina, and consequently they do not include the entire economy of the country, but only of one entity within Bosnia and

Herzegovina. The subjectivity of the respondents should also be mentioned, since all the questions on the questionnaire were answered by employees who were in a managerial position. The research did not deal with quantitative indicators that would be able to check the true success rate of the talent management program, and the responses were based solely on the subjective opinion of the respondent, in this case the manager.

Recommendations for future research would be to broaden the scope of the research on attitudes to this topic by including employees and not only managers. It would also be interesting to try to determine exactly to what extent the perception of employees influences potential job seekers from the external environment (students, users of employment offices, etc.). In future research, it would be useful to include certain quantitative indicators that would confirm the success of talent management strategies in companies, and even perhaps direct the research to those sectors in which the talent management process is most developed, so that the results and examples are as concrete as possible.

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**GLOBALIZATION
AND REGIONALIZATION**

FISCAL POLICY AND POLITICAL BUDGET CYCLES IN SERBIA: PRELIMINARY FINDINGS

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***Abstract:** The paper explores the existence of Political Budget Cycles in Serbia in the period 2005-2022. The underlying assumption is that an incumbent government (mis)uses public resources to increase chances of being re-elected. To test our hypothesis, we employ monthly time series data on the overall budget balance obtained from the government fiscal statistics. We test the hypothesis by utilizing Intervention Analysis as the main econometric tool. Estimation results undoubtedly reveal the existence of opportunistic behaviour by different governments, although the results hold only for regular election rounds and not for premature elections. In former case, expenditures increase in pre-election a period, which suggests an effort to gain electoral support and improve chances of re-election. The results are independent from the party affiliation over the observed period.*

***Keywords:** Political budget cycles; Budget balance (deficit); Early elections; Regular elections; Serbia*

***JEL Classification:** E60, E62*

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INTRODUCTION

It is common for governments to engage in expansionary fiscal policies before elections, giving rise to the so-called Political Business Cycles (Nordhaus, 1975). Political Budget Cycles (PBCs), which refer to the use of fiscal policies in the context of Political Business Cycles, are more pronounced in emerging / transition economies or new democracies (Brender and Drazen, 2005; Klomp and de Haan, 2013a, 2013b).

Lack of voter experience can be the reason why in new democracies do not behave rationally or punish such incumbent behaviour. On the other hand, differences in a PBC patterns between developing or emerging economies and developed countries may be enabled also by differences in institutional environments, which are linked to corruption (Shi and Svensson, 2006). Also, transparency is crucial as confirmed by Alt and Lassen (2006a, 2006b) highlight the importance of transparency – the higher the degree of fiscal transparency the lower are public debt and deficits during electoral periods.

PBC patterns may be influenced additionally by the typology of elections (if the date is exogenously fixed such as by constitution or not) (Lächler, 1982; Ito and Park, 1988). In the case of early elections, the incumbent may not have sufficient time to plan and implement expansionary policies. Thus, it is important to distinguish between regular (scheduled) and early (snap) elections when analysing PBCs (Imami *et al.*, 2020).

In our paper, we empirically investigate PBCs in Serbia, a post-communist economy, characterized by a short democratic lifespan and voter experience and a high level of corruption. We analyse the general government budget (fiscal) balance, distinguishing between regular and early elections – empirical results show different patterns as expected.

The structure of the paper is as follows. The following section describes the country context by presenting an extensive analysis, which is important to understand the political, institutional, and economic context, and also provides useful information *per se*, given the scarcity of such insights about Serbia in the academic literature. The third section describes the methodology, the fourth section provides the findings while in the last section concluding remarks are presented.

HISTORICAL CONTEXT AND INSTITUTIONAL ENVIRONMENT

Serbia's development during XX century was characterized by continuous struggle with state building and un(der)development in unfavourable social, economic, and political conditions coupled with highly complex, adverse, and uncertain regional and international environment.

Serbia as sovereign state entered the unitary state of Kingdom of Yugoslavia after the WW1 as underdeveloped and rural country. Diverse institutional development and heritage (Benakio, 2002), different levels of economic development across Yugoslav state, relying almost exclusively on agriculture, strong and specific feudal legacy in northern parts of kingdom, low urbanisation and generally low level of human capital, undeveloped infrastructure (Đurović, 1991), were deeply constraining factors new communist regime were confronted with after the revolution in 1945. Setting up communist rule after the WW2 meant the introduction of plan economy and communist party dictatorship. Continuous reforms over the post-war time, economic and administrative in nature, but retaining communist party monopoly, led to the establishment of the system with unique characteristics based on socialist, self-management and to some extant market features (Uvalić, 2013). Despite reform attempts, structural characteristics of the institutional structure, reflecting state

ownership, overregulation of economy and political dictatorship has shown inability to solve information and allocation problems in Yugoslav economy, and the state eventually collapsed by the beginning of 1990s.

Collapse, however, produced political and economic chaos ending up in bloody decay of Yugoslav socialist state, where Federal Republic of Yugoslavia (FRY), constituted of Serbia and Montenegro, became a successor. While all the other former communist countries were confronting with steep economic downturn at the beginning of transition, in a case of FRY it was even more pronounced because of economic and political isolation the country was facing with, destructive economic policies and hostile political and regulatory environment, which all culminated by Kosovo war and NATO bombing of FRY in 1999. From relatively favourable starting conditions in 1989 comprised of greater experience with market-oriented reforms, major economic (and political) decentralisation and greater openness to West as well as better integration in world economy (Uvalić, 2007), Serbia entered real transformation toward market economy and pluralistic democracy, as a latecomer and under highly unfavourable conditions at the beginning of third millennium. At that time, Serbia was one of the poorest European countries with GDP value half of the level in 1989 and it is still the only former Yugoslav republic, beside Bosnia and Herzegovina, which hasn't reached the level of GDP three decades after the fall of Berlin wall (Jović, 2022).

One may argue that Serbia as a latecomer had a chance for more efficient transition, avoiding mistakes made by other transition countries and learning from their experience, but it didn't happen. The countervailing forces were stronger: path dependency, adverse initial conditions, and broad and deeply rooted institutional failure, including unfavourable informal institutional structure. They made long-lasting nexus of burdens in successful transformation toward market economy and supporting political institutions. If the initial conditions and political and economic heritage were to be seen as disadvantaging, the institutional setting formed during transition was equally disappointing. Captured state, weak rule of law, uneven distribution of political and economic power determining strong incentives toward rent seeking and partisan behaviour, unfunctional political market, led to high economic uncertainty and political instability.

The quality of institutional structure, measured by economic freedom index of Heritage Foundation (HF) and accompanying institutional subindexes, i.e., property rights, government integrity and judicial independence are presented on the Figure 1 and Figure 2. HF index of economic freedom is a good proxy for overall development of institutional structure. It describes how well institutional structure suits to promotion of entrepreneurial activities and overall development of market economy, not only looking at the degree of freedom *en general*, then also considering how well "rules of the game" (North, 1990) are formulated, impartially implemented, and rigorously protected. The low start and weak institutional development is obvious from the Figure 1. Serbia started its transformation toward market economy and political pluralism from the level considerably lower than it was a world average at the beginning of 2000s. The lagging was even more pronounced compared with advanced market economies (not presented on the Figure 1). It took almost a decade and a half to (considerably) improve the institutional quality and to move over the world average. However, over the whole period, institutional environment stayed rather challenging severely burdening stability and sustainability of development and growth.

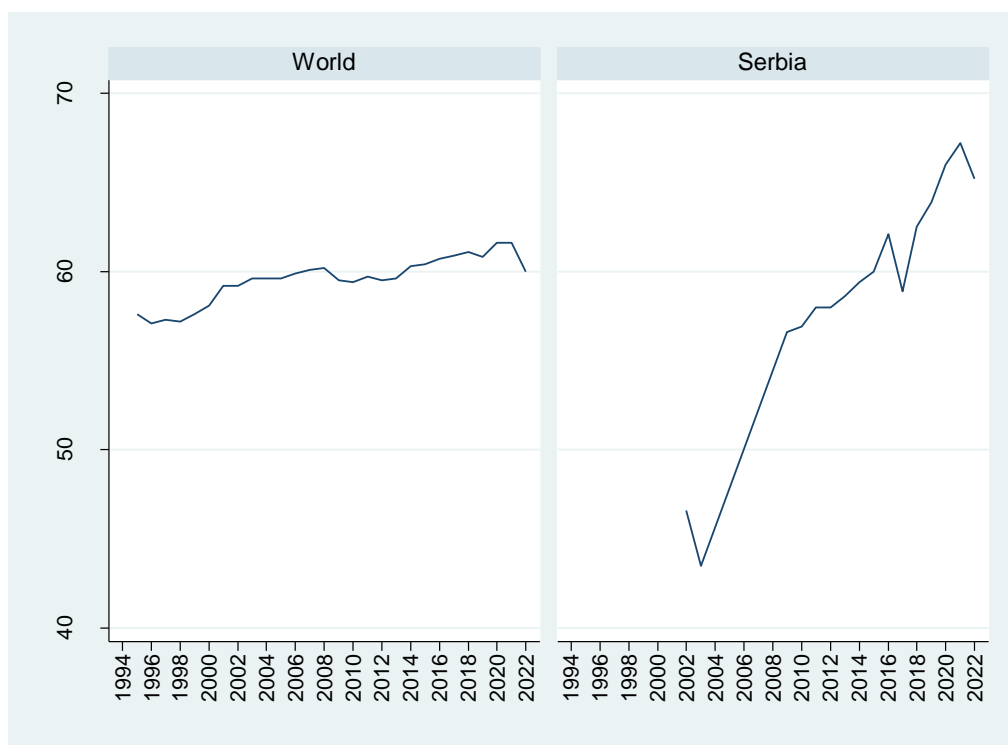


Figure 1: Economic freedom in Serbia and the world 1995-2022

Source: Heritage Foundation (2022)

The improving institutional environment came along with very unfavourable domestic heritage and international circumstances. The assassination of Prime Minister Zoran Đinđić (2003) at the beginning of the reforms, dissolution of State community of Serbia and Montenegro (2006), and unilateral proclamation of Kosovo independence (2008) (Kovačević, 2019), beside other important political events, were creating political climate where inefficient use of resources was natural consequence. External circumstances were additionally worsening the situation. First, global financial crisis caused recession in Serbia (2009) followed by unfavourable economic conditions: unstable growth, very high unemployment and relatively (to its development) high level of debt. Additional problems were created by European sovereign debt crisis, which effectively triggered two additional recessions in Serbia (in 2012 and in 2014).

Although transition process was characterized by the progress in setting up and upgrading institutional structure (Vladislavljević, 2019), reflected in rising values of democracy, the most important formal rules of market economy – credible and stable property rights, freedom of contract, an independent judiciary, and constitutional protection (Pejovich, 2003), stayed under large extant unfunctional and were unable to reduce discretionary power of bureaucrats. It can be seen from the Figure 2, with very low levels of property right protection, poor government integrity and low level of judicial efficiency. All the basic institutional prerequisites for efficient market were missing, mirroring in captured state, flourishing corruption and supremacy of political power over other branches of government.

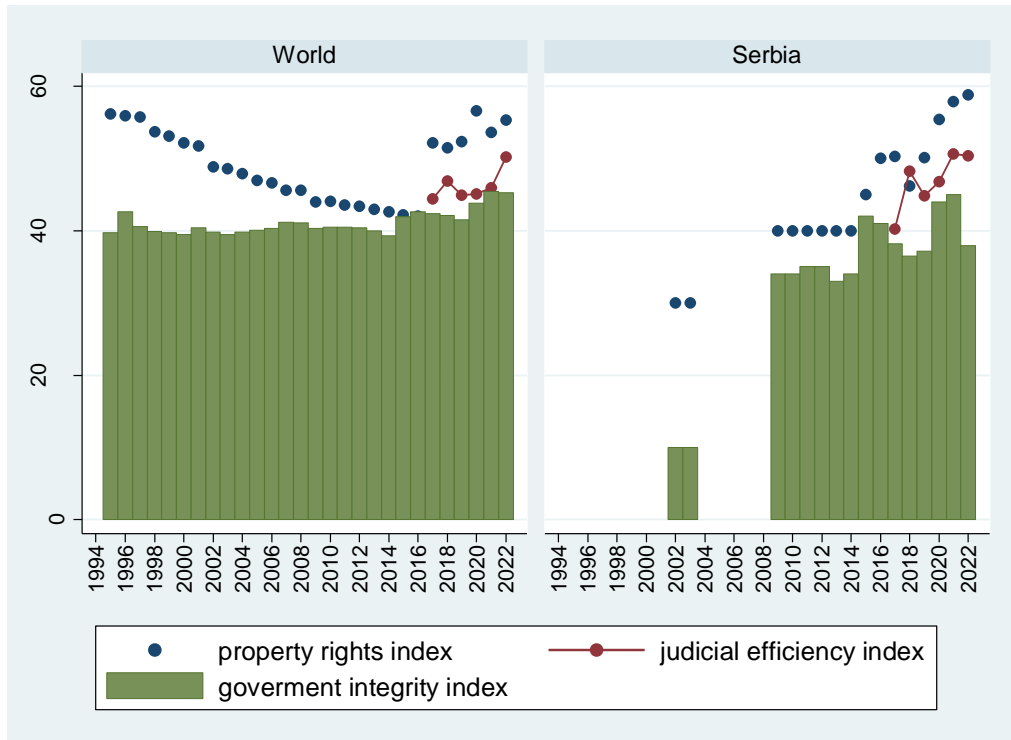


Figure 2: Institutional quality in detail: Serbia and the world 1995-2022

Source: Heritage Foundation (2022)

The supremacy of the politics and parties in power over economy shapes the way in which Serbian political and economic system is structured. Moreover, high level of centralisation of power creates a stimulus for inefficient use of resources. It creates situation where political system becomes overburdened because it performs functions that do not belong to it. In a consequence it undermines democratization, political and economic competition (Pešić, 2007) with the backflash on institutional quality and economic efficiency. Non-functionality of institutional structure should be not equalled with its absence. Many anticorruption laws exist and many important supporting organizations are constituted. The problems arise because many of anti-corruption policies were largely unsystematic, insufficiently clear, not integrated in strategic framework, while incentives for the adoption of anti-corruption policies came mainly from international commitments made by ratifying international instruments in this area (UNDP, 2015). In consequence, *de jure* institutional building was not followed by *de facto* institutional development.

While asset-stripping strategies of rent seekers were the mostly pronounced in privatisation process (Ivanović *et al.*, 2019), public funds were frequently confronted with the same problems. Unresolved Kosovo question, migration crisis and eventually Covid-19 pandemic additionally diverted attention from economic topics. From asset-stripping strategies was not exempted even the international assistance (Bartlett, 2021). Asset-stripping strategies and rent extraction was executed by officeholders or/and their family members (Resimić, 2022), while rising control over media additionally put under control information flows, further fuelling misuse of public resources (Pavlovic, 2020). While the privatisation process is almost finished, an important channel for misuse of public resources after 2012 continued through the secret contracts (Ivanovic, 2022), where the most important information on rights and obligations between the state and private investors are hidden.

Costs of institutional failure are not to be seen only in an inefficient allocation and use of resources, then in penalties weak institutional structure is producing. Fiscal Council, an independent state agency, gave 14 recommendations in 2016 to improve the use of public money. No single recommendation was still implemented in 2019. Uncollected receivables by municipalities were worth of 1 billion €, while 100 million € are written off due to inability to be collected. With the last amount of 100 million € the problem of waste disposal could be solved (The Anti-Corruption Council, 2021). Moreover, inefficient use of resources is additionally worsened by *ex post* transaction costs it produces. An illustrative example in this regard refers to the case with Miroslav Miskovic. Namely, after winning the elections in 2012, an important message was the fight against tycoons and corruption. The big process against the biggest oligarch Miroslav Mišković, who was arrested in december 2012, started with a broad media covering bringing the ruling party broad support among citizens. After ten years of trial, he was declared not guilty. However, he sued Serbia in front of international courts and won a process getting a compensation of 30 million € (Nova, 2022).

Weak institutions are not only enabled rent seeking activities, then they attract political agents who are prone to use public resources for private gains, dismantling democratic institutions and violating democratic procedures (Pavlović, 2020). Although there are some differences between the periods before and after 2012, when it came to the structural change in distribution of political power in Serbia, political system setup is shaped in a way that it serves to incumbent party interests. Similar tendencies recorded in Poland, Hungary, or other neighbouring Balkan countries (Keil, 2018). In such an environment there is weak vertical and even more squeezed horizontal accountability, where the use of public resources for partisan purposes is a standard tool in maximization and consolidation of political power. State became “money wasting machine” (Pavlović, 2016) hampering long-term productivity and economic growth.

DATA AND METHOD

We statistically test the hypothesis that the general government budget balance (fiscal balance) deteriorates significantly before general (parliamentary) elections in Serbia and such deterioration is attributed to regular (scheduled) elections only – not to early (snap) elections. Fiscal balance is defined as general government budget revenues minus general government budget spending. If revenues are smaller (greater) than the respective spending, then the budget is running a fiscal deficit (surplus). When observed in annual terms, Serbia’s budget was in deficit for 14 out of 17 fiscal years and in surplus for the other three. Observations on a monthly basis shows the government ran a deficit in about 69 percent of the number of observed months (143 out of 206) and a surplus for about 31 percent. To test our hypothesis, we employ monthly time series data on the overall budget balance obtained from the government fiscal statistics.² Monthly data, in addition to providing more robust statistical results, due to a higher number of observations (compared to annual data), most importantly allows for the inclusion of any intra-annual election effects. Empirical analysis based on annual data has been a serious drawback of many empirical studies analysing several aspects of PBCs (see Streb *et al.*, 2012; Akhmedov and Zhuravskaya, 2004). On the other hand, one of the potential problems associated with monthly time series (or, generally, with any intra-annual frequency data) is the possible existence of seasonality patterns, which if not addressed could distort the results. We address this potential drawback, as explained below.

² Data on the overall budget balance are sourced from the National Bank of Serbia (NBS).

The available time series of the fiscal balance includes 206 observations, from January 2005 to February 2022. The data are denominated in billions of Serbian Dinar (RSD). In our empirical analysis strategy, we distinguish between early (snap) elections and regular (scheduled) elections which as a rule should take place every four years.³ Six parliamentary (general) elections were held during this period – out of which three were regular elections and three early elections – whose expected effect on fiscal balance is statistically captured by several dummy variables, constructed as explained below. Parliamentary elections were held on 21st of January 2007 (regular)⁴; 11th of May 2008 (early); 6th of May 2012 (regular); 16th of March 2014 (early); 24th of April 2016 (early); and 21st of June 2020 (regular)⁵.

We test the hypothesis of this paper by utilizing Intervention Analysis as the main econometric tool, which is based on the Box and Tiao (1975) methodology. This econometric approach has been applied in several similar works on PBCs or other fields with the same statistical inquiry objective of analysing the impact of “a known event” on a social or a natural time process.⁶ There are not many appropriate controlling variables available at a monthly frequency for this analysis. Therefore, another main reason we employ Intervention Analysis as our primary statistical framework is its advantage of enabling reliable econometric modelling even in the absence of such explanatory variables, as the time process could be modelled by its own autoregressive and moving average components (ARMA). However, as explained below, we conduct thorough robustness checking for our findings by replicating all the analysis using linear regression modelling as well as modelling with the data collapsed to quarterly frequency to utilise additional and more appropriate control variables available at quarterly intervals.

Basically, the test in the Intervention Analysis proceeds by modelling the variable of interest (i.e. the fiscal balance) by an appropriate autoregressive moving-average model (ARMA) and an intervention term. The intervention term models the time distance to each election day and captures any potential effect of elections on the variable of interest. The intervention term that models “the event” – the approaching elections in this case – could be considered as an explanatory variable capturing the dynamics of the dependent variable in addition to its “natural” pattern, which is modelled by the appropriate $ARMA(p,q)$ specification (where p refers to the order – number of lags – of the autoregressive component, and q to the order of the moving-average component). Intervention terms employed in this analysis consist of several dummy variables modelling different periods before and after elections. We call these variables “Electoral dummies” (EDs). Therefore, if the estimated parameter of a particular ED variable were to both prove statistically significant and have the anticipated sign, that would be considered as empirical evidence in support of the hypothesis of this study.

³ We have considered early elections those which were called prior to the fourth year from the previous election (which is the standard time span between parliamentary elections) or that were labelled/classified as such by OSCE (2022).

⁴ The 2007 elections were called to be held on 21st of January 2007, a few months prior to the expected date. However, they were not unexpected. Two big political events in 2006 caused it. The first relates to the secession of Montenegro from the State union of Serbia and Montenegro on 21st of May 2006. Already in May 2006 there was a common understanding that new elections would happen after proclamation of new Serbian constitution, which is the second event happening on 28th and 29th of October 2006. Thus, in the context of our analysis, we consider them scheduled (as they were planned in advance and the incumbent had sufficient time to prepare for its electoral strategy, including hypothetical engagement in expansionary policies).

⁵ Originally elections were to be organized on April 26th, but because of Covid-19 pandemic they were postponed to June 21st.

⁶ See, for example, McCallum (1978), Hibbs (1977), Alesina and Sachs (1986), Mills and Mills (1991), Alesina and Roubini (1992), Yoo (1998), Gilmour *et al.* (2006), and Sarfo *et al.* (2017). For a comprehensive and practical explanation of Intervention Analysis, see Enders (2015).

We define four ED variables for different time intervals preceding elections (all elections) and four others for symmetrical time intervals after elections. Likewise, we also define ED variables separately for each category of elections part of our hypothesis, namely for regular and early elections. Each set of EDs is formally defined as follows:

(i) EDs for “all elections” (regular and early elections altogether)

$$ED_{\pm j,t} = \begin{cases} 1: \text{for all months up to and including the } \pm j^{\text{th}} \text{ month} \\ \quad \text{before } (-j) \text{ or after } (+j) \text{ elections} \\ 0: \text{otherwise} \end{cases}, \quad j \in [3; 6; 9; 12]$$

(ii) EDs for “regular elections” only

$$ED_{\text{regular}\pm j,t} = \begin{cases} 1: \text{for all months up to and including the } j^{\text{th}} \text{ month} \\ \quad \text{before } (-j) \text{ or after } (+j) \text{ "regular elections"} \\ 0: \text{otherwise} \end{cases}, \quad j \in [3; 6; 9; 12]$$

(iii) EDs for “early elections” only

$$ED_{\text{early}\pm j,t} = \begin{cases} 1: \text{for all months up to and including the } j^{\text{th}} \text{ month} \\ \quad \text{before } (-j) \text{ or after } (+j) \text{ "early elections"} \\ 0: \text{otherwise} \end{cases}, \quad j \in [3; 6; 9; 12]$$

The methodology allows also for augmentation of the statistical model with other explanatory variables, which, referring to economic theory or common sense, could be considered relevant to explain any degree of variation in the dependent variable. These augmented models are known as $ARMAX(p,q,m)$, where X denotes the presence of (m) other explanatory variables. We employ this type of augmented model as the main statistical setting of our analysis. The additional explanatory variables we include are the Industrial Production Index (IPI) in volume terms; Retail Trade Index (RTI) in volume terms; the number of unemployed persons (Un_Per); RSD/USD nominal exchange rate (NER); and a dummy variable to control for the Covid-19 pandemic shock, which takes the value “1” from February 2020 to March 2021 and value “0” otherwise (Covid_dum).⁷ Based on theoretical and intuitive reasoning, the explanatory variables are included either with a time lag of one period (in the case of monthly data) or as time contemporary variables (when quarterly collapsed data were employed).⁸

In the absence of monthly time series data on real output growth (Gross Domestic Production-GDP), which would be the most appropriate variable to control for real economic activity that might affect fiscal balance, the IPI and RTI in volume terms are reasonable proxy variables.⁹ The number of unemployed persons is available at monthly frequency and we employ this variable to control for possible fiscal balance variation due to labour market dynamics (e.g. to

⁷ Monthly time series starting from January 2005 on all four variables are sourced from the National Bank of Serbia.

⁸ The short forms of the variables match the dataset, which is available on request. All of the transformations and estimates reported in this paper can thus be easily checked and/or extended.

⁹ We utilise the available data on quarterly GDP in our robustness check modelling with quarterly aggregated data, as explained below.

control for potential influences on the fiscal deficit through certain budget items such as unemployment state assistance, etc.). Whereas nominal exchange rate (RSD/USD) controls for any potential variation due to dynamics in currency exchange markets which also, theoretically and intuitively, might affect fiscal balance.

In the Box-Jenkins methodology of ARMA modelling (Box and Jenkins, 1976), one key prerequisite is the stationarity and non-presence of seasonality of the time process being modelled (i.e. the dependent variable), as well as all explanatory variables in the model, if any. First, we deflate the original time series of monthly fiscal balance with the Consumer Price Index (CPI) to remove inflation effects and then test the deflated series for any presence of seasonality.¹⁰ The series contains strong patterns of seasonality based on all seasonality tests employed (i.e. F-test; nonparametric Kruskal-Wallis test¹¹; Moving seasonality test; and Combined test). The seasonal patterns are also visible from the left-hand graph of Figure 1.

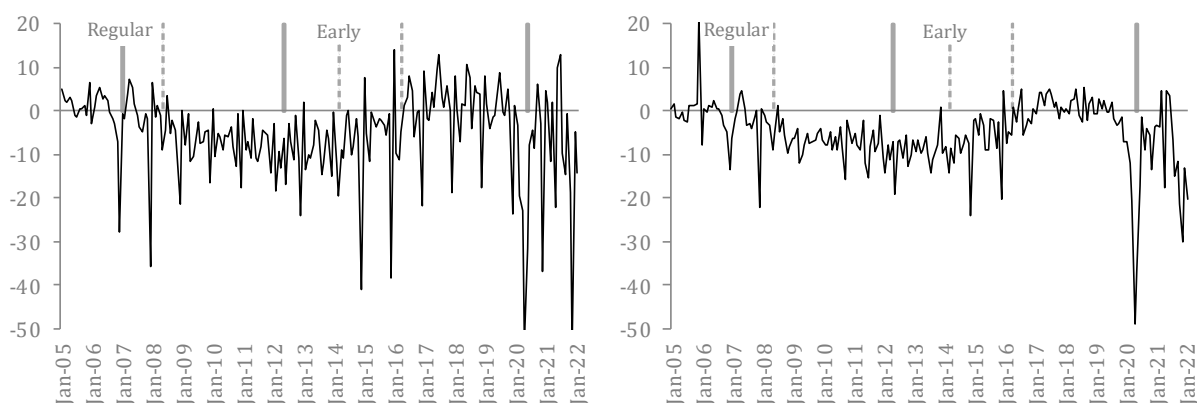


Figure 3: Inflation adjusted monthly fiscal balance in RSD billion (left-hand panel); deflated and seasonally adjusted monthly fiscal balance in RSD billion (right-hand panel)

Source: National Bank of Serbia—seasonal adjustment by the authors

The same is the case for the time series of our explanatory variables. Therefore, first we seasonally adjusted all of the original series.¹² Then we tested again for the stationarity of each seasonally adjusted time series, utilizing several unit root tests. The seasonally adjusted series of the dependent variable (i.e. fiscal balance) results in a stationary time process according to all of the statistical tests employed (i.e. Augmented Dickey-Fuller test; Philips-Perron test; and Kwiatkowski-Phillips-Schmidt-Shin test).¹³ Conversely, all seasonally adjusted series of explanatory variables were non-stationary processes according to all tests. Therefore, in order to obtain a stationary series, we further transformed explanatory variables

¹⁰ CPI monthly time series starting from January 2005 are sourced from the National Bank of Serbia.

¹¹ See Kruskal and Wallis (1952).

¹² Seasonal adjustment of all series is computed by the Census-X12-ARIMA method (developed by U.S. Census Bureau), run through EViews software with all default options, except in the case of deflated fiscal balance series (the dependent variable) which employed the additive decomposition instead of the default multiplicative decomposition, given that this series takes also negative values and multiplicative decomposition cannot be applied in this case. Whereas for the time series of other explanatory variables, all of which take only positive values, the default multiplicative decomposition was employed. After seasonal adjustments, all statistical tests employed for the presence of seasonality (i.e. F-tests; nonparametric Kruskal-Wallis test; Moving seasonality test; and Combined test) reject the seasonal null at the 1% level of significance for all the series (i.e. the dependent and explanatory variables).

¹³ See Dickey and Fuller (1981); Phillips and Perron (1988); Kwiatkowski et. al. (1992).

into their respective first lag differences of the natural logarithms, which are approximately the monthly growth rates of the original series.¹⁴

The right-hand graph in Figure 1 presents the time series of the seasonally adjusted and monthly fiscal balance in constant prices, whereas the left-hand graph shows the time series only adjusted for prices but not seasonally adjusted, both measured in RSD billions. The “regular election” dates are depicted by the solid grey vertical lines and the “early elections” dates are depicted by the dashed lines. Already, from an eyeballing of the right-hand graph in Figure 1, it is possible to discern deteriorating (decreasing) patterns during certain time periods anticipating certain regular elections and a pick-up afterwards.

The formal representation of the intervention analysis in this study is:

$$y_t = a_0 + \sum_{i=1}^p a_i y_{t-i} + \sum_{i=0}^q \beta_i \varepsilon_{t-i} + \omega_{\pm j} ED_{\pm j,t} + \sum_{k=1}^m \sum_{i=0}^n \phi_k x_{k,t-i}, \quad j \in [3; 6; 9; 12]$$

where y_t denotes the seasonally and price adjusted monthly fiscal balance measured in RSD billions and t indexes months; a_0 is the constant term; a_i and β_i are, respectively, the i autoregressive (AR) and moving average (MA) parameters of the p AR lags and q MA (ε) terms in the $ARMAX(p,q,m)$ model, which model the “natural” dynamics of fiscal balance; $\omega_{\pm j,t}$ are the parameters that capture any opportunistic effects of approaching elections (i.e. “the event”) on the variable of interest, namely fiscal balance; and the parameters ϕ_k model the effect of x_k , where k is the number (m) of additional explanatory variables. The latter could be either contemporaneous variables ($i = 0$) or variables with a time lag ($i = 1, \dots, n$). In this case, with monthly data, $k = 5$ – i.e. $IPI_{(t-1)}$; $RTI_{(t-1)}$; $Un_Per_{(t-1)}$; $NER_{(t-1)}$; and $Covid_dum_{(t)}$. Therefore, the parameters $\omega_{\pm j,t}$ measure the effects of the interventions (events) and are estimated along with the parameters of the ARMAX components. The estimation procedure provides estimates of $\omega_{\pm j,t}$ as well the corresponding confidence intervals. The probabilistic distribution of each estimator $\omega_{\pm j,t}$ is a t -distribution allowing for straightforward testing of our hypothesis.

We follow the Box-Jenkins methodology (Box and Jenkins, 1976) to identify and estimate the most appropriate $ARMAX(p,q,m)$ model for the time process of interest, namely, the seasonally adjusted fiscal balance. The most appropriate $ARMA(p,q)$ component of the ARMAX model tentatively found for the variable of interest was an $ARMA(1,1)$ specification – i.e. one first lag auto regression term (ARI) and one first lag moving average term (MAI). We reached this econometric conclusion following the Box-Jenkins methodology, which consists of an iterative three-stage process of: (i) model identification; (ii) parameter estimation; and (iii) assessing the model’s diagnostics. Several conventional criteria and diagnostic tests were employed throughout this iterative procedure.¹⁵

¹⁴ We tested the null of a unit root for the deflated and seasonally adjusted series of the dependent variable (i.e. fiscal balance) as well as first differences of the natural logarithms of seasonally adjusted explanatory variables (i.e. IPI, RTI, Un_Per and NER) by two statistical tests, the Augmented Dickey-Fuller test and the Philips-Perron test. The unit-root null was rejected at conventional levels of significance in all cases. We also tested the null of stationarity by the Kwiatkowski-Phillips-Schmidt-Shin test, which was not rejected even at the 10% level of significance in all the aforementioned transformed series (e.g., for the dependent variable the asymptotic critical value for the 10% level of significance is 0.347, while the test value was 0.225).

¹⁵ The selection between competing ARMA models fitting each time series was based on three formal criteria: the Akaike Information Criterion (AIC), (Akaike, 1973); the Bayesian Information Criterion (BIC), (Schwarz, 1978); and the Hannan-Quinn Information Criterion (HQC), (Hannan and Quinn, 1979). We did not encounter any case of conflicting selection guidance among these criteria. Several formal diagnostic tests and means of judgment were used throughout the Box-Jenkins iterative procedure to determine the “best” ARMA model and diagnose its residual properties: the Durbin-

Each pair of symmetrical *pre*- and *post*-elections dummy variables (EDs) as defined earlier were introduced one at a time in the “best” *ARMA(1,1)* model.¹⁶ Including also the monthly growth rates of IPI, RTI, Un_Per, NER (all four lagged by one period/month) and Covid_dum as additional controlling variables, all parameters of each final comprehensive ARMAX model were estimated simultaneously. If the respective ED estimates have the expected sign (in line with our hypothesis), then the statistical significance of the electoral dummy variables, tested through *t*-tests, reveals whether there is indeed any supposed impact of the elections on the fiscal balance.

EMPIRICAL RESULTS

The empirical analysis reveals clear evidence of election-related cycles in the fiscal balance of Serbia. Interestingly, PBCs take place only in regular (scheduled) elections, while there is virtually no PBC whatsoever in snap (early called) elections.

The estimated parameters of most of the electoral dummy variables employed in the analyses strongly indicate that there is a statistically significant deterioration of the fiscal balance at various time-intervals before elections, followed by normalizations or improvements thereafter. More interestingly, the election-related effect on fiscal balance is essentially driven only by regular elections, while there is no statistically significant deteriorating effect of the fiscal balance before snap elections, thus corroborating the hypothesis of this article. Fiscal balance cycles are obviously more pronounced during regular elections. The deterioration magnitude before these elections (i.e. the negative values of the respective estimated electoral dummy variables) are substantially higher than when all elections were considered together.

Furthermore, improvements of fiscal balance after elections (statistically significant at conventional levels) also appear mostly only in the estimated equations employing regular elections or all elections altogether and only a couple in the case of equations employing early elections. In contrast, in the case of early elections we find no statistically significant estimated EDs' coefficients at all for any of the time intervals before elections and only in two cases/EDs after elections in one of the alternative specifications.

These findings are robust to alternative econometric approaches and specifications, namely: (i) ARMAX modelling, including the alternative specifications within this modelling framework (i.e. specifications with the “second best” ARMA components, or without any controlling variables but ARMA components only, or with separate inclusion of *pre*- and *post*-elections EDs instead of pair inclusion of symmetrical *pre*- and *post*-elections EDs); (ii) OLS linear regression modelling; and (iii) specifications and estimations with quarterly collapsed data for the dependent variable (fiscal balance) and employing more adequate explanatory variables available at quarterly frequency (i.e. GDP).¹⁷

Watson test (Durbin and Watson, 1951); the Jarque-Bera test (Jarque and Bera, 1980); the Q-statistics test (Ljung and Box, 1978); the Breusch-Godfrey test (Breusch, 1978; Godfrey, 1978); the Breusch-Pagan-Godfrey test (Breusch and Pagan, 1979; Godfrey, 1978); and the Harvey test (Harvey, 1976). In addition, we took into account the patterns of autocorrelation functions (ACF), the partial autocorrelation functions (PACF) and residual plots. Although the null of homoscedastic SEs was not rejected by any of the tests employed, we ran the regressions with robust SEs and obtained similar results.

¹⁶ It is intuitive to introduce separately (one at a time) each symmetrical EDs couple as, by definition, the cumulative time interval that each of these pre- or post-elections dummy variables is modeling, encompasses the time interval modelled by the preceding dummy, hence there are times overlap (e.g. $ED_{.3}$ captures PBC effect during three months before elections. Whereas $ED_{.6}$ captures the effect during six months before elections, encompassing the time interval modelled by $ED_{.3}$).

¹⁷ For reasons of space, we do not report the empirical results for some of the alternative specifications, namely with “second best” ARMA components and with separate inclusion of EDs. These results are available upon request.

Table 1 presents the econometric results for each set of elections separately: i.e. “all elections”; “regular elections”; and “early elections”. In each case, estimates are reported from each econometric approach (i.e. ARMAX and OLS linear regression modelling) and for each data frequency (i.e. monthly and quarterly). The table is trimmed to present only the main variables of interest, i.e. the estimated parameters of the Electoral Dummy variables.

<i>Dependent variable: Overall fiscal balance (deflated and seasonally adjusted, in RSD billion)</i>				
Electoral Dummy _(±)	ARMAX		OLS linear regression	
	Monthly	Quarterly	Monthly	Quarterly
<i>All elections</i>				
ED ₍₋₃₎	-5.937 *** (1.766)	-14.261 ** (5.662)	-4.952 *** (1.507)	-11.423 *** (4.267)
ED ₍₊₃₎	0.131 (1.755)	1.216 (3.621)	2.590 * (1.565)	12.885 *** (3.462)
ED ₍₋₆₎	-3.848 ** (1.680)	-3.630 (5.315)	-3.322 *** (1.156)	-6.198 (4.173)
ED ₍₊₆₎	0.460 (1.686)	7.919 * (4.292)	0.536 (1.181)	8.974 ** (3.378)
ED ₍₋₉₎	-2.488 (1.669)	-10.591 ** (4.556)	-2.416 ** (1.026)	-8.650 ** (3.545)
ED ₍₊₉₎	0.655 (1.700)	-0.229 (3.819)	0.376 (1.059)	3.475 (3.780)
ED ₍₋₁₂₎	-3.292 ** (1.677)	-5.902 * (3.617)	-2.304 ** (0.944)	-7.358 ** (3.062)
ED ₍₊₁₂₎	0.472 (1.657)	5.107 (3.771)	0.555 (0.956)	3.984 (0.214)
<i>Only regular elections</i>				
ED_regular ₍₋₃₎	-10.287 *** (2.344)	-21.377 *** (7.839)	-6.879 *** (2.168)	-17.639 *** (6.559)
ED_regular ₍₊₃₎	-0.269 (2.316)	-0.107 (7.638)	4.058 * (2.228)	15.305 *** (3.905)
ED_regular ₍₋₆₎	-5.233 ** (2.325)	-15.243 ** (7.424)	-4.570 *** (1.158)	-15.981 *** (3.753)
ED_regular ₍₊₆₎	0.966 (2.259)	5.845 (7.092)	1.231 (1.624)	9.220 ** (4.305)
ED_regular ₍₋₉₎	-1.951 (2.254)	-8.415 (6.679)	-2.559 ** (1.329)	-10.509 ** (4.290)
ED_regular ₍₊₉₎	3.936 * (2.341)	1.498 (7.167)	1.629 (1.437)	2.515 (5.317)
ED_regular ₍₋₁₂₎	-3.049 (2.270)	-6.319 (6.701)	-1.978 * (1.198)	-8.526 ** (3.750)
ED_regular ₍₊₁₂₎	2.662 (2.156)	8.699 (6.896)	0.867 (1.239)	1.318 (4.066)
<i>Only early elections</i>				
ED_early ₍₋₃₎	-3.046 (2.731)	-6.739 (8.058)	-3.139 (2.089)	-5.824 (4.672)
ED_early ₍₊₃₎	-0.044 (2.670)	3.315 (8.139)	1.337 (2.099)	9.926 *** (3.543)
ED_early ₍₋₆₎	-2.794 (2.383)	5.688 (7.240)	-1.708 (1.540)	1.436 (4.669)
ED_early ₍₊₆₎	0.063 (2.397)	9.316 (7.376)	0.381 (1.552)	8.152 ** (3.432)
ED_early ₍₋₉₎	-2.322 (2.209)	-10.999 (8.871)	-1.575 (1.303)	-5.608 (4.753)
ED_early ₍₊₉₎	-1.341 (2.213)	0.094 (6.561)	-0.198 (1.316)	5.695 (4.246)
ED_early ₍₋₁₂₎	-2.862 (2.176)	-4.536 (6.007)	-1.729 (1.173)	-3.930 (4.085)
ED_early ₍₊₁₂₎	-0.682 (2.183)	3.440 (6.144)	0.376 (1.192)	5.937 (4.022)
Controls included	YES ^a	YES ^b	YES ^c	YES ^d
No. of obs.	207	69	207	69

Notes: Standard errors in parentheses. ***, **, and * significant at 1%, 5%, and 10% respectively.

^a AR(1); MA(1); $\Delta_1[\ln(\text{IPI}_{t-1})]$; $\Delta_1[\ln(\text{RTI}_{t-1})]$; $\Delta_1[\ln(\text{Un_Per}_{t-1})]$; $\Delta_1[\ln(\text{NER}_{t-1})]$; Covid_dum_t

^b AR(1); $\Delta_1[\ln(\text{GDP}_t)]$; $\Delta_1[\ln(\text{Un_Per}_t)]$; $\Delta_1[\ln(\text{NER}_t)]$; Covid_dum_t

^c fiscal_bal_{t-1}; fiscal_bal_{t-2}; $\Delta_1[\ln(\text{IPI}_{t-1})]$; $\Delta_1[\ln(\text{RTI}_{t-1})]$; $\Delta_1[\ln(\text{Un_Per}_{t-1})]$; $\Delta_1[\ln(\text{NER}_{t-1})]$; Covid_dum_t

^d fiscal_bal_{t-1}; $\Delta_1[\ln(\text{GDP}_t)]$; $\Delta_1[\ln(\text{Un_Per}_t)]$; $\Delta_1[\ln(\text{NER}_t)]$; Covid_dum_t

Table 1. The impact of elections on fiscal balance

Most of the estimated parameters of EDs *before* “all elections”, estimated through both ARMAX and OLS modelling on monthly data, are significantly negative at either the five or one per cent level of significance. More specifically, prior to elections, when “all elections” are considered, we see a deterioration of the monthly fiscal balance ranging from RSD 2.3

billion in the twelve months before elections ($ED_{.12}$) estimated through OLS modelling to RSD 5.9 billion in the three months before elections ($ED_{.3}$) estimated through ARMAX, as shown respectively in the third and first columns of the “all elections” block in table 1. Given that the overall sample mean of fiscal balance (monthly average of fiscal balance at constant prices) is RSD -5.2 billion, these constitute substantial magnitudes of deterioration, from almost half of its long-term “natural” average to above a hundred percent of this average.

Such deterioration in the fiscal balance is considerably larger when only “regular elections” are considered compared to the case of “all elections”, particularly for the most immediate time intervals before elections (i.e. six or three months before elections). In contrast, when only “early elections” are considered none of the estimated parameters of the respective EDs before those elections result in statistically significant results at conventional levels, in any of the econometrical setting employed (see the “early elections” block in Table 1).

CONCLUSION

The study findings are in line with the previous studies on PBCs (Lami, 2022). The empirical findings indicate that, the incumbent expansionary fiscal behaviour takes place (statistically) only in regular elections and does not occur in snap elections. Thus, the paper contributes to the political economy debate around the incumbent PBC related behaviour in early versus regular elections, by showing very different policy strategy followed by the incumbent.

The empirical research relies on monthly data on the fiscal balance. Most studies in this field of research rely on annual data which has been considered a serious drawback (Streb *et al.*, 2012; Akhmedov and Zhuravskaya, 2004), thus our study can be considered more solid.

In order to reduce election driven debt/deficit trends, it is necessary to improve both the overall justice and institutional framework (e.g. courts, state audit, etc.) and the professionalization and independence of media, which is important to raise the awareness of voters. That is important also because the development of an institutional framework has a significant positive impact on growth (Havrylyshyn and Van Rooden, 2003; Havrylyshyn and Wolf, 1999).

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FINDING SIMILARITIES WHERE DIFFERENCES ARE OBVIOUS – COMPARATIVE STUDY OF SERBIAN AND CHINESE BUSINESS PRACTICES

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Abstract: *The Republic of Serbia and the People's Republic of China started to develop better political and economic relations after signing the Strategic Partnership Agreement in 2009. The second impetus for further improvement of economic relations was Serbia's joining China's coordination mechanism "16+1" and "Belt and Road" Initiative. The third and final momentum that fully secured the relationship between the two countries was achieved by signing the Comprehensive Strategic Partnership Agreement in 2016. That is the highest level of cooperation that China can officially establish with other countries, and it is a testament to China's plans for Serbia. Thanks to previously mentioned circumstances, Chinese investments in Serbia have grown, as well as the number of Chinese companies working on infrastructural projects in Serbia. In a relatively short period, there was a significant increase in the number of Chinese businesspeople and workers in Serbia. Since the two nations have different cultures, traditions, and ways of doing business, some problems occurred. Both Chinese and Serbian managers and employees have difficulties adjusting to the new circumstances, so it is worth identifying similarities and differences in business practices to overcome occurring problems. The authors will use the comparative method to present the main differences in doing business originating from different cultural backgrounds and communicating and conducting business. In doing so, findings from two cross-cultural studies will be used, such as the Hofstede model of cultural dimensions and the GLOBE project. The authors conclude that according to the Hofstede model, management practices are different regarding uncertainty avoidance index, masculinity/femininity index, and long-term orientation. The GLOBE project indicates the following differences: assertiveness, future orientation, human orientation and uncertainty avoidance index. Both parties should improve their cross-cultural knowledge and work on overcoming cultural issues to achieve better business cooperation.*

Keywords: *Serbia, China, management practice, cross-cultural studies, differences, similarities*

JEL Classification: *M14, O57, Z13*

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SINO-SERBIAN RELATIONS

Political and historical ties between Serbia and China date back to the time of the former Yugoslavia (1955) in which Serbia was one of six federal republics. In regards to legal secession, Dimitrijević states: “After the collapse of SFRY, China continued to treat SR Yugoslavia as its legal successor, and then the State Union of Serbia and Montenegro, and Serbia after the secession of Montenegro from the State Union in 2006. We are of the opinion that in the international legal sense, for Serbia, this kind of behaviour by China can mean unilateral confirmation recognition of the state legal continuity of the international legal subjectivity of the former Yugoslavia (2018, 52).” Following Montenegro’s referendum and declaring independence from the State Union of Serbia and Montenegro in 2006, the Republic of Serbia and the People’s Republic of China continued diplomatic relations when Serbia became a sovereign country. Serbia has continued the good tradition and political relations that Yugoslavia had with China, and today their relations are on the highest historical level.

This high level of political and economic relations did not arise quickly, and they were developed through years based on mutual trust and respect. The beginning of those improved relations started in 2009 after the Strategic Partnership Agreement was signed. That agreement provided a basis for the improvement of political, economic, people-to-people relations and multilateral cooperation between the two countries (Lađevac 2020).

The second impetus for further improvement in relations came in 2012 when Serbia joined the cooperation mechanism China – Central and Eastern countries (CEEC), formerly known as the 16+1 format. Because China had less developed economic, political and people-to-people relations with CEEC than with the Western European countries, it saw the potential in that region (Kong 2015). It wanted to establish formal and grounded relations, through which it could promote better bilateral cooperation of those countries with China, but at the same time better multilateral cooperation among those countries. One year after that, China proposed the establishment of the New Silk Road, which was later renamed the Belt and Road Initiative (BRI). This initiative is in a sense a revival of the ancient Silk Road, which has the aim of improving economic connectivity by improving economic (trade, investments, and loans), infrastructural and people-to-people connectivity between China and member countries. For that purpose, China funded many projects through Silk Road Fund and Asian Infrastructure Investment Bank, while at the same time trying to achieve win-win cooperation. Serbia joined this initiative in 2016, and through this initiative, as well as the China-CEEC format, Serbia negotiated many projects and improved its economic cooperation with China (Pavličević 2018).

In the same year in which Serbia joined BRI, Serbia signed the highest political agreement that China can have with one country and that is the Comprehensive Strategic Partnership Agreement (Subotić, Janjić 2020). This agreement is in a way testament to the two Governments’ willingness to further work on their relations and improve them even more.

With further improvement and development of political relations, economic relations improved as well. Serbia now has fully developed economic relations with China. Many Chinese companies are working in Serbia, and bilateral economic relations in the field of trade and investments are increasing rapidly. Since economic cooperation is intensifying, it is worth examining at the same time the current everyday business cooperation. Both sides do not know much about each other, and there is evidence from the business practices that problems occur due to different cultural backgrounds. Because of that, cultural differences and conflicts that arise on those occasions are explained in this paper, so they could be prevented or downsized in the future.

The main research question is: What are the main differences when doing business in China and Serbia? To answer that question the authors will use Hofstede's cultural dimensions model and the GLOBE project to give a theoretical framework for this research. Secondary data will be provided for those two intercultural studies, which will show how Serbia and China differ regarding cultural values. For both models, the comparative cross-cultural analysis will be used. As Alder (1983) pointed out, by using comparative studies, we can explain how organisations in two or more countries differ in the way they are running their business according to their cultural values.² Since the theoretical models cannot explain all differences between nations, the authors will provide additional explanations of differences between cultures that occur in everyday business life by using other available primary and secondary data.

THE SINO-SERBIAN ECONOMIC COOPERATION FRAMEWORK

Before Serbia and China signed Strategic Partnership Agreement in 2009, economic relations were modest.³ Until then, Serbia imported excessively from China and moderately exported Serbian products. According to the Statistical Office of the Republic of Serbia, in 2008, Serbia imported from China almost 1470 billion US\$ while at the same time exporting 5.2 million US\$. The trend of a huge trade deficit did not stop in the upcoming years, but the Serbian export volume did change. In 2019, Serbian export was worth 392.2 million \$, in 2020 it was 377 million, and in 2021, they hit a record level of 971.7 million \$. At the same time, the import from China increased so that in 2019 it was 2507.7 million \$, in 2020 it was 3290.1 million, and in 2021 it was 4308.8 million \$. In total, trade volume in 2021 is worth 5.2 billion US dollars, and Serbia has a trade deficit worth 3.3 billion dollars.

Serbia is exporting to China unprocessed and processed copper, raw wood and silver, while China is exporting mobile phones, technical equipment, clothing, iron and steel products. Serbian export looks like this due to the changes in the domestic market. Since Zijin Mining acquired the copper mine RTB Bor, in 2016, it started slowly exporting copper to China, and in 2021, it mainly exported to China and not to some other countries (Zakić, Stanojević 2022). It is the main reason why Serbian export is so high. Therefore, the increased export didn't happen because Serbia exported domestic goods that are popular in China, but rather because of the export of mainly unprocessed copper, for which there is a high demand in China.

Sino-Serbian relations are nowadays mostly at the centre of attention because of the infrastructural projects that China conducts in Serbia, thanks to BRI and China-CEEC framework. Chinese companies participate in two types of projects. The first type is those for which China provided loans and on which Chinese state companies work with Chinese workers. The second type of project is those that Serbia is funding, and on which the job is done by Chinese state companies.

In the first group of projects financed by Chinese loans within the BRI and China-CEEC framework, starting from 2014, we have the following projects (Zakić, Stanojević 2022):

1. Construction of the high-speed railway Belgrade – Stara Pazova and Novi Sad – Subotica, which is conducted by the China Communication Construction Company and China

² Besides comparative studies, Adler states in the same article, that there are also unicultural (presents the study of organizations in one country and its cultural values) and intercultural studies (research within multinational organizations in which people from different countries and different cultural background work in one company).

³ Data about trade relation was given according to Statistical Office of the Republic of Serbia and its publication Monthly Bulletin.

Railway International. The project is funded by a Chinese loan (85%) and by the Republic of Serbia (15%), and the value of the project is \$1.49 billion.

2. Construction of the new block B in the Kostolac thermal power plant and expansion of the mine Drmno, conducted by China Machinery Engineering Corporation. The project is worth \$715.6 million.

3. Two parts of the highway Miloš Veliki (which belongs to Corridor 11), were done by Shandong Hi-Speed Group and China Communication Construction Company, and they are completed. The first section on which they were working was a road between Surčin and Obrenovac and the second was the Obrenovac-Ub road. Construction was financed by a Chinese loan (85%) and by the Republic of Serbia (15%). The project was worth \$541 million.

4. China Road and Bridge Company signed the agreement to work on the construction of corridor Fruška gora. Although we know that this project will be financed by a loan, we still don't know from whom the Serbian government will lend the money. The project is worth €606 million.

5. Power Construction Corporation of China is working on the traffic bypass around Belgrade, on so-called sector B (bridge over river Save near Ostružnica and sections of roads 4, 5, 6). For this project, the Chinese loan and the budget of the Republic of Serbia were used for funding. The value of this project is €227 million.

6. Construction work on the Belgrade metro started in 2022, and one of the companies that are working on this project is Power China International Group Limited. The financial details of the job are unknown.

In the second group are the projects financed by the Serbian Government, on which Chinese state-owned companies are working (Zakić, Stanojević 2022):

1. Novi Beograd – Surčin highway (part of Miloš Veliki highway), construction company China Communication Construction Company is in charge of this job and the value of the project is \$70.5 million;

2. Traffic bypass around Belgrade sector C (Bubanj Potok-Vinča-Pančevo) is built by construction companies Power China and Azvirt (Azerbaijan), and the value of the project € 500 million;

3. Preljina-Požega highway (part of Miloš Veliki) is done by construction company China Communication Construction Company and the value of the project is €450 million;

4. Traffic bypass around Užice – Čačak is built by Power Construction Corporation of China and the value of the project €29.8 million;

5. The heating pipeline between Obrenovac and Novi Beograd is being built by Power Construction Corporation of China, and the value of the project is \$193 million;

6. Design and construction of infrastructure for municipal solid waste disposal in 65 municipalities and cities in Serbia – construction company China Road and Bridge Company, the value of the project is €3.2 billion.

Chinese investments in Serbia started in 2016 after Serbia joined BRI. Following Chinese companies invested in Serbia:

1. Hesteel in Smederevo, HBIS Group Iron and Steel State Company, €300 million;

2. Eurofiber in Ćuprija, China Prosperity Industrial Corporation, €1.1 million;

3. Mei Ta in Obrenovac, Mei Ta Company, \$110 million;
4. Zijin Mining in Bor, Zijin Mining, \$1.26 billion and \$200 million for paying for previous loans;
5. Shandong Linglong tire company in Zrenjanin, Shandong Linglong, €800 million;
6. Yanfeng internal interiors for cars in Kragujevac, Yanfeng Seating, €40 million;
7. Xingyu lights for cars in Niš, Changzhou Xingyu Automotive Lighting Systems, €60 million;
8. Yanfeng car security systems in Kragujevac, Yanfeng Seating, €18 million;
9. Minth company in Loznica and Šabac, €100 million (Zakić, Stanojević 2022).

Besides trade, loans and investments, economic cooperation has been developing in one additional format – tourism. The number of Chinese tourists visiting Serbia increased steadily since the visa-free regime was established in 2017 until the coronavirus pandemic started in 2020. In 2019, almost 145.000 Chinese tourists visited Serbia (Politika 2020).

According to the Serbian Business Register Agency (Republika Srbija Agencija za privredne registre), until September 2021, Chinese citizens and companies opened 3.519 companies and entrepreneurial businesses in Serbia (Vukašinović 2021). The same source stated, that China is leading in the number of registered and active companies in Serbia (2034), leaving behind Italy (1657) and Slovenia (1.403). Additionally, China is the first one according to registered and active entrepreneurial business (1485), leaving behind Romania (415) and Russian Federation (278).

In all the above-mentioned companies, the Chinese workforce is living and working in different cities in Serbia, meaning both workers and managers are coming from China. In this circumstance, Serbian business people and the workforce have many opportunities to work and cooperate with Chinese colleagues. Besides this, many state-owned companies, as well as private companies, both from China and Serbia are cooperating constantly - not in person, but rather online. Due to this increased working dynamic, it was observed that some problems in everyday business life occurred due to differences mainly deriving from different cultural backgrounds. Because of that, two cross-cultural studies will be used as a theoretical base, to explain what we know so far regarding the main characteristics of these two cultures. After that, we will present how those different values are affecting business life.

THEORETICAL AND EMPIRICAL BACKGROUND: CROSS-CULTURAL STUDIES

Although cross-cultural studies originate from sociological studies, management studies are using them as well. Interest in studying the influence of culture on organizations gradually developed in North America and Western Europe after World War II as a result of two trends: the internationalization of business, on the one hand, and the internationalization of social sciences, on the other (Mojčić 2007). In terms of the internationalization of social sciences, they are referring primarily to sociology, psychology and political sciences, which have greatly contributed to a better understanding of how culture affects business and organizations. The ability of sociology to summarize issues of cultural differences provided a basis for understanding, accepting and overcoming them in everyday business life.

The beginnings of the comparative study of management and organizations are linked to different authors. However, the work of Frederick Harbison and Charles Myers from 1959,

Management in the Industrial World, is most often mentioned in this context. At the centre of their interest were differences in understandings various types of leadership (from authoritative to participative) in countries at different levels of industrialization. It also refers to the innovative and influential cross-national research done in 1961 by David McClelland on motivation - *The Achieving Society*.

Further, one of the first cultural classifications is linked to the American anthropologists Florence Kluckhohn and Fred Strodtbeck. Their 'framework for the study of cultural orientations' is the result of many years of content analysis of the basic findings of empirical research conducted around the world (Kluckhohn, Strodtbeck 1961). Thanks to the results of this study, Kluckhohn and Strodtbeck defined six basic questions (problems) that different societies/cultures face: The nature of people, The relationship with nature, Duty towards others, Mode of activity, Privacy of Space and Temporal Orientation.

Originally in 1954, two Americans, sociologist Alex Inkeles and psychologist Daniel Levinson, after numerous researches of national cultures, proposed the following issues as basic differences between cultures worldwide: Relationship to the authorities, Notion of self, especially the relationship between the individual and society, Individual concept of masculinity and femininity and modes of conflict resolutions, including controlling aggression and expressing feelings. It can be said that these four categories that every human community encounters, in fact, represent the first explained dimensions of culture. A dimension is an aspect of a culture that can be measured in relation to other cultures.

Thirty years later, the Dutch researcher, Geert Hofstede, with his books *Culture's Consequences* and *Cultures and Organizations* undoubtedly contributed the most to the development of the study of cultural influences on organizations (Jurčić et al, 2015). Hofstede explains that the prevailing belief in the 1950s and 1960s was (at least in Europe and the US) that management principles were universally applicable. In other words, it was considered that there were clear principles of management that were valid regardless of national peculiarities. However, in the 1970s, the belief about the inevitable convergence of management practices, according to Hofstede, began to wane and the awareness of the importance of the influence of national cultures on organizations became stronger (Hofstede 1983).

In addition to Hofstede's model, another important study for the dimensioning of national cultures is the work of one more Dutch author, Fons Trompenaars. Trompenaars also believes that each culture differs from others in its characteristic ways of approaching problems and solving them, which he explained in his most famous book *Riding the Waves of Culture* (1993). In 1998, in co-authorship with Charles Hampden-Turner, Trompenaar deepened the research and an updated edition of the book was published. Trompenaar and Hampden-Turner classify the problems that all national communities face into three general categories: Relationship with other people, Relationship with time, and Relationship with the environment and they define seven different cultural dimensions/preferences: Universalism vs particularism, Individualism vs communitarianism, Specific vs diffuse, Neutral versus emotional, Achievement vs ascription, Internal vs outer direction and Sequential vs synchronous time (Trompenaars, Hampden-Turner 1998).

Two cross-cultural studies used in this paper to highlight cultural differences are not the only ones (as seen in previous lines), but rather those that were suitable for this analysis.

MODEL OF CULTURAL DIMENSIONS

Hofstede's model of cultural dimensions is probably the most known one. This model is easy to understand, but at the same time, it critically and extensively points out the most important characteristics of one culture and then compares them with others. The model can be used in various situations and for different purposes. In this case, it is used to compare cultural values and characteristics in China and Serbia so that we can identify, according to this model, the main differences and similarities between them.

The original model has changed two times since it was presented, and instead of the initial four dimensions, the model now has six of them. The last version of this model has the following explanations (Hofstede 2011; Hofstede, Hofstede, Minkov 2010):

1. Power Distance Index (PDI) – This index measures the degree to which there is a distance between the members of society that have power and those that don't have it. In countries where this index is high, there is a stark difference between those groups. Those with power expect other people to accept that situation and behave accordingly. Societies with a high level of PDI are more authoritarian, while countries with low PDI are more democratic.
2. Individualism/Collectivism (IDV) – Societies have different dynamics between their members and different opinions about their roles. According to Hofstede, societies with loose connections between their members and in which individual values are above collectivistic values are those that prefer individualism. In collectivistic cultures, individual values are less significant compared to collectivistic ones. Within them, the norms and values of a society, as a whole, are more important than individual values and norms, and everyone is expected to obey them.
3. Masculinity/Femininity (MAS) – This cultural dimension explains the gender values that society acknowledges as the most important. Prevailing values in masculine societies are assertiveness, competition and ambition, and a traditional gender roles model exists. Societies in which femininity prevails cherish modesty, empathy and caring for others. Within them, members consider those values as the most significant ones, and there is no strict division of gender roles.
4. Uncertainty Avoidance Index (UAI) – Societies see and deal with uncertainty in different manners. In those with a low level of UAI, people think uncertainty is a normal part of life and something they cannot and should not avoid. Members of those societies are adapting to new circumstances more smoothly, than those in which there is a high level of UAI. In addition, they do not stress because many things are unknown, and there is a higher level of acceptance of something new or different. In societies with a high level of UAI, people want to avoid uncertainty, because it produces stress and anxiety, while people at the same time seek clarity and structure within the country.
5. Long-term Orientation (LTO)/Short-term Orientation – The understanding of time e.g. are people more oriented towards the past or future is an important issue. It is why this index suggests that in long-term oriented societies, the future is more important than the past, and the most important events will happen in future. People in them are oriented toward future economic success, tend to save a lot and want to achieve goals within the groups such as families. On the contrary, societies with short-term orientation consider that past and present times are the most important ones. The history of society and its past is sacred. Success should be instant, while spending and consumption should be immediate in short-term cultures.

6. Indulgence/Restraint (IND) – This is the last and newest index in the Hofstede model. It explains the difference between cultures according to people's perceptions of how should they live their life. Indulgence, in that sense, means that people think that the purpose of life is to be happy, and because of that, they indulge in various things to achieve happiness. In those societies, people feel they are more in control of their life, and see personal freedom as very important, while at the same time, they do not recognize the need for a strict structure within the society/country. In societies in which restraint prevails, people are less oriented toward happiness and leisure. Personal and institutional freedom is not at the centre of their attention, and in those societies, the control of the state government is stricter.

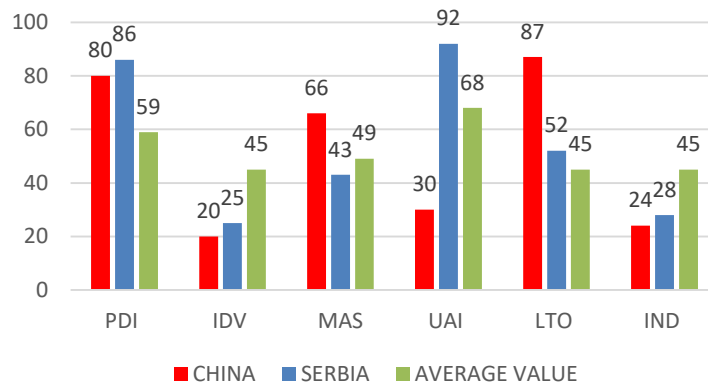


Figure 1: Hofstede’s cultural dimensions on the example of China and Serbia

Source: Hofstede Insights, <https://www.hofstede-insights.com/country>

Figure 1 shows values for six indexes in two countries and the average values for each dimension. By displaying the average values, it is easy to identify differences between cultures. For example, cultures with PDI below the average value (e.g. 59) have a low level of PDI, and so on.

China and Serbia have the same three cultural dimensions, meaning that both countries have high PDI; they are societies with collectivistic characteristics, and people in both countries value more restraint than indulgence. China, unlike Serbia, is a masculine society with a low level of UAI. Serbia, on the other hand, is a country in which femininity and high UAI prevail. Although both countries are, according to their values, long-term oriented there is a difference between them, and it can be proved by comparing their values. Serbian value is very close to the average value, while China’s value is significantly higher. That means that although Serbia is in a group of countries with a long-term orientation, it is not oriented towards the future at the same level as China is.

By looking at the presented data, we can observe many similarities between the two countries. First, as countries with high power distance indexes, they both tend to have strict power distribution, which does show in everyday business life. Managers and directors are those that have the power, and they expect their co-workers to obey their rules and norms. Second, as collectivistic societies, they value group norms and values, so in business life, it translates as a focus on what the group can do and how it can improve the results of the company rather than focusing on individual work and success. Third, in countries in which restraint prevails over indulgences, such as Serbia and China, there is a need for stability, security and structure before achieving happiness. Forth, while Chinese society thinks many years, even decades, in advance, the situation in Serbia is somewhat different. Many decades of turbulent times and the need for stable life are showcased in the value of LTO, which is very close to the average

value. It means that in business life, there is a need to be more short-term oriented than long-term since the circumstances are constantly changing.

When it comes to differences, they are the most obvious in the uncertainty avoidance index and the masculinity dimension. China is a society where many philosopher schools and religions, such as Confucianism, Daoism, Buddhism etc., were present for many centuries, so the time reference and understanding of uncertainty in a philosophical sense is very different compared to the traditional Western thoughts. Because of this, uncertainty is seen in China as something that comes and goes. Everything goes in circles, so there is no need to be afraid or stressed because of the changes since they will also come and go. Western societies, and Serbia among them, perceive uncertainty differently, and they tend to be more oriented toward present and immediate future time. They like to have more control over things and avoid risk. Because of this, Chinese companies in business life are willing to take more risks, while Serbian companies try to avoid them.

The second difference is about the two countries' masculinity/femininity index. China is a country where values such as ambition, success and assertiveness prevail, while Serbia has more characteristics of feminine society. It should be at the same time highlighted, that in this case, the Serbian value for this index is very close to the average level. It means that Serbia is - in a way, in between society, having both characteristics of masculinity and femininity. Many would argue that traditional Serbian values oriented towards helping others, being kind and caring are changing and that the society is not what it was before. Even if this is the truth, according to the surveys used in the Hofstede model, people still declare and answer the questions in a way that puts Serbia in a group of societies in which femininity prevails. This characteristic can be important in the business environment because it will shape the way business is done and it will influence the working atmosphere.

GLOBE PROJECT

Global Leadership and Organizational Behavior Effectiveness Research Project (GLOBE) is a large international study dedicated to understanding in which ways and to what extent the national culture influences the leadership styles of managers. The authors of this study House, Hanges, Javidan, Dorfman, and Gupta for that purpose formed a substantial team of international scholars and managers who helped conduct the study (surveys) in 62 countries (House et al., 2004). The research includes the study of the following variables: societal culture, organizational culture, leadership and societal achievements (Javidan, Ali Dastmalchian 2009).

According to this study, nine cultural dimensions are measured in two ways (*as it is* and *as it should be*), from which we can derive six leadership styles and ten regional world clusters. House et al. cite the following nine cultural dimensions:

- “1. *Uncertainty avoidance* - The extent to which a society, organization, or group relies on social norms, rules, and procedures to alleviate unpredictability of future events.
2. *Power distance* - The degree to which members of a collective expect power to be distributed equally.
3. *Institutional collectivism* - The degree to which organizational and societal institutional practices encourage and reward collective distribution of resources and collective action.
4. *In-group collectivism* - The degree to which individuals express pride, loyalty, and cohesiveness in their organizations or families.

5. *Gender egalitarianism* - The degree to which a collective minimizes gender inequality.
6. *Assertiveness* - The degree to which individuals are assertive, confrontational, and aggressive in their relationships with others.
7. *Future orientation* - The extent to which individuals engage in future-oriented behaviours such as delaying gratification, planning, and investing in the future.
8. *Performance orientation* - The degree to which a collective encourages and rewards group members for performance improvement and excellence.
9. *Human orientation* - The degree to which a collective encourages and rewards individuals for being fair, altruistic, generous, caring, and kind to others. (2004, 30)”

All of the dimensions are measured in two ways, as cultural practices (*as it is*) and as cultural values (*as it should be*), and for that purpose, the GLOBE team used a 7-point Likert scale. Respondents in the survey had to answer questions about how they see that society/organization is (cultural practice) and how they think that the society/organization should be (cultural value). Practices and values were measured on levels of societal and organizational cultures.

Thanks to previously mentioned surveys, House et al. defined six global leadership styles: charismatic/value-based, team-oriented, participative, humane-oriented, autonomous and self-protective leadership styles. Based on the nine cultural values (measured in two modes) and six leadership styles, House et al. formed ten regional clusters: Anglo, Germanic Europe, Latin Europe, Sub-Sahara Africa, Eastern Europe, Middle East, Confucian Asia, Southern Asia, Latin America and Nordic Europe. China belongs to the Confucian Asia cluster and that was written in the original research. Serbia was not part of the original study, but thanks to Nedeljković et al. (2018) and their research, it was confirmed that Serbia belongs to the Eastern Europe cluster.⁴

In this article, data for China’s cultural dimensions, and their respected cultural practices and values, are used from the original GLOBE research published in the book *Culture, Leadership and Organizations – The GLOBE Study of 62 Societies* by House et al. (2004), while the data for cultural dimensions for Serbia are used from the article “A Comparative Analysis of Serbian National Culture and National Cultures of Some European Countries by GLOBE Project Approach” by Nedeljković et al. (2018).

According to House et al. findings, cultural practices (*as is*) in China that have high scores for cultural dimensions, compared to the rest of the countries in the survey, are performance orientation, institutional collectivism, inter-group collectivism, humane orientation and uncertainty avoidance. Chinese cultural dimensions, which have high scores for cultural values (*as it should be*), are assertiveness, institutional collectivism, power distance and uncertainty avoidance. Those findings show that Chinese society is one in which the distribution of power and gender equality is uneven, and the members don't wish to change that. It is interesting to note that although the level of assertiveness in China is relatively low (*as is*) people think it should be much higher. Chinese society, in general, is oriented toward performance, institutional and in-group collectivism, and human orientation and they are prepared for uncertainties.

⁴ It should be also mentioned that although Nedeljković et al. confirmed that Serbia belongs to the Eastern European cluster, it still has some specific results that are different compared to the rest of the countries. More about that - page 373.

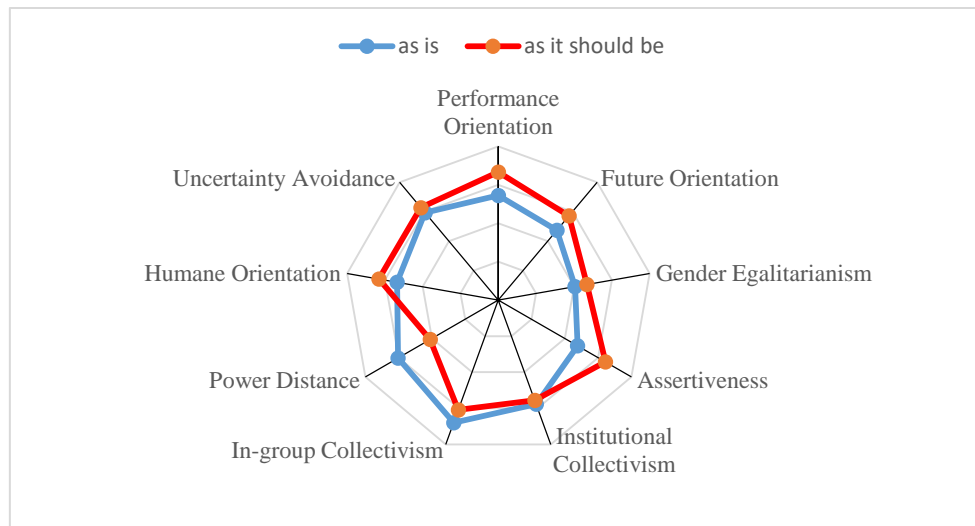


Figure 2: GLOBE cultural dimensions for China

Source: House et al., 2004.

Chinese leadership style is mostly charismatic and team-oriented, participative and humane-oriented, which means that leaders within an organization are people-oriented, and their relationship with their employees is important. They expect good results from their employees, which should work in teams and contribute to making decisions.

According to Nedeljković et al. (2018)⁵, cultural practice (*as it is*) in Serbia has a high score for performance orientation and power distance, while at the same time, it has a very low score for future orientation, institutional collectivism, humane orientation and uncertainty avoidance. Serbia has the following cultural values (*as it should be*) that have high scores: performance orientation, future orientation, gender egalitarianism, power distance, humane orientation, and uncertainty avoidance. Results for several values should be explained more and amplified. The first one is that there is a big difference in scores between *as is* and *as it should be* for future orientation. In practice, future orientation has a low score, while as a cultural value it has a very high score. It indicates that although people in Serbia are currently more oriented toward the present time and immediate future, they would like to be more oriented toward the distant future. Besides this, people in Serbia think that assertiveness, gender egalitarianism, humane orientation and uncertainty avoidance should be different from what they are in reality. Generally speaking, they would prefer that Serbian society is less assertive, more gender egalitarian and humane oriented. People would also like to be more prepared for changes that are coming, and they would like to be less stressed about uncertainties.

Since Serbia was not part of the original GLOBE survey in 62 countries, we do not have information about leadership styles in Serbia. What we have, however, is the knowledge that Serbia belongs to the Eastern European cluster. Because of that, we can use data from original research to indicate what kind of leadership style prevails in Eastern Europe or so to say in Serbia. The main types of leadership styles in the Eastern Europe cluster, according to House et al., are charismatic/value-based and team-oriented (GLOBE 2020).

It is worth noting that scores for Chinese cultural dimensions have similarities with the cultural dimensions in the Eastern European cluster (House et al.) and Serbia's cultural dimensions (Nedeljković et al.). China and Serbia have similarities regarding power distance

⁵ Note: Values from Nedeljković et al. for cultural values are compared to the values given in House et al. book.

and performance orientation dimensions. They are very performance-oriented, both in terms of, *as is* and *as it should be* dimensions. The score for the power distance dimension in both countries is very high, but we should stress that Serbia has one of the highest scores in the world for this dimension. China and Serbia are relatively similar regarding institutional and in-group collectivism and gender egalitarianism or rather, the lack of gender equality. While in China, this is not something people want to change, in Serbia, *as it should be* variable is very high, indicating that society thinks this situation should change. In addition, preferred leadership styles are the same - charismatic/value-based and team-oriented. From the point of view of business cooperation in everyday life, people from China and Serbia can work together successfully because the cultural dimensions indicate many similarities in culture and leadership styles.

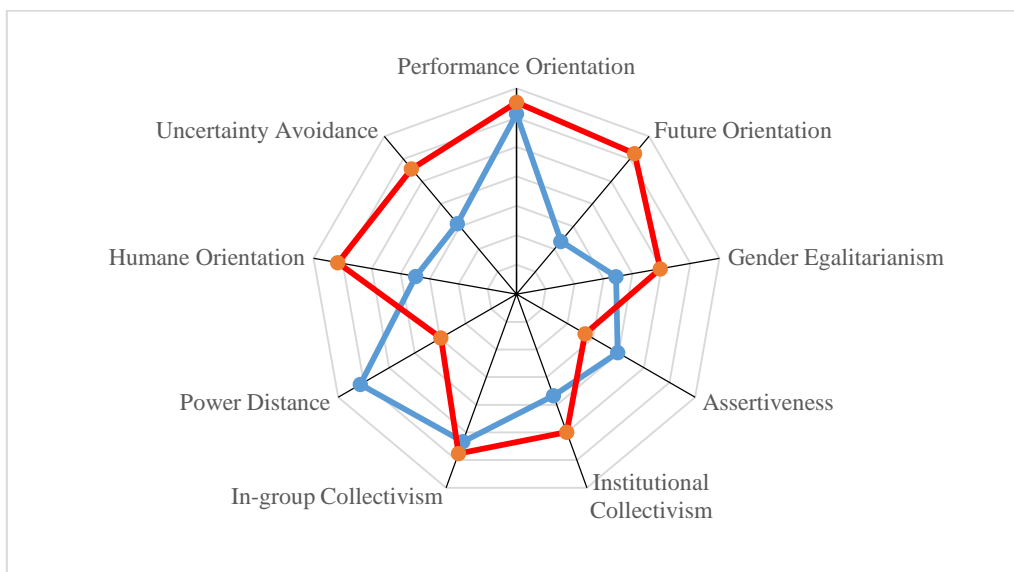


Figure 3: GLOBE cultural dimensions for Serbia

Source: Nedeljković et al., (2018).

Of course, there are differences as well. The main difference within the GLOBE model coincides with Hofstede's findings about the uncertainty avoidance index, which means there is a discrepancy between uncertainty avoidance in China and Serbia. Unlike China, which has a high score for uncertainty avoidance (both - *as is* and *as it should be*), in Serbia, this dimension has a low score for *as is* and a very high score for *as it should be* dimension. It means society has a strong opinion on uncertainty and thinks that it should be avoided. This belief derives from many political and economic instabilities in the last seven decades in Serbia. On other hand, the dimension *as it should be* is high, which indicates that people want to be stress relieved, be able to adapt to changes and not constantly worry. The second difference is future orientation, which goes hand in hand with uncertainty avoidance. China is long-term oriented (both values are close to average values), while Serbia is short-term oriented (*as is*) with the willingness to be more long-term oriented (*as it should be*). As was said previously, Chinese people think about time differently than Western cultures and plan everything in the long term. In Serbia, unlike in China, because of many uncertainties and unknown things, even though people want to plan for a long time, they are unable to achieve that.

THE ADDITIONAL CULTURAL PRACTICES AND BELIEFS THAT MAY AFFECT BUSINESS COOPERATION

Cross-cultural models detect and explain most of the cultural values, norms and practices, but there are still some beliefs, practices or communication styles that cannot be explained in that way. Therefore, additional explanations will help better explain cultural differences and similarities and provide better cross-cultural understanding.

One of the similarities that China and Serbia share is the way that people are helping each other in everyday and business life by using connections (Zakić, 2022). Connections provide help, instructions, and recommendations regarding specific problems or topics. People rely on them to finish some practical stuff in everyday life or to start, run, negotiate and make a business deal. Connections rely on obligation so that people who helped someone solve a problem, can expect that they will help them in return in another situation. In the Chinese language, the term that describes using connections is *guanxi*, and in the Serbian language, the appropriate words are *društvene veze*. Chinese people see *guanxi/connections* as a normal part of living and business practice, which has been existing for centuries. In Serbia, this term does not essentially mean a positive thing, and very often, *društvene veze* is looked upon as a necessary thing but not in a good sense. Informal connections are not only part of the business life of China and Serbia, and they can be seen in many regions of the world. Horak (2020) pointed out that until recently, informal networks were usually considered as a part of developing countries' systems, but newer studies show that informal networks exist even in countries that have established economies and legal systems, like Japan and South Korea.

An additional cultural characteristic specific to China is *mianzi*, which means face. This word, in an everyday use, means that person is obliged to follow social norms and rules, and by following them, they will not force someone else to lose their face (dignity) (Chen, 2001). *Mianzi* is not only part of everyday life but also business life. It could be potentially a big problem in international business, if the business people are unaware of the rules and relations that their Chinese business partners have. For example, in Serbia, traditional ways of communicating when problems occur are very straightforward, which may be the wrong way of communicating with Chinese partners because it may cause them to lose face. In addition, the communication style in China is very different from the one in Serbia. Chinese people tend to communicate indirectly and politely with social distance, with no big emotions or closeness. Besides this, Chinese people prefer to say *we*, instead of *I*. It is uncommon to praise yourself or your work, and in a way, it is considered impolite. In Serbia, people prefer a direct communication style, which is pretty open and polite. Speaking of achievements in the first person (as I) is not considered impolite if it is done appropriately. Very expressive facial expressions and expressing feelings are common in Serbia, and they are not something to which people pay attention.

BUSINESS EXPERIENCES IN PRACTICE – HOW TO BETTER UNDERSTAND EACH OTHER?⁶

In the end, we should look at the business and living experiences of the Chinese workers and business people in Serbia, as well as with Serbians who work in China. Chinese workers and

⁶ Note: Both authors had the privilege and opportunity to work with Chinese universities, institutes, state agencies and business people both from Serbia and China for many years. Observations about business cooperation and results written in this part of the paper are those that the authors had the opportunity to witness, hear or learn. Of course, not in every Chinese company, the situation is the same, and the analysis presented here is a result of analysis and deduction process.

managers work today in almost every major city in Serbia. In some of them, we have many Chinese people, like in Belgrade, Novi Sad, Bor, Smederevo or Kragujevac. In others, we only have a relatively small number of Chinese people, usually small entrepreneurs who have small shops or restaurants. The first Chinese settlers came to Serbia in the late 1990s, and it was really a novelty in Serbia to have small Chinese shops or restaurants. Today, the situation is completely different. In 2021, almost 7.600 Chinese people had a working permit to work in Serbia according to the Serbian Employment Agency (BETA 2021), but this is only the number of those that are working, and there are still many of them that do not have a permit, so that number is probably higher. Since the workers that are mainly working on infrastructural projects in Serbia are living relatively close to the construction sites, there is no connection between them and the local people. There is a language barrier and long working hours, and the possibilities to cooperate more and live together are restricted. Chinese managers, however, have more opportunities to work with Serbian people, since they have many responsibilities at the administrative level, so they need to communicate with translators, local administrative staff, state agencies, and local and republic officials. They are more integrated into Serbian society and have more possibilities to explore and learn more about Serbia. Serbian people that work for Chinese companies usually say that the salaries in Chinese companies are great, but the working hours are very long, the decision-making process is slow and there are strict rules and hierarchy in the company. Those observations are indicating that Chinese state and private companies did not change their primary organizational culture in Serbia, but rather kept the one that is usual in China. Since the Serbian translators during their studies had the opportunity to learn about Chinese culture and way of living, they are more accustomed to those circumstances. Other Serbian workers, that are not familiar with Chinese culture, have more difficulties in adapting to new circumstances. It would be a very good business decision for Chinese companies in Serbia to organize cross-cultural training for all of their employees so that they could get the opportunity to learn and understand each other in a better way.

Serbian people, generally speaking, have good working experiences in China and this is the reason why they are working there and not in other countries. For most of them, the first months or first year is difficult but after that, they usually adapt to new working and life conditions. Those experiences are not unique, and they are in theory and practice known as cultural shock, which can be overcome. A small number of Serbian people work in China since the main destinations (countries) towards which they gravitate are the USA, Canada or the EU.

CONCLUSIONS

Sino-Serbian political and economic ties are vastly improved in the last 15 years. Political relations are currently at the highest historical level, while economic relations are developing rapidly. The number of Chinese companies and Chinese people living and working in Serbia is increasing, which is creating opportunities for Chinese and Serbian people to cooperate even more on the organizational level.

Even though economic cooperation is increasing, there is still a lack of knowledge about each other, on both sides, which leads to problems in a business environment. Because of those problems, the authors presented two cross-cultural studies, which can help understand similarities and differences in a national culture reflected in organizational culture. Hofstede's model indicated that the main similarities between the two countries correspond to the power distance index, collectivism, and restraint. In the same model, the main differences are detected in masculinity/femininity, uncertainty avoidance and long-term orientation index.

The GLOBE model indicates the following differences - assertiveness, future orientation, human orientation and uncertainty avoidance index. According to the same model, the main similarities can be found in performance orientation, power distance, institutional and in-group collectivism, and gender egalitarianism.

Additional analysis provided in the paper showed that China and Serbia use informal connections (*guanxi/društvene veze*) to collaborate and solve business issues. In China, face (*mianzi*) is something that should be considered in communication while working with Chinese partners. Communication styles are also very different in the two countries, and they stem from different cultural backgrounds. While Chinese people communicate indirectly and with reduced facial expressions and emotions, Serbian people do the opposite.

Serbian people that work for Chinese companies in Serbia have problems adjusting to Chinese corporate culture, so there is a real business need to learn more about each other and understand each other. Although the two countries have very different cultural backgrounds, China is an Asian Confucian country, and Serbia is a European Orthodox country, they have more cultural similarities than one might think, and it is a good starting point for cooperation. Cultural differences are not something to be stressed about or overlooked but rather understood, as a chance, to learn that something different can be interesting, novel and original.

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PUBLIC DEBT MANAGEMENT IN PANDEMIC ERA: THEORETICAL DEBATES

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Abstract: *The COVID-19 pandemic has led to serious losses in human lives and has changed the world we knew. Among numerous consequences, the economic ones are particularly emphasized, as they directly affect the widest range of people. Governments around the globe had to respond to economic recession due to pandemics by aggressive economic policy measures, mainly by fiscal policy through intensive public spending programs. As a corollary, public debts in the majority of economies have reached unprecedented levels. The mainstream macroeconomics postulates that the increase of the share of public debt in the GDP above a certain threshold will probably negatively affect economic growth in the long run. However, in the case of a pandemic, the "whatever it takes" approach was implemented in order to prevent losses of lives in the first place, and then a deep recession and unemployment increase. These circumstances also resulted in the reaffirmation of some theoretical approaches, such as a functional finance concept and the Modern Monetary Theory. Accordingly, this paper aims to evaluate the theoretical debate between the mainstream standpoint (embodied in the so-called New Consensus Macroeconomics) and the challenges imposed on this paradigm by some of the heterodox approaches. The main research question is whether these changes in the field of public debt management theory are comprehensive enough to provoke some shifts in the dominant macroeconomic paradigm. The main finding obtained by theoretical analysis is that it is premature to talk about some radical changes in the New Consensus Macroeconomics, but also that there is room for some improvements in the mainstream model related to the role of monetary and fiscal policy in aggregate demand control and public debt management.*

Keywords: *public debt, COVID-19, functional finance concept, Modern Monetary Theory, New Consensus Macroeconomics*

JEL Classification: *B22, E12, E63, H63*

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INTRODUCTION

In 2020, the world faced a serious health crisis that resulted in a pandemic leading to considerable losses in human lives. The measures aimed to prevent and mitigate these losses led to substantial economic consequences, such as a fall in output and a rise in unemployment, but also an increase in inflation.

The pandemic affected economic activity in many ways. The level of aggregate spending is reduced significantly due to social distancing measures and adverse expectations regarding the future economic outlook. On the supply side, supply chain interruptions occurred leading to the labour demand shrinking and unemployment increasing (Carlson-Szlezak, 2020). However, apart from these short-run effects, there are important corollaries in the long run. For instance, widespread bankruptcies around the world induced significant loss of human, organizational and informational capital. To compensate for these losses, a very long period of time is needed. Furthermore, the pessimistic expectations about economic recovery reduced investments drastically, with adverse long-run consequences. In addition, the reduction in households' income and wealth induced a fall in aggregate demand and a rise in precautionary savings thus prolonging proper economic recovery even more (Stiglitz, 2021).

These negative tendencies, like in any other economic crisis to date, call for timely and strong economic policy measures in order to prevent further aggravation of economic conditions. However, for economic policy to react in the required direction and intensity, there is a need for enough room for maneuver. In the case of ongoing pandemic, that space was too narrow. The effectiveness of the monetary policy was limited by extremely low interest rates settled to stimulate economic recovery after the Great Recession of 2008. On the other hand, fiscal policy response depended upon fiscal space available. Although this space is very different from country to country, the general level of indebtedness prior to pandemic was relatively high. Hence, there was no way to finance additional public spending without further increasing of existing public debts.

Having the above mentioned in mind, this paper aims to evaluate the theoretical debates about the economic policy responses to pandemic worldwide. The research focus is on the fiscal policy and public debt dynamics in different countries, in order to examine how these tendencies are viewed through the lens of the economic mainstream and some heterodox theoretical approaches. The main research question is whether these changes in the field of public debt management theory are sweeping enough to yield some shifts in the dominant macroeconomic paradigm (New Consensus Macroeconomics). These theoretical controversies are important as they have the potential to change economic policy course and thus impact post-pandemic recovery.

THE ECONOMIC POLICY RESPONSES TO PANDEMIC AND PUBLIC DEBT DYNAMICS

The economic recession generated by the pandemic is atypical, as both aggregate demand and aggregate supply shock contributed to its emergence. Accordingly, the economic policy mix that should mitigate the economic consequences has to be defined respecting that fact. In addition, the economic policy response should account for some challenges posed to the monetary and fiscal policy prior to the pandemic: unprecedentedly low interest rates and relatively high public debts in the majority of countries.

Faced with zero lower bound limitation in the situation known as a liquidity trap, central banks around the globe had to rely on some unconventional monetary policy measures. One way of conducting monetary policy was based on purchasing state bonds. It is an activity that is not initiated by central banks, but also one which can support public spending programs without public debt increasing. Namely, in the environment of extremely low interest rates, the increase of the state liabilities in bonds does not make a significant difference to public debt dynamics (Blanchard and Pisani-Ferry, 2020). This measure, known as quantitative easing, can make downward pressure on the interest rates, but, more importantly (since the rates are already very low), can increase liquidity. The evidence about the implementation of quantitative easing after the Great Recession of 2008 shows that this measure can stimulate economic activity without inflationary pressures, at least in developed economies (Baumeister and Benati, 2013; Qianying et al., 2016; Albertazzi et al., 2018). The other forms of the unconventional monetary policy included “helicopter money”, a measure that also can increase aggregate demand but with different effects on the central bank’s balance sheet. However, the economic disorders generated by the pandemic spurred ample fiscal policy responses in order to prevent a deeper recession. When looking at actual data on the scale of the fiscal response to the pandemic (Figure 1), it can be concluded that it was unprecedented in most countries. For instance, it is evident that more than a quarter of the GDP in the USA was spent in less than two years (January 2020-October 2021) on supporting public spending programs. The situation is similar to other countries with monetary sovereignty, such as United Kingdom, Australia, and Japan. In selected eurozone countries, such as Greece, Germany and Austria, the fiscal response was also significant, ranging between 15 and 17.5 per cent of GDP. On the other hand, the rest of the observed countries, except Serbia, Hungary and Italy, spent less than 10 per cent of their GDP on these measures.

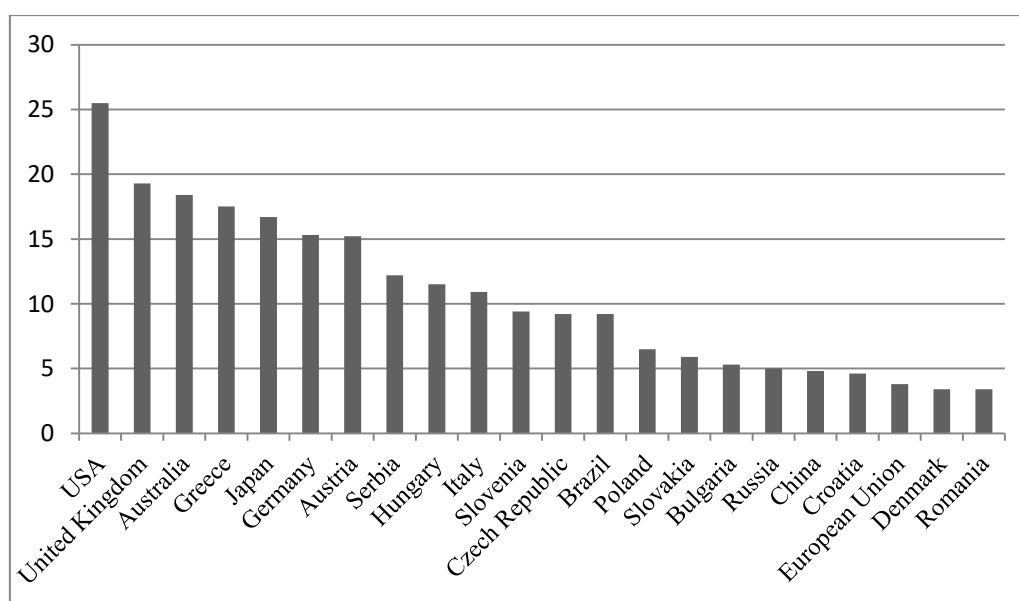


Figure 1: Fiscal response to pandemic in selected countries (January 2020-October 2021) as a % of GDP

Source: Fiscal Monitor, 2021.

Note: According to the IMF classification, the fiscal response covers an additional increase in public spending and the tax revenue reduction directed to the health and non-health sectors. The EU data do not refer to the sum of particular spending of the member states but the spending of the EU as a supranational entity.

The strong fiscal expansion aimed at financing public programs directed to the health and non-health sectors deteriorated the public debt situation (Figure 2). The public debt in 2020 has increased in all observed countries and worsened the already existing indebtedness problem in some economies. For instance, in Greece, Italy, and Portugal, pre-pandemic public debt levels were above 100 per cent of the GDP and have increased furthermore, whereas public debt in Spain and France overreached the value of total GDP in 2020. Although in some of the observed countries the public debt exhibited sustainable dynamics (Estonia, Bulgaria, Denmark), in the majority of economies the public debt surpassed the level defined by the Maastricht Treaty (60% of the GDP). It indicates that, albeit the implementation of the “whatever it takes” approach to respond to the pandemic was absolutely inevitable and justifiable, the economic policy course in the medium and the long run should be subordinated to achieving fiscal stability.

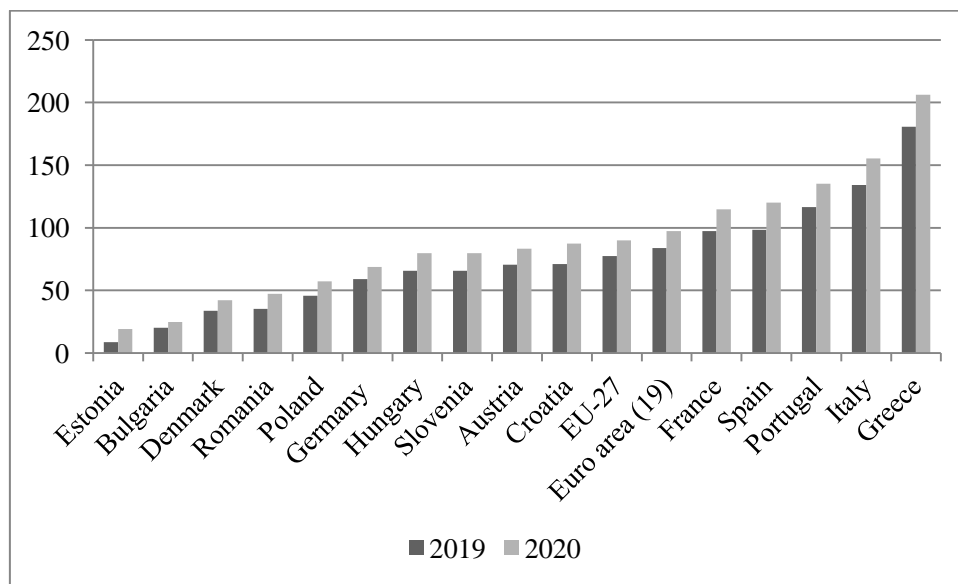


Figure 2: General government consolidated public debt (% of GDP) in selected EU economies

Source: Eurostat database

In addition, it should be stressed that the amplest increase in public debt was not in emerging economies, new EU member states and so on, but rather in the most advanced economies, the members of the G7 group. As is apparent from Figure 3, the public debt levels in these countries were already above 100% of the GDP prior to the pandemic (except in Germany). Due to enormous public expenditures as a response to the pandemic, the public debt is increased furthermore. Japan is certainly an indicative example, as a country with the highest public debt compared with its GDP. However, it appears that policymakers in these economies are not too worried about these facts. The possible reason could be found in the character of their currencies. For instance, four out of seven countries (United States, United Kingdom, Canada, and Japan) can borrow in their own currency. In other words, they have monetary sovereignty, or the possibility to freely issue their own currency and to create public debt denominated in it. It is not the case in Germany, France, and Italy as euro area economies, since the issuing of money is in charge of the European Central Bank. These differences raised the question of public debt management, and the answer was scoured in economic theory. Bearing in mind that the consensus view emphasizes the role of long-run fiscal discipline, these circumstances intensified the theoretical debate between economic

mainstream and some heterodox approaches. This debate resulted in the reaffirmation of some earlier theoretical constructs, which features will be presented in the next section.

THEORETICAL CONTROVERSIES ABOUT PUBLIC DEBT MANAGEMENT

The mainstream view about public debt is that the increase of the share of public debt in the GDP above a certain threshold will probably negatively affect economic growth in the long run. There are numerous empirical studies confirming this (Afonso and Jalles 2013; Woo and Kumar 2015; Chudik et al. 2017), but also ones which find no such evidence (for instance, Heimberger, 2021). Consequently, the fiscal discipline principle should be respected in the medium and the long run. In the short run, in the case of economic disturbances of different scales, it is allowed that the government creates fiscal deficits in order to support aggregate demand; when the crisis is over, however, it is expected that fiscal consolidation measures be implemented in order to make public debt sustainable in the long run.

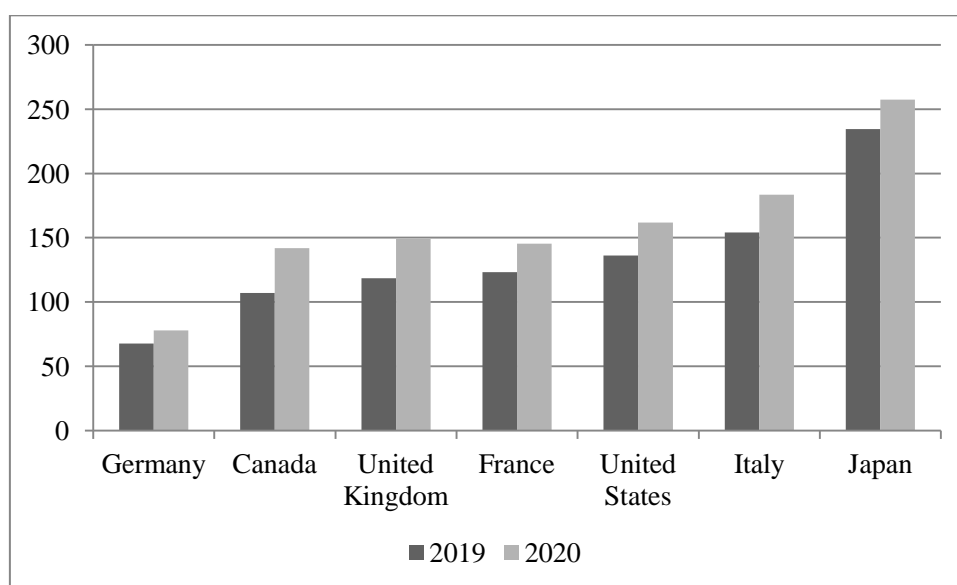


Figure 3: Public debt in G7 economies (% of GDP)

Source: Eurostat Database

In economic theory, this principle is known as the sound finance approach. According to its proponents, only fiscal discipline could improve the credibility of fiscal policy and allow the creation of sufficient fiscal space, i.e. the capacity of the state to borrow in the case of economic disorders (Heller, 2005, p. 3). This approach is traditionally associated with classical theory and represents the part of different economic schools built on classical roots (Monetarism, New Classical Macroeconomics).

On the other hand, insisting on fiscal discipline could result in a limited focus on essential goals of economic policy – macroeconomic stability and a better standard of living. In other words, the government should align public spending and tax revenues in a way that the aggregate demand is enough to ensure the total output is realized at full employment and current prices. This is the main principle of the so-called functional finance approach, which is founded in Keynesian theory and represents the theoretical opponent to sound finance principle. Actually, budget deficit and monetary expansion should be treated as the means for accomplishing the main goals, full employment and price stability. The importance of these principles is more profound in the case of economic disorders resulting in recessions, or in the case when a health crisis is transferred to economy and all other sectors of society, like in the

current pandemic. Although its implementation is likely to produce short run fiscal deficits and public debt increase, it is expected that the improvement of economic conditions will provide a room for debt servicing and achieving fiscal stability in the long run. In other words, the concept of functional finance does not exclude proper public debt management necessary to accomplish long-run fiscal sustainability. The periods of economic prosperity can provide enough fiscal revenues to achieve this goal.

However, there are also theoretical approaches with different views on public debt management. During and after the Great Recession of 2008, as well as in the current pandemic, the theoretical concept that attracted the most attention from academics and policymakers is certainly the so-called Modern Monetary Theory (MMT). The MMT is developed within Post-Keynesian economics, but with a radically different view regarding the constraints faced by contemporary economies. Namely, this concept presumes that only households and firms should respect budget constraints, whereas the government should not. There is no financial constraint for the state having monopoly power on issuing its own currency. This monetary sovereignty assumption entails the possibility the government can borrow in this currency and service existing debt by creating new money. As in the case of functional finance, the primary goal of economic policy is to achieve full employment with price stability, and the creation of debt is only a means for this. The capacity of an economy to absorb additional money is determined by the extent production capacities are utilized. To put it another way, the government can issue money until the full employment level is reached, without the risk of inflationary pressures. In addition, unlike the conventional view, MMT presumes that a budget deficit increase, *ceteris paribus*, will not increase interest rates. The additional public spending means that more money will be provided to the private sector and, in the end, will finish in the banking system (Taylor, 2019). All these are reasons MMT is under intensive scrutiny by academics, with theoretical proponents (i.e. Tymoigne, 2021; Kotilainen, 2022; Summa 2022) and opponents (i.e. Bossone, 2020; Prinz and Beck 2021; Drumetz and Pfister 2021; Leeper, 2022).

The MMT prescriptions for public debt management became very attractive during the COVID-19 pandemic. The reason is simple: this concept insists on deficit financing of the aggregate demand until the crisis is over and the employment level reaches its potential. The accumulated public debt does not present a problem *per se*, as a government with monetary sovereignty can create additional money (through the central bank) to service the debt and associated interest. However, the main limitation of this activity is embodied in the inflation rate, which can rise albeit the potential output isn't reached.

It is exactly the point made by mainstream macroeconomics. Namely, fiscal stimulus could lead to demand pressures on goods and labor market, thus raising inflation. In order to alleviate inflationary pressures, the aggregate supply should adapt to increased demand. Further, financing public spending by means of printing money could result in fiscal dominance connected with public debt monetization. In addition, if the public programs are financed by creating new money, it could be a signal that the government doesn't plan to raise taxes to generate surpluses in the future. As a result, aggregate demand can increase even more (Boone et al., 2022, pp. 78-79).

Although it appears that MMT and mainstream macroeconomics are quite different, there are also some important similarities. For instance, both theoretical approaches focus on the same goals of macroeconomic policy – zero output gap (at which the unemployment is low and the inflation rate is low and stable) and sustainable public debt (meaning that the debt-to-GDP ratio remains at or below its current level) (Jayadev and Mason, 2018). On the other hand, there is a difference in the delegation of economic policy measures in accomplishing these

goals. MMT insists that fiscal policy should be devoted to aggregate demand management and monetary policy should be used in achieving public debt sustainability. In contrast, the conventional view states that aggregate demand should be managed by means of monetary policy whereas fiscal policy should be used to control public debt.

Apart from these differences between the two approaches, a more important question appears to be related to the limitations of their implementation. The mainstream model relies on fewer prerequisites to be implemented in the economies of different levels of development. However, the MMT approach can be used only if an economy has monetary sovereignty. In other words, this concept cannot be applied in the economies belonging to currency unions (i.e. euro area countries), developing and transitional economies. This indicates that the theoretical debate about public debt management should include these aspects as well. Furthermore, the main message is that the countries which cannot borrow in their own currency (the majority of world economies) still should found their debt management on sound principles, i.e. by respecting fiscal discipline.

CONCLUDING REMARKS

The serious recession generated by the COVID-19 pandemic required ample economic policy response to prevent the situation becomes even worse. Although the room for the proper reaction of policymakers was rather narrow due to limitations of monetary policy (already too low interest rates) and fiscal policy (relatively high public debt in the majority of economies), further human and economic losses had to be alleviated. It was done at a cost of increasing public debt levels to unprecedented heights.

The mainstream view predicts that fiscal expansion in short run should be followed by fiscal consolidation in the medium term in order to achieve sustainable fiscal position. Even though there was no doubt that enormous public spending programs need to be undertaken, the consensus view about gradual reduction of public debt towards long run is challenged by some of the heterodox theoretical approaches.

As the analysis in the paper shown, among these approaches particular attention was directed to the functional finance concept and MMT. While the functional finance approach still holds that fiscal deficits created in the short run should be covered by surpluses in the next period, MMT takes a radically different position. Namely, the main question is actually whether the public debt is large enough to support economic recovery. Debt is never a problem for the government with monetary sovereignty. However, as indicated in the paper, the preconditions for the implementation of the MMT economic policy approach are limited to several world economies. In other words, even though MMT exhibits some theoretical flaws, the limitation of its implementation in practice is what really matters.

Accordingly, one can conclude that ongoing theoretical debates about public debt management yet do not have enough potential to provoke some shifts in the dominant macroeconomic paradigm. Fiscal discipline still remains the best principle in the long run, especially for economies which cannot borrow in their own currency. These countries should work on creating sufficient fiscal space required for a proper reaction in the case of future economic disorders.

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LONG-TERM VISION FOR EU RURAL AREAS UP TO 2040 - RURAL PACT, GREEN DEAL AND FARM TO FORK STRATEGY

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Abstract: *The European Union (EU) has been implementing the Common Agricultural Policy (CAP) for decades, while solving agrarian and rural issues. Thereby, the EU introduces certain changes in the CAP, but very gradually and carefully, in order to maintain a competitive position on the international market and achieve other accompanying goals. A large number of strategic documents, law regulations and other institutional mechanisms, along with the strong protectionism, has been following the CAP, causing a number of criticisms. The reforms are most often required by farmers, some EU member countries, as well as non-EU countries. Namely, the pressures come from both inside and outside, confirming the imperfection of the CAP. The subject of research in this paper is a long-term vision for the EU's rural areas up to 2040, and accordingly Rural Pact & Rural Action Plan, Green Deal and Farm to Fork Strategy. The aim of this research is to point out that the new adopted rural development policy of the EU, despite its comprehensiveness, as usual, must be additionally adapted, reformed and changed, in accordance with numerous requirements of the global and local environment. The paper starts from the following hypothesis: If the Rural Pact, Rural Action Plan, Green Deal and Farm to Fork Strategy, within the long-term vision for the EU's rural areas up to 2040, are implemented without adapting to the new global circumstances (COVID-19, climate change, energy crisis, war conflicts, food security problems, etc.), it will not be possible to realize sustainable development of the EU rural areas. The results of the research within this paper confirm the starting hypothesis. Namely, it is emphasized that the dynamics of contemporary global circumstances, in the field of economy, ecology and socio-political factors, affect the rural development of all countries. Accordingly, the necessity of further adjustments and reforms of the CAP is observed. The CAP has been reformed since its creation, due to its imperfections. They were noticed many decades before, although there are still a lot of unresolved problems. The description and comparison of the previous programming periods, schematic representations and available statistical data, as well as numerous studies by renowned authors and relevant institutions, confirm that the agricultural and rural policy of the EU has been one of the most important issues for the development of Europe and more broadly. In the contemporary conditions, due to the pandemic, environmental and energy problems, international conflicts and similar challenges, the issue of food has come to the fore everywhere. It additionally imposes a task for the EU, to improve its agrarian and rural policy, which has undergone a series of reforms since its inception due to numerous unresolved problems in this area. At the same time, the policy of the EU, as one of the world leaders in the field of agricultural and rural development, represents an important landmark for the countries trying to join the EU.*

Keywords: *Rural Pact, Rural Action Plan, Green Deal, Farm to Fork Strategy, Vision for the EU's rural areas*

JEL Classification: *O52, Q01, R59*

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INTRODUCTION

The agricultural and rural development policy of the European Union (EU) has been reformed since its inception, due to a large number of internal and external pressures. Namely, due to the requirements of farmers, some EU members, institutions, third countries, global problems, etc., the CAP (Common Agricultural Policy) of the EU is in the process of permanent changes. At the same time, the objectives, priorities, measures and instruments of the CAP, protective mechanisms for farmers and rural population, funds for financing agricultural and rural development, etc. are changed. In addition to the economic-financial and social goals, with the introduction of sustainable development concept, the environmental component of the CAP is increasingly emphasized. It relates to the preservation of natural resources, biodiversity and human health. Although the EU very often links environmental demands to subsidies and the EU farmers generally accept this, it is not a rule that the EU farmers will accept all green mechanisms, especially if they are not economically suitable. Consequently, arises the question of complete realization of the long-term vision for the EU's rural areas up to 2040, i. e. the Green Deal, Rural Pact, Rural Action Plan and Farm to Fork Strategy.

The subject of research in this paper is a long-term vision for the EU's rural areas up to 2040, and accordingly the contemporary strategic documents that guide rural development in the EU, such as the Rural Pact & Rural Action Plan, Green Deal and Farm to Fork Strategy.

The aim of this research is to point out that the new adopted rural development policy of the EU, despite its comprehensiveness, as usual, must be additionally adapted, reformed and changed, in accordance with numerous requirements of the global and local environment.

The paper starts from the following hypothesis: If the Rural Pact, Rural Action Plan, Green Deal and Farm to Fork Strategy, within the long-term vision for the EU's rural areas up to 2040, are implemented without adapting to the new global circumstances (COVID-19 pandemic, climate change, energy crisis, war conflicts, food security problems, etc.), it will not be possible to realize sustainable development of the EU rural areas.

LITERATURE REVIEW

Agriculture and rural development are among the most researched topics about the European Union. Namely, a large number of authors, for decades, have been analyzing the origin, development and reforms of CAP, that is, agricultural and rural policy of the EU (Rizov, 2005; Pejanović, 2005; Papadopoulos, 2015; Đokić, 2019; Stoustrup, 2021; Grodzicki & Jankiewicz, 2022; etc.). Considering the actuality of European integrations, Vujčić et al. (2012 & 2015), as well as a large number of other authors, research the EU integration, rural development policy of the Republic of Serbia and other Western Balkan Countries (WBCs). In the EU rural policy, the LEADER approach, which encourages local initiatives for sustainable rural development, has been developing for 30 years (Barke & Newton, 1997; Konečný, 2019; Slee, 2021; etc.). In contemporary conditions, the following topics concerning the EU agro-rural issues are particularly interesting: the Green Deal (Umbach, 2020; Sikora, 2021; Alberti et al., 2021; Wolf et al., 2021; Paleri, 2022; etc.), the Rural Pact & Rural Action Plan (Szpor, 2021; Lafortune et al., 2021; Cojocararu et al., 2022; etc.), the Farm to Fork Strategy (Schebesta et al., 2020; Arabaska, 2021; Wessler, 2022; etc.) and a long-term vision for the EU's rural areas up to 2040 (Decoville & Schneider, 2016; Di Federico, 2021; Besana, 2021; etc.). Eckert & Kovalevska (2021) research sustainability in the European Union, by analyzing the discourse of the European Green Deal. Machin (2019) writes about ecological modernisation in the EU in the context of environmental politics.

METHODOLOGY

The paper mainly uses official statistical data and strategic documents of the European Union, since these are the most reliable sources of data when it comes to the CAP. Namely, on the official website of the European Commission, in the section concerning agriculture and rural development, almost all relevant documents necessary for a detailed analysis of the identified problem area in the paper are available. At the same time, data from other sources are also very helpful, so the EU agricultural and rural development in relation to other countries is analyzed using the comparative method. The research results of renowned authors and institutions around the world greatly contributes to the clarification of the problem area that is analyzed in the paper. The descriptive and historical methods are used to observe and understand the essence of the CAP, that is, the rural policy of the EU, through the history. Given that the EU as a supranational organization today has 27 member states, the paper uses the methods of analysis and synthesis, induction and deduction, as well as the method of generalization to get useful conclusions. Tables, schematic and graphic representations, which the EU has been insisting on lately in its analyses, projections and presentations, were used in this paper wherever it was necessary and possible.

RESULTS AND DISCUSSION

In the EU's rural areas live about 137 million people, i.e. almost 30% of the EU's population. Rural areas represent about 83% of the total EU area (EC, 2022e). Employment by sectors in the EU rural regions is as follows: agriculture, forestry and fishery about 12%; industry and construction about 28%; and services about 60% (Eurostat, 2022). The selected economic indicators by urban-rural regional typology are presented in the Table 1.

Table 1. Selected economic indicators by urban-rural regional typology, including remoteness

Indicator	Urban	Intermediate			Rural			EU
		Close	Remote	Total	Close	Remote	Total	
GDP per head (PPS), 2018 (EU=100)	124.9	89.1	67.6	87.7	77.7	68.5	75.2	100
GDP per head, 2018 (EURO in PPS)	37,788	26,958	20,448	26,535	23,523	20,738	22,753	30,256
Change in GDP per head, 2000-2018 (index points)	-5.0	-0.2	-4.4	-0.4	8.5	-1.8	5.6	0.0
Real GDP per head growth, 2000-2018, annual average (%)	1.1	1.2	0.9	1.2	1.7	1.1	1.5	1.2

Source: EC (2021b), based on Eurostat data

According to the Eurobarometer surveys, the dominant number of respondents in the EU support the EU giving consideration to rural areas in public spending decisions. Also, the respondents consider: agriculture and rural areas are important for the future of the EU; local area should participate in decision how the EU funds for rural areas are spent; transport infrastructure and connections are the key needs of rural areas (EC, 2022f).

The EU rural development policy priorities in contemporary conditions are (ENRD, 2022b):

- 1: Knowledge transfer, innovation, Life-Long Learning (LLL) and trainings in rural areas;
- 2: Farm viability and competitiveness - improving economic performance of farms and skills of farmers, farm restructuring and modernisation, etc.;
- 3: Better food chain organisation and risk management, with improving competitiveness of primary producers by better integrating them into the agri-food chain;

- 4: Restoring, preserving and enhancing ecosystems, i.e. biodiversity, water, soil, and similar.
- 5: Resource-efficient, climate-resilient economy - efficiency in water and energy use in agriculture, use of renewable energy, reducing greenhouse effects from agriculture, etc.;
- 6: Social inclusion & economic development – fostering local initiatives, improving quality and use of information and communication technologies (ICTs) in rural communities, job creation, diversification of rural economy, micro, small and medium enterprises.

The EU member states have to include at least four of these six listed priorities when designing their Rural Development Programmes - RDPs (ENRD, 2022b).

The objectives of the CAP for the period 2021-2027 are presented in the Figure 1.



Figure 1: CAP's 10 key objectives until year 2027

Source: EC (2022g)

The EU's Multiannual Financial Framework (MFF), for the period 2021-2027, amounts to €1.21 trillion with an additional €808 billion from the Next generation EU recovery instrument. The total allocation for the CAP amounts to €386.6 billion, divided between two funds ("two pillars" of the CAP): (1) The "first pillar": European Agricultural Guarantee Fund (EAGF) amounts to €291.1 billion; and (2) The "second pillar": European Agricultural Fund for Rural Development (EAFRD) amounts to €95.5 billion. It includes €8.1 billion from the Next generation EU recovery instrument due to the COVID-19 pandemic (EC, 2022d).

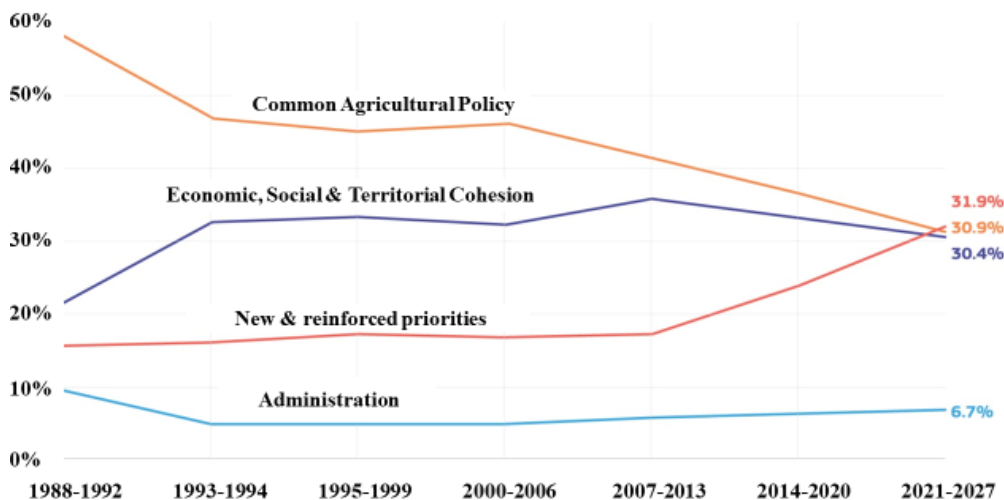


Figure 2: Share of the main policy areas in the Multiannual Financial Frameworks (MFFs)

Source: EC (2020b)

CAP allocations for the period 2021-2027 plan the highest funds for income support (38,93 billion €), then for rural development (12,11 billion €), for Next Generation EU injection (5,68 billion €), and for market measures 3,25 billion € (EC, 2022d).

For a long time, the LEADER has been providing support to rural development in the EU. The LEADER is actually a local development method which has been used in the EU for 30 years to engage local actors (rural population) in rural development. It is realized by the Local Action Groups (LAGs). The LEADER is implemented under the national and regional RDPs of the EU member states and co-financed from the EAFRD. It has been extended under the Community-Led Local Development (CLLD) to three additional EU funds: European Maritime and Fisheries Fund (EMFF); European Regional Development Fund (ERDF); and European Social Fund (ESF). The European Network for Rural Development (ENRD), National Rural Networks (NRNs), etc. contribute to its promotion, through workshops, rural vision weeks, as well as live, virtual-online or hybrid events (ENRD, 2022a).

The key areas of new CAP until year 2027 are (EC, 2022j):

- a greener CAP – the support is focused on eco-schemes, environment-friendly farming practices and approaches, such as organic farming, sustainable rural development, climate, biodiversity, environment and animal welfare, etc.;
- a fairer CAP - the new CAP directs support to those who need it most: smaller and medium-sized farms, active farmers, young farmers, gender balance, etc.;
- improving competitiveness - the new CAP strives to strengthen the position of farmers in the supply chain and competitiveness of the agri-food sector.

The new CAP continues with a strong budget, digital transition, new ideas, advancing research and dissemination of their results. The Agricultural Knowledge and Innovation Systems (AKIS) and the European Innovation Partnership for Agricultural Productivity and Sustainability (EIP-Agri) support knowledge and innovation in agriculture and rural communities. The new CAP promotes the transition towards a smart, sustainable, competitive, resilient and diversified agricultural sector with a long-term food security, climate action, protection of natural resources and biodiversity, strengthens the socio-economic and environmental capacity of rural areas (EC, 2022j).

The EU member states propose the distribution of the CAP funds, in the draft CAP Strategic Plans - CSPs (Figure 3).

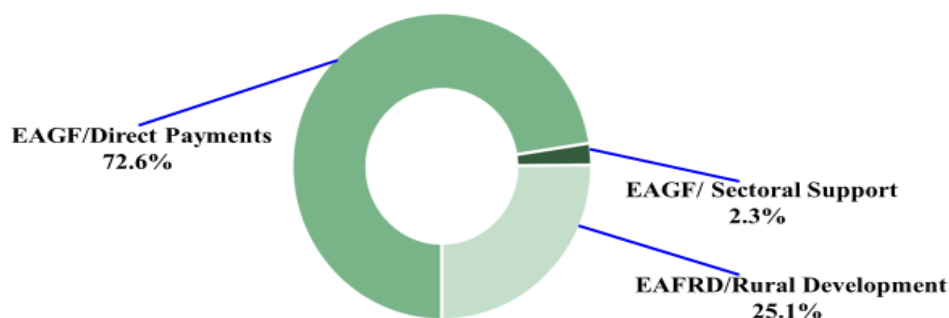


Figure 3: Indicative and approximate cumulative distribution of the CAP funds proposed by the EU member states in the draft CAP Strategic Plans (EU level - average)

Source: EC (2022h)

The national level CAP Strategic Plans with "green architecture" harmonize the local and the EU objectives (Figure 4).

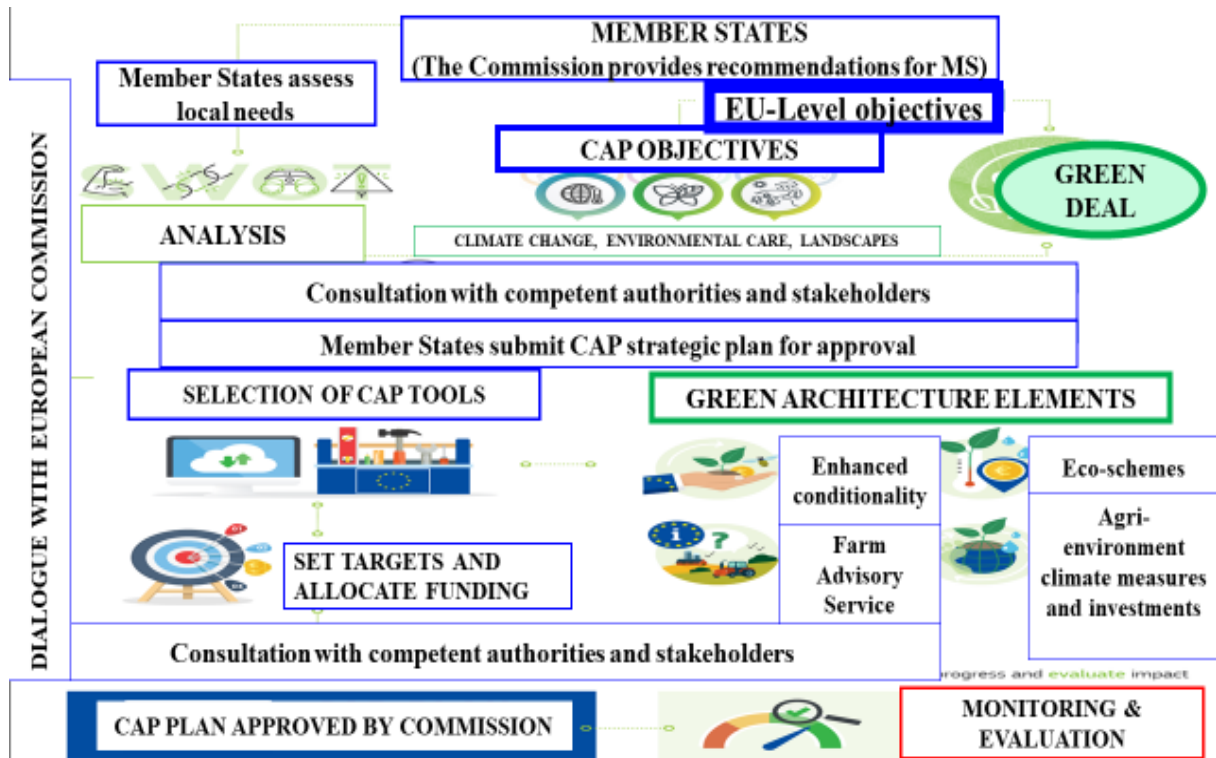


Figure 4: CAP Strategic Plans with "green architecture" directed for approval of the EC

Source: EC (2020a)

The CAP Strategic Plans (CSPs) include the European Green Deal. All Member States (MS) submit their CSPs to the Commission (EC) for assessment and approval. The EU countries' CAP Strategic Plans are in relation to the EU objectives and the Green Deal (EC, 2022c).



Figure 5: European Green Deal

Source: EU ASEAN (2022); EC (2019)

The European Green Deal (Figure 5) strives to make Europe the first climate neutral continent and transform the EU into a modern, resource-efficient and competitive economy, ensuring (EC, 2022a):

- no net emissions of greenhouse gases by 2050;
- economic growth decoupled from resource use;
- no person and no place left behind.

The objectives of the Green Deal are reducing net greenhouse gas emissions by at least 55% by 2030, compared to 1990 levels, i.e. achieve a 55% decrease of CO₂ emissions by 2030. The Green Deal supports the efficient use of resources, green and circular economy, stop climate change, protection of biodiversity, reduce pollution, and similar (EC, 2022a).

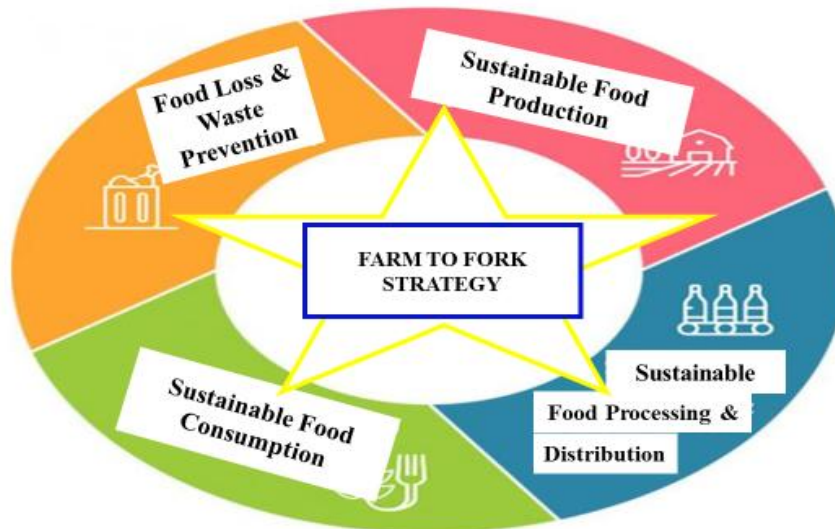


Figure 6: Farm to Fork Strategy

Source: EC (2022i)

The Farm to Fork Strategy is a central part of the European Green Deal, aiming to make EU food systems fair, healthy and environmentally-friendly, sustainable, guardian of biodiversity, provider of food security, nutrition & public health, which fostering competitiveness of the EU supply of food sector and promoting fair trade at the food market (EC, 2022i).



Figure 7: Main drivers shaping the future of EU rural areas for 2040 and the four complementary areas for action

Source: EC (2021a)

The Rural Pact & Rural Action Plan, towards a long-term vision for the EU's rural areas up to 2040, include a lot of objectives, participants and benefits (EC, 2022b; EC, 2022e):

1. Rural pact:

- Rural pact is building the future of rural areas together, as a framework for cooperation among authorities and stakeholders at the European, national, regional and local level. The Commission facilitates this framework through the networks, exchange of ideas and best practices. Rural Pact fosters economic, social and territorial cohesion of rural communities.
- Rural pact - towards stronger, connected, resilient and prosperous rural areas and communities.
- Objectives of the Rural Pact:
 - amplify rural voices;
 - structure collaboration and mutual learning;
 - encourage voluntary commitment to act for rural areas.
- Participants of the Rural Pact are: public authorities, civil society organisations, businesses, citizens, academic, research and innovation organisations.
- Benefits of participating in the Rural Pact: keep rural areas; learning from others; access to relevant information and events in rural areas.
- How to take part in the Rural Pact: first of all, explain how to contribute rural areas development.

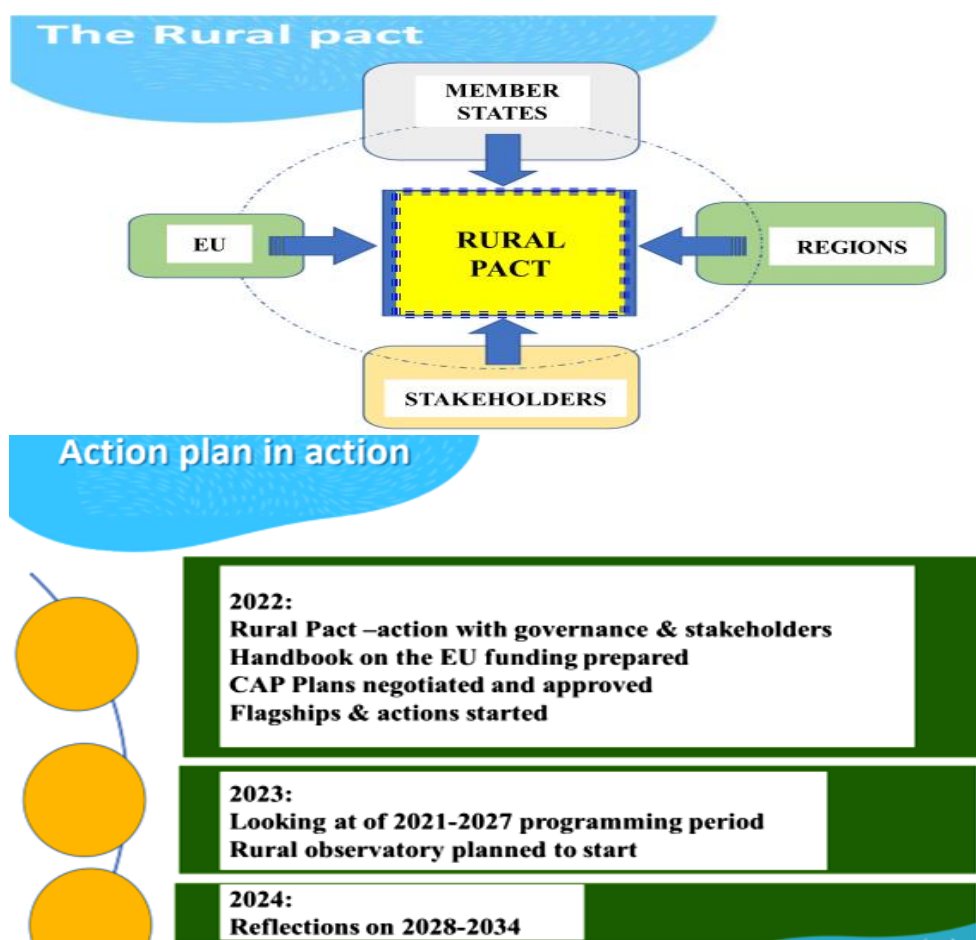


Figure 8: Rural Pact & Rural Action Plan

Source: Rouby (2021); Heikkila & Gafo (2021)

2. Rural Action Plan (RAP-EC):

- The EU Rural Action Plan (RAP-EC) for sustainable, cohesive, integrated, balanced, fair, green and innovative rural development of the EU.
- Objectives of the RAP-EC:
 - foster territorial cohesion and create new opportunities to attract innovative businesses;
 - provide access to quality jobs;
 - promote new and improved skills;
 - ensure better infrastructure and services;
 - leverage the role of sustainable agriculture and diversified economic activities.
- The RAP-EC is focused on the following: creating an innovation ecosystem, i.e. social innovation; boosting sustainable transport links and digitalization of rural areas; increasing environmental, climatic and social resilience; rural well-being with support for vulnerable groups in rural areas; supporting economic diversification, rural tourism, local traditional food, entrepreneurship and social economy in rural areas.
- The CAP and the Cohesion Policy are fundamental in supporting the RAP-EC.
- The Commission supports and monitors the implementation of the RAP-EC through: "rural proofing" (impact of the initiative on rural jobs, growth and sustainable development); "rural observatory" (provides evidence).

It is very important an adequate combining the funds, programs and institutional activities to achieve the EU vision goals of rural development and shaping it together (Figure 9).

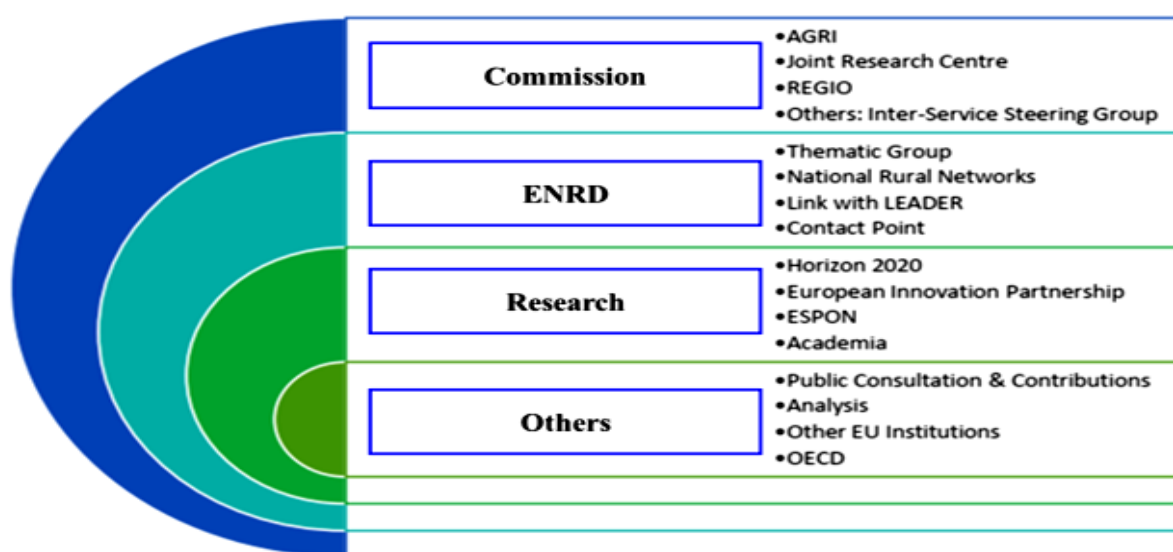


Figure 9: Participatory foresight for contribution to the long-term vision for EU rural areas

Source: EC (2021b)

Many studies show that, in addition to a number of benefits for farmers and rural population in the EU, there are also a number of shortcomings of the CAP, especially in today's very complex global conditions. It is noticed that the complaints and protests of agricultural producers are becoming more frequent and intense. This sector is suffering from the crisis that has affected the whole world, as well as the restrictions related to the Green Deal of the EU. The problems that plague the EU farmers are very diverse. The biggest problems are usually eco-requirements, low purchasing prices, expensive inputs, especially fertilizers and fuel.

Nevertheless, the EU representatives do not give up on the goals of the Green Deal in the EU agricultural and rural policy, despite many calls for prioritizing food security due to disruptions caused by the COVID-19 pandemic, crisis in international relations, etc. The EU strives to improve food security by reducing dependence on imported agricultural products and inputs. However, this is not easy to achieve, especially not fast. Also, it is very difficult to maintain a leadership position, such as that of the EU, on the market of many agri-food products. Consequently, several scenarios for rural areas are considered (Figure 10).

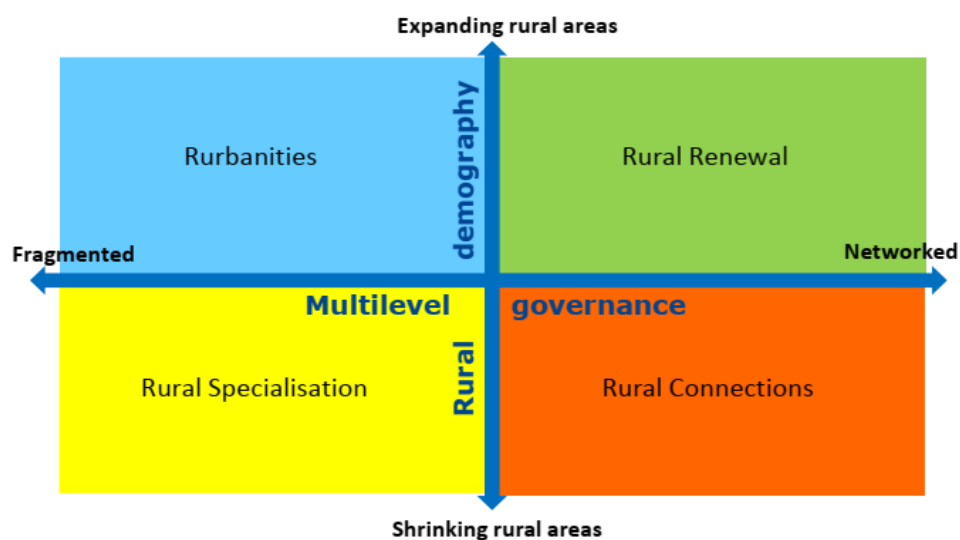


Figure 10: Illustrative scenarios for EU rural areas by 2040

Source: EC (2021b)

In order to establish in the future a “fully fledged multi-sectoral development policy”, there is a need to transform the agricultural and rural policy of EU. The actions proposed in the "Rural Europe takes action – no more business as usual", to support the EU rural communities, are as follows (ARC, 2022): focus on different types of rural areas with integrated rural programmes and policies based on a deep analysis of rural and surrounding urban areas, needs of local population and similar; coordinated multi-sectoral policy; and empowering rural people.

CONCLUSIONS AND RECOMMENDATIONS

For decades, in the European Union, a strong support has been provided to agriculture and rural development, which resulted that many EU countries today represent agricultural and rural leaders in the world. They are among the world's largest producers and exporters of agri-food products, with extremely profitable farmers. The CAP supported protective prices of the EU agricultural products and farmers' incomes, gave priority to the EU products compared to other countries. Recently, after a series of reforms, the CAP increasingly encourages ecological models of agriculture and rural development. This is particularly noticeable in the Green Deal, Rural Pact, Rural Action Plan and Farm to Fork Strategy within the long-term vision for the EU's rural areas up to 2040. A large number of reforms indicate that the CAP in addition to a number of positive economic effects for agriculture and rural economy in the EU, has also led to a number of problems. Namely, dissatisfaction arose from some EU members, non-EU countries, small farmers, and even highly profitable large EU farms that receive reduced subsidies or have to buy more expensive inputs, introduce green elements, etc. The problems have become greater if the farmers are economically stronger. Also, it should not be ignored the dissatisfaction expressed by small farmers or countries that are not

members of the EU. In addition, farmers and other rural population in the countries that are candidates for the EU membership often evaluate the IPARD (Instrument for Pre-Accession Assistance for Rural Development) as very complicated and not adapted to the needs for which it is primarily intended. A large number of strategic documents, plans, programs, specialized funds, accompanying legislation and other institutional mechanisms of the EU refer to agriculture and rural development. Nevertheless, there are still a number of problems in this field, which are further complicated today, due to the COVID-19 pandemic, energy crisis, war conflicts and climate change. It additionally requires new CAP reforms and adaptation of the proposed green models to the circumstances of the global market. This confirms the starting hypothesis in the paper. Monitoring the reforms and responses of the CAP to all contemporary challenges is especially important for countries that are in the process of joining the EU and have a wealth of natural resources in rural areas, as is the case with the Republic of Serbia and other Western Balkan countries. Given that the CAP primarily strives to achieve the EU goals, it is important for other countries to analyze the tendencies of the CAP, in order to better adapt to the new trends, while realizing as many benefits as possible and less losses, considering that due to the certain measures which the CAP undertakes, countries that are not members of the EU, unfortunately, may have some losses or encounter certain limitations in the field of agricultural and rural development. Namely, for decades, the EU has been leading a very protective agricultural and rural policy for its members. In this way, the CAP brought farmers and other rural population in the EU much greater economic power compared to many other non-EU countries which have more favorable natural conditions for the development of rural economy than the EU. However, the EU periodically reforms agricultural and rural policy, in order to maintain its leadership position in the world and be more competitive compared to countries that have natural resources in agriculture and rural areas, but do not have strong financial and other support in this field.

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DIFFERENCES IN REGIONAL APPROACHES TOWARD IMPLEMENTING THE CIRCULAR ECONOMY MODEL

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Abstract: *At this moment, global consumption of raw materials is 70% greater than what the planet can safely renew. The Circular Economy (CE) is a new economic development model based on the 7Rs (redesign, reduce, reuse, repair, renovate, recycle, and recover) that provide operational and strategic benefits at the micro, meso, and macro levels. The model of a circular economy has emerged as an important part of policy debates in North America, East Asia, and Europe within the last decade. However, approaches to the utilisation and implementation of this model differ on the regional and national levels. The aim of this paper is to provide a deeper understanding of the differences in the approaches taken on the regional level, especially focusing on North America, East Asia, and Europe's circular economy development. This paper will present the qualitative and quantitative analysis of the understanding of the CE concept in policy disclosure, similarities and differences between the three regions in terms of the focus of policy activity, and the measures that are used to evaluate the progress based on the available literature and the secondary data sources. The paper makes suggestions as to the causes for the varying policy articulations of the CE model and indicates as to the lessons that one region might learn from the other.*

Keywords: *Circular Economy, Sustainable Development, Regional Development, Economic Policy, 7R*

JEL Classification: *O440, E600, Q580*

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INTRODUCTION

A linear production and consumption model, in which goods are produced from raw materials, sold, exploited, and then discarded or incinerated, has dominated the global economy for the past 150 years of industrial evolution, causing increasing environmental issues such as biodiversity loss, water, air, and soil pollution, resource depletion, and excessive land usage which threaten the planet's life-support systems. Thus, moving to more sustainable production and consumption systems is urgently required (Geissdoerfer et al., 2017).

Since the Paris conference on climate change in 2015 and the Glasgow conference on climate change in 2021, 70% more raw materials have been extracted than the Earth's capacity to renew them safely (Circle Economy, 2022). Global material consumption has nearly doubled in less than half a century, exceeding population growth. In 1972, when the report *Limits to Growth* was published by the Club of Rome, the world consumed 28.6 billion tons of materials. As of 2019, this number has topped 100 billion tonnes, increasing from 54.9 billion tonnes in 2000. Rising waste levels accompany the fast acceleration of consumption. In the end, nearly 90% of all extracted and used materials are discarded (Circle Economy, 2022). The global situation is frightening, but the Circular Economy (CE) offers immense possibilities. The Circular Economy could generate \$4.5 trillion in additional economic output by 2030, \$25 trillion in more economic output globally by 2050, as well as strengthen the global economy and its supply lines (McGuinness, 2015). A new economic model has become indispensable as the global economy becomes more volatile and resource depletion becomes evident.

However, regional approaches to responsible resource usage and sustainable economic growth vary. The average European produces over 5 tons of waste annually, of which only 38% is recycled, and over 60% of domestic waste still goes to landfill in several EU nations (EC, 2022a). The European Commission estimates that the transition to a circular economy would result in an annual increase of 600 billion euros for the EU manufacturing sector alone (Korhonen et al., 2018). Canada and the United States produce among the world's highest per capita trash averages, at around 2.21 kilos daily. In comparison, Mexico generates about 1.16 kg per person per day. It is estimated that the United States discards over 227 million tons of solid garbage annually, of which three-quarters might be recycled or repurposed (but only 30% is). According to estimates, just 47% of the potential economic value of recycling is absorbed (Kaza et al., 2018; Shorthouse, 2021). Finally, East Asia and the Pacific region produce 23% of the world's trash, more than any other region. Hong Kong, Singapore, Taiwan, and China generate 223 million tons annually. Opportunities in the built environment, mobility, nutrition, textiles, and electronics indicate that enterprises and consumers might save 16% of China's estimated GDP by 2040 (Ironsides, 2020).

Overall, each region treats important elements of the Circular Economy differently, depending on its potential for improving economic conditions and quality of life (Rezaie et al., 2022). However, at this moment, theoretical and empirical comparative research analysing the objectives, barriers, and drivers of the Circular Economy in different world regions is scarce.

This paper aims to improve understanding of the differences in the approaches taken towards implementing the Circular Economy model in North America, Europe, and East Asia. For the purpose of this analysis, the model of global regions was developed by Polonský et al. (2010). Relying on the available regional reports, policies, and strategies, this paper will present the theoretical concepts of the Circular Economy, analyse approaches taken in different regions

and develop recommendations for stakeholders in order to provide them with a reference point for faster and more efficient Circular Economy implementation.

THEORETICAL BACKGROUND

In the 1970s, the ecological economist Boulding (1966) and the political economist Thomas Malthus (Popović, 2020) for the first time introduced the concept of growth restrictions. Several authors and influential international institutions introduced the social and environmental dimensions to growth based on their fundamental conclusion that limited resources do not provide an infinite supply of fuel for growth based on the linear production model (Popović, 2020). Multiple authors (Andersen, 2007; Ghisellini et al., 2016) trace the concept of the linear economy being replaced by the circular system to Pearce & Turner (1989), who originated the concept of circularity in the 1970s. They analysed and discussed the role of natural resources on both sides of linear production, making it necessary to evaluate and utilise the economy's circular flow of matter.

In the decades that followed, various research areas were offered based on the linear economy's limits. Circular Economy became the most practical means of implementing the Sustainable Development paradigm in enterprises and economies (Ghisellini et al., 2016; Kirchherr et al., 2017). The contributions and characteristics of a group of notions that share the idea of closed loops shaped the current conception of the Circular Economy (Geissdoerfer et al., 2016). Laws of ecology (Commoner, 1971), regenerative design (Lyle, 1994), industrial ecology (Graedel & Allenby, 1995), cradle-to-grave (McDonough & Braungart, 2002), biomimicry (Benyus, 2002), looping and performance economy (Stahel, 2010), and blue economy are the most significant concepts (Pauli, 2010). Over time, a variety of factors contributed to the inability to agree on a single, definitive definition of the CE. Currently, there are 114 CE definitions worthy of consideration (Kirchherr et al., 2017). The most widely accepted definition is that of the Ellen MacArthur Foundation, which defines a Circular Economy as "an industrial economy that strives to rely on renewable energy; reduces, tracks, and eliminates the use of harmful chemicals; and eliminates waste via careful design" (EMF, 2013, p.22). In addition to the Ellen MacArthur Foundation's definition, the definition provided by Kirchherr et al. (2017), through the analysis of 114 definitions present in the literature and which defines CE as follows, stands out as the most significant "A system of economics that replaces the concept of "end of life" with the reduction, reuse, recycling, and recovery of materials in production/distribution and consumption processes. It operates at the micro level (products, companies, and consumers), the meso level (eco-industrial parks), and the macro level (city, region, nation, and beyond) to achieve sustainable development, thereby creating environmental quality, economic prosperity, and social equity for the benefit of future generations. It is made possible by innovative business strategies and accountable consumers" (Kirchherr et al., 2017, p. 229).

A Circular Economy is a holistic approach to economic development intended to benefit all socioeconomic fields. The Circular Economy provides operational and strategic benefits at both the microeconomic and macroeconomic levels as an alternative paradigm. This change represents a tremendous opportunity for innovation, job creation, and economic growth, fuelled by the technological advancements of Industry 4.0 (EMF, 2013; Popović, 2020). The Circular Economy, in contrast to the linear model, is intended to be regenerative by design and strives to gradually detach growth and development from the consumption of finite resources (EMF, 2022). By following the seven principles ("7Rs") of redesign, reduce, reuse, repair, renovate, recycle, and recover, the Circular Economy seeks to maximise the use of material resources. The concept derives from mimicking nature, where everything has value

and is utilised and where trash becomes a new resource. Thus, the product's life cycle is prolonged, and waste is repurposed, and, over time, a more efficient and sustainable production model is developed. Thus, the equilibrium between development and sustainability is preserved (REPSOL, 2022).

Even though Circular Economy is globally accepted as a new model of sustainable development, it is evident that the world lacks any cohesive action for its further implementation, and the situation is even more complicated, having in mind differences in defining global regions. This paper analyses the situation in only three out of ten global regions defined by Polonský et al. (2010), and even though these regions are the top three regions in terms of the Circular Economy, there are significant differences in the approach. The majority of research over the past two decades has focused on theoretical discussions of the effects, potential, benefits, limitations, and measurement of the Circular Economy in Europe and China (Kirchherr et al., 2017; Geissdoerfer et al., 2017; Berg et al., 2018; Korhonen et al., 2018; Marković et al., 2020) However, beginning with China's trial with a Circular Economy (Yuan et al., 2006; Geng et al., 2013; Chen et al., 2020), empirical research conducted over the past decade has provided a bit clearer understanding of how a Circular Economy might improve national, regional, and global economies (Berg et al., 2018; Bogovitz & Sergi, 2019). However, even though there is comprehensive research, reports and policies targeting Circular Economy implementation in Europe and East Asia, North America lacks a cohesive approach and focuses solely on the recycling part of the “7Rs”.

REGIONAL APPROACHES

The shift to a global circular economy requires a global perspective. If correctly implemented, the idea of a circular economy may generate advantages for diverse regions, populations, and cultures around the globe (EMF, 2022). Developing a shared regional and global vision and strategy for a Circular Economy in order to have a more significant impact, build cooperation and exchange best practices might become a solution to increase resilience and mitigate future disruptions.

In March 2020, the European Commission announced a new Circular Economy action plan. This action plan is one of the key pillars of the European Green Deal, Europe's new sustainable growth plan. The European Union wants to reduce the strain on natural resources, help the economy grow, and create jobs by switching to a circular economy. The new action plan outlines actions throughout the product life cycle and links to the “7Rs” of the Circular Economy. It focuses on how goods are created, supports circular economy processes, encourages sustainable consumption, and strives to reduce waste and keep as many resources as possible inside the EU economy. In addition, it offers legislative and non-legislative initiatives aimed at sectors where action at the EU level might provide a genuine added benefit (EC, 2022b).

Asia is a big consumer and producer, so it is a great place to show how the circular economy works on a large scale. It accounts for around 60% of the world's population, and Asian countries have become global manufacturing hubs. During the last two decades, China, as the most prominent representative of East Asia, experienced rapid growth, urbanisation, and industrialisation alongside the associated negative environmental impacts. Unsurprisingly, East Asia leads in research and conscious effort to create new value and economic growth from the transition towards a circular economy (EMF, 2022).

Finally, in North America, new businesses and technology are accelerating the transformation of the world as we know it. However, only recently have these corporations begun to consider their environmental impact, incorporate circularity into their business models, and determine

how they can facilitate the transition to a circular economy. Understanding how the circular economy can be implemented in dynamic and diverse urban contexts and how citizens, the environment, and the economy can benefit is facilitated through collaboration between municipal governments and the corporate sector (EMF, 2022).

Defining the opportunities for the Circular Economy in North America requires an understanding of the continent's current position, its ultimate objective, and the identification of relevant natural resource industry strengths while leveraging service-based sectors and the broader innovation ecosystem.

STRATEGIC OBJECTIVES

Strategic objectives defined on the national and regional level will provide direction for the transition toward a Circular Economy. Strategic objectives differ based on the region and on the identified preconditions.

The European regional approach towards the Circular Economy is the most comprehensive, and it was even more propelled by the energy crisis Europe has suffered since the COVID-19 pandemic. Based on the Strategic objectives presented in Table 1, the European approach to the Circular Economy covers overall dedication to sustainable production in the most resource-intensive sectors, responsible consumption, waste management and societal inclusion in the Circular Economy transition (EC, 2022b).

North American region, on the other hand, is focused on resource management and recycling. Even though Canada has made further advances towards Circular Economy implementation, the United States still remain on the first step, recycling, which is confirmed through the National Recycling strategy (EPA, 2022).

Finally, East Asia has made significant advances towards a Circular Economy, with China leading the charge. However, in terms of cohesive action, East Asia is focused primarily on creating the institutional environment necessary for Circular Economy implementation. Compared to Europe and the United States, East Asia is focusing on sustainable production and resource management, while all other strategic objectives are focused on supporting the financial and innovation ecosystem.

Table 1. Comparative Overview of Circular Economy Strategic Objectives per Region

Region	Europe	North America	East Asia
Strategic Objectives	Make Sustainable Products the Norm in the EU	Improve Markets for Recycling Commodities	Standard Harmonisation and Mutual Recognition of Circular Products & Services
	Empower Consumers and Public Buyers	Increase Collection and Improve Materials Management Infrastructure	Trade Openness and Trade Facilitation in Goods & Services
	Focus on the Sectors that use the most resources and where the potential for circularity is high such as: electronics and ICT, batteries and vehicles, packaging, plastics, textiles, construction and buildings, food, water and nutrients	Reduce Contamination in the Recycled Materials Stream	Enhanced Role of Innovation, Digitalisation and Emerging Technologies
	Ensure Less Waste	Enhance Policies to Support Recycling	Sustainable Finance and Innovative Investments
	Make Circularity Work for People, Regions and Cities	Standardize Measurement and Increase Data Collection	Efficient Use of Energy and Other Resources

Source: Table created by Authors based on European Commission (EC). (2022b); ASEAN. (2021); EPA (2022)

BARRIERS TO THE CIRCULAR ECONOMY IMPLEMENTATION

Accelerating a circular economy will require global corporate structures, practices, and legislation modifications. Circular economy policies have the ability to generate substantial commercial value, therefore incentivizing industry and the private sector to take the lead and presenting new options for economic revitalization, investment attraction, diversification, and job creation. However, transforming an established, robust, and linked system will require time, multi-stakeholder engagement, and coordination in order to overcome obstacles and exploit the enablers that will drive the demand and supply of circular economy goods and solutions (Shorthouse, 2021).

Implementation of the Circular Economy on the European level faces three key barriers (Houston et al., 2019):

- Taxation and regulatory barriers to using secondary raw materials - Tax and regulatory obstacles to the use of secondary raw resources - There is still room for improvement in market-based incentives that assist the shift towards circularity. Moreover, because of present taxation systems, virgin raw materials are frequently less expensive than secondary ones, hence diminishing the incentives to invest in corporate transformation. In addition to cost, restrictions impede the utilisation of secondary raw resources.
- Lack of harmonisation across EU Member States EU regulations are not equally applied by the Member States - The disparities in the application of the EU framework pose a barrier to the EU's aspiration to become a worldwide leader in the circular economy.
- Absence of an integrated recycling plan across the EU - For recycling to be practical, substantial amounts of garbage are necessary. Currently, EU member states need a comprehensive recycling programme. Such a strategy would enable the collection of adequate waste volumes necessary for achieving efficiency.

Additional factors identified as obstacles to the implementation of circular business models include:

- Externalities are not factored into cost-benefit calculations, hence environmentally hazardous products are very affordable.
- Absence of regulatory differentiation between circular and non-circular enterprises.
- Lack of a holistic approach to circular economy initiatives.
- Policy environment and market indicators that favour linear business models.
- Lack of transparency and information on the availability and eligibility of EU funding to support circularity.

In North America, a systematic approach toward the evaluation of all segments of the Circular Economy implementation lead toward the identification of the following barriers. Due in large part to a failure to identify existing economic and environmental externalities already faced by society, in many circumstances, it remains cheaper to stay with the linear economy status quo (e.g., the cost of pollution, health care impacts, etc.) In turn, this affects the demand for circular products and solutions and discourages investment.

The aforementioned difficulties complement the conclusions of studies published in Canada, the United States, and Mexico that emphasise (Shorthouse, 2021):

- There is a need for stronger legislative support and harmonisation
- Investments in technology, infrastructure, and innovation;

- Increased collaboration and information sharing.

In East Asia, the move to a circular economy is fraught with obstacles. The majority of obstacles involve institutions and government, culture and behaviour, innovation and creativity, and science and technology (Arthur et al., 2022, Shi et al., 2006).

- First, the transformation from a linear to a circular economy necessitates fundamental changes throughout the entire regional economy. Consequently, it is extremely challenging to raise firms', citizens', and government officials' understanding of the circular economy and to achieve consensus among them.
- Second, East Asia has initially built a legislative corridor for a circular economy, and the application of such a model in various industries, sectors, and regions is time-consuming. In addition, this approach lacks economic incentives and market mechanisms to engage essential parties.
- Thirdly, a circular economy is linked to technological innovation. East Asia is a regional nation with obsolete technology and small-scale production. Additionally, human and financial resources for cleaner production at the enterprise level are still limited.

IDENTIFIED REGIONAL DIFFERENCES

In many global regions, the transition to a circular economy brings both unique problems and enormous commercial opportunities. It is the responsibility of governments to establish, review, and adjust the framework under which the circular economy will continually develop. National and regional governments are supposed to develop circular economy action plans and to establish institutional environments necessary for circularization.

Local and regional authorities must send a clear signal to the different stakeholders on the legislative and political framework and planning, taxes and economic incentives, and waste management infrastructures, in particular. At this level, a vast array of material resource operations can be affected.

However, the potential for regional action is currently limited. Except for European Union, other global regions lack the institutional infrastructure to support the transition towards a Circular Economy. The lack of harmonized policies, standards, and frameworks is one of the most significant barriers shared across regions. This barrier is one of the major differences between Europe, North America, and East Asia.

The European Union has institutional mechanisms for advancing the Circular Economy through overarching frameworks, policies, and strategies, but the implementation is left to individual country members. On the other hand, East Asia, and North America, even though they have the strong national potential for implementation, lack regional governing bodies to drive the necessary change. In that regard, East Asia is in a better position than North America since there is an existing regional organisation which can take the lead in developing regional frameworks, policies, and legislation harmonization. Finally, North America does not have any formal or informal regional infrastructure which can pave the way for North American countries.

The second point of difference is the standardization of circular products and services. While the European Union has the power to enforce standardization of the products and services within the region, there is no such possibility in North America and East Asia where the possibility for harmonization of standards and norms is left to national governments, which so far have not made much progress.

The third point of difference is the approach toward the mobilization of digital, innovative, and cutting-edge technologies on the regional level. While the European Union has significant potential and infrastructural options to mobilize the innovative potential, the same is not true for East Asia and North America. Even though both regions promote and support innovative activities, this type of action is related to individual governments.

The fourth point of difference is the financing of the circular economy transition. Currently, European Union has the highest potential for capital mobilization, while East Asia is in the legislative development and harmonization stage. North America, on the other hand, is relying on the traditionally strong potential of individual companies and governments to be the driver of the necessary change.

Finally, one point of similarity in all three analyzed regions is the approach to resource management and recycling. All three regions have made an effort to establish strong recycling practices and frameworks regardless of the overarching frameworks, policies and legislations. Thus, this action can be considered as the first step towards a circular global economy.

CONCLUSION

Even while the Circular Economy is universally recognised as a new paradigm for sustainable development, it is evident that the world lacks a clear action plan for its ongoing implementation. The purpose of this article is to provide light on the disparities between North American, European, and East Asian methods of adopting the Circular Economy model. Utilizing regional reports, regulations, and strategies, this article provided the theoretical ideas of the Circular Economy and analysed the techniques followed in Europe, North America, and East Asia.

Available data indicate that regions widely differ in the approaches towards the Circular Economy transition. The European Union provides institutional means for developing the Circular Economy via broad frameworks, policies, and strategies, but it is up to individual member states to carry out the implementation. In contrast, whereas East Asia and North America have tremendous national implementation capacity, they lack regional governing structures to promote essential transformation.

In regard to the standardisation of circular products and services, the European Union has the authority to enforce it, although North America and East Asia do not. There are also differences in regional approaches to the mobilisation of digital, innovative, and cutting-edge technology. East Asia and North America lack the potential and infrastructure to deploy their inventive potential, but the European Union possesses both. Even while both regions promote and support innovative activity, individual governments are responsible for this sort of action. Lastly, there is a distinction in transition funding for the circular economy. Currently, the European Union has the greatest capital mobilisation potential, whereas East Asia is in the stage of legislative development and harmonisation. North America, on the other hand, relies on the historically robust potential of individual businesses and governments to achieve the essential transformation. However, there is one area of agreement throughout regions - regardless of the underlying frameworks, regulations, and laws, they have made efforts to build effective recycling practices and systems, and this can be considered as the initial step toward a circular global economy.

The conclusions of this paper are relevant for academic and business communities, as well as for policymakers. Scientifically, this paper contributes to an attractive and profound research area. Even though primarily theoretical, this paper provides a significant starting point towards the analysis of the regional differences in terms of the Circular Economy. This paper

aims to analyze and potentially narrow the gap between the regional approaches to the Circular Economy. Contribution to the business community can be seen through the indication of future development in the European, North American, and East Asian regions. Finally, perhaps the most significant contribution is to the policymakers. This research is an inquiry into the differences into regional approaches towards the implementation of the Circular Economy, and it can provide valuable insights and reference points for future policy improvements.

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CONTEMPORARY CHALLENGES OF SUSTAINABLE TOURISM DEVELOPMENT - THE ROLE OF REGIONALIZATION AND SMART SPECIALIZATION

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Abstract: *The development of regions must be guided by effective and efficient management with a focus on sustainable growth. Tourism, as one of the biggest drivers of economic development, requires the need to establish sustainable and responsible development, in order to preserve the essential values of the environment. In this context, sustainability, regionalization and smart specialization become key common threads calling for new approaches mitigating negative impacts, upscaling resilience capacity and boosting economic recovery in the post-pandemic era. The aim of this paper is to analyze the importance of the process of regionalization and smart specialization in improving the competitiveness and innovation of the tourist offer. Based on a review of the relevant literature, it is noticeable that regionalization and smart specialization are complementary to sustainable tourism development and can significantly contribute increasing the competitiveness of both of the whole region and all its parts. Tourism has many positive effects and contributes to the economic development of the areas that contain tourism destinations directly and indirectly. Well-known contributions of tourism, its contribution to forming the community's income, the generation of business and employment opportunities, are only a few of the aspects that show the part played by tourism in the overall economic development of an area. Modern conditions and use of information and communication technologies can significantly contribute to the impact of tourism. Through the integration of knowledge and innovations into the tourist products and services, based on sustainable tourism and connection with related sectors - smart specialization, the competitiveness of tourism and a certain region, can be improved.*

Keywords: *sustainable tourism development, regionalization, smart specialization, innovation.*

JEL Classification: Z30, Z32

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INTRODUCTION

Tourism is one of the largest and fastest growing sectors in the global economy bringing new opportunities for many countries, cities, and regions, while at the same time presenting many new challenges. In a market economy, the rapidity of technological change forces continuous adaptation as innovation and economic crises reshuffle the competitive standing and make tourism into a regionally-integrated and knowledge-intensive industry. Tourism is assumed as an activity deeply embedded into the characteristics of the territories, tourism development based on specific characteristics of different regions constitute prerequisites for the sustainability. Specific characteristics of the tourism sector, like co-spatiality, co-temporality and co-terminality emphasize territorial embeddedness, while making the tourism destination a repository of information about behaviors, needs, preferences and motivations of visitors (Romão, 2020).

The rapid development of tourism and the demand for constant growth is incompatible with sustainability goals, which is why it is necessary to include the concept of regionalization and smart specialization. The COVID-19 pandemic represented a historic moment for change, and especially for change in tourism. It opened the way to the necessary drastic revision and abandoning the path of unsustainability. Contemporary strategies and practices for tourism sustainable development tend to comprise role of regionalization and smart specialization in development.

Regionalization is a process of creating a new level in a state territorial organization, bridging national and local, establishing institutions with different degrees of responsibilities and authorities, and leading to the decentralized authority, with the aim of providing a better service with the citizens in the region (Schrijver, 2005). Regions should designate the areas in which they have a competitive advantage, and should encourage and promote innovations in these areas, on the basis of smart specialisation.

Smart specialization offers opportunities to modernize tourism development strategies, to link tourism with other sectors in a perspective of related variety, and to promote tourism innovation and sustainability (Del Vecchio, Passiante, 2017). Regionalization and smart specialization play an important role in improving the competitiveness of the Republic of Serbia, based on sustainability.

The aim of this paper is to analyze the importance of the process of regionalization and smart specialization in improving the competitiveness and innovation of the tourist offer. The specific goal of the paper is to point out the importance of using the concepts of smart specialization and regionalization in the improvement of Serbia's tourist offer, as well as to show the attitudes of the population of Serbia regarding the inclusion of these concepts in the sustainable and competitive development of tourism. In addition to the introduction and conclusion, the paper is structured in five parts. In the first part, an overview of the literature will be given, while in the second part, there will be given comparative analysis of Serbia and countries in the region. The third part of the work will show the position of the regions in Republic of Serbia based on the achieved results in tourism. In fourth part the methods of the work will be presented. The fifth part of the paper will be devoted to the presentation of data and research results.

LITERATURE REVIEW

In report on sustainable development, the United Nations Educational, Scientific and Cultural Organization (UNESCO) recommended the development of sustainable tourism practices, including replacing mass tourism with high-quality tourism (UNESCO, 2016). The goal of this strategy is to encourage the development of the quality of the tourist offer which implies high costs for tourists (Montanari, 2020) and policy makers.

In recent years, the smart specialization approach has been widely used in EU cohesion policy, driven by the ex-ante conditionality for countries or regions to develop smart specialization strategies (Benner, 2020). The process of Serbia's accession to the European Union will also involve the harmonisation with the strategies and measures used within the EU in order to strengthen its competitiveness. Smart specialisation implies the identification of unique characteristics and potentials of each country and region with emphasis on competitive advantages and gathering of regional stakeholders and resources around the vision of future based on excellence and achieving competitive advantage (Morgan, Kevin, 2015). The goal of smart specialization in tourism is not to make the economic structure of regions less diversified, but instead to leverage existing strengths, to identify hidden opportunities and to generate novel platforms upon which regions can build competitive advantage in high value-added activities (Balland, et. al. 2019).

As innovation can be thought of as a major driver of related variety, smart specialization can serve as a vehicle to promote tourism innovation, taking into account the specificities of innovation in the tourism sector. Further, promoting the tourism sector under smart specialization will have to consider aspects of tourism sustainability (Frenken, Van Oort, Verburg, 2007). Smart specializations strategies are making optimal utilisation of resources so they can produce the best economic outcomes.

The smart specialisation strategy (S3) was adopted in the Republic of Serbia (RS) at the beginning of March 2020, on the basis of the Law on the Planning System of The Republic of Serbia, and it was defined for the period 2020- 2027. The main aim of the strategy is to increase the competitiveness of economy in the Republic of Serbia, to contribute to the economic growth and social progress by conjoining research and innovation resources with priority fields of economy (Serbian Government, 2020).

Large regional development disparities, in addition to significantly reducing and slowing down economic growth, cause large demographic, social, security, and other problems (Nikolić, Filipović, Pokrajac, 2016). Therefore, it is necessary to invest in human resource development, build modern business, transport, telecommunications and digital infrastructure, so tourism would become sustainable and the engine of even regional development. The focus of policy makers must be on regional innovation tourism systems to implement research and innovation strategies. Smart specialization and regionalization in tourism of countries and regions is desirable since it might help them to better integrate into the global economic space. This approach is in accord with the modern transition to the sustainable economy that is marked by the regional and territorial specialization and digitalization and which constitutes the most popular and rapid pathways for the sustainable regional development.

Researchers have become increasingly more interested in studying the relationship between tourism specialization and regionalization and economic growth (Neves, Maças, 2008). Previous literature shows that tourism they have a positive and significant effect in many different areas of our economies and that the providers and users of tourist services are

increasingly interested and knowledgeable in these concepts. Huang et al. (2018) studied the dynamic evolution and synergy characteristics of regional tourism development pattern and evaluated the quality performance of tourism development process and the total performance of development results from the perspectives of “efficiency” and “performance. Matić, Đorđević, Vujić in research, conducted 2019 showed that claims related to regionalization in tourism, competitiveness, innovation, sustainable development and smart specialization, in most cases there is a consensus of key stakeholders and they have a positive attitude. Following these recommendations, our study aims to show attitude of stakeholders toward increasing the role of the concept of smart specialization and regionalization in the creation of the tourist offer of the Republic of Serbia.

THE POSITION OF THE REPUBLIC OF SERBIA ON THE TOURISM MARKET IN COMPARISON WITH COUNTRIES IN THE REGION

Competitiveness in tourism connects competitiveness with concepts of sustainability, smart destinations, especially in the European context (Cronjé, du Plessis, 2020). It is for this reason that the report on the competitiveness of Travel and Tourism was created by World Economic Forum, which indicates what factors are needed to enable the sustainable development of the tourism sector, which will further contribute to improving the competitiveness of tourism.

The competitiveness of Serbia as a tourist destination is shown using the Index of Competitiveness of Countries as Tourist Destinations, which is published every two years. According to the definition of the WEF (2020), the Tourism Sector Competitiveness Index represents "a set of factors and policies that enable the sustainable development of this sector, which further contributes to the level of development and competitiveness of the country". The aim of the index is to rank as many countries as possible according to the level of competitiveness of the tourism sector and to monitor the overall competitiveness, individual indicator categories and individual indicators, in relation to other countries and in relation to their own value in previous years (Radivojević, 2019).

Due to changes in the number of ranked interests, the movement in the ranking list is more difficult to compare, while the change in the score is a reference indicator. This index evaluates the favorable environment in the field of tourism and travel, infrastructure, but also the wealth of the country in natural and cultural resources. The data collection sources for creating the index are of two groups, one is represented by international institutions that provide data based on their statistical surveys, while the other data group consists of data obtained by surveying managers (World Economic Forum, 2021). According to the position of the World Economic Forum, countries that achieved a ranking above the 50th place can be considered as globally competitive tourist destinations.

Of particular importance for determining the real position of Serbia, as a tourist destination, on the regional and international tourism market is the assessment of the competitive position of Serbia's regional competitors in tourism. In the table 1. has been showed the trend of the Travel & Tourism index in Serbia and the country in the region in the period 2007-2021. year.

Table 1. Ranking of countries according to the The Travel & Tourism Competitiveness index

	Serbia	Slovenia	Bulgaria	Croatia	Romania	Montenegro	Albania	North Macedonia	BiH	Hungary
2007	61	44	54	38	76	61*	94	114	94	51
2009	88	35	50	34	66	52	90	80	107	38

* Serbia and Montenegro were still a union.

	Serbia	Slovenia	Bulgaria	Croatia	Romania	Montenegro	Albania	North Macedonia	BiH	Hungary
2011	82	33	50	34	66	36	71	76	97	38
2013	89	36	50	35	68	40	77	75	90	39
2015	95	39	49	33	66	67	106	82	/*	41
2017	95	41	45	32	68	72	98	89	113	49
2019	73	36	45	27	56	67	86	101	105	48
2021	73	39	47	31	59	70	87	104	108	48

Source: World Economic Forum

By observing the tourism competitiveness indicators of individual countries, given in the publication *The Travel & Tourism Competitiveness Report 2019*, it can be concluded that Serbia is insufficiently competitive as a tourist destination and that in all segments.

In this period, according to this index, the Republic of Serbia was ranked worse than Slovenia, Bulgaria, Romania, Croatia, Montenegro and Hungary, and better than Albania, North Macedonia and Bosnia and Herzegovina. Looking at the years, it can be concluded that in relation to the countries in the region, Serbia significantly improved position in 2021. Better ranking for 2007 should be interpreted in the context of the union of Serbia and Montenegro. The improvement of 12 positions is the biggest improvement recorded in 2021. year's report, and it is interesting that the countries of the region, Albania and Romania, recorded the same result along with Serbia. In the analysis of the creation of sustainable competitiveness, the authors generally agree that Serbia should emulate its neighbor Croatia, which bases its economic competitiveness on specialization and the development of regionalization.

THE POSITION OF THE REGIONS IN REPUBLIC OF SERBIA BASED ON THE ACHIEVED RESULTS IN TOURISM

Development of tourism with a regional approach, it is of particular importance for our country, which has very few tourist destinations that are capable of competing independently on the European market. Therefore, it would be necessary for the development of tourism to be based on the grouping of smaller destinations, which would jointly appear on the market as regional destinations, because in this way the tourist offer can be more complete and richer. The current situation regarding the achievement of results in the regions of the Republic of Serbia is shown by the analysis of the number of overnight stays of tourists by year in the period 2010-2021. year. The results are given in Table 2.

The presented results provide a basis for ranking the results of the region by category number of tourist overnight. It is noticeable that in all observed years and categories of tourists, the region of Šumadija and Western Serbia leads, followed by the Belgrade region, than the Vojvodina region, and at the last place is the region of Southern and Eastern Serbia. The data presented indicate the insufficient development of certain regions, which further implies the need to create strategies to improve the position of these regions in order to use their competitive advantages. Also, it is noticeable that concept of regionalization is still not sufficiently implemented.

* Insufficient data for this year so the data for this country is not included in the report from 2015.

Table 2. Overview of the number of tourist overnight stays by region in the period 2010-2021.

	Republic Serbia			Belgrade region			Region of Vojvodina			Region of Šumadia and Western Serbia			Region of Southern and Eastern Serbia		
	total	domestic	foreign	total	domestic	foreign	total	domestic	foreign	total	domestic	foreign	total	domestic	foreign
2010	95550	66370	29180	28812	11635	17177	12713	8509	4204	43353	37289	6064	10672	8937	1735
2011	113022	78519	34503	29503	10797	18706	13748	8518	5230	56789	49175	7614	12982	10029	2953
2012	132021	83908	48113	41785	15177	26608	15767	8549	7218	60211	50425	9786	14258	9757	4501
2013	118194	76275	41919	32515	10074	22441	16912	11171	5741	54843	44587	10256	13924	10443	3481
2014	125793	77030	48763	36295	9839	26456	19709	11990	7719	54132	43608	10524	15657	11593	4064
2015	137734	83247	54487	36349	8699	27650	22201	14032	8169	61597	49324	12273	17587	11192	6395
2016	150481	83743	66738	43671	9357	34314	23997	14693	9304	64611	49096	15515	18202	10597	7605
2017	158606	88312	70294	45811	8689	37122	22567	13328	9239	72936	55645	17291	17292	10650	6642
2018	176750	95308	81442	50744	10388	40356	26455	15373	11082	77327	57179	20148	22224	12368	9856
2019	177750	94811	82939	51720	11025	40695	25206	14353	10853	77265	56023	21242	23559	13410	10149
2020	220733	113959	106774	65246	12547	52699	30699	17320	13379	94962	67966	26996	29826	16126	13700
2021	131586	104909	26677	18962	7256	11706	17051	12575	4476	77838	69722	8116	17735	15356	2379

Source: Republic Office for Statistics of the Republic of Serbia

METHODOLOGY

The present research can be classified as a descriptive-analytical study. In order to test the hypotheses of the research, an online questionnaire was conducted to examine trends. A quantitative method of data collection was used with a sample of 50 people aged 18 to over 60 years. The investigation was divided into four parts. The first part gathered demographic data. The second part examined respondents' opinions about the use of concept of smart specialization in Serbian tourism. Part third examined the obstacles facing the implementation of mentioned concept. The fourth part was about the knowledge of the respondents about the application of concept of regionalization in the tourist offer of Serbia.

DATA AND RESULTS

The first group of questions dealt with personal data. The result showed that 63% were women while 37% were men. Concerning the environment in which they grew up, 35% were from rural, 65% were from urban environment. As for age groups, results are shown on Figure 1.

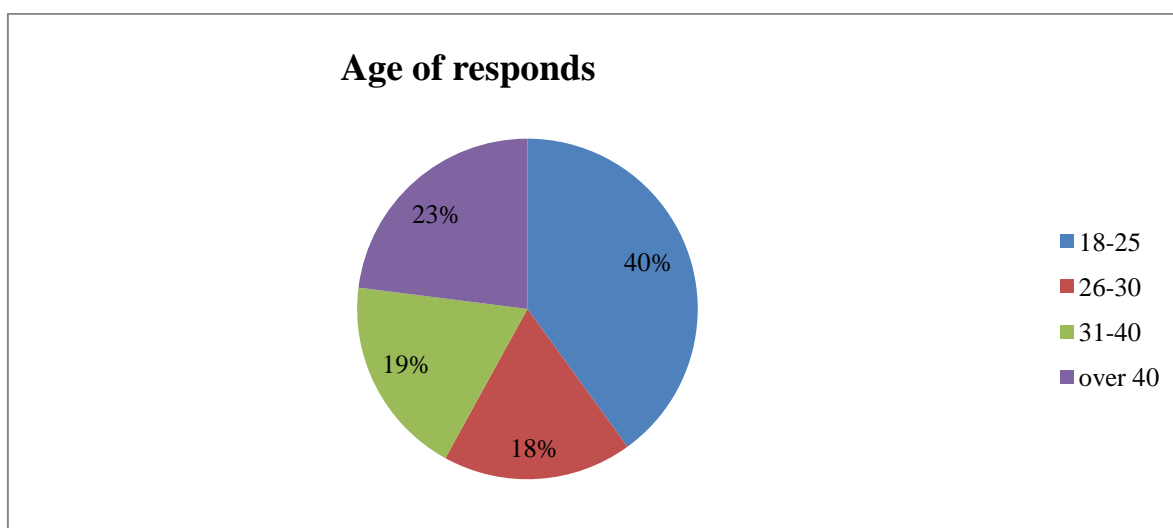


Figure 1. Age structure of respondents

Source: Author

When asked about the importance about the use of concept of smart specialization in Serbian tourism, the majority of respondents were in favor of usage. Results are shown on Figure 2.

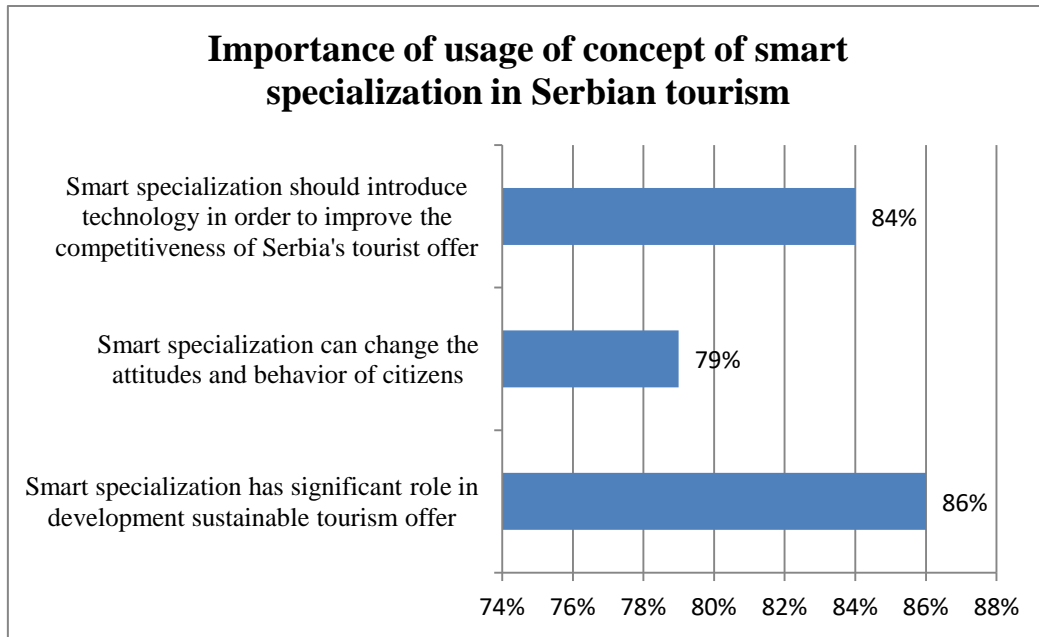


Figure 2. Attitude of the respondents about the use of concept of smart specialization in Serbian tourism

Source: Author

When asked about the key issues facing smart specialization, most respondents agreed that funding is the biggest obstacle. The lack of capacities come second and lack of experiences come fourth, community acceptance come fifth.

The last question was about the knowledge of the respondents about the application of concept of regionalization in the tourist offer of Serbia. Figure 3 shows the results.

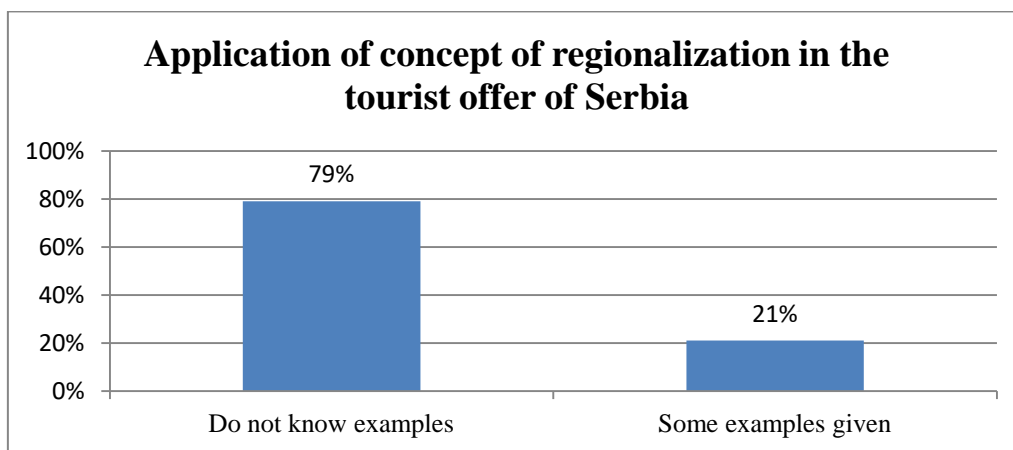


Figure 3. Attitude of the respondents about the knowledge of the respondents about the application of concept of regionalization in the tourist offer of Serbia

Source: Author

The stated examples were such as the wine route, the roads of Nikola Tesla, etc. The conducted research showed that respondents are generally aware of the role that new concepts can play in improving the competitiveness of Serbia's tourist offer.

CONCLUSION

In the context of long-term sustainability and competitiveness, it is necessary to establish a suitable balance between the environmental, economic and socio-cultural aspects of tourism development. With the advancement of technology and the growth of the tourist market, the growth of tourism has changed in a qualitative and quantitative sense.

The strategy of smart specializations, as a basis for future innovations, should be based on available resources and potentials, technological specializations and identification of competitive advantages. Through the strategy of smart specializations, investments in the field of research and technology are stimulated development and innovation, with the aim of increasing competitiveness at the level of the regions of the country.

In order to clearly define a smart specialization strategy, an adequate review of the development of the region or country is needed, followed by a review of the development of the management system, the identification of the areas of greatest strategic potential by entrepreneurs and the implementation of the smart specialization policy to increase the knowledge-based potential. Smart and sustainable specialization of regions and territories is crucial for achieving their competitiveness and balanced sustainable development.

Managing tourism development carefully and with a long-term focus on careful diversification and linkage with other innovative sectors of the economy is strategic path and direction of Serbia, therefore it is necessary, and smart specialization and regionalization might offer an opportunity, to develop such a focus in development strategies.

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FINANCIAL DEVELOPMENT, TRADE OPENNESS AND ECONOMIC GROWTH: PANEL ANALYSIS OF SELECTED CEE COUNTRIES

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***Abstract:** The aim of the paper is to examine the impact of trade openness and financial development measured by domestic credit to the private sector by banks on economic growth in selected Central and Eastern European countries (CEEC). The analysis covered 19 years from 2000 to 2018. The following countries were analyzed: Bulgaria, Croatia, Czech Republic, Hungary, Poland, and Romania. Cointegration between variables is confirmed by the Westerlund cointegration test. Based on the Mean Group (MG) estimator, outcomes exhibit that the trade openness in the long run has a positive effect on economic growth, while domestic credit to the private sector by banks negatively affects growth in the observed period. The negative impact of financial development on economic growth is possible if the expansion of credit to the private sector is not accompanied by adequate increase in real output.*

***Keywords:** Financial Development, Trade Openness, Economic Growth, Panel ARDL*

JEL Classification: C33, F10, O11

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INTRODUCTION

Endogenous growth theories, which seek to demonstrate where the economy can generate growth despite the absence of exogenous technological progress, presume that trade and finance can be significant determinants of production because their impact is not only short-term but also generates a substantial change in the growth trajectory (Kawa et al., 2020). As a result of numerous empirical studies, it is generally believed that trade openness and financial development stimulate economic growth, because outward-oriented economies with a developed financial system consistently have higher rates of economic growth than inward-oriented economies.

Investigating the main drivers of economic growth is one of the fundamental concerns of development economics. The literature has empirically explored the relationship and the direction of causality between financial development, international trade and economic growth. An intense discussion has taken place in macroeconomics over the effects of trade and financial development on economic growth. The argument has drawn more attention in both theoretical and empirical literature, but it is still up for debate. Numerous studies on the connection between financial development, trade liberalization, and economic growth have been undertaken throughout the years. These studies include cross-country and regional comparisons, examination of particular economies, and country-by-income comparisons. The literature generally comes to the conclusion that trade liberalization and financial development are important elements in promoting economic growth (Hong et al., 2018).

Hence, the aim of the paper is to examine the impact of trade openness and financial development measured by domestic credit to the private sector by banks on economic growth in selected CEEC. Following the aim of the research, two main hypotheses can be derived:

H1: An increase in trade openness incites economic growth in the analyzed CEE countries.

H2: An increase in domestic credits to the private sector stimulates economic growth in the analyzed CEE countries.

The rest of the article is organized as follows: Section 2 presents the review of the past literature. Section 3 illustrates the used methodology. Section 4 provides results and discussion. At last, conclusions are summarized, and some basic policy recommendations are offered in section 5.

LITERATURE REVIEW

The financial aspect of economic development has long been neglected in economic studies, and subsequent research has shown contradictory results. The connection between financial development and economic growth was first established by Goldsmith (1969), McKinnon (1973), and Shaw (1973). Patrick (1966) developed two hypotheses analysing causality between financial development and economic growth: the supply-leading hypothesis and the demand-following hypothesis. Thus, two directions of future studies were determined. The supply-leading hypothesis implies that financial development leads to economic growth. If economic growth causes financial development, it is the demand-following hypothesis.

Relationship between trade openness and economic growth has been examined in many studies. There are mixed results. Trade openness has been linked to economic growth, according to some academics. However, others have claimed the contrary, and yet other researchers have not been able to establish a link between these two factors. Ramanayake and Lee (2015) and Keho (2017) argued that economic growth is driven by trade openness. On the

other side, Sarkar (2008) claimed that there are not positive long-run relationship between trade openness and economic growth in 51 countries in period over 1961-2002.

Companies can access to new technology through international trade which causes productivity increase. It encourages specialization in research-incentive products. At the same time, multinational companies have to be more competitive in order to thrive in international trade as opposed to domestic markets. This kind of process encourages economic growth. Contrarily, other research contends that trade openness may be detrimental to economic expansion. International markets enhance competition, which lowers predicted earnings and deters innovation and R&D. Additionally, when nations open to the rest of the world, they could choose to specialize in fields where they have a disadvantage or where technical advancements or experiential learning have reached their limits (Polat, 2019, 120).

Ayad and Belmokkadem (2017) examined the causal relationship between financial development, trade openness and economic growth for 16 MENA countries using panel co-integration techniques from 1980 to 2014. The results show that financial development and trade liberalization does not have a significant impact on economic growth. To determine which proxy measures are most accurate, Hassan et al. (2007) used an unbalanced panel regression and variance decomposition to provide new evidence on the significance of financial development in accounting for economic growth. The results indicate considerable correlations between these factors and economic growth in high-income OECD nations but not in the regions of South Asia and Sub-Saharan Africa.

D'Onofrio and Rousseau (2018) examined relationship between financial development and trade and its impact on economic growth in 17 countries during first globalization wave (1850-1929) applying cross-country dynamic panels, VARs and VECMs. The results indicate that financial development led both trade and growth, while trade largely responded to financial development. Omoke et al. (2022) investigated impact of financial development, trade openness, and environmental degradation on economic growth in Venezuela from 1980 to 2019. They applied the nonlinear autoregressive distributed lag model. The results show that the variables have cointegration. Additional research results confirmed that Venezuela's deteriorating financial development impedes economic growth by demonstrating long-term negative impact of negative shocks to financial development on long-run economic growth. Additionally, both positive and negative shocks to trade openness have a long-term beneficial effect on economic growth. In contrast, short-term negative shocks to financial development have a negative impact on economic growth, but long-term negative shocks to financial development have a positive influence. They suggested the development of the financial sector and the trade restrictions elimination when this is practical to improve economic growth. Tatar et al. (2022) studied the effects of financial development and trade openness on economic growth in Turkey from 1960 to 2017 by applying Fourier-based stationarity test and its complementary Fourier-based cointegration test. They found long-term cointegration relationship between variables. The conclusion is that there is a one-way causal relationship between financial development and trade openness as well as between financial development and economic growth. Contrast with that, Polat (2019) conducted dynamic panel data of 41 developing countries from 1995 to 2014 and did not find any impact of financial development or trade openness on economic growth.

When it comes to European countries only a few studies have concentrated on the transition economies from Central and Eastern Europe. Many studies primarily finding a positive relationship between a number of financial indicators and economic growth (Berglöf & Bolton, 2002; Bonin & Wachtel, 2003; Kenourgios and Samitas, 2007; and Fink et al., 2009). Dritsaki and Dritsaki (2013) investigate the relationship between financial development, trade

openness and economic growth in Bulgaria by applying cointegration analysis and Granger causality test. Study confirmed long-run relationship between financial development, trade openness and economic growth. Furthermore, There is a high level of confidence that a greater degree of openness is related with improved economic performance in Bulgaria. Using a panel dataset of 26 European Union nations from 1990 to 2016, Asteriou and Spainos (2019) examined the link between financial development and economic growth in light of the financial crisis from 2008. Caporale et al. (2015) analysed the relationship between financial development and economic growth in 10 new EU members using a dynamic from 1994 to 2007. Results showed that the stock and credit markets does not have impact on economic growth, but it is discovered that the banking sector has experienced faster development.

METHODOLOGY

The analysis takes into consideration the relationship between economic development (measured by GDP per capita - variable GDPPC), the openness of the economy (measured by trade openness - variable TO), and financial development (measured by domestic credit to the private sector - variable DCPS). The analysis covered 19 years from 2000 to 2018. The following countries were analyzed: Bulgaria, Croatia, Czech Republic, Hungary, Poland, and Romania. The data were taken from the World Bank Database. Descriptive statistics of the variables and correlation matrix are exhibited in Table 1 and 2, respectively. Except for the DCPS series, the Jarque-Bera statistic in Table 1 reveals the absence of normal distribution for all series. The cause might be a cross-sectional and heterogeneous characteristics of the data, which are corrected through the examinations in panel data analysis.

Table 1. Descriptive statistics of the variables

	GDPPC	TO	DCPS
Mean	3.540289	103.9341	42.96410
Median	4.112087	93.96496	45.05475
Maximum	11.14421	168.4897	70.85333
Minimum	-7.262149	48.52133	7.125225
St. Dev.	3.165445	33.05955	15.93682
Skewness	-0.820510	0.447210	-0.229365
Kurtosis	4.780328	2.067348	2.313535
Jarque-Bera	27.84695	7.931672	3.237833
Probability	0.000001	0.018952	0.198113
Obs.	114	114	114

Source: Authors' calculations

The variables are not highly correlated with each other therefore using variables in one regression equation will not lead to a problem of multicollinearity.

Table 2. Correlation matrix of the variables

	GDPPC	TO	DCPS
GDPPC	1		
TO	-0.1693	1	
DCPS	-0.4573	0.3721	1

Source: Authors' calculations

In the article, two tests were used that correspond to the characteristics of the analyzed panel ($N < T$) - Breusch–Pagan LM and Pesaran-scaled LM test. Given the high degree of interactivity in the functioning of analyzed economies, it is assumed that the data will be cross-sectionally dependent. Consequently, a second-generation unite root test, Cross-sectionally ADF (CADF) test and the Cross-sectional augmented IPS (CIPS) test will be used. Westerlund's error-correction-based panel cointegration tests was used in the paper to test for cointegration between variables. If cointegration is confirmed, short-term and long-term relationships between variables will be established through the ARDL model, which will be estimated using the Mean Group (MG) or Pooled Mean Group (PMG) estimators. The Hausman test will be used to decide between MG and PMG estimators.

RESULTS AND DISCUSSION

Table 3. shows the results of cross-sectional dependence and unit root tests. The cross-sectional dependence can be confirmed based on the Breusch-Pagan LM and Pesaran-scaled LM tests. Furthermore, all variables are not stationary at level besides the GDPPC (by the CIPS test) and DCPS (by the CADAF test). Different orders of integration of variables and occurrence of cross-sectional dependence support the use of the Westerlund cointegration test and the panel ARDL model.

Table 3. Cross-sectional dependence and unit root tests results

Variable	GDPPC	TO	DCPS
Breusch–Pagan LM	120.8042 (0.0000)	194.6544 (0.0000)	162.3475 (0.0000)
Pesaran-scaled LM	19.31712 (0.0000)	32.80025 (0.0000)	26.90186 (0.0000)
CIPS (level)	-3.060*	-0.894	-1.688
CIPS (first difference)	-5.091*	-2.937*	-2.371*
CADF (level)	-2.193	-1.950	-2.406*
CADF (first difference)	-3.910*	-2.810*	-3.958*
<i>Notes: Figures in the parenthesis are p-values, * symbolizes the rejection of the null hypothesis of unit root</i>			

Source: Authors' calculations

In table 4. the null hypothesis of no cointegration between the variables is rejected at the 1% significance level according to the p values of Gt, Ga, Pt, and Pa statistics, which imply the equilibrium association among the variables. Results denote the appearance of the cointegration relationship between economic growth, trade openness, and financial development in the entire panel.

Table 4. The Westerlund cointegration test results

	Test	Value
Westerlund cointegration test	Gt	-2.045***
	Ga	-3.371***
	Pt	-3.965***
	Pa	-4.333***
<i>Notes: ***, **, and * represent 1, 5 and 10 percent level of significance, respectively.</i>		

Source: Authors' calculations

The results of the Hausman test indicate that the MG estimator is more suitable for further panel analysis since the long-term homogeneity restrictions are rejected. Accordingly, Table 5. contains the results of the Hausman test and the Mean Group Regression results.

Table 5. Hausman test and Mean Group Regression results

Dependent variable	GDPPC ARDL(1 0 0)
Long-run coefficient	
TO	0.1148453***
DCPS	-0.2532225***
Short-run coefficient	
ECT	-0.7419893***
Δ TO	0.2323267***
Δ DCPS	0.1262497**
Hausman test value	9.96
P-value	0.0069
<i>Notes: ***, **, and * represent 1, 5 and 10 percent level of significance, respectively. The optimal lag length is determined by Schwarz Information Criterion</i>	

Source: Authors' calculations

The results reveal a positive impact of trade openness on economic growth in both the long and short term, an increase in trade openness of 1% enhances economic growth by 0.11% in the long run and 0,23% in the short run. The positive impact of trade openness on economic growth is not unexpected and is consistent with the results obtained by Silajdzic and Mehic (2018). The authors provide strong evidence for the positive relationship between trade intensity measures and economic growth, emphasizing the benefits of trade integration through increased imports from technologically advanced EU countries to less developed CEE economies. In the last two decades, the CEE countries have pursued a broad trade liberalization policy, opening their markets to outside participants. The trade liberalization that accompanied their accession to the EU was the reform that had the most profound impact on these economies (Stojčić et al., 2018). Iyke (2017), analyzing the impact of trade openness on economic growth in 17 CEE countries from 1994 to 2014, points out that trade openness is a good predictor of economic growth in these countries. On the other hand, a 1% increase in financial development measured by domestic credit to the private sector decreases economic growth by 0.25%, while in the short term, this impact is positive. One of the reasons may be the existence of a certain financial threshold in the relationship between financial development and economic growth, so a growth in credit in the short term that is below this threshold leads to an increase in economic growth (Law & Singh, 2014). However, a further increase in credit will lead to a negative impact of financial development on economic growth. This outcome is consistent with the result of Tang's (2015) study. Despite increased bank credit growth in CEEC, the author finds that bank credit flows harm economic growth. The growing reliance of CEEC banks on EU bank capital supply may be the cause of the negative effect, as bank credits may not be managed for productive investments due to EU bank dominance. Also, the negative impact of financial development on economic growth is possible if the expansion of credit to the private sector is not accompanied by adequate increase in real output. From Table 5. it can also be seen that the speed of adjustment (ECT) is negative and statistically significant, which indicates that there is a long-term equilibrium relationship between financial development, trade openness, and economic development in the observed CEE countries. The results confirm the first hypothesis, which assumes that increasing trade openness incites economic growth. The second hypothesis can be partially

accepted since the increase of domestic credits to the private sector in the short term has a positive impact on economic growth, while in the long term, this impact becomes negative.

CONCLUSIONS AND RECOMMENDATIONS

The article includes an analysis of the impact of trade openness and financial development measured by domestic loans to the private sector on economic growth in 6 CEE countries, viz Bulgaria, Croatia, the Czech Republic, Hungary, Poland, and Romania. The paper includes an analysis of the impact of trade openness and financial development measured by domestic loans to the private sector on economic growth in 6 CEE countries, viz Bulgaria, Croatia, the Czech Republic, Hungary, Poland, and Romania. Analysis of the long-term relationship between variables was considered using Westerlund's error-correction-based panel cointegration tests. Test outcomes established the presence of the cointegration relation between trade openness, domestic loans to the private sector, and economic growth in the complete sample of countries. Furthermore, the short-term and long-term impacts of trade openness and the volume of domestic loans to the private sector on economic growth were analyzed using the MG estimator. The long-term aspect of the study showed the positive impact of trade openness and the negative effect of financial development on economic growth in the analyzed countries. The results of the short-term analysis revealed a significant positive impact of trade openness and financial development on economic growth in the entire panel.

The positive impact of trade openness on economic growth is not unexpected and has been confirmed by numerous empirical studies in CEE countries, as highlighted in the results and discussion section. Furthermore, the results suggest that more finance harms economic growth in the observed countries. Knowing the optimal level and efficient channeling of financial resources for productive activities are important for ensuring the efficiency of financial development and positive impact on economic growth (Law & Singh, 2014).

One of the limitations of the analysis is the inclusion of years of economic crisis. Studies conducted by Law and Singh (Law & Singh, 2014), and Arcand et al. (2015), which takes into account the years of crisis, reveals that more finance discourages economic growth.

As it was pointed out in the paper that the possible reason for the negative impact of financial development on economic growth is the existence of a certain financial threshold, the recommendation for further analysis can be oriented towards analyzing the extent of the financial threshold in the mentioned countries.

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MARKET CONCENTRATION AND FOREIGN DIRECT INVESTMENT IN THE BANKING SECTOR OF WESTERN BALKAN COUNTRIES

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Abstract: *The banking sector in Western Balkan countries characterizes the transition from state-owned banks to private and mostly foreign-owned ones. Therefore, the aim of the paper is to examine the relationship between market concentration and foreign direct investment (FDI) in the banking sector of Western Balkan countries. The annual data for five Western Balkan (Serbia, Albania, Bosnia and Herzegovina, North Macedonia, and Montenegro) countries from 2000 to 2020 were analyzed using the autoregressive distributed lag approach (ARDL). The results show a significant positive relationship between market concentration and FDI in the long run while a significant negative relationship in the short run. It means that the FDI worsens competition in the long run while improving competition in the short run in Western Balkan countries. Policymakers and antitrust authorities in the Western Balkans need to devise a policy to attract FDI, mainly greenfield investments, that will reduce the negative effects of FDI and make it positive in the long run.*

Keywords: *market concentration, concentration ratio, foreign direct investment, banking*

JEL Classification: *G15, G20, G21*

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INTRODUCTION

The impact of FDI on the market concentration of the host country is still an under-researched area, as there are two opposing views on this impact. The first point of view considers that by entering the domestic market, FDI reduces market concentration and thus improves conditions of competition (Blomstrom and Kokko, 1997; Dunning and Lundan, 2008). According to another point of view, FDI can influence the increase of market concentration and thus worsen the conditions of competition. A negative impact on the conditions of competition may be because companies that enter the domestic market have specific advantages, which allow them to create barriers to entry and eliminate existing, often insufficiently efficient competition from the market (crowding out effect) (Dunning and Lundan, 2008; Franco and Gelubcke, 2013; Rutkowski, 2006). In these cases, Singh (2011) sees the need to implement a quality competition policy to mitigate the unwanted outcomes of these activities. The process of crowding out can be followed by the later "closing" of the market and the use of the dominant position thus acquired for the realization of monopoly extra profits.

According to the UNCTAD report, if TNCs enter the market through greenfield investments, there will most likely be an increase in competition in the short term due to the increase in the number of firms in the market. On the contrary, if TNCs enter the market of the host country in the form of acquisitions or mergers, the number of firms on the market does not change and this change in the short term does not affect the market concentration and the conditions of competition. Acquisitions can prevent an increase in market concentration when a takeover prevents the closure of the acquired firm. The effects of FDI on the market concentration in the host country also depend on the influence of TNCs on entry barriers. Barriers to entry can increase if TNCs, applying modern technologies, organizational and other advantages, achieve a competitive advantage over domestic companies. Blomstrom (1986) believes that TNCs, due to their financial power, can bear losses in the short term until they overcome the potential advantages of domestic firms, which makes it easier for them to fight for market share. Foreign companies can also influence the reduction of entry barriers. If the market of the host country already has a monopoly market structure, the entry of foreign companies can increase competition, directly or indirectly, through the spillover effect, which can lead to an increase in the productivity of domestic companies (Blomstrom, 1986).

Theoretical and empirical research on the impact of FDI on market concentration and therefore on the conditions of competition indicates the importance of this problem area in modern economic theory, especially in the part that concerns industrial organization. Creating an environment that is suitable for attracting FDI is one of the priorities of every country, especially developing countries because FDI changes market structures in host countries. Bearing in mind the importance of FDI both for the development of national economies and for the market concentration and conditions of competition, the research is focused on examining the impact of FDI on the market concentration and indirectly competition in the banking sector of the Western Balkan countries. Therefore, the aim of the paper is to examine the relationship between market concentration and foreign direct investment (FDI) in the banking sector of Western Balkan countries. The following hypothesis was tested in the paper in the long and short-run: Foreign direct investment (FDI) negatively impact market concentration in the banking sector of Western Balkan countries.

The paper is structured as follows. Besides Introduction and Conclusion, the paper has three sections. Section one provides a literature review of the relationship between market concentration and FDI. Section two explains the methodology and data. Section three shows results about the effect of FDI on market concentration and discusses the results.

LITERATURE REVIEW

Despite the importance of the issue itself, in the literature, no agreement has yet been reached on the impact of FDI on the market structures of the host country. The existing empirical studies on the impact of FDI on the market concentration of the host country show that the growing inflow of FDI affects changes in the market structure of the host country by improving or worsening the conditions of a competition (Dunning and Landan, 2008; Forte and Sarmento, 2012; Rutkowski, 2006; Ames and Roberts, 2005). Most empirical studies on the relationship between FDI and the market concentration of the host country refer to the manufacturing industry (Forte and Sarmento, 2012; Singh, 2011; Rutkowski, 2006; Adam and Khalifah, 2012; Yun and Lee, 2001), but some studies refer to the banking sector (Cho, 1990; Sathye, 2002; Mulyaningsih; 2014).

Cho (1990) examined the impact of FDI on the level of market concentration in the Indonesian banking market. The research was carried out from 1974 to 1983. The concentration ratio of the four largest banks in Indonesia (CR4) was used as the dependent variable, while the volume of FDI was used as the independent variable. The results of the research showed that the increase in the volume of FDI affects the decrease in the level of market concentration in the Indonesian banking sector.

Driffield (2001) examined the impact of FDI on the level of market concentration in the manufacturing industry of the United Kingdom from 1983 to 1992. Using econometric techniques (SEM - Simultaneous Equation Method), he proved that the entry of TNCs reduced the level of market concentration and increased competition in the manufacturing industry of the United Kingdom. Forte and Sarmento (2012) examined the effects of FDI on market structures in the Portuguese manufacturing industry using data from 2006 to 2009 and applying panel analysis. The concentration ratio of the four largest firms (CR4) was used as a dependent variable and measure of market concentration, while the share of foreign companies in the total sales of the manufacturing industry was used as an explanatory variable to approximate FDI. In addition, the following variables are included in the analysis: market size, market growth rate, economies of scale, etc. The results of the research showed that with an increase in the volume of FDI, there is a decrease in the level of market concentration.

Bourlakis (1987) also examined the impact of FDI on the level of market concentration in the Greek manufacturing industry from 1975 to 1979 and found that FDI had the effect of increasing the level of market concentration in this industry. This author also believes that transnational companies influence the increase in the level of market concentration because they prevent the entry of new firms and increase entry barriers. In this way, their influence is negative on the conditions of competition. However, it is particularly noticeable that the entry of TNCs has increased competition in developed countries, primarily because domestic companies in those countries have already applied modern technology in production, organization and management so that they can compete with transnational companies by improving their performance. Yun and Lee (2001) investigated the impact of FDI on the level of market concentration in South Korea's manufacturing industry from 1991 to 1997 and concluded that higher FDI inflows increased the level of market concentration.

Rutkowski (2006) determined the negative impact of FDI on the level of market concentration in the manufacturing industry of 13 countries of Central and Eastern Europe using data for the year 2001, that is, with an increase in the volume of FDI, there is a decrease in the level of market concentration. Ames and Roberts (2005) determined that there is no impact of FDI on the level of market concentration in the Polish manufacturing industry using the method of instrumental variables.

Panjaitan et al. (2016) investigated the impact of FDI on the level of market concentration in the Indonesian banking sector from 2005 to 2014 using the participation of foreign banks in the total assets of the banking sector as a measure of FDI and the concentration ratio of the three largest firms (CR3) as a measure of the level of market concentration. The results showed that an increase in FDI by one unit leads to a decrease in CR3 by 0.35 units. Lundin et al. (2007) examined the impact of FDI on the level of market concentration in the Chinese manufacturing industry. The analysis was performed for the period from 1998 to 2004. The research results showed that the inflow of FDI contributed to the increase of competition in the Chinese manufacturing industry.

Newfarmer (1979) found a positive relationship between FDI and the level of market concentration in the Brazilian industry, specifically emphasizing that TNCs used lower price strategies to achieve a dominant market position. Singh (2011) examined the impact of FDI on the level of market concentration in India's manufacturing industry over the period 2001 to 2006 using panel regression analysis. The concentration ratio of the three largest companies (CR3) was used as a dependent variable in this research, while the participation of foreign companies in total industry sales and the market growth rate were used as explanatory variables. The research results showed that there is a statistically significant impact of FDI on increasing the level of market concentration. Lall (1979) studied the impact of FDI on the level of market concentration in the Malaysian manufacturing industry and concluded that the presence of TNCs affects the increase in the level of market concentration and thus distorts the conditions of competition.

Mulyaningsih (2014) attempted to determine the relationship between FDI and competitive conditions in the Indonesian banking sector in the period from 1980 to 2010. He used the Vector Error Correction Model (VECM) to analyze the data, finding that there is a long-term relationship between competition and FDI in Indonesia's banking sector. In addition, the author confirms that if there is a greater number of banks on the market and a favourable macroeconomic environment, then there will be an increase in competition in this sector. Wu and Tu (2014) examined the effects of FDI on the level of market concentration in the Chinese port industry in the period from 1991 to 2011 and found that the inflow of FDI significantly increases the level of market concentration in this industry.

Sathye (2002) investigated the impact of FDI on the level of market concentration in the Indian banking sector for the years 1997 and 1998, where the Herfindahl-Hirschman Index (HHI) was used as the dependent variable and concentration measure, and a dummy variable which shows whether the bank is foreign or domestically owned (1 – foreign bank, 0 – domestic bank) was used as the explanatory variable. The results of this research showed that there is no statistically significant impact of FDI on the level of market concentration.

Radulović (2020) examined whether there is a relationship between foreign direct investments and the level of market concentration in the financial leasing sector of the Republic of Serbia. Quarterly data were used for the period from the first quarter of 2006 to the first quarter of 2019. The autoregressive distributed lag model (ARDL) and bounds test were used for data analysis. The results showed that there is a negative relationship between FDI and the level of market concentration in the financial leasing sector of the Republic of Serbia in the long term, which means that the conditions of competition have improved in this sector. In the short term, no statistically significant relationship between FDI and the level of market concentration.

Radulović (2018) also examined the relationship between foreign direct investment and market structure in the Serbian automotive industry. The concentration ratio of the three companies was used to measure market concentration. Regression analysis was applied to

analyze annual data from 2006 to 2016. The results showed that there is a statistically significant and positive relationship between FDI and the level of market concentration in the Serbian automotive industry. If FDI changes by 1%, the level of market concentration will increase by 0.13%, with all other conditions remaining unchanged. This means that an increase in the inflow of FDI in the Serbian automotive industry will lead to a decrease of competition.

Kastratović (2018) investigated the impact of FDI on the level of market concentration in the manufacturing industry of Bosnia and Herzegovina. The ordinary least squares (OLS) method was used for data analysis, and 21 sectors of the manufacturing industry of Bosnia and Herzegovina, i.e. 4924 companies, were included in the analysis. Data for 2016 were used. The results suggest that the impact of FDI on market concentration can best be described as a convex function, with FDI having a statistically significant effect on market concentration as measured by the Herfindahl-Hirschman index. A positive impact on the level of market concentration, and thus a negative impact on the conditions of competition, was determined.

According to the aforementioned empirical research, it can be concluded that the impact of FDI on the level of market concentration differs depending on the observed country and market. The literature that deals with researching the impact of FDI on the market structure of the host country are related to both the markets of developed countries and the markets of developing countries (Lall, 1979; Driffield, 2001; Yun and Lee, 2001; Forte and Sarmiento, 2012; Singh, 2011; Rutkowski, 2006; Adam and Khalifah, 2012; Ames and Roberts, 1987; Blomstrom, 1987; Willmore, 1987; Petrochilos, 1989; Sathye, 2002). Thus, some studies have shown that FDI affects the reduction of the level of market concentration of the host country and the improvement of competition conditions (Orazlin and Dulambaeva, 2013; Cho, 1990). The conclusions are not unique.

DATA AND METHODOLOGY

The annual data for five Western Balkan (Serbia, Albania, Bosnia and Herzegovina, North Macedonia, and Montenegro) countries from 2000 to 2020 were analyzed. Data were retrieved from World Bank and National banks. The model was developed according to previous research Cho (1990) and Radulović (2020). The following equation sets the model:

$$CR5_{it} = f(FP_{it}, MG_{it}) \quad (1)$$

$$CR5_{it} = b_0 + b_1 * FP_{it} + b_2 * MG_{it} + \varepsilon_{it} \quad i = 1, 2, ..5; t = 2000, ..., 2020 \quad (2)$$

where $CR5_{it}$ is the concentration ratio of the 5 largest banks in i country in t period; FP_{it} is share of foreign banks in the total assets of the sector in i country in t period; MG_{it} is market growth - the growth rate of total assets in i country in t period; ε_{it} error term of i country in t period.

Descriptive statistics measures were used to describe the variables CR5, FP, and MG. A cross-section dependence test was used to examine if there is cross-section dependence in the time series. The second generation of unit root tests (Im, Pesaran, and Shin) was used to determine the variables' order of integration and get unbiased estimations (Pesaran, 2007). Kao's cointegration test (Kao & Chiang, 2000) was used to determine whether there is cointegration among variables. Auto-Regressive Distributed Lag (ARDL) approach was used for data analysis (Pesaran et al., 1999).

RESULTS AND DISCUSSION

Table 1 shows the descriptive statistics for all variables in the study from 2000 to 2020. The mean CR5 is 79.19 and ranges from 49.43 (Serbia) to 100.00 (Albania and Montenegro). The mean FP is 82.90 and ranges from 38.00 (Serbia) to 93.50 (Bosnia and Herzegovina). It means that in the observed period from more than a third of the banking sector and above 90% of the banking sector was in foreign ownership. The mean growth of total assets of the banking sector is 9.41 and ranges from -1.27 (North Macedonia) to 48.66 (Serbia).

Table 1. Descriptive statistics

	CR5	FP	MG
Mean	79.19	82.90	9.41
Standard deviation	14.16	12.96	10.46
Minimum	49.43	38.00	-1.27
Maximum	100.00	93.50	48.66
Number of observations	105	105	105

Source: Authors' calculations in EViews 12

Note: CR5 – concentration ratio for 5 largest banks; FP – foreign presence, the share of foreign banks in the sector's total assets; MG – market growth, total assets of banking sector growth

The cross-section dependence test (Pesaran CD test) was used to test the null hypothesis that there is no cross-section dependence (correlation) in the time series (Pesaran, 2004). It is important to test for the cross-sectional dependence in a panel analysis because ignorance of the cross-section dependency leads to substantial bias in estimations. The results showed that there is a cross-section dependence in time series (Table 2). The results of the cross-section dependence test (Pesaran CD test) showed that changes in CR5, FP, and MG that occurred in any of the observed countries affected other countries as well.

Table 2. Results of cross-section dependence test

Variable	t
CR5	4.39***
FP	4.07***
MG	2.86***

Source: Authors' calculations in EViews 12

Note: CR5 – concentration ratio for 5 largest banks; FP – foreign presence, the share of foreign banks in the sector's total assets; MG – market growth, total assets of the banking sector

*** $p < 0.01$; ** $p < 0.05$; * $p < 0.10$

Since the results of the Pesaran CD test showed that there is a cross-section dependence in all-time series, the second generation of unit root test (CIPS cross-section Im, Pesaran, and Shin) was used to determine the order of integration of variables and to get unbiased estimations (Pesaran, 2007). The panel unit root test results showed that the series is not integrated in the same order. Some series are stationary at level $I(0)$, while others are stationary at the first difference $I(1)$. CR5 and FP are stationary at level $I(1)$, while MG is stationary at level $I(0)$. The results of the panel unit root test are shown in Table 3.

Table 3. Unit root test results

Variable	Trend	Intercept and trend	I
CR5	-1.27	1.79	
Δ (CR5)	-2.09***	-0.55***	I(1)
FP	-0.16	-0.10	
Δ (FP)	-2.89***	-2.86***	I(1)
MG	0.08***	0.06***	I(0)

Source: Authors' calculations in EViews 12

Note: CR5 – concentration ratio for 5 largest banks; FP – foreign presence, the share of foreign banks in the sector's total assets; MG – market growth, total assets of the banking sector
 *** $p < 0.01$; ** $p < 0.05$; * $p < 0.10$

Kao's cointegration test was used to test the null hypothesis that there is no cointegration among variables (Kao and Chiang, 2000). The results of Kao's test showed that there is cointegration among variables ($t = -0.21$, $p < 0.05$). Since the variables are not integrated in the same order, the panel ARDL model developed by Pesaran et al. (1999) may be used to determine whether there is a short-run and long-run relationship between variables. The optimal lag length is determined using Akaike Information Criterion (AIC) and found to be ARDL (1, 3, 3).

Table 4 shows the long-run coefficients of the ARDL approach. In the long run, there is a positive statistically significant relationship between FP and CR5 ($p < 0.01$). It means that foreign direct investment increases market concentration and worsens competition in the long run in Western Balkan countries. Furthermore, there is a negative statistically significant relationship between MG and CR5 ($p < 0.05$). It means that as the banking market grows (total assets increase), market concentration decreases.

Table 4. ARDL approaches long-run results

Variable	Coefficient
FP	0.96*** (0.23)
MG	-0.16** (0.08)

Source: Authors' calculations in EViews 11

Note: CR5 – concentration ratio for 5 largest banks (dependent variable); FP – foreign presence, the share of foreign banks in the sector's total assets; MG – market growth, total assets of the banking sector; standard errors in ()
 *** $p < 0.01$; ** $p < 0.05$; * $p < 0.10$

The results of the ARDL approach in the short run show a statistically significant relationship negative relationship between market concentration and FDI in the short run ($p < 0.05$). The results are significant in t , $t-1$, and $t-2$ periods. It means that the FDI is improving competition in the short run in Western Balkan countries. There is no significant relationship between market growth (MG) and foreign direct investment (FDI) in the short run (Table 6).

Table 5. ARDL approaches short-run results

Variable	Coefficient
ECT	-0.16** (0.27)
$\Delta(\text{CR5}_{t-1})$	0.15 (0.17)
$\Delta(\text{FP})$	-0.10** (0.95)
$\Delta(\text{FP}_{t-1})$	-0.73** (0.66)
$\Delta(\text{FP}_{t-2})$	-0.22** (0.72)
$\Delta(\text{MG})$	-0.01 (0.22)
$\Delta(\text{MG}_{t-1})$	0.29 (0.46)
$\Delta(\text{MG}_{t-2})$	-0.03 (0.28)
C	10.03

Source: Authors' calculations in EViews 11

Note: CR5 – concentration ratio for 5 largest banks (dependent variable); FP – foreign presence, the share of foreign banks in the sector's total assets; MG – market growth, total assets of the banking sector; standard errors in (); *** $p < 0.01$; ** $p < 0.05$; * $p < 0.10$

The error correction term is negative and statistically significant (ECT = -0.16, $p < 0.05$). It shows how much of the disequilibrium caused by a shock in the short run will be corrected in the long run. Therefore, the speed of adjustment towards equilibrium is 16% annually in response to a shock (Table 5).

CONCLUSION

The aim of the paper was to examine the relationship between market concentration and foreign direct investment (FDI) in the banking sector of Western Balkan countries. Therefore, the ARDL approach was applied to examine this relationship in the long and short run. The results show a significant positive relationship between market concentration and FDI in the long run while a significant negative relationship in the short run. Therefore, the hypothesis that foreign direct investment (FDI) negatively impact market concentration in the banking sector of Western Balkan countries is confirmed only in the short run. The results are in line with Cho (1990) and Panjaitan et al. (2016) who also found a negative relationship between FDI and market concentration in the banking sector.

Most developing countries have faced an increase in market concentration under the influence of FDI, primarily because foreign companies have taken advantage of those that have enabled them to perform better than domestic firms. In the process, transnational companies squeezed domestic companies out of the market and increased the market concentration. The reason for this sequence of events, among other things, should be sought in the fact that the competition policy in developing countries is less developed than that in developed countries, so it is not able to prevent the negative effects of FDI entry. Also, developing countries, due to the lack of own capital necessary for accelerating economic development, are looking for a way out of

FDI, becoming more tolerant of the negative effects that these types of investments can bring. Transnational companies are taking advantage of this situation by creating a dominant market position in the countries where they enter, using such a position to appropriate a part of social welfare that does not belong to them.

According to the author's knowledge, based on the reviewed literature about the impact of FDI on market concentration, there is no research examining this relationship in the banking sector of Western Balkan countries. Future research may be extended to the level of individual countries over a longer period and to the inclusion of more explanatory variables, to perform a better analysis over a longer period to draw adequate conclusions to help economic policymakers create and apply a proper framework for FDI attraction. Policymakers and antitrust authorities in the Western Balkans need to devise a policy to attract FDI, mainly greenfield investments, that will reduce the negative effects of FDI and make it positive in the long run.

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**APPLIED INFORMATICS AND QUANTITATIVE
METHODS IN ECONOMICS
AND MANAGEMENT & ACCOUNTING
AND BUSINESS FINANCE**

BUSINESS INTELLIGENCE SYSTEM FOR CRM ANALYTICS

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Abstract: *In today's highly competitive business environment, one of the key success elements is efficient and effective customer relationship management (CRM). Customer data became a critical corporate asset and information turn out to be one of the key components of the competitive advantage and sustainability. Nowadays, enormous amount of heterogeneous and high-velocity CRM data is generated. This data has huge potential value, but many organizations failed to utilize this large amount of data.*

Business intelligence (BI), data science and big data technologies encompass the collection of platforms, services, and tools, as well as data modelling and analytical methods for efficient data integration, storage, processing, and reporting.

In this paper, business intelligence system for advanced CRM analytics based on data warehousing and machine learning models is presented. Its main purpose is to support better business decision making by integrating relevant data from various sources and transforming it into usable and actionable information and knowledge. The BI system combines several analytical technologies, services and tools for data extraction, transformation, and loading, in-memory storage and processing, data warehousing, machine learning, and cloud-based visualisation and reporting.

In order to demonstrate the effectiveness and usefulness of the proposed BI system, an experiment with the real-world dataset from the retail industry has been carried out. Data has been integrated into the single multidimensional data warehouse with semantic BI elements dimensions, measures, calculations, and key performance indicators. For advanced analytics, such as predictions, classifications, and associations, several machine learning (ML) models have been created. These ML models complement data warehouse reporting with advanced knowledge that can be used for effective decision making and proactive actions.

Keywords: *Business intelligence, Data science, Data warehousing, Machine learning, Advanced analytics*

JEL Classification: *C55, C88, C89, L81*

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INTRODUCTION

Frequent changes in the market, accelerated development of technologies and changes in perception users have, influenced organizations to explore the way they operate and communicate with their clients, so they can improve their relationship, but also developing a marketplace strategy for competitive advantage.

Nowadays, the organization's aim is not only to satisfy the customers, but also to compete in the marketplace to achieve their goals. In order to research how to improve knowledge available to decision makers, two enterprise technologies, Business Intelligence (BI) and Customer Relationship Management (CRM), are examined. While CRM provides transactional information and knowledge about customers, BI analyse operational data and the knowledge gained is used for continual optimization of operations. In such a way this combination is a critical source of competitive advantage for businesses today.

According to Liu et al. (2018), the need for continual analysis and innovation to remain competitive through new opportunities is what sets a lot of successful businesses apart from failing ones. The purpose of this study is to investigate the role of business intelligence competence in improving customer relationship management process.

INTELLIGENT BUSINESS PROCESSES IN CRM

Business intelligence and customer relationship management are two enterprise technologies that enhance the knowledge available to decision makers and therefore organizations increasingly rely on them.

The best CRM practice of how to improve the relationship with existing customers and finding new prospective customers, as well as winning back former customers, is usually presented as a 360-degree view of the customer (Figure 1). By giving organizations a consolidated perspective of all customer engaging points with all customer relationship departments, it offers a strategic way for them to create the greatest customer experience across all channels (Stefanović et al., 2018).

While CRM system provides a central location to store customer and prospect data, manage customer interactions, and distribute crucial information across employees, business intelligence includes processes like data preparation, in which raw data from different source systems should be integrated, consolidated and cleansed, storing this data in a data warehouse, search of meaningful patterns of consumer behaviour in large amounts of data, such as switching patterns, fraud patterns, market basket analysis, and consumer trends, and distribution of the obtained information to help influence and drive business decisions. The goal of business intelligence is to make it feasible to combine data from many sources, evaluate, and systematize information before sharing it with the appropriate stakeholders. Data analytics provides an opportunity to transform from a product-centric focus to a more customer-centric view (Gončarovs & Grabis, 2017).

Many aspects of business model innovation are explored, with a particular emphasis on the relationship between a company and its customers, as well as the methods that companies use to grasp the bigger picture, or whole system perspective. This allows them to understand how their enterprise relates to the larger industry and broader economy in which it operates (Morris, 2010).

According to Habul (2010) CRM systems and Business Intelligence provide a holistic approach to customers which includes improvements in customer profiling, simpler detection value for customers, measuring the success of the company in satisfying its customers, and create a comprehensive customer relationship management.



Figure 1: Customer 360-degree

Source: <https://www.simplecrm.com/digital-banking-enhancing-customer-experience-with-customer-360/>

As Phan and Vogel (2010) point out, companies should use Business Intelligence to further mine the customer relationships, because Business Intelligence helps in consolidating, analysing, and providing access to vast amounts of data for business decision making.

Ibrahim et al. (2015) suggested that close relationship with customers requires a strong coordination between marketing departments and information technology in order to retain customers for a long time. Hence, in achieving CRM, many organizations use a set of tools, technologies, and procedures to support the relationship with the customer to enhance sales (Dowling, 2002).

RESULTS AND DISCUSSION

The modern enterprise is built around data. Data assists businesses in better understanding their customers and improving business processes, but many organizations have had to improve their understanding of how to deal with the increasing amounts and different forms of data that they're now creating and collecting. Machine learning algorithms for big data analytics can help business to maximize the value of their data. Machine learning tools analyse data sets using data-driven algorithms and statistical models, then draw inferences or make predictions based on them.

Dataset that has been used in this research is sourced from CRM system of a company based in the United States, which is multinational manufacturer and seller of clothes. In order to obtain better data analysis and reveal more about the dynamics of business and the nature of this data, business intelligence and machine learning were needed. CRM-enabled data analytics can be used across the organization, from forecasting customer behaviour and purchasing patterns to identifying trends in sales activities.

Aside from advanced analytics and knowledge extraction, it is critical to deliver information to decision-makers in a timely and appropriate format. Reporting is accomplished through the use of a Power BI, cloud-based business intelligence service, in order to provide better interactive visualizations and gain some insights.

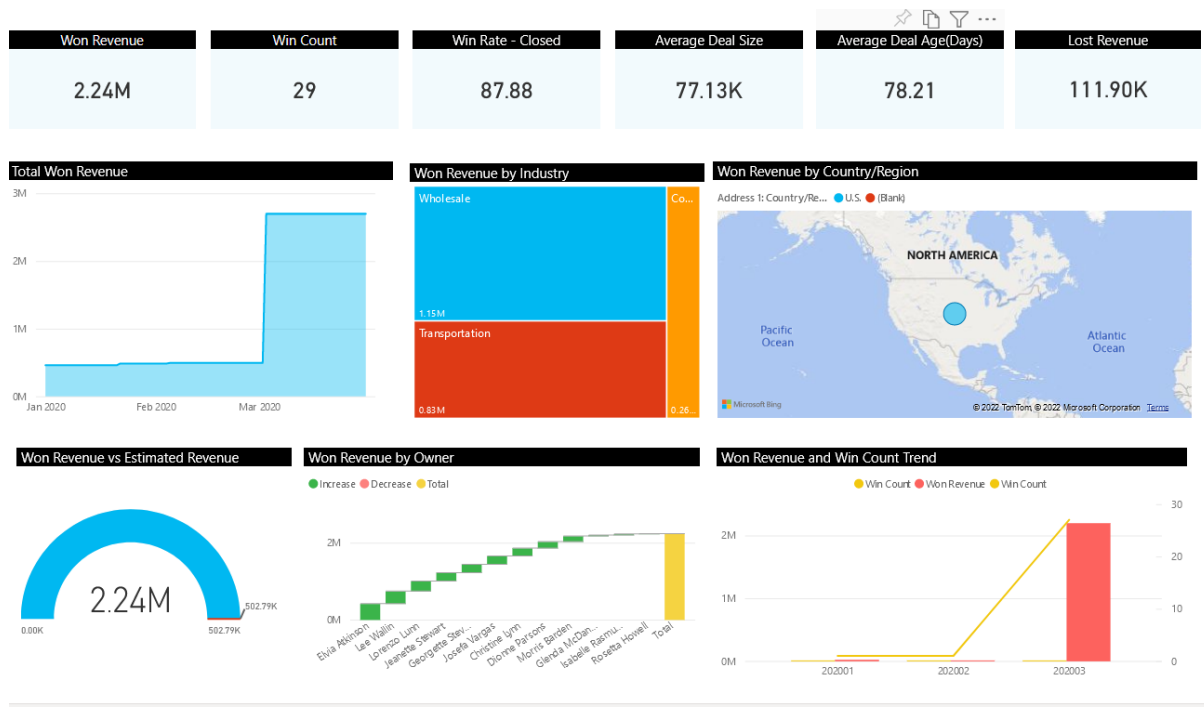


Figure 2: Power BI Dashboard – Sales module

Figure 2 shows Power BI Dashboard with reports for Sales module. First row shows some Key performance indicators - *Won Revenue*, *Win Count*, *Win Rate – Closed*, *Average Deal size*, *Average Deal Age*, *Lost revenue*. Besides, there is a possibility to interact with the visuals and filters and generate some other graphics, like those shown below - *Total Won Revenue by Date* that shows trended up between Friday, February 28, 2020 and Tuesday, March 3, 2020 with a rise of 2201794; *Overall Won Revenue* which is currently at 2236794; *Won Revenue by Owner*, *Won Revenue by region* and so on.

Figure 3 shows some reports for information about Leads, like number of leads by source (advertisement, trade show, partner, word of mouth, public relations, web, seminar) and *Leads by rating* (warm, cold and hot).

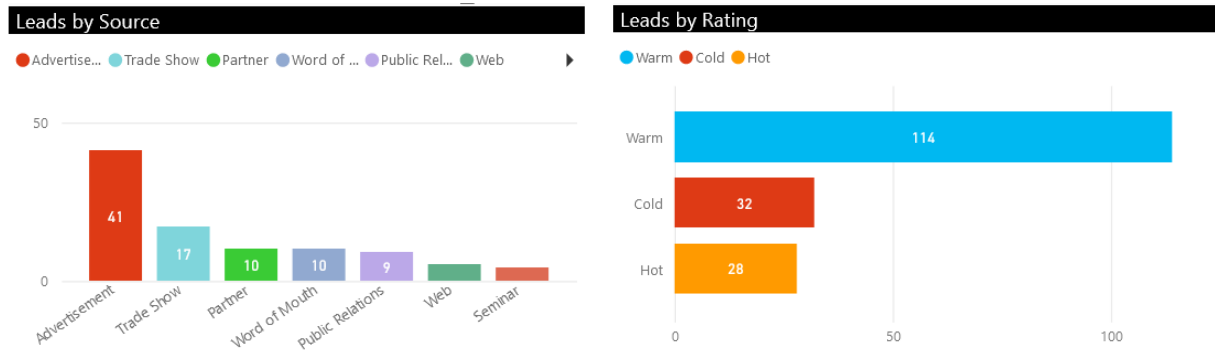


Figure 3: Leads insights

In order to generate more insights and discover hidden trends and patterns several more ML models and algorithms were created. Figure 4 shows some predictions for the next year, based on created ML models - about *Opportunities by Region* (East will have the highest Opportunity count at 212, accounted for 43.53% of Opportunity count), *Leads by Source* given by month for the next year, *Sales amount by category* (Women’s clothes will have the most sales amount, followed by men’s clothes, winter clothes, summer clothes and then baby clothes), *Sales Quantity and Sales amount by month*, also for the next year.

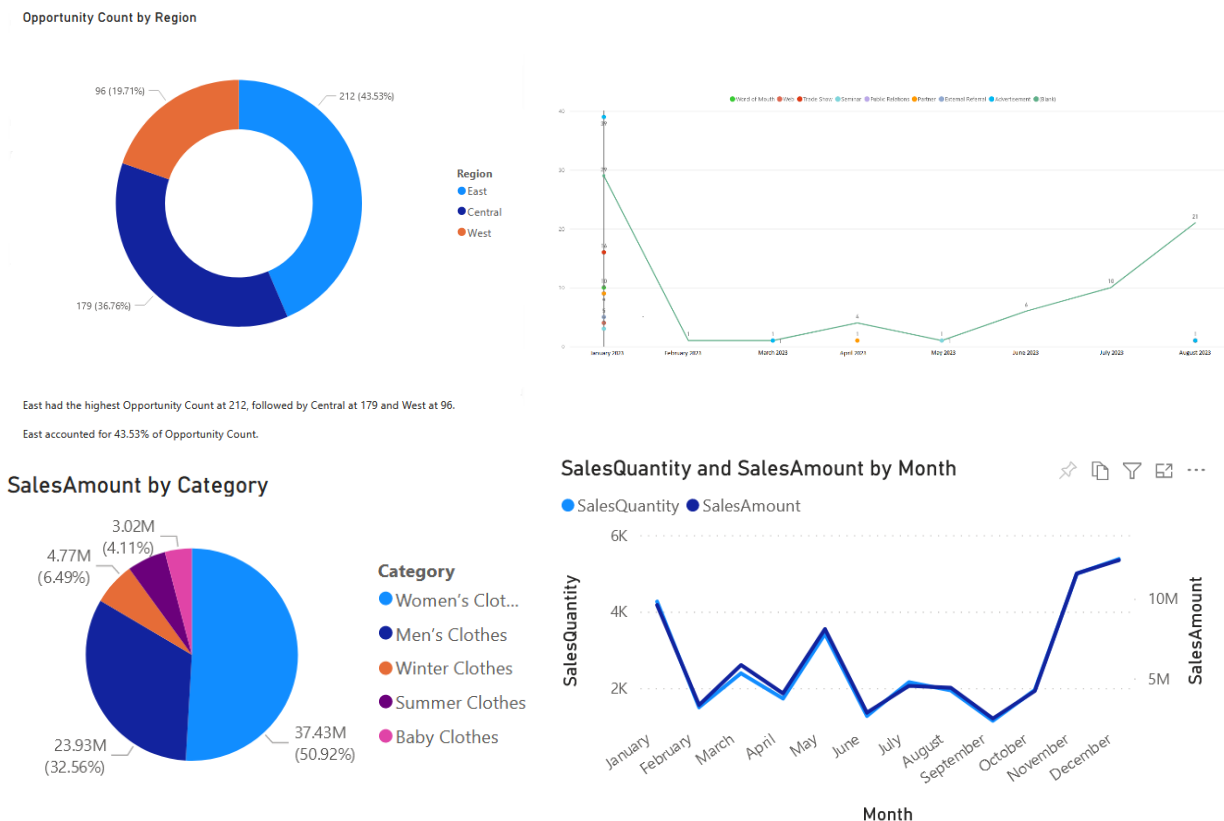


Figure 4: Scoped insights

Obtained results shows that machine learning can replace time-consuming traditional analytical methods by providing an automated way to extract the most relevant information from data, and therefore have great impact on the business performance.

CONCLUSION

The study has presented that there is a significant relationship between CRM and business intelligence. Business intelligence can detect various incentives to increase sales and revenue, such as faster conversion of potential into actual clients, reducing the number of outgoing customers and increase sales to existing customers.

Organizations can bring together CRM and business intelligence to analyse large volume of data and gain useful information in order to improve decisions and cost saving and discover new business opportunities, which is essential for managing today's global businesses.

Enhancing effectiveness and efficiency of CRM using a BI approach is a critical component in a company's ability to achieve its competitive advantage.

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THE POWER OF SILHOUETTE ANALYSIS IN EVALUATION OF HIERARCHICAL CLUSTERING RESULTS

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Abstract: *Unlike classical classification methods, cluster analysis belongs to the group of unsupervised learning, nonparametric, multivariate statistical interdependence methods, since precise information regarding the number and / or structure of groups is mostly not a priori available. As a data-driven analytical process, clustering represents a useful statistical tool for exploratory, as well as confirmatory data analysis, since it can also be used to verify classifications obtained by applying some other methods. The main objective of cluster analysis can be defined as discovery of the "optimal" classification structure that allocates (n) multivariate observation units into (g) mutually exclusive, internally homogeneous / externally heterogeneous, clusters (where $g \ll n$). However, there is an essential difference in achieving this goal, directly related to the methodological specificities of hierarchical and non-hierarchical clustering methods. In fact, unlike non-hierarchical methods in which the final number of clusters is previously defined, the application of hierarchical clustering methods does not result only in one classification solution, but in a whole series of possible solutions, ranging from $g = n$ clusters to $g = 1$ cluster. Precisely the evaluation of extracted series of possible solutions, in order to find a particular division, which is considered to best represent the inherent structure of multivariate observations, represents a critical analytical activity in the implementation of cluster analysis tasks.*

The fundamental idea of the mentioned evaluation process can be defined as: of a total of (n) possible divisions of (n) multivariate observations, it is necessary to select one specific solution, for which, in comparison with all other solutions, the best ratio of internal homogeneity and external heterogeneity is achieved. In order to minimize the use of subjective arguments in the realization of this idea, a large number of (objective) statistical criteria have been proposed in the literature, based on the values of specific coefficients. Consequently, the aim of this Paper is to emphasize the applicative significance and potential of the criteria for evaluating the quality of cluster analysis results and selecting the optimal number of clusters, with a focus on the methodological-applicative properties of the silhouette coefficient.

Keywords: *hierarchical cluster analysis, statistical criteria, silhouette coefficient, economic examples*

JEL Classification: *C18, C30, C38*

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INTRODUCTION

Cluster analysis (acronym, CA) is a nonparametric multivariate statistical method (Sharma, 1996), which includes a wide range of specialized analytical procedures, created for identification of hidden but natural classification structures of analyzed observations within complex and heterogeneous data sets (Gore, 2000). The division of the analyzed set of multivariate observations into certain, as a rule, "small" number of mutually exclusive, internally homogeneous / externally heterogeneous groups of observation units (i.e. clusters) can be identified as a common primary goal of these statistical procedures. Unlike classical classification methods, which are aimed at deriving rules for allocating observations to a known number of previously specified groups, CA belongs to the group of unsupervised learning methods, since precise information regarding the number and / or structure of groups is not *a priori* available (Everitt, et al., 2011; Johnson & Wichern, 2007). As a data-driven analytical process, CA is a useful statistical tool for exploratory as well as confirmatory data analysis (Gore, 2000), since it can also be used to verify classifications obtained by applying some other analysis methods. Starting from the aforementioned, but also the fact that grouping of observations on the basis of their mutual similarity / dissimilarity represents one of the basic human conceptual activity (Everitt, 2010; Vercellis, 2009), high frequency and diversity of research application of CA in the domain of numerous scientific fields and disciplines today, does not surprise.

The starting point in the implementation of CA is the ($n \times p$) matrix of multivariate data, $\mathbf{X} = [x_{ij}]$, composed of n rows, which denote observation units (for $i = 1, 2, \dots, n$) and p columns, which represent the analyzed variables, X_j (for $j = 1, 2, \dots, p$). The multivariate profile of the i^{th} observation, in the context of the analyzed variables, is denoted by the symbol $\mathbf{x}_i' = [x_{i1}, x_{i2}, \dots, x_{ip}]$. In that sense, the objective of CA can be defined as discovery of the "optimal" classification structure that allocates n rows of the matrix \mathbf{X} into (g) distinctive clusters C_k (for $k = 1, 2, \dots, g$), where $g \ll n$, and $\forall C_k \subset \mathbf{X}$. In formulation of final solution to the clustering problem, it is evident that the number of groups (g) plays a key role, and the way it is determined is largely conditioned by the specifically applied clustering procedure. In fact, unlike (by their nature confirmatory) non-hierarchical methods in which the final number of clusters (g) is *a priori* known, the application of (exploratory) hierarchical methods does not result only in one classification solution, but in a whole series of possible solutions to the clustering problem, ranging from $g = n$ clusters to $g = 1$ cluster.

Precisely the evaluation of extracted series of possible solutions, resulting from the hierarchical clustering approach, in order to find a particular division (i.e. the "optimal" number of clusters, g), which is considered to best represent the inherent structure of multivariate observations in the available data set, represents a critical analytical activity in the implementation of CA tasks (Halkidi, et al., 2002). However, regardless of its indisputable importance, this activity is also most often neglected and omitted by researchers in the implementation of CA (Aldenderfer & Blashfield, 1984). In such circumstances, as the main, and by its nature extremely subjective, argument for selection of the "optimal" clustering solution, the "interpretability" of the extracted division is most often used. This research practice in the CA application is quite incomprehensible, and the obtained results can be considered as quite questionable, especially when a large number of statistical criteria have been proposed in the literature, intended to minimize the apostrophized subjectivity in solving this issue.

Consequently, the aim of this Paper is to emphasize the applicative significance and potential of the criteria for evaluating the quality of cluster analysis results and selecting the optimal

number of clusters, with a focus on the methodological-applicative properties of the silhouette coefficient. The main contribution of the Paper is the popularization of the use of the considered optimality criteria in function of ensuring the objectivity and scientific basis of the obtained hierarchical cluster analysis results.

In addition to the Introduction, the rest of the Paper is organized as follows. The fundamental idea of evaluating the quality of clustering solutions is presented in Section 2. In Section 3, the key methodological properties of the silhouette coefficient are presented, while the potentials and possibilities of its application are overviewed in Section 4. Conclusions are summarized in Section 5.

CLUSTERING RESULTS QUALITY EVALUATION: BACKGROUND AND CRITERIA

The fundamental idea of quality evaluation, aimed at ensuring the practical usability of the results of hierarchical CA (Liu, et al., 2010), can be defined as: of a total of n possible divisions of n multivariate observations, marked as $C^{(i)} = \{C_1, C_2, \dots, C_g\}$, individually composed of g clusters C_k , where the following tendency holds ($C^{(1)} \rightarrow g = n$), ($C^{(2)} \rightarrow g = n-1$), ..., ($C^{(n)} \rightarrow g = 1$), it is necessary to select one specific solution $C^{(i)}$, for which, in comparison with all other solutions and their corresponding values of the parameter g , the best ratio of internal homogeneity and external heterogeneity is achieved, for g extracted clusters. For the purposes of realization of this idea, a large number of (objective) statistical criteria have been proposed in the literature (Calinski & Harabasz, 1974; Kovačić, 1994; Liu, et al., 2010; Milligan & Cooper, 1985; Vercellis, 2009), based on the values of specific coefficients, such as: Calinski-Harabasz coefficient, R_g^2 coefficient, semi-partial ΔR_g^2 coefficient, cohesion coefficient, separation coefficient, bi-serial correlation coefficient, Baker-Hubert γ coefficient of concordance, $G_{(+)}$ coefficient, silhouette coefficient, etc. Since their application enables the identification of the optimal division within the developed hierarchical structure of possible solutions, the following alternative names are mainly used in the literature to denote these criteria: stopping rules (Milligan & Cooper, 1985), optimality criteria (Kovačić, 1994), cluster validity indices (Halkidi et al., 2001), and methods for assessing the quality of clustering results and selecting an adequate number of clusters (Martinez & Martinez, 2007; Tuffery, 2011).

Generally, these are specific ad hoc procedures of a heuristic nature, which usually require manual implementation of, often quite complex computational approaches, since their calculation is not significantly supported by open source statistical software solutions. In addition, although these criteria are initially intended to evaluate the results of hierarchical clustering methods, with appropriate adjustments and modifications, their application can also be extended to the domain of non-hierarchical procedures (Milligan & Cooper, 1985).

Due to the differences in terms of application features of individual optimality criteria, two approaches differ in identifying a specific division that can be considered "optimal" in terms of the number of clusters and/or their structure (Everitt, et al., 2011; Halkidi, et al., 2001). According to the first, the selection of the g value is conditioned by identifying the division for which the criterion used achieves the maximum or minimum value compared to the corresponding values at the level of remaining solutions to the clustering problem. Second, if the movement of the values of selected criterion is characterized by an increasing / decreasing, clearly noticeable, tendency during the process of hierarchical clustering, then pronounced and sudden changes in the calculated values at the level of individual solutions are used as indicators of the moment in which the merging of two quite different clusters

occurred, and the optimal solution is declared to be the classification that immediately precedes the observed change.

It is important to emphasize that there is no single, universally best, statistical coefficient whose "suggestion" related to the selection of the optimal solution can be considered inviolable and correct compared to the conclusions obtained by applying some other criteria. Accordingly, since they are characterized by differential statistical properties, but also based on consideration of (mostly) different aspects of quality of analyzed solutions, guidelines related to the selection of the optimal solution for a given set of observations, obtained by their application, will usually show a high degree of variability. In this sense, most authors recommend the simultaneous use of several criteria (Sharma, 1996; Everitt, et al., 2011), a critical approach to the perception of generated suggestions (Milligan & Cooper, 1985), and taking into account the available domain knowledge from particular field of CA application (Tuffery, 2011). In the following text, the silhouette coefficient is singled out from the large group of coefficients and attention is focused on its methodological determinations and applicative significance.

SILHOUETTE COEFFICIENT

Silhouette coefficient, proposed by Rousseeuw (1987), is a statistical measure intended for comprehensive evaluation of the quality of clustering process solutions, since it provides simultaneous monitoring of changes in internal homogeneity and external heterogeneity of formed C_k clusters in individual solutions, $C^{(i)}$. This coefficient represents a suitable analytical tool for answering the following, in the field of CA, important research questions: (1) Which observations are correctly classified, or perhaps misclassified? (2) Are there observations that can be considered a borderline case in the performed classification? (3) What is the quality of individual clusters within a specific division? (4) What is the quality of individual clustering solutions that are characterized by different values of the parameter g ? (5) Which individual solution $C^{(i)}$, in terms of the number of extracted clusters (g), can be selected as an optimal? (6) Which of the two alternative solutions with the same number of clusters, obtained by applying hierarchical and non-hierarchical methods, represents a more adequate division, in terms of the structure of the formed clusters?

The application potential of the silhouette coefficient arises from the possibility of calculating its values for the following three levels of observation and analysis: (1) level of individual observations, \mathbf{x}_i (for $i = 1, 2, \dots, n$), (2) level of individual clusters, C_k (for $k = 1, 2, \dots, g$) in the composition of a particular division, and (3) level of a overall clustering solution composed of g clusters, $C^{(i)} = \{C_1, C_2, \dots, C_g\}$, (for $i = 2, 3, \dots, n-1$).

SILHOUETTE COEFFICIENT FOR INDIVIDUAL OBSERVATIONS

The silhouette coefficient value for i^{th} observation within the (hypothetical) cluster C_i is calculated using the following expression (Rousseeuw, 1987):

$$\text{silh}(\mathbf{x}_i)^g = \frac{b(\mathbf{x}_i) - a(\mathbf{x}_i)}{\max\{a(\mathbf{x}_i), b(\mathbf{x}_i)\}}, \text{ for } i = 1, 2, \dots, n \text{ and } g = n-1, \dots, 2. \quad (1)$$

In a given expression, the symbols denote:

- $a(\mathbf{x}_i)$ – the arithmetic mean of the values of selected distance measure (i.e. the elements of proximity matrix) between the i^{th} observation and all other observations within the (same) cluster C_i ;

- $b(\mathbf{x}_i)$ – The minimum of separately calculated arithmetic means of the distance measure values between the i^{th} observation ($\mathbf{x}_i \in C_i$) and all individual observations in the composition of each of the remaining clusters covered by a particular solution, consisting of a total of g clusters. More precisely, for each of the remaining $(g-1)$ clusters, the average distance of observation \mathbf{x}_i from individual observations in the composition of each of these clusters is calculated separately. The minimum value of the total determined $(g-1)$ averages, in fact, represents the $b(\mathbf{x}_i)$ value. The cluster with which the observation \mathbf{x}_i shares the smallest average distance is called the "cluster-neighbor";
- $\max\{a(\mathbf{x}_i), b(\mathbf{x}_i)\}$ – Greater value of the two previously defined values, $a(\mathbf{x}_i)$ and $b(\mathbf{x}_i)$.
- For the silhouette coefficient values of individual observations, ranging from $-1 \leq \text{silh}(\mathbf{x}_i)^g \leq +1$, the following relations apply (Rousseeuw, 1987):

$$\text{silh}(\mathbf{x}_i)^g \begin{cases} > 0, & \text{if } a(\mathbf{x}_i) < b(\mathbf{x}_i) \\ = 0, & \text{if } a(\mathbf{x}_i) = b(\mathbf{x}_i). \\ < 0, & \text{if } a(\mathbf{x}_i) > b(\mathbf{x}_i) \end{cases} \quad (2)$$

A positive $\text{silh}(\mathbf{x}_i)^g$ value for a particular observation unit, indicates that its average distance from other members of the same cluster is smaller than its average distances from observation units distributed within all remaining individual clusters, thus confirming its correct allocation. Consequently, the closer the $\text{silh}(\mathbf{x}_i)^g$ value is to 1, the stronger the "evidence" in support of this conclusion are. The negative value of $\text{silh}(\mathbf{x}_i)^g$, conditioned by the inverse ratio of intra-group and inter-group (average) distances, suggests the opposite conclusion. Namely, the closer the value of $\text{silh}(\mathbf{x}_i)^g$ is to -1 , the stronger the evidence in support of the claim regarding the wrong allocation of a particular observation unit. In that case, the reallocation of the given observation within the "cluster-neighbor" is usually suggested. Finally, the value of $\text{silh}(\mathbf{x}_i)^g = 0$ suggests that the given observation represents a boundary case, for which it is not entirely clear whether it belongs to the initially assigned cluster or to the "cluster-neighbor". Given interpretation notations can, among other things, serve to analyze the observed differences in the clusters' structure at the level of two different solutions, obtained by applying some of the hierarchical and non-hierarchical clustering methods.

SILHOUETTE COEFFICIENT FOR INDIVIDUAL CLUSTERS

The value of the silhouette coefficient for each individual cluster C_k , as part of a specific clustering solution, $C^{(i)} = \{C_1, C_2, \dots, C_g\}$, represents the arithmetic mean of the silhouette coefficient values of individual observations within the same cluster, symbolically:

$$\overline{\text{silh}(C_k)^g} = \frac{\sum_{i=1}^{n_k} \text{silh}(\mathbf{x}_i)^g}{n_k}, \text{ for } k = 1, 2, \dots, g \text{ and } g = n-1, \dots, 2, \quad (3)$$

where symbol n_k denotes the number of observation units within the k^{th} cluster. Regarding the relation between internal homogeneity and external heterogeneity, a positive value of this coefficient represents a more desirable outcome compared to a negative value. More precisely, the closer the value of this coefficient is to 1, the k^{th} cluster is considered to be more compact and better separated from other clusters within the given classification solution, and vice versa.

SILHOUETTE COEFFICIENT FOR THE OVERALL CLUSTERING SOLUTION

The silhouette coefficient value for the overall clustering solution, consisting of g clusters, $C^{(i)} = \{C_1, C_2, \dots, C_g\}$, is determined as the arithmetic mean of the coefficient values determined for each of the n individual observations, symbolically:

$$\overline{\text{silh}(C^{(i)})^g} = \frac{\sum_{i=1}^n \text{silh}(\mathbf{x}_i)^g}{n}, \text{ for } g = n-1, \dots, 2. \quad (4)$$

Alternatively, the value of this coefficient represents the weighted arithmetic mean of the silhouette coefficient values determined for each individual cluster C_k , as part of the overall solution. Interpretations of the obtained silhouette coefficient values in terms of quality of individual overall classification solutions can be carried out in accordance with the following guidelines (Izenman, 2008):

$$\begin{aligned} \overline{\text{silh}(C^{(i)})^g} &\leq 1.00 \rightarrow \text{A strong structure has been found} \\ \overline{\text{silh}(C^{(i)})^g} &\leq 0.70 \rightarrow \text{A reasonable structure has been found} \\ \overline{\text{silh}(C^{(i)})^g} &\leq 0.50 \rightarrow \text{The structure is weak and could be artificial} \\ \overline{\text{silh}(C^{(i)})^g} &\leq 0.25 \rightarrow \text{No substantial structure has been found} \end{aligned} \quad (5)$$

Generally, the decision on the optimal classification of observations in terms of number of clusters (g) is based on comparing the values of silhouette coefficient determined at the level of individual solutions $C^{(i)}$ and identifying the specific division for which the highest overall silhouette coefficient value is achieved.

PRACTICAL EXAMPLES OF SILHOUETTE COEFFICIENT APPLICATION

In this Section, a brief overview of selected empirical research demonstrating the use of the silhouette coefficient in the function of answering previously formulated research questions of interest in the domain of CA implementation (Section 3) is given.

In this context, in Stamenković, et al. (2021), the CA-based classification of districts in the Republic of Serbia into internally homogeneous / externally heterogeneous clusters, according to selected regional economic development indicators is conducted. The optimal classification of districts, regarding the number of clusters, was selected by comparing the overall silhouette coefficient values including several other optimality criteria, calculated for individual hierarchical solutions ranging from 7 to 2 clusters. In that way, answers to CA research questions (4) and (5) are provided.

Using the hierarchical CA methods, in Stamenković, et al. (2021), the classification of 37 European countries into appropriate clusters according to the selected indicators of ICT infrastructure development is performed. The silhouette coefficient was used for assessing the correctness of the classification of individual observations, the quality of individual clusters within the proposed classification, as well as to evaluate the quality of the overall clustering solution. More precisely, by demonstrating the application potentials of the silhouette coefficient at all three levels of analysis, the answers to CA research questions (1), (2), (3) and (4), are provided.

In Stamenković & Milanović (2021), the CA-based classification of 33 European countries into internally more similar and externally more dissimilar clusters, according to the selected

indicators of quality of life of their citizens in 2018, is performed. As a result of hierarchical and non-hierarchical clustering procedures, two classification alternatives with the same number of clusters were created. The selection of a more suitable alternative, i.e. more optimal in terms of the structure of the extracted 4 groups of countries, was made on the basis of a comprehensive comparison of the silhouette coefficient values of individual countries, formed clusters and overall solutions, calculated for both clustering alternatives. In that way, by conducted quality evaluation of the proposed hierarchical and non-hierarchical clustering solutions, answers to the following CA research questions were provided: (1), (2), (3) and (6).

CONCLUSION

The evaluation of quality of the obtained results represents a fundamental step in the cluster analysis, since it provides "solid" (quantitative) evidence for the performed selection of particular classification solution, through the elimination and / or mitigation of the subjectivity effects. The applicative essence and statistical significance of the clustering solutions evaluation procedure may be best expressed by the following statement of Jain & Dubes (1988, p.222): "The validation of clustering structures is the most difficult and frustrating part of cluster analysis. Without a strong effort in this direction, cluster analysis will remain a black art accessible only to those true believers who have experience and great courage."

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APPLICATION OF ARTIFICIAL INTELLIGENCE IN RECRUITMENT AND SELECTION PROCESSES

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Abstract: *We are at the beginning of the Fifth Industrial Revolution, which quickly led us to scientific development such as robotics, algorithm, machine learning, and artificial intelligence. Organizations develop and sustain by innovating new ideas to compete in digitalized economy, covering all business areas, and Human Resource Management is no exception. Use of artificial intelligence, in a practical and efficient way, leads to improved performance in various fields of HR management, covering employment, performance management, training and development, or even forecasting labor market and its needs. Every organization tends to hire skilled and capable employees who could be more efficient and effective in accomplishing job objectives, therefore recruitment as such has huge impact on organization's overall success. Recruitment strategy plays vital role, so in order to be more efficient it could use help of data analysis (i.e. Artificial Intelligence) for decision making process. Tendency is to facilitate computers to carry out the work normally done by people, where AI wins with an incredible speed and accuracy. This paper is therefore investigating application of AI in recruitment and selection processes in particular, focusing on techniques and methodologies used to improve the process. These methods are not only reducing costs, saving time, but also improving efficiency and making organizations more attractive. Another important goal in introducing AI in recruitment is improvement of process quality, by eliminating recruiter's bias. This paper will point out concrete examples with quantified measures (in terms of cost, efficiency, and profit) on improvement of employment processes and overall success of companies which implemented AI in selection process.*

Keywords: *Artificial Intelligence, Machine Learning, Human Resources, Recruitment, Selection*

JEL Classification: *J24, O31, O32*

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INTRODUCTION

General trend of digitalisation did not bypass the HR world, i.e. jobs within human resources services, with a special emphasis on recruitment and selection processes. This new approach gained even more importance with COVID-19 pandemic, given that physical face-to-face contact had to be replaced by virtual ones, including job interviews. Internet and the availability of numerous information and communication technologies have led to a radical change in the field of recruitment and employment, significantly changing the processes of advertising open positions, reviewing resumes, narrowing down choices and communicating with candidates. Modern recruitment takes place with the help of electronic systems, which in one word is called e-recruitment. Such systems are often connected to external "online" databases that are available 24/7 and contain open positions and resumes, and act as intermediaries in the labor market.

One of the key elements of innovation in the recruitment process is the introduction of video in various forms. The basic forms of using online videos in recruitment and selection processes are Video CVs/biographies; Video Conferencing/Interviewing and Automated Video Interviewing (Hendrick, 2011). Using a video CV during screening is actually much closer to a face-to-face interview than CV screening itself (Hiemstra et al. 2012). A video resume allows potential candidates to stand out among numerous candidates, to demonstrate their motivation for a specific position, as well as the abilities and talents they possess (Hiemstra et al. 2015). From the recruiter's point of view, the advantages of online video are numerous. They are reflected in the recruiter's ability to access global candidate bases, to reduce interview costs, speed up entire hiring process.

A new dimension in this field has been introduced with use of artificial intelligence, which is rapidly entering all business segments, including the domain of human resources management.

DIGITALIZATION OF HR AND APPLICATION OF ARTIFICIAL INTELLIGENCE

In the sphere of HR digitalization, artificial intelligence (hereafter referred to as "AI") represents a real breakthrough in business and management and has a strong impact on the way employees work, especially in human resources and employment departments. AI refers to technology used to perform a task that requires a certain level of intelligence, in other words, a tool that is trained to do what a human can do. Artificial intelligence is a technology in computer science that creates machines that can work and react like humans, that is, to simulate the processes of human intelligence. Speech and image recognition, learning, planning and problem solving are some of the activities designed for computers using AI. Artificial intelligence is now widely used as we are in the era of new Industry revolution (Rusidan and Roshidi, 2019). Machine intelligence, is an interdisciplinary science that imitates human abilities and intellectual behavior, and the development of this type of technology has become a key factor for the survival and transformation of enterprises in a changing environment. In the process of simulating the information process of human consciousness and thinking, it can quickly access databases, extract information, effectively answer our doubts, and rationally and directly provide the best answer. AI is gradually being applied to decision-making in enterprise management, allowing managers to free themselves from repetitive routine work and engage in more important and valuable activities (Jia et al. 2018).

The use of AI in a practical and effective way leads to the improvement of the achievement of work tasks in human resource management, whether in the field of recruitment, evaluation and performance measurement, human resource planning, employee training needs, job evaluation or even for predicting the labor market and its needs and indicators. Essentially, AI plays a vital role in shifting the HR function into the digital era (Aldulaimi, 2020). In the process of human resource management, the use of artificial intelligence technology can bring significant economic benefits. Improving the efficiency of human resource management by applying AI technology has become an important trend in development of HR management. The development of the Human Resource Information System (HRIS) provided the basis for the application of artificial intelligence. HRIS means the collection, storage, maintenance, retrieval and validation of employee data needed by the organization. HRIS can help in strategic planning to forecast labor supply and demand, then in the development area by processing information about trainings, performance evaluation, etc (Jia et al. 2018).

Companies at the beginning of the fifth industrial revolution are looking for quality employees, full of potential, in order to achieve defined goals and survive in the competitive digital era. Organizations that succeed in this are those with an effective recruitment strategy, and effective strategies that rely on data analysis in the decision-making process. This data analysis is known as Artificial Intelligence and is starting to play a crucial role when it comes to making hiring decisions. AI techniques used for this purpose refer to "screening" of candidates, acceptance of offers, on boarding of new employees, career development, schedule management, etc. The importance of using AI in recruitment is reflected in: time savings, talent mapping, cost savings, increased quality of employment, higher employee satisfaction and thus lower turnover, impartial selection and recruitment (Reddy and Geetha, 2018). Essentially, the application of AI in the recruitment process mainly refers to the facilitated implementation of the process itself, with an emphasis on efficiency, shortening the duration, while overcoming the factor of human bias. Artificial intelligence has many advantages, but at the same time there are counter arguments in accepting AI as a main tool in employment (Rusydan and Roshidi, 2019).

HR departments are faced with tasks that require a lot of time and energy, from finding the right candidate, onboarding employee in team, through managing salary budgets, benefits, and firing the employee. Technology can help completing many of those cumbersome tasks faster, cheaper and better. HR professionals have begun to see the benefits of data-driven decisions. Data-driven technology, such as AI, is based on the analysis of huge amount of data, with the aim of predicting trends and making suggestions in a humanized format. AI that leverages workforce data will help HR professionals better understand their employees and anticipate issues and trends. AI tools will solve extensive manual analysis and time-consuming tasks in HR, thus enabling HR experts to work on more productive tasks (Rubi and Jayam, 2018).

PROS OF APPLICATION OF AI IN RECRUITMENT AND SELECTION PROCESS

Undercover Recruiter, a recruiting blog, suggests that AI will replace 16% of HR jobs in the next 10 years. One of the new uses of artificial intelligence is in the recruitment process. AI can help HR managers in hiring more effectively, especially in selecting the best candidates. Currently, the sending of printed forms and resumes is replaced by the use of online forms or through employment portals. Recruiters can search for talent using business portals such as LinkedIn, and this way of recruiting will be much easier with the help of AI technology (Rusidan and Roshidi, 2019). As an important part of the system, the recruitment process includes reviewing resumes, analyzing, interviewing candidates, finding suitable positions, etc. Somen Mondal, CEO of Ideal Corp, a software company that uses artificial intelligence to

automate recruitment jobs, says the biggest benefit of AI is to automatically screen applicants and reduce bias. AI can learn the qualifications of successful employees in a particular position and apply that knowledge to select and evaluate qualified candidates. According to Mondal, a company that used AI recruiting software reduced hiring costs by 71% and tripled hiring efficiency.

Manually screening resumes is still the most time-consuming part of recruiting, especially when 75% to 88% of the resumes received for a role are unqualified. Screening resumes and shortlisting candidates to interview is estimated to take 23 hours of a recruiter's time for a single hire (<https://ideal.com/ai-recruiting/>).

The use of artificial intelligence in recruitment provides multiple solutions, including core recruiting tools, middleware applications and advanced AI solutions. Together or individually, these tools create a more effective way for HR to predict a candidate's future success at their company. In hiring processes, many decisions are made on the basis of "gut feeling". One study found that most recruiters make a decision about a candidate within the first 60 seconds of meeting the candidate, often based on appearance, handshake, clothing or speech. It is not possible to make a decision based on the impression about the characteristics, experience, education and personality traits of the candidate, and their success in the new job, herefore managers and HR experts invest billions of dollars in assessments, tests, simulations and gamifications in order to hire the right employees, and yet, many say that they were wrong with 30-40% of candidates. However, AI-based algorithms can leverage resumes, find good internal candidates, profile top performers, and even decode video interviews and provide signals about who is likely to succeed (Owais, 2018).

Traveling to another city or even country for a job interview is like gambling, as candidates will spend time and money traveling with the uncertainty of whether they will get the job. This is one of the reasons why the previously mentioned video interviewing has become more and more popular. Interviews can be conducted anywhere with a good internet connection, which can save time and money. There is also AI technology that can analyze body language patterns and facial expressions during video interviews. This can make the hiring process easier as the candidate will relax and at the same time, the interviewer can later analyze the interview recordings which can result in a more accurate and efficient decision making process. Also, in this way, the factor of human bias during the interview is eliminated (Rusidan and Roshidi, 2019). AI will simplify or automate monotonous and extensive tasks in the recruitment process, given that one of the biggest challenges of the recruiter is to find the right candidate within a limited time among a large number of incoming resumes. This kind of software will scan, evaluate and reject 75% of unqualified resumes i.e. candidates, and create a shortlist of the best candidates. AI digital interview software assesses the candidate's speech, word choice, and body language through video and audio recordings and analyzes whether the personality traits will fit the job (Rubi & Jayam, 2018). This tool turns a 15-minute video interview into a set of 20,000 data points on facial movements, intonation and word choice. The system can help the recruiter significantly improve interview efficiency without reducing interview quality (Jia et al. 2018).

CONS OF APPLICATION OF AI IN RECRUITMENT AND SELECTION PROCESS

Effective application of AI to HR problems faces different challenges than it does in other fields. These range from the practical to the conceptual, including the fact that data science analysis - when applied to making decisions about people - can create serious conflicts with

what society deems appropriate when it comes to making consequential decisions about individuals (Tambe et al. 2019).

Despite all the benefits of using AI in recruiting, one thing to note is that AI is not magic. It is a program that relies on data and an algorithm written by a programmer to perform a task efficiently. The main prerequisite for AI to perform job matching, screening and analysis of candidate patterns is a huge amount of data. Without it, the given results obtained by the AI tool may not be as expected. There is also concern that in the future AI could "learn" to duplicate a biased decision made by a human. This can happen because of the concept of "machine learning" in AI, where patterns of decisions made by humans will be analyzed and repeated from time to time. (Rusydan and Roshidi, 2019). AI is trained to find patterns in previous behavior. That means any human bias that may already be in certain recruiting process – even if it's unconscious – could be learned by AI if developed without due diligence. To avoid replicating any biases that may already exist, AI software vendor must take steps to ensure that their AI is developed and continually monitored for any patterns of potential bias (e.g., only hiring graduates from a certain college (<https://ideal.com/ai-recruiting/>)).

Another thing is the skepticism in accepting AI technology, for the reason that the "human approach" that exists during face-to-face interviews is lost. Additionally, experienced interviewer can always see "that something" special in the candidate, which is not visible in the resume. Currently, this type of observation cannot be replicated using AI software (Rusydan and Roshidi, 2019).

There are several issues in HR that distinguish it from many other areas where AI techniques have been applied. The first is the complexity of the outcomes of HR processes, which are used by AI, such as the evaluation of the quality of work. For example, what does it mean "good worker"? This form has many dimensions, in terms of performance evaluation, so its precise measurement is quite difficult for most jobs. Each relatively complex job is interdependent with other jobs, so individual performance is difficult to separate from group performance. Further, the problem with data science is that many important HR outcomes, such as layoffs, are relatively rare events, especially in smaller organizations. Machine learning and other techniques used by AI require a large number of observations, and they perform poorly when predicting relatively rare outcomes.

The outcomes of HR decisions, such as who will be hired and fired, have serious consequences for individuals and society in terms of ethics, fairness and procedural consistency. A clear legal framework holds employers accountable for making those decisions in a fair manner, emphasizing the ability to "explain" their decisions. This is something that is missing when it comes to algorithms and how AI makes inferences (Tambe et al. 2019).

Artificial intelligence is leading us into an era of extensive automation and these technologies are disrupting the current state of things, creating fear among people that automation will make them lose jobs. However, through numerous examples, history has taught us that automation has revolutionized industry by promoting growth and development in other spheres, and that looking at the bigger picture, it actually increases employment opportunities. Therefore, we don't have to fear AI, but accept it and evolve with the changes (Ruby and Jayam, 2018).

SUCCESS STORIES OF COMPANIES WHICH IMPLEMENTED AI IN SELECTION

Given that the imperative of modern business is to increase efficiency and reduce costs, applying AI results in exactly those benefits. The valuable time of the already overburdened

HR officers dealing with recruitment can be used/saved more efficiently and redirected to other important activities. Those are mainly in domain of the final selection phase, when face-to-face interviews with final candidates are conducted, contract elements, salary and benefits are negotiated.

Furthermore, the application of this model of candidate selection, apart from shortening the time, also contributes to the quality of the process, because the factor of recruiter's bias is eliminated. When it comes to the already mentioned increase in efficiency, the following are examples/case studies of large international companies, which have introduced the application of AI into the selection and employment process, specifically the "HireVue" platform (www.hirevue.com).

- Unilever: £1M annual cost savings, 90% faster recruitment process (<https://www.hirevue.com/case-studies/global-talent-acquisition-unilever-case-study>)
- National Safety Apparel: 4 x faster recruitment time, 50% reduction in costs per vacancy (job add) (<https://www.hirevue.com/case-studies/national-safety-apparel>)
- Maxis: 57% reduced time to hire, 2:1 interview to hire ratio (<https://www.hirevue.com/case-studies/maxis>)
- Hilton International: reduced average employment time from 6 weeks to 5 days (<https://www.washingtonpost.com/technology/2019/10/22/ai-hiring-face-scanning-algorithm-increasingly-decides-whether-you-deserve-job/>)
- Rackspace: 131% ROI in the first year, 87% accelerated time to hire (<https://www.hirevue.com/case-studies/rackspace>)
- Automation anywhere: Greater diversity in candidates and hires, 31% improvement in time to fill (<https://eightfold.ai/wp-content/uploads/Automation-Anywhere-Eightfold-Customer-Story.pdf>)

The promise of AI for improving quality of hire lies in its ability to use data to standardize the matching between candidates' experience, knowledge, and skills and the requirements of the job. This improvement in job matching is predicted to lead to happier, more productive employees who are less likely to turnover. Early results are extremely promising. Early adopter companies using AI-powered recruiting software have seen their cost per screen reduced by 75%, their revenue per employee improve by 4% and their turnover decrease by 35% (<https://ideal.com/ai-recruiting/>).

CONCLUSION

Recently, the role of HR has made great progress and in most organizations they are perceived as key partners to company management. However, despite their new responsibility and ability to make key strategic decisions, reality is that HR professionals still spend most of their time tied up with admin work – 86% (https://www.ey.com/en_gl/workforce/future-hr). This is clearly incompatible with the new strategic demands of the function, but with implementation of AI and deep learning technologies which have proven to free up time-consuming HR tasks, HR function can reach its full potential.

According to research conducted by LinkedIn, European employees stay in one company for an average of 2.4 years. Behind this number there is almost immeasurable amount of working hours of HR professionals working on recruitment and selection, making this happen'. With the growing trend of general online communication caused by the pandemic as well as the transition to online job interviews, the use of automated platforms that will cover the selection process from start to end in a structured way, with the application of artificial intelligence, is emerging as a natural change.

Application of the above mentioned concept with application of AI is possible in all economic branches, wherever there is a willingness to go one step further in the selection process, beyond classic resume in paper form and conducting only face-to-face interviews. In fact, it should indicate the necessity of changes that can and should be included in the selection and employment process.

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CLOUD-BASED DIGITAL PLATFORM OF THE INSTITUTE FOR THE PROTECTION OF CULTURAL HERITAGE

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Abstract: *Cultural heritage is essential not only for every country or region and their people, but also for the world globally. Thus, protection and preservation of cultural heritage is of critical importance because it can help preserve national identities, connect people, promote cultural diversity, expand tourism offering, inspire innovation in various fields, etc. Government and non-government organizations specialized in protection of cultural heritage are the key success factors in this process. Digitalization of cultural heritage and associated processes is critical for successful protection and preservation. Digital transformation represents the opportunity for organisations from cultural heritage sector to think and operate like digital organizations in the way they engage their clients and consumers, empower their employees, optimize their operations, and transform their services. Continuous and rapid advances in information technologies (IT) provide various computing platforms, systems and tools that can support, improve, and transform processes of cultural heritage protection. This paper discusses the importance of digitalization in the cultural heritage sector, possible applications of information technologies, and the benefits they generate. It provides review of the most important research results, policies, models, and IT solutions utilized for the digitalization of cultural heritage. Based on the analysis of existing approaches, best practices, as well as practical experience, an integrated model for digital transformation is presented. Its architecture is modular, flexible and encompasses the individual, team, organizational and community collaboration levels. For the effective deployment of cloud services, cloud adoption strategy is presented. Following best practices for the cloud adoption framework allows organizations to better align business and technical strategies and ensure success. Finally, the real-world cloud-based digital platform designed for the Institute for the Protection of Cultural Heritage in Kragujevac is presented. The core services and solutions are presented. The platform is fully integrated, scalable, modular, and secured. It enables process automation, digitization, data management, multimedia support, document management, productivity, analytics, collaboration, social networking, and communication. The proposed model for digital transformation and the designed cloud platform, enable organizations working in the cultural heritage domain to improve quality of processes and operations, digitize data, better protect and manage cultural heritage, enhance services towards citizens, and reduce costs.*

Keywords: *Cloud Computing, Web Portal, Digital Transformation, Information Systems, Cultural Heritage*

JEL Classification: *C 55, C 88, C 89, L 81*

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INTRODUCTION

Cultural heritage is a perpetual source of inspiration, innovation and creation, benefitting the economy and society. It can stimulate tourism, which benefits local economies, educates people with culture and history, and enhances social inclusiveness (Yan, 2022). That is why it needs to be preserved and protected. While the importance of preserving cultural heritage is obvious, people are facing difficulties in the preservation process.

The management of cultural and digital resources, is the first fundamental step to achieve a more efficient operation of the entire cultural heritage ecosystem (Stancato, 2019). Fundamentally, the cultural heritage sector needs to build digital capacity and understanding in order to be more resilient, remain relevant and thrive in the 21st century. This means making an impact and a difference to the people who visit and use their products and services. Beyond that, digital transformation needs to be driven by organisational mission, purpose and values, and to encompass wider societal issues such as social justice, equity and the climate crisis (Europeana, 2022).

The Information and Communications Technologies (ICT) are nowadays fundamental in all areas of society, including in the protection of cultural heritage. The growing broadband and mobile connectivity, the access to online data, the use of cloud computing and collaboration platforms – these trends determine also the future of the cultural assets management.

New tools for digitisation and virtualisation are used to protect cultural heritage and communicate its unique value (Interreg Europe, 2017). The investment into digitisation of historical documents, cultural artefacts, collections and intangible assets turns into improved access, promotion and better management of the data. Online platforms have become the dominant environment for professionals and general audience and serve as attractive channels for promoting heritage of the regions.

One of the key problems in cultural heritage is the management of data and information. Dealing with heritage sites, monuments, and artefacts involves a large volume of data: text documents, images, measurements, technical drawings, etc. (Soler et al., 2012). This requires design and application of comprehensive information systems where the cultural institutions can efficiently document, manage and preserve and integrate with a searchable user interface mechanism (Thekkum Kara, 2021).

At the same time, it is a challenge to establish a common digital environment for sharing of community-developed data and tools. 90% of Europe's heritage has not yet been digitized (Charles and Isaac, 2015). There is a persistent need for sharing and updating knowledge and for identifying common solutions (European Council, 2016).

The Commission recommends Member States to accelerate the digitisation of all cultural heritage monuments and sites, objects and artefacts for future generations, to protect and preserve those at risk, and boost their reuse in domains such as education, sustainable tourism and cultural creative sectors. Europeana, the European digital cultural platform, will be at the basis for building the common data space for cultural heritage (Digibyte, 2021). There is no one-size-fits-all solution for digital transformation and it can only happen in response to various individual and organisational contexts, be it size, location, domain, purpose, audience etc. In response, the guide sets out three recommendations to help frame an approach to digital transformation for the whole of the culture sector in Europe (Finnis and Kennedy, 2022):

- Language and approach: share a common language and approach to all aspects of digital transformation

- Mindset and culture: adopt a mindset and culture that is open to learning and collaboration
- Purpose and values: ensure that digital is purposeful and values-driven

FRAMEWORK FOR DIGITAL TRANSFORMATION

Digital transformation is both the process and the result of using digital technology to transform how an organisation operates and delivers value. It helps an organisation to thrive, fulfil its mission and meet the needs of its stakeholders. It enables cultural heritage institutions to contribute to the transformation of a sector powered by digital and a Europe powered by culture (Europeana, 2021).

However, digital transformation is typically complex and risky endeavour, and it needs to be carefully planned and executed. This requires adequate digital transformation framework processes and digital architecture. Figure 1 shows the four key steps of a successful digital transformation process:

1. Set vision & identify business scenarios

- Identify Key Stakeholders
- Set Vision
- Executive Sponsorship
- Identify Scenarios

2. Prioritize solutions & create an adoption plan

- Define & Prioritize Solutions
- Champions Program
- Adoption Plan

3. Commit resources & execute on adoption plan

- Awareness Campaign
- Lunch & Learn
- Learning Center

4. Measure, share success & iterate

- Measuring Success
- Sample User Satisfaction Surveys

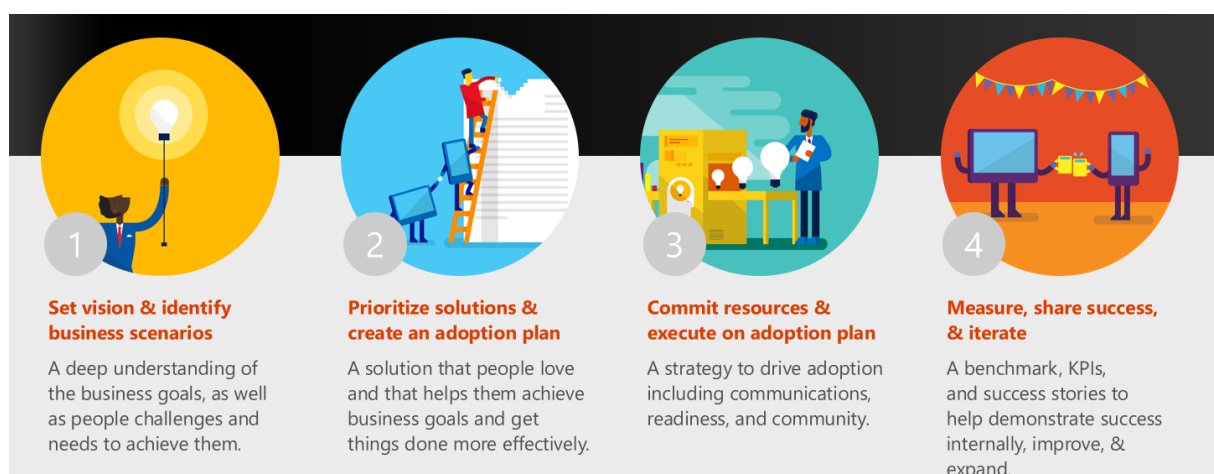


Figure 1: Digital Transformation Process

Source: Microsoft. (2022). Microsoft 365 Adoption Plan Guide

Digital transformation also requires adequate digital architecture that encompasses four key areas of productivity:

- Individual productivity
- Team productivity
- Community enablement
- Organisational productivity

This architecture forms the cornerstone for successfully implementing digital transformation programs. It highlights which digital service and tools enables which organizational focus (Figure 2).

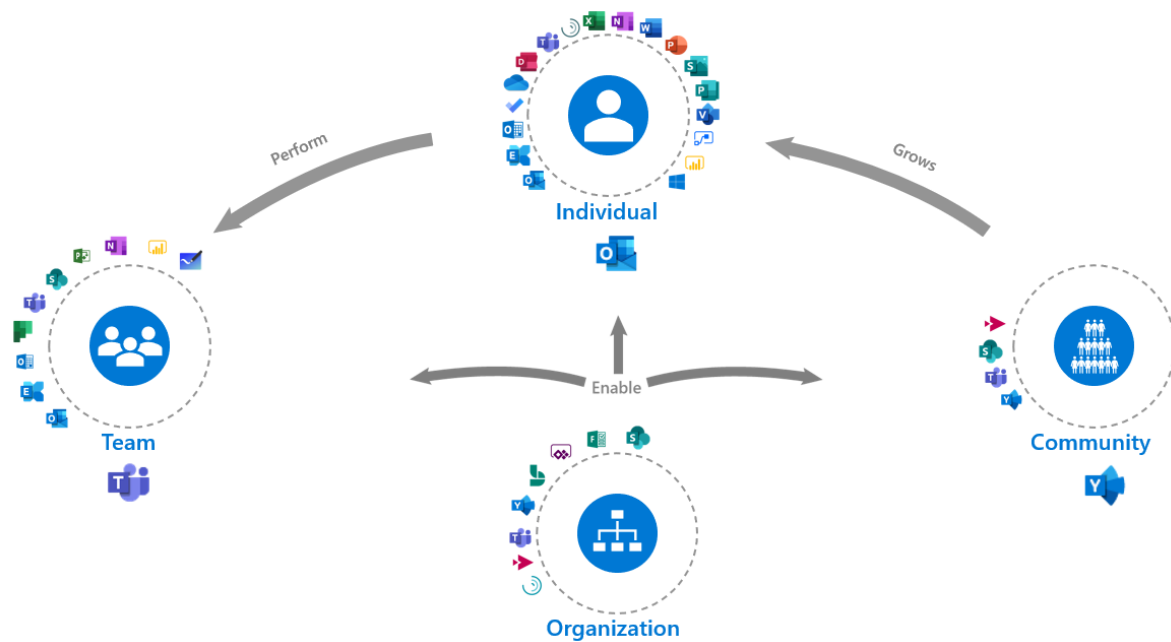


Figure 2: Architecture of Digital System

Source: Microsoft. (2022). Modern Collaboration Architecture, Standard 2.0

CLOUD-BASED DIGITAL PLATFORM OF THE KRAGUJEVAC INSTITUTE FOR PROTECTION OF CULTURAL MONUMENTS

The cloud delivers fundamental technology benefits that can help cultural heritage institutions execute multiple business strategies. By using cloud-based approaches, they can:

- Improve business agility
- Reduce costs
- Accelerate time to market
- Enable expansion into new markets

To take advantage of this great potential, cultural heritage institutions need to define appropriate cloud adoption strategy and methodology (lifecycle).

The following steps can help organizations document their cloud strategy efficiently.

- Define and document motivations: Meet with key stakeholders and executives to document the motivations behind cloud adoption.
- Document business outcomes: Engage motivated stakeholders and executives to document specific business outcomes.
- Evaluate financial considerations: Learn how to use the cloud to make IT cost structure more flexible. Then, build a business case to adopt the cloud.
- Understand technical considerations: Discover the technical flexibility, efficiencies, and capabilities that help build a business case to adopt the cloud.

This approach helps organizations drive adoption efforts that capture targeted business value in a cross-functional model. Then, they can map their cloud adoption strategy to specific cloud capabilities.

The cloud adoption framework is a full lifecycle framework that enables cloud architects, IT professionals, and business decision makers to achieve their cloud adoption goals. It provides best practices, documentation, and tools that help organizations create and implement business and technology strategies for the cloud. Figure 3 outlines the main phases of the cloud adoption lifecycle. Following best practices for the cloud adoption framework allows organizations to better align business and technical strategies and ensure success.

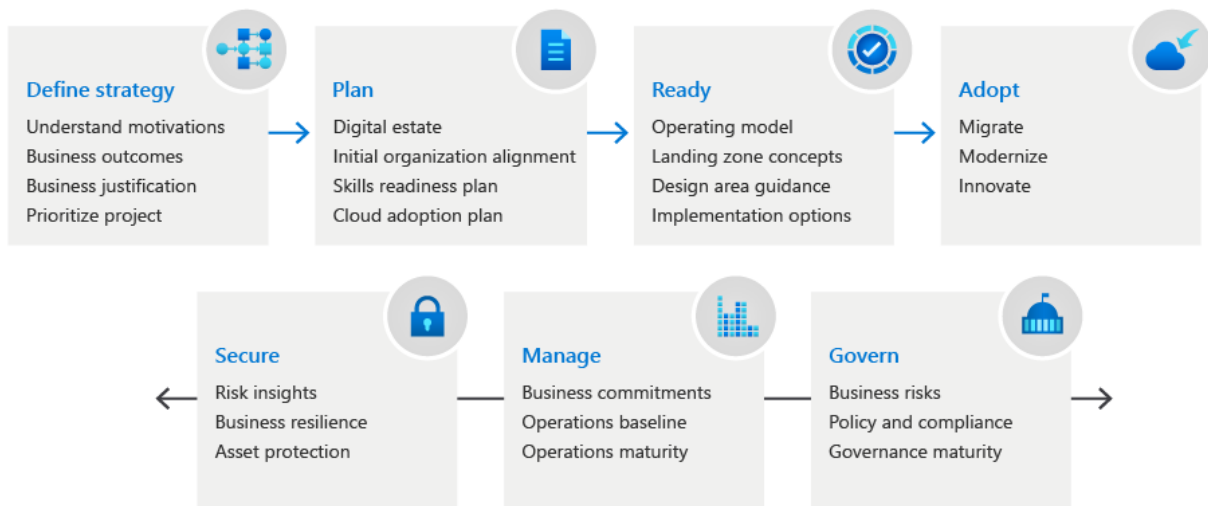


Figure 3: Cloud Adoption Framework

Source: Microsoft. (2022). Cloud Adoption Framework for Azure

*CASE STUDY – KRAGUJEVAC INSTITUTE
FOR PROTECTION OF THE CULTURAL MONUMENTS*

Kragujevac Institute for protection of the cultural monuments covers territories of cities Kragujevac and Jagodina and 11 municipalities of Sumadija and Pomoravlje counties. It is tasked with recording, examining, protecting and presenting of cultural heritage that includes the oldest prehistoric and antique monuments, works of medieval sacral and fortification architecture, traditional architecture and monuments created in the recent history and contemporary works, which are now comprising significant cultural and historical, artistic,

educational and aesthetical value. The institute protects 168 stationary cultural assets that include cultural monuments, archaeological sites, spatial cultural-historical units, and landmarks.

Based on the presented digital system process and the architecture, and the cloud adoption framework, digital transformation of the Institute for protection of the cultural monuments in Kragujevac has been planned and carried out. The specialised digital system was designed implemented. It is based on the Azure cloud platform and Microsoft 365 cloud services. It encompasses several components and services:

- Web-based information system for data management
- Document management
- Collaboration and teamwork
- Project management
- Process automation
- Communication
- Social networking
- Multimedia content
- Identity management

Figure 4 shows the home page of the web information system based on the SharePoint platform, and Figure 5 shows the registrar of the cultural monuments with section for accompanying documentation.

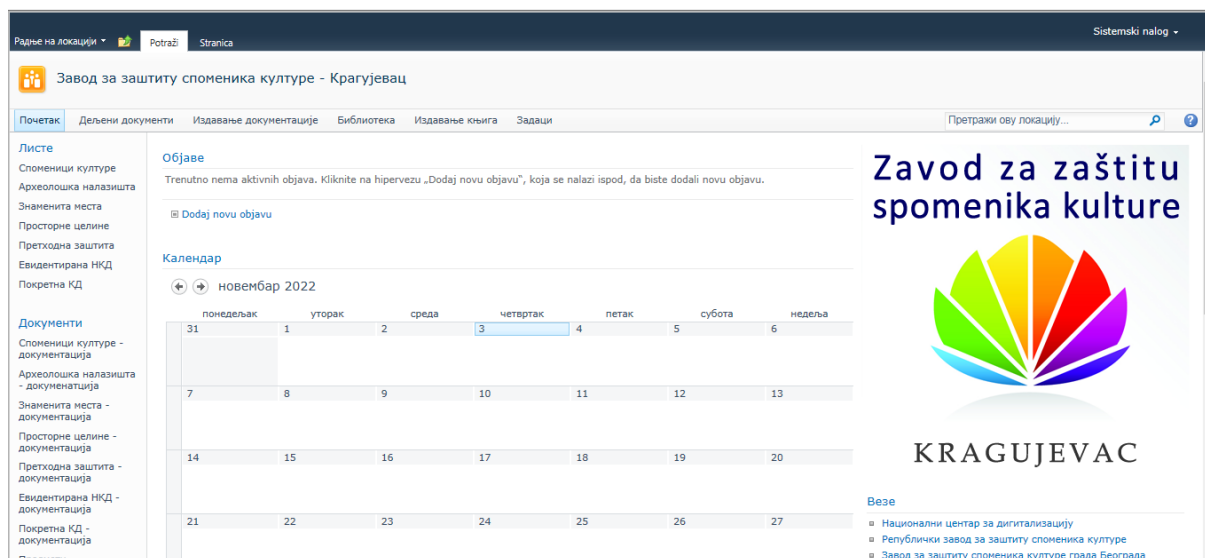


Figure 4: Information system home page

Source: Stefanovic, N. (2022). Web Information System of the Institute for protection of the cultural monuments Kragujevac

Листе	Назив	Адреса	Место	Општина	Округ	Број регистра	Број ЦП	Категоризација	Датум уписа у ЦП	Број одлуке	Датум одлуке	Орган*
Spomenici kulture	Prebrojavanje= 104											
Arheološka nalazišta	Градина		Честин	Клић	Шумадијски округ	26	251	Значај	22.6.1982	????????????????	14.7.1977	????????????????
Знаменита места	Манастир Драча		Драча	Крагујевац	Шумадијски округ	5	141	Велики значај	19.10.1981	P 700/55	11.6.1955	ЗНПСК БГ
Претходна заштита	Манастир Благовештење Рудничко		Страгари	Крагујевац	Шумадијски округ	7	246	Велики значај	22.6.1982	P 1191/49 09.07.49	9.7.1949	ЗНПСК БГ
Евидентирана НКД	Манастир Раваница		Сење	Ђурђија	Поморавски округ	1	244	Изузетан значај	22.6.1982	P 304/48	5.3.1948	ЗНПСК БГ
Документи	Манастир Сисојевац	Сисевац		Параћин	Поморавски округ	2	139	Велики значај	19.10.1981	P 307/51	29.3.1951	ЗНПСК БГ
Spomenici kulture - документација	Манастир Манасија		Деспотовац	Деспотовац	Поморавски округ	3	140	Изузетан значај	19.10.1981	P 301/48	5.3.1948	ЗНПСК БГ
Arheološka nalazišta - документација	Манастир Каленић		Каленички Прњавор	Рековац	Поморавски округ	4	245	Изузетан значај	22.6.1982	P 341/48	10.3.1948	ЗНПСК БГ
Знаменита места - документација	Манастир Јошаница		Јошанички Прњавор	Јагодина	Поморавски округ	6	142	Велики значај	19.10.1981	P 88/52	19.2.1952	ЗНПСК БГ
Просторне целине - документација	Манастир Вољавча		Страгари	Крагујевац	Шумадијски округ	8	143	Велики значај	19.10.1981	P 453/49	18.3.1949	ЗНПСК БГ
Претходна заштита - документација	Црква Светог Николе	Ранаћа	Крагујевац	Шумадијски округ	9	248	Велики значај	22.6.1982	P 699/55		11.6.1955	ЗНПСК БГ
Евидентирана НКД - документација												
Покретна КД -												

Figure 5: Registrar of cultural monuments

Source: Stefanovic, N. (2022). Web Information System of the Institute for protection of the cultural monuments Kragujevac

Figure 6 shows the project management module for managing tasks and monitoring project execution.

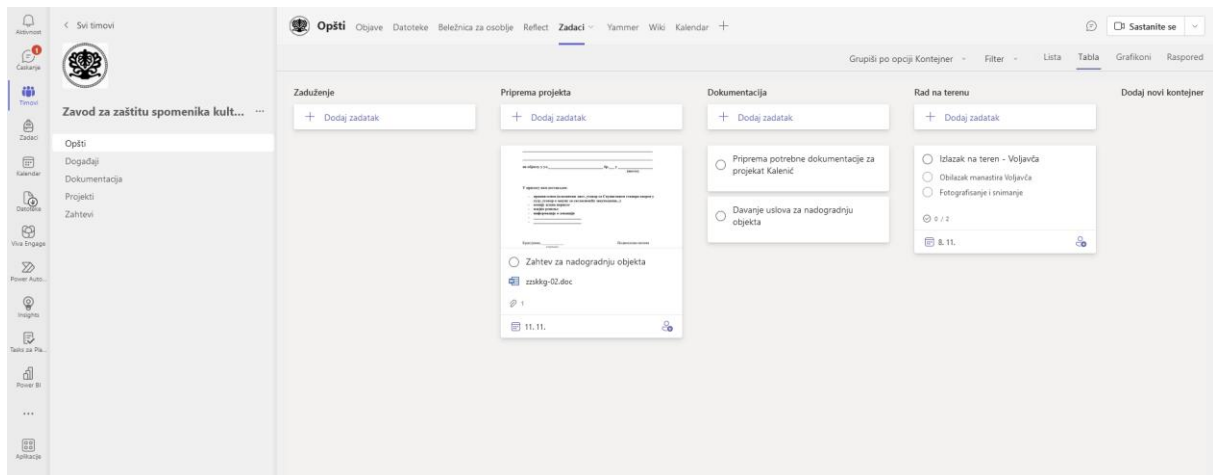


Figure 6: Project management module

Source: Microsoft 365 Teams/Planner module

CONCLUSION

Cultural heritage is evolving rapidly thanks to digital technologies. The momentum is now to preserve our cultural heritage and bring it to modern digital age. The digitisation of cultural heritage generates large amount of high value data that can inspire creation and innovation within the cultural heritage sector, and beyond, in games, virtual shopping or new buildings in smart cities.

Based on the analysis of existing approaches, best practices, as well as practical experience, an integrated model for digital transformation is presented. Its architecture is modular,

flexible and encompasses the individual, team, organizational and community collaboration levels.

The real-world cloud-based digital platform designed for the Kragujevac Institute for the Protection of Cultural Heritage is presented. It enables process automation, digitization, data management, multimedia support, document management, productivity, analytics, collaboration, social networking, and communication. The proposed model for digital transformation and the designed cloud platform enable organizations working in the cultural heritage domain to improve quality of processes and operations, digitize data, better protect and manage cultural heritage, enhance services towards citizens, and reduce costs.

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THE IMPACT OF DIGITALIZATION ON THE PERFORMANCE OF ACQUIRED COMPANIES IN THE REPUBLIC OF SERBIA

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Abstract: *The adoption and implementation of digital technologies in companies are of key importance not only for effective communication and business management but also for the improvement of their financial and organizational performance. In the last twenty years, the execution of digital technology has attracted enormous attention from companies in the Republic of Serbia, considering that digitalization provides the basis for business improvement. The paper aims to examine the impact of implemented digital technology on the organizational and financial performance of acquired companies in the Republic of Serbia. The research will be conducted based on the responses of 31 managers from 5 companies that were part of the acquisition process in Serbia. In the interpretation of the research results, relevant statistical methods will be used, such as regression analysis, which will be used for hypothesis testing. It is assumed that the research results will confirm the previously stated hypotheses that the developed digital infrastructure in acquired companies positively affects their organizational and financial post-acquisition performance. Since research in the field of digitalization of acquired companies in Serbia is scarce, future studies should provide new directions, recommendations, and structures for future researchers. On the other hand, this study will contribute to the development of management's perception in acquired companies that the modernization of digital infrastructure results in significant savings in business costs and a significantly better competitive position in the market.*

Keywords: *Digitalization, Performance, Acquisition, Technology*

JEL Classification: *M15, O32*

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INTRODUCTION

Large and significant social and industrial changes in the world have occurred as a result of the application and development of key digital technologies, such as artificial intelligence, business software, cloud computing, database analytics, etc. Since 2019, with the emergence of the Covid-19 virus and its pandemic, the use of digital technology in business has increased rapidly, although there has already been a growing trend since 2000 in the use of digital technology in almost all economic structures. The number of participants in all markets around the world is increasing year by year, accordingly, the intensity of competition between those participants in the markets has increased significantly. To remain competitive in the digital context and cope with growing competition, companies at the national levels and global level are dominantly intensifying their digitalization of business.

When we say digitalization, we mean the improvement of cooperation with customers, production processes, and procurement processes using digital technology (Hess, Matt, Benlian & Wiesböck, 2016). Digitalization directs business toward joint organization, flexible business processes, intelligent management decision-making, and joint environmental protection. According to Melrose et al. (2021), 92% of industrial companies have started the process of digitizing their business, relying on the assumption that in this way they will be able to achieve or maintain a competitive advantage in the market. In addition to research on the initial use of digital technology in business, some research results indicate that investing in digital technology positively affects financial and organizational performance (Raguseo & Vitari, 2018). It is necessary to note that by using digital technology in business, companies not only simplify the business process but also create a creative basis for creating value through the development of product innovation, the overall production process, generating a business vision, and restructuring the organizational culture (Guo & Xu, 2021). When it comes to the costs of digitalization in business, it means capital investment in the development of the company's digital infrastructure, as well as all those costs related to the integration and management of that technology, which include training costs, licenses for more advanced versions of programs, etc. Most of the studies on the topic of examining the impact of digitalization on business performance belong to consulting companies, which predominantly researched the impact of the application of digital technology in business on the financial and organizational performance of companies. Specific research has not provided a sufficient theoretical explanation on this topic, how digitalization affects business.

This paper analyzes the impact of digitalization in business on the organizational and financial performance of acquired companies in the Republic of Serbia. Unlike the authors' research (Abou-foul, Ruiz-Alba & Soares, 2020; Yu & Moon, 2021), it has not yet been investigated how the application of digital technology in the post-acquisition period contributes to the organizational and financial performance of acquired companies in Serbia. Specifically, this research addresses gaps reflected in previous literature, providing significant theoretical and practical implications.

The subject of research in this paper is the digitalization of business and its effects on post-acquisition organizational and financial performance. The paper aims to examine whether the digitalization of business affects the post-acquisition performance of the acquired company. Bearing in mind the set subject and goal of the research, qualitative and quantitative methodology was applied in the work. The application of the qualitative methodology is manifested in the consultation of the relevant literature to create a theoretical basis for the application of the quantitative methodology, using which the research hypotheses were tested. Empirical research was conducted on the example of acquired companies operating in the territory of the Republic of Serbia, which were the subject of acquisitions. Data collection was

carried out using a structured questionnaire that was distributed to employees in different positions. Data analysis was performed using various quantitative statistical methods and techniques. An analysis of the reliability and internal consistency of the variables was performed. Hierarchical regression was used to test the hypotheses.

The paper is structured in five sections. After the introduction, the paper provides an overview of the literature, which lays the foundation for formulating research hypotheses. The third section explains the research methodology. The fourth section follows, in which the results of the empirical research are presented. Finally, in the fifth section, the conclusions are given, the contribution of the work is highlighted and directions for future research are pointed out.

DIGITALIZATION AND ORGANIZATIONAL POST-ACQUISITION PERFORMANCE

By applying digital technology in business, companies can provide an improved offer of products or services to customers, thereby increasing their satisfaction and reducing administrative costs (Mithas et al., 2005). There is no doubt that companies with a developed digital infrastructure can maintain a competitive advantage in the market, and many studies indicate that the first effects of digitalization in the company affect primarily cost reduction. Previous studies on the implications of the application of digital technologies suggest that digitalization can positively affect the development of service products (Lehrer et al., 2018), the sale of products (Yeov et al., 2018), and the procurement of materials for their production (Lee & Berente, 2012). Digitalization not only affects the improvement of companies' operations but also encourages the development of product and production process innovations (Hanelt et al., 2021). From a long-term perspective, companies position their strategic goals in the direction of achieving innovative solutions, which would significantly improve business. In accordance with this goal, the digitalization of business represents the primary and almost necessary means for the realization of those innovative solutions (eg 3D printing), which are also key drivers of the sustainable development of companies. Digitalization improves business operations by reducing transaction costs, increasing employee productivity, improving the efficiency of production assets, and optimizing procurement. Primarily, digitalization affects the reduction of transaction costs in production and sales processes, after which information is effectively shared within the company, which can result in improved communication between employees (Guo & Xu, 2021). The application of digital technology in the company facilitates the growth of the company, through digital marketing, technological achievements, and changing the business process.

The period after the year 2000 in Serbia was recorded as the beginning of the transition, which meant, among other things, that state-owned companies were privatized. By taking over those companies, mostly from foreign owners, a complete organizational restructuring and modernization of the business process were carried out. This implied significantly improving and innovating outdated existing products, as well as introducing completely new products that will create a new need among customers in the market. According to Kohli & Melville (2019), there are very few studies that have analyzed the impact of digitalization on the organizational performance of companies, especially those companies that have been the target of a takeover acquisition.

The starting point for analyzing this relationship is to identify the digital competence of the employees in the acquired companies. That is, the acquired digital knowledge and skills can significantly contribute to the organizational performance of the company. Authors Kim et al. (2012) believe that the efficiency of information management depends on the degree of digital

competence of employees in companies. In transition countries, with the influx of foreign capital and the takeover of state-owned enterprises, the digital era of business began. This meant that employees acquired or improved their digital skills through training and courses, to master business software and all other programs that are necessary for modern business.

In light of all of the above, we propose the two following hypotheses:

H1: Digitalization has a positive effect on the organizational post-acquisition performance of the company.

DIGITALIZATION AND FINANCIAL POST-ACQUISITION PERFORMANCE

Financial performance represents the final results of a company's operations. Positive organizational performance, which the company records, indirectly affects financial performance as well. Based on this, by applying digital technology, the company develops innovations and improves the overall business process, which results in an additional improvement of the company's financial results.

However, digitalization cannot guarantee profitability in business because the implementation of digital technology creates costs (Hanelt et al., 2021) that can threaten that profitability. Considering the costs of integration and synergies, it is assumed that there is a curvilinear relationship between digitalization and the financial results of the company. After the implementation of digital technology, integration costs rise sharply, leading to a significant increase in management costs (Besson & Rowe, 2012). The effects of digitalization cannot reach their peak in the first years of existence, therefore the costs of integration will compensate for the initial contributions of digitalization in business. That is, when the degree of digitalization is low in the company, the marginal costs of integrating a specific digital technology exceed its benefits from application in business (Deng et al., 2019). By digitally integrating suppliers and customers in the value chain, the company can achieve significant savings in certain costs, such as coordination costs, transaction costs, and agency costs, through significantly increased communication and transparency (Nwankpa & Roumani, 2016) in business. According to Guo and Xu (2021), companies can record positive financial results only after the intensity of business digitalization reaches a certain level. If that threshold is not met, the costs of digitalization will be significantly higher than the contribution of digitalization.

The post-acquisition period is often followed by the organizational restructuring that requires significant financial investments. This can be a problem in assessing the impact of digitalization on the financial performance of the acquired company because the change in financial results is not only accompanied by the effects of the application of digital technology in business, but also by investing in some other business segments. To avoid this potential problem in assessing the impact of digitalization on financial performance, it is necessary to observe only those costs that arise as a consequence of the application of digital technology.

Therefore, the following hypothesis is proposed:

H2: Digitalization has a positive effect on the financial post-acquisition performance of companies.

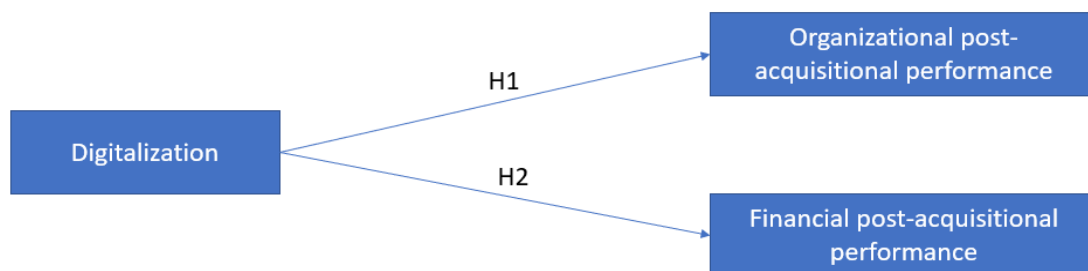


Figure 1: Research model

Source: Authors

METHODOLOGY

Empirical research on the impact of digitalization in the acquisition process on post-acquisition performance was conducted on a sample of acquired companies in the Republic of Serbia, i.e. companies that were the subject of integration processes. For the collection of primary data, a survey method, a questionnaire instrument, was used.

The research was carried out with the help of the Google Forms platform and by physically filling out the questionnaire, in the period from May to June 2022. Before the actual research and data collection, the target population for the needs of the research was identified. The research sample consists of 31 managers at the tactical and strategic level, who are employed in five acquired companies in Serbia. Through the questionnaire, respondents expressed their views on the implemented digitalization (adapted from Ravichandran, 2018; Yu & Moon, 2021) after the takeover, as well as on organizational (Tanriverdi & Lim, 2017) and financial post-acquisition performance (Savović, 2017).

Dependent variables Organizational post-acquisition performance and Financial post-acquisition performance were measured through the subjective perceptions of managers, who expressed the degree of agreement with specific statements. A five-point Likert scale was used, which shows the degree of agreement of the respondents with the statements made. Answers from 1 (I do not agree at all) to 5 (I completely agree) were available to the respondents. As shown in Table 1, there are more men (61.3%) than women (38.7%) in the sample. Observed according to the age structure, the most numerous categories of respondents are in the age groups of 26 to 35 years (41.9%) and 36 to 45 years (41.9%). If the years of work experience are observed, the representation of respondents with shorter work experience is observed: up to five years (12.9%), from 6-10 years (29%), and from 11-15 years (35.5%), and the participation of respondents with longer working experience: from 16-25 years (12.9%) and over 25 years (9.7%).

Table 1. Characteristics of the sample

Characteristics of the respondents		Frequency	Percentage
Gender	Muško	19	61,3%
	Žensko	12	38,7%
Age	26-35	13	41,9%
	36-45	13	41,9%
	46-55	5	16,1%
Years of service	<5	4	12,9%
	6-10	9	29,0%
	11-15	11	35,5%
	16-25	4	12,9%
	>25	3	9,7%
Total		31	100%

Source: Authors

The data were analyzed in the Statistical Package for Social Sciences – SPSS. Cronbach's alpha was used to measure the reliability of the variables and the internal consistency of the statements used to measure said variables. Descriptive statistics were used to measure central tendency (arithmetic mean) and measure variability (standard deviation). Associations between research variables were tested using correlational statistical analysis. The testing of the research hypotheses was carried out using simple regression analysis.

RESEARCH RESULTS

Table 2 shows the standard deviations, arithmetic means, and Cronbach's Alpha coefficients of the analyzed variables. The value of the arithmetic mean of the Digitalization variable is above 4, which means that managers believe that the application of digital technology in business is more frequent after acquisitions. The values of the arithmetic mean of the dependent variables Organizational post-acquisition performance and Financial post-acquisition performance are also above 4, which means that a satisfactory improvement in financial and organizational performance has been achieved in the post-acquisition period.

Table 2. Arithmetic means, standard deviations and Cronbach's Alpha coefficients of the analyzed variables

Variables	AM	S.D.	Cronbach's Alpha
Digitalization	4,26	0,74	0,896
Organizational post-acquisition performance	4,02	0,73	0,872
Financial post-acquisition performance	4,14	0,68	0,732

Source: Authors

To examine the internal consistency of the variables, Cronbach's Alpha coefficient was used. The values of this coefficient range between 0 and 1, when the value is greater than 0.7 it can be said that the reliability and consistency of the claims are adequate (Hair et al., 2014). Based on Table 2, it can be concluded that all 3 variables, which were observed in the research, have a very good internal consistency. The highest level of reliability is characteristic of Digitalization ($\alpha=0.896$), but a high level of reliability is also characteristic of the other

variables (Organizational post-acquisition performance: $\alpha=0.872$, Financial post-acquisition performance: $\alpha=0.732$). To examine the impact of digitalization on the financial and organizational post-acquisition performance of the company, two simple regression analyzes were applied.

Table 3. Correlation analysis

	Digitalization	Organizational post-acquisition performance	Financial post-acquisition performance
Digitalization	1	-	-
Organizational post-acquisition performance	0,760**	1	-
Financial post-acquisition performance	0,748**	0,863**	1

** Correlation is significant at the 0.01 level

Source: Authors

To determine the strength of the relationship between the investigated variables, a correlational analysis was conducted, the results of which are shown in Table 3.

Based on the obtained values of the Pearson correlation coefficient, it can be concluded that there is a statistically significant positive relationship at the 0.01 level between all analyzed variables. Observing the correlation between the variables Financial post-acquisition performance and Organizational post-acquisition performance, the strongest degree of linear correlation can be identified (0.863). The smallest connection and the weakest degree of linear correlation in the research were recorded between the variables Digitalization and Financial post-acquisition performance (0.748).

Table 4. Results of simple regression analysis - organizational post-acquisition performance

Variable	Organizational post-acquisition performance			
	Beta	t	sig.	VIF
Digitalization	0,760	6,301	0,000	1,000
*** Value is significant at the level $p < 0,01$	$R^2 = 0,578$; $F = 39,697^{***}$			

Source: Authors

Based on Table 4, it can be concluded that 57.8% of the organizational post-acquisition variability is described by the given regression model, which shows the value of the coefficient of determination 0.602. The value is significant at the 0.01 level. Regression analysis determined that the digitalization of business has a statistically significant impact on organizational performance after the acquisition ($\beta=0.760$; $p < 0.01$) of acquired companies in Serbia. Based on the obtained results, hypothesis H1 can be accepted, i.e. the results show that digitalization of business has a positive effect on organizational performance after the acquisition of acquired companies.

Table 5. Results of simple regression analysis - financial post-acquisition performance

Variable	Financial post-acquisition performance			
	Beta	t	sig.	VIF
Digitalization	0,748	6,078	0,000	1,000
*** Value is significant at the level $p < 0,01$	$R^2 = 0,560$; $F = 36,946^{***}$			

Source: Authors

The regression model in Table 5 describes 56% of the variability of financial post-acquisition performance and this is a good regression model because the value of the coefficient of determination is greater than 0.4. Also, the value of the coefficient of determination is statistically significant at the level of 0.01 ($p < 0.01$). The analysis found that the Digitalization of business also has a statistically significant impact on the financial post-acquisition performance ($\beta = 0.748$; $p < 0.01$) of acquired companies in Serbia. That is, it can be concluded that the second H2 research hypothesis is also confirmed, that digitalization of business has a positive impact on the financial performance of acquired companies in Serbia.

CONCLUSION AND RECOMMENDATIONS

A review of the literature in the field of enterprise digitalization shows that studies that analyze the impact of the application of digital technologies in business are limited, as well as that there is a limited understanding of the implementation of digitalization in acquired enterprises. This created space and a need for the realization of this kind of research. According to Guo and Xu (2021), the application of digital technology in business significantly contributes to the improvement of organizational performance, emphasizing that the effect of organizational performance is significantly more permanent than on financial performance in the company. That is, it is easier for companies to improve the business process through the application of digital technology than to make a profit through it.

Acquisitions represent one of how companies can access modern digital infrastructure and, based on that, develop digital competencies among employees. In the preparation of the literature review, a theoretical model was constructed that indicates the relationships and impacts of the digitalization of business on the organizational and financial performance of the company, specifically on post-acquisition performance. The purpose of this paper is to examine the effects of digitalization, from the buyer's company to the acquired company, on organizational and financial post-acquisition performance in Serbia. The results of empirical research show that the digitalization of businesses after acquisitions has a positive effect on the organizational and financial performance of those acquired companies in Serbia. Previous research on this topic confirms the positive impact of business digitalization on the performance of banks and multinational companies (Bayo-Moriones et al., 2013; Scott et al., 2017). The application of digital technology significantly facilitates the process of innovation in companies, which allows companies to produce high-quality products at lower costs, consuming a significantly smaller amount of natural resources. It can be concluded that digitalization not only enables businesses to achieve digital sustainability but also increases the satisfaction and loyalty of their customers, which directly leads to achieving economic sustainability.

In transitional economies, such as Serbia, first of all, managers in acquired companies must consider the option of complete digitalization of business, to encourage the development of various innovations and achieve huge savings in the business, in newly acquired companies. By constantly monitoring and updating the digital infrastructure in the acquired company, the process of internationalization of the company in the developed economies of the world can be facilitated. However, the implementation of digital technology is not simple and it is not easy, it is necessary to focus attention on three key prerequisites for implementation: employee competencies, existing technological infrastructure, and employees' willingness to improve.

There are several limitations of the research conducted, which should be investigated in the future. First, the insufficient sample size may affect the reliability of the results and conclusions. Directions for future research indicate the necessity of including a larger number of employees and a larger number of companies in the research itself. Second, our research was conducted exclusively in the acquired companies in Serbia and it is believed that a large number of service and other companies are facing problems in implementing digital technology in business. The following research on this topic should analyze a specific type of industry in the economic sector of the Republic of Serbia, or observe a specific region of Serbia where companies operate. Also, companies that were the subject of takeovers on the international market can be included in future research, which would make the results of such research more comprehensive and globally relevant for analysis. Finally, although it was determined in this study that the digitalization of business has a strong impact on organizational and financial post-acquisition performance, it is also assumed that the digital transformation of the overall business drastically affects the performance of the company. Therefore, future research directions can be directed to examining the relationship between the digital transformation of business in transition countries and company performance, to identify all possible factors that influence the improvement or impairment of company performance.

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ATTACHMENT

Questionnaire

1. After the takeover, our company uses digital technology more often in the development of new products. (Digitalization)
2. After the takeover, the application of digital technology in our company is more easily adopted and accepted by the employees. (Digitalization)
3. After the download, the quality of digital technology in our company is better. (Digitalization)
4. Revenue growth in our company is higher than before the takeover. (Financial post-acquisition performance)
5. Cost reduction in our company is greater than before the takeover. (Financial post-acquisition performance)
6. Productivity in our company is higher than before the takeover. (Financial post-acquisition performance)

7. The market share of our company is higher compared to the situation before the takeover. (Financial post-acquisition performance)
8. The competitive position of our company is better after the takeover. (Organizational post-acquisition performance)
9. The satisfaction of our employees in the company is higher than before the takeover. (Organizational post-acquisition performance)
10. Our company's customer base has expanded after the takeover. (Organizational post-acquisition performance)
11. The quality of our company's products is better after taking over. (Organizational post-acquisition performance)
12. The development of new products in our company is better compared to the situation before the takeover. (Organizational post-acquisition performance)

PROFITABILITY OF SERBIAN PHARMACIES: DOES COVID-19 PANDEMIC MAKE A DIFFERENCE?

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Abstract: *The first cases of COVID-19 infection were reported in Wuhan at the end of 2019, whereas on March 11, 2020, World Health Organization officially declared the COVID-19 outbreak to be a global pandemic. Since March 2020, the COVID-19 pandemic has had a strong impact on everyday life and economic activities in the Republic of Serbia. The objective of the paper is to examine whether the profitability of Serbian pharmacies was changed under the influence of the COVID-19 pandemic. More precisely, we analyse the profitability of Serbian pharmacies in 2019, the year before the pandemic, and in 2020, the year the pandemic started. The motivation for the research is the fact that the influence of the COVID-19 pandemic differs across business sectors, company size, etc. The sample comprises 98 randomly selected Serbian pharmacies of different sizes, legal forms, and ages. All observed pharmacies are registered under industry code 4773 – Retail trade with pharmaceutical product in specialized stores – pharmacies. Profitability is measured by return on equity and return on assets. To determine the reason(s) for change(s), both return on equity and return on assets were decomposed. First of all, obtained results indicate the growth of Serbian pharmacies' business activity in 2020 compared with 2019. The results of the research also show that the profitability of Serbian pharmacies measured by both profitability indicators significantly increased in 2020 compared with 2019. Generally, an increase in return on equity is a consequence of an increase in return on sales, whereas an increase of return on assets is a consequence of an increase in the earnings before interest, taxes, depreciation and amortization margin. It means that control of expenses to maximize both the net income and earnings before interest, taxes, depreciation and amortization earned for each RSD of sales revenue generally improved in Serbian pharmacies in 2020. In the other words, both overall profitability and profitability independent of the company's financing, tax position, and accounting policies and judgments about depreciation and amortization of non-current non-financial assets generally improved in 2020.*

Key words: *profitability, Serbian pharmacies, COVID-19*

JEL Classification: *M41*

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INTRODUCTION

The first written traces of pandemics are 25 centuries old and the oldest recorded pandemic occurred during the Peloponnesian war in the fifth century Before Christ. Infective diseases that appeared during the time of the original civilization not only sowed death but also affected military failures and the fate of empires. Despite the great achievements of contemporary medicine, infectious diseases still cause intense fear (Milovanović et al., 2021, 845). The first cases of COVID-19 infection were reported in the live-animal markets in Wuhan at the end of 2019. On December 31, 2019, China sent a warning to World Health Organization (WHO) that several cases of unusual pneumonia had occurred in Wuhan (Luković and Stojković, 2020, 81). On March 11, 2020, WHO officially declared the COVID-19 outbreak to be a global pandemic because many countries reported a surging number of confirmed cases (Zhang et al., 2020; Chen and Yeh, 2021). Zhang and Zheng (2022, 560) point out that the impact of the COVID-19 pandemic is still a black box and the mechanism is attracting the attention of policymakers and the academic community to guide policy design in the aftermath of the pandemic. They marked the COVID-19 pandemic as a „dominant risk factor of the global economy“.

To curb the spread of the COVID-19 pandemic, many countries have opted for isolation of the population, which has resulted in a sharp decline in their economic activity (Milovanović et al., 2021, 861). Zhang et al. (2020) point out that over 170 countries were affected by the COVID-19 pandemic. The Republic of Serbia (RS) is one of them. The objective of this paper is to examine whether the profitability of Serbian pharmacies was changed under the influence of the COVID-19 pandemic. We analyse the profitability of Serbian pharmacies in 2019, the year before the pandemic, and in 2020, the year the pandemic started. In that sense, we formulate the research question as follows: Does the profitability of Serbian pharmacies measured by return on equity (ROE) and return on assets (ROA) significantly changed under influence of the COVID-19 pandemic?

The next section of the paper reviews the literature regarding the influences of the COVID-19 pandemic on different areas of the economy. Thereafter, the research sample, methodology, and results of empirical research on the Serbian pharmacies' profitability are presented and discussed.

LITERATURE REVIEW

Chen and Yeh (2021) mark the Global financial crisis in 2008 and the COVID-19 pandemic as two major events that negatively influence global financial markets. By analyzing relevant academic sources, statistics of financial institutions, and governments and internet sources, Milovanović et al. (2021, 862) find that the consequences of the COVID-19 pandemic are much greater than those caused by the 2008 Global financial crisis. According to Yeyati and Fillipini (2021, 1) „the COVID-19 global recession is the deepest since the end of World War II“. They point out that the global economy contracted 3.5% in 2020, which represents a loss of 7% relative to the 3.4% growth forecast back in October 2019. Research conducted by Zhang et al. (2020) shows that global financial market risks have increased substantially in response to the pandemic. Heyden and Heyden (2021) find that stock markets react significantly negatively to the announcement of the first death caused by COVID-19 in the USA and Europe. Zhang and Zheng (2022) examine the effects of the COVID-19 pandemic on companies' performance by using newly merged financial data of listed companies in China. They find that the pandemic caused a reduction in sale-related profit. Based on the European Union-related data on the tourism industry, Petrović et al. (2021, 1220) point out

that the number of reservations decreased by 90% in 2020 compared to 2019, hotels and tour operators recorded a drop in guests of 85%, while travel by plane and cruise ships declined by 90% as well. Stanojević et al. (2021) examines the impact of COVID-19 on the European airline industry. Their research based on the top five airline companies according to the biggest number of passengers in 2019 shows that the overall impact of the pandemic on liquidity is moderately detrimental, while its impact on profitability is significantly detrimental. Temelkov (2022) conducts a horizontal analysis of the revenues and expenses of 34 hotels and resorts worldwide according to their financial statements and annual reports published on their websites. He finds that the majority of hotels in 2020 have experienced a drop in revenues. For some hotels, this drop was more than 70% compared to 2019. He also finds that the expense-to-revenue ratio increased for most hotels, which means that the COVID-19 pandemic negatively affected the operational efficiency of hotels.

Negative effects of the COVID-19 pandemic did not go around Serbian companies. Based on the Eurostat data referred to the RS, Randelović (2021, 233-234) points out that (a) personal consumption, investment and net exports recorded a considerable annual decline, (b) the government consumption expanded sharply in order to offset a part of the negative trends in other components of gross domestic product, and (c) the impact of the COVID-19 pandemic differs significantly across the sectors. Using the gross value added data, negative growth was observed in trade, transportation and tourism, as well as in construction and other sectors in the RS, while (a) information and telecommunication, (b) finance and insurance and (c) agriculture recorded a significant rise in their gross value added. Gross value added in manufacturing stagnated. The survey conducted by the Serbian Association of Employers and the International Labour Organization shows that about 17% of companies completely suspended their activities and that almost 70% of companies reported a decline in revenue in 2020 as compared with 2019, but that there are big differences in the decline depending of the company size (according to: Petrović et al., 2021, 1220-1221).

Milošević and Marjanović (2022, 206) point out that small and medium-sized enterprises are the most vulnerable on the COVID-19 crisis, because they are the most numerous and employ about 2/3 employees in the non-financial sector in EU-28. Paunović and Aničić (2021) analyse the impact of the COVID-19 crisis on the business operations of 689 small and medium-sized enterprises in Serbia. The main conclusion of their analysis is that the generally impact of the COVID-19 pandemic on the observed enterprises and its impact on the individual business segments are perceived as negative through the entire sample. The most negative impact was found in the market operations of enterprises (product/service demand and customer acquisition), whereas less negative impact recorded in the segments of logistics and business activities organization, and the least negative impact recorded on financing. They also find that the COVID-19 crisis had more severe negative impact on service sector firms (for example, accommodation and food service activities, entertainment and recreation) than on manufacturing firms, where mining and quarrying, manufacturing and constructions industries were most severely affected.

Čavlin et al. (2022) analyse the financial vitality of the manufacture of food products and beverages (sector C) in 2019 and 2020 as well as its' average five-year parameters (2015-2019). Their research shows that the liquidity indicators are below the desirable norms and the overall liquidity assessment is unfavorable. They have also found a decline in operating revenues in 2020 compared to 2019 and a decrease in profitability indicators. Cico et al. (2021) point out that the COVID-19 pandemic hit the agricultural sector with great intensity. Their research shows that agricultural entities have to undertake restructuring measures as soon as possible, primarily organizational ones, to ensure a speedy recovery. Pavlović et al. (2021, 172) consider that „travel agencies are one of the biggest victims of the COVID-19

pandemic, which has made their business more difficult, and has reflected in the risk assessment and the amount of costs in the process of issuing travel quarantines“. In order to overcome a similar crisis in the future, travel agencies need to work on new programs and adapt to new target groups and markets. The condition for survival in crisis circumstances can be the opening of new sales channels. Račić and Paunović (2021) analyzed the impact of bank size on the main indicators of their business activity and assess whether the COVID-19 pandemic has changed the nature and intensity of this impact. Their research conducted on 23 banks that operate in the RS shows that larger banks reduced lending activities and increased liquidity during the pandemic compared to smaller banks. The profitability of larger banks was not affected by that practice. It means that larger banks achieved higher ROE than smaller banks, as in the pre-pandemic period.

RESEARCH SAMPLE AND METHODOLOGY

Our sample comprises 98 randomly selected Serbian pharmacies of different sizes, legal forms and ages. All observed pharmacies are registered under industry code 4773 – Retail trade with pharmaceutical product in specialized stores – pharmacies. The structure of the sample is shown in Table 1. The research is based on the individual statements of financial position and income statements available at the official website of the Serbian Business Registers Agency and relies on hand-collected data from the mentioned financial statements. Obradović and Karapavlović (2020, 295) point out that „comparative ammounts are more reliable than the original ones“. In that sense, we have used the income statements for 2020, which contain comparative information for 2019, and the statements of financial position on 31 December 2020, which contain comparative information for 31 December 2019. In addition, we have used the statements of financial position on 31 December 2019, because we need information on total assets and equity at the end of 2018 (beginning of 2019). The reporting period of all observed pharmacies is a calendar year. We choose 2019 for the first year of our analysis because it is the year before the pandemic, whereas the pandemic started in 2020, as a second year of our analysis.

Table 1. Sample structure

	<i>Number of pharmacies</i>	<i>%</i>
<i>SIZE*</i>		
Micro	16	16.33
Small	67	68.37
Medium-sized	13	13.26
Large	2	2.04
<i>Total:</i>	98	100.00
<i>LEGAL FORM</i>		
Pharmacy institution	82	83.67
Entrepreneur	16	16.33
<i>Total:</i>	98	100.00
<i>AGE** (in years)</i>		
0 – 10.99	36	36.73
11 – 14.99	34	34.70
15 and up	28	28.57
<i>Total:</i>	98	100.00

* Classification is based on the 2019 Accounting Law.

** Difference between reporting date and incorporation date.

Source: Authors' calculation

The profitability of Serbian pharmacies is measured by Return on Equity (ROE) and Return on Assets (ROA). According to many analysts, ROE is the most important ratio of all financial indicators (ratios), because it measures the profitability of company from the owners' perspective. ROE is a function of both operating profitability and the financing choices made by management (Young and Cohen, 2013, 155-156). ROE is calculated as net income (profit or loss) divided by the average equity multiplied by 100. The average equity equals the beginning balance plus the ending balance divided by two. We have calculated ROE for each pharmacy in the sample and also on the sample level. In order to determine reason(s) for its change(s), ROE is decomposed as Return on Sales (ROS) (net income/sales revenue x 100) multiplied by Equity Turnover Ratio (EQTR) (sales revenue/average equity).

While ROE is more interesting to present and prospective shareholders, because it shows the effectiveness of the use of equity, ROA can be very useful for management as a control tool. This does not mean that ROE has no significance for management (Todorović and Čupić, 2017, 314), who is responsible for operating the business in the owners' best interest (Anthony and Reece, 1989, 426). ROA is one of the financial ratios which is inconsistently defined in the literature and, therefore, differently calculated in practice. Inconsistency mostly arises from different opinions about the numerator of ROA (see, for example, Higgins, 2012, 41; Fraser and Ormiston, 2013, 230; Livingstone, 2002, 30; Friedlob and Plewa, 1996, 263; Williams et al., 2005, 622), but we have also found ROA with different denominators (Anthony et al., 2003, 414-415). In order to neutralize the effects of the funding sources, tax position, and accounting policies and judgments about depreciation and amortization of non-current non-financial assets, we calculate ROA as Earnings Before Interest, Taxes, Depreciation and Amortization (EBITDA) divided by average total assets multiplied by 100. EBITDA equals net income enlarged by interest expense, tax expense and depreciation and amortization expense. Average total assets equal the beginning balance plus the ending balance divided by two. ROA also can be decomposed as EBITDA margin (EBITDA/sales revenue x 100) multiplied by Total Assets Turnover Ratio (TATR) (sales revenue/average total assets).

Table 2. Normality tests

	<i>Kolmogorov-Smirnov</i>		
	<i>Statistic</i>	<i>df</i>	<i>p</i>
Difference between ROE ₂₀₂₀ and ROE ₂₀₁₉	0.067	84	0.200
Difference between ROA _{EBITDA 2020} and ROA _{EBITDA 2019}	0.093	89	0.055

Source: Authors' calculation

ROE is not usable for over-indebted companies (Obradović, 2021, 344), and such companies were eliminated from the sample in the context of ROE analysis. We have also eliminated atypical cases and extreme values in the case of both ROE and ROA. This is the reason for an unbalanced sample. In the context of ROE analysis $n = 84$, whereas in the context of ROA analysis $n = 89$. The data collected is processed by using IBM® SPSS® Statistics 26 software package and Microsoft Excel program. The research question is examined by using Paired Samples T-test because we analyse the profitability of Serbian pharmacies in the year before the pandemic and in the year when the pandemic started. In other words, we have analysed the profitability of Serbian pharmacies under two conditions. Our choice to use Paired Samples T-test is also supported by the fact that the rest assumptions of parametric tests (Pallant, 2011, 207-208) are satisfied. Besides, an additional assumption of variable normality is satisfied (Pallant, 2011, 244) – the differences between ROE₂₀₂₀ and ROE₂₀₁₉ and between

$ROA_{EBITDA\ 2020}$ and $ROA_{EBITDA\ 2019}$ have a normal distribution (Table 2). We use the 0.05 level (α) to determine statistical significance.

RESEARCH RESULTS

The sum of observed pharmacies' average total assets is 18.94% higher in 2020 than in 2019. In the case of 93.26% of pharmacies, average total assets in 2020 are higher than in 2019, whereas the contrary is only in the case of 6.74% of pharmacies. The average assets growth in 2020 compared with 2019 is 30.38%. The sum of sales revenue of Serbian pharmacies in 2020 is also higher than in 2019 by 20.19%. Sales revenue of 95.51% of pharmacies is higher in 2020 than in 2019, whereas the contrary is only in the case of 4.49% of pharmacies. The average growth of sales revenue in 2020 compared with 2019 is 26.17%. Mentioned percentages indicate the growth of Serbian pharmacies' business activity in 2020 compared with 2019.

Table 3. The ROE of Serbian pharmacies in 2019 and 2020

	2019	2020	Δ
Net income of the sample* (in 000 RSD)	1,523,851	2,579,032	↑
Average equity of the sample (in 000 RSD)	7,566,838	9,279,743	↑
Sales revenue of the sample (in 000 RSD)	58,620,780	67,994,108	↑
ROE of the sample	20.14%	27.79%	↑
ROS of the sample	2.60%	3.79%	↑
EQTR of the sample	7.75	7.33	↓
Average ROE	31.32%	43.62%	↑
Average ROS	2.47%	3.62%	↑
Average EQTR	26.49	20.26	↓
Min. ROE	-12.66%	5.64%	↑
Max. ROE	99.72%	121.47%	↑
Median ROE	25.02%	38.37%	↑
Mode ROE	12.06%	42.57%	↑

* $n = 84$

Source: Authors' calculation

Table 4. The Results of Paired Samples T-tests (ROE and its determinants)

	t	df	p	$eta\ squared$
$ROE_{2019}-ROE_{2020}$	-5.551	83	0.000	0.271
$ROS_{2019}-ROS_{2020}$	-7.480	83	0.000	0.403
$EQTR_{2019}-EQTR_{2020}$	2.484	83	0.015	0.069

Source: Authors' calculation

In 2020, all observed pharmacies operated with a net profit, whereas only one pharmacy operated with a net loss in 2019. At the sample level, the ROE of Serbian pharmacies in 2020 is higher than in 2019. According to Table 3, both net income and average equity increased, whereby an increase in net income is higher than an increase in equity (69.24% versus 22.64%). An increase in ROE in 2020 in comparison with 2019, at the sample level, is a consequence of an increase in ROS. The net income (the numerator of ROS) of the sample increased by 69.24%, whereas sales revenue (the denominator of ROE) increased by 15.99%. In essence, ROS expresses net income as a percentage of sales revenue. It is a key test of how

effectively a company can squeeze net income from sales revenue (Schoenebeck and Holtzman, 2013, 70). In that sense, the control of expenses to maximize the net income earned for each RSD of sales revenue improved in Serbian pharmacies in 2020. On the other hand, the EQTR of the sample is lower in 2020 than in 2019. Both determinants of EQTR are higher in 2020 than in 2019, but an increase in average equity (denominator) of the sample (22.64%) is higher than an increase in sales revenue (numerator) of the sample (15.99%). However, this decrease in EQTR is lower than an increase in ROS, and ROE increased in 2020. In the case of 77.38% of pharmacies, ROE in 2020 is higher than in 2019, whereas the contrary is in the case of 22.62% of pharmacies. The results of Paired Samples T-test show that there is a statistically significant difference between ROE_{2019} and ROE_{2020} (Table 4). That difference is large, according to Cohen's criteria (Pallant, 2011, 247). The difference between ROS_{2019} and ROS_{2020} is also large and statistically significant, whereas the difference between $EQTR_{2019}$ and $EQTR_{2020}$ is statistically significant but moderate. Average, minimum, maximum, median, and mode ROE in 2020 are also higher than comparative indicators in 2019.

Table 5. ROA_{EBITDA} of Serbian pharmacies in 2019 and 2020

	2019	2020	Δ
EBITDA of the sample* (in 000 RSD)	2,626,026	4,239,067	↑
Average total assets of the sample (in 000 RSD)	26,363,561	31,355,742	↑
Sales revenue of the sample (in 000 RSD)	72,086,030	86,643,525	↑
ROA_{EBITDA} of the sample	9.96%	13.52%	↑
EBITDA margin of the sample	3.64%	4.89%	↑
TATR of the sample	2.73	2.76	↑
Average ROA_{EBITDA}	8.33%	12.56%	↑
Average EBITDA margin	2.76%	3.97%	↑
Average TATR	3.46	3.43	↑
Min. ROA_{EBITDA}	-7.82%	-3.08%	↑
Max. ROA_{EBITDA}	27.27%	35.65%	↑
Median ROA_{EBITDA}	7.09%	11.52%	↑
Mode ROA_{EBITDA}	5.74%	7.94%	↑

*n = 89

Source: Authors' calculation

Table 6. The results of Paired Samples T-tests (ROA_{EBITDA} and its determinants)

	<i>t</i>	<i>df</i>	<i>p</i>	<i>eta squared</i>
$ROA_{EBITDA 2019} - ROA_{EBITDA 2020}$	-8.276	88	0.000	0.440
$EBITDA\ margin_{2019} - EBITDA\ margin_{2020}$	-6.921	88	0.000	0.355
$TATR_{2019} - TATR_{2020}$	-0.540	88	0.591	0.003

Source: Author's calculation

If ROE has changed, without further analysis we cannot conclude whether this change is a function of changes in the underlying profitability of the business or whether it is a function of changes in how the company finances its assets (Young and Cohen, 2013, 156). That is the reason why we calculate ROA. At the sample level, the ROA_{EBITDA} of Serbian pharmacies in 2020 is higher than in 2019. According to Table 5, both EBITDA and average total assets increased, whereby an increase in EBITDA is higher than an increase in average total assets (61.42% versus 18.94%). An increase in ROA_{EBITDA} in 2020 in comparison with 2019, at the sample level, is a consequence of an increase in the EBITDA margin, whereas TATR

increased only by 1.10%. EBITDA (the numerator of the EBITDA margin) of the sample increased by 61.42%, whereas sales revenue (the denominator of the EBITDA margin) increased by 20.19%. Unlike ROS as an overall profitability ratio, the EBITDA margin is a profit margin that is independent of the company's financing, tax position, and accounting policies and judgments about depreciation and amortization of non-current non-financial assets. In that sense, control of expenses to maximize the EBITDA earned for each RSD of sales revenue improved in 2020 in Serbian pharmacies. Slightly increase in the TATR of the sample is a consequence of an increase in sales revenue (20.19%), whereas an increase in average total assets on the sample level is 18.94%. In the case of 95.51% pharmacies, ROA_{EBITDA} in 2020 is higher than in 2019, whereas the contrary is only in the case of 4.49% of pharmacies. The results of Paired Samples T-test presented in Table 6 show that the difference between (a) $ROA_{EBITDA2019}$ and $ROA_{EBITDA2020}$ and (b) $EBITDA\ margin_{2019}$ and $EBITDA\ margin_{2020}$ is statistically significant and large. The difference between $TATR_{2019}$ and $TATR_{2020}$ is not statistically significant. Average, minimum, maximum, median, and mode ROA_{EBITDA} in 2020 are also higher than comparative indicators in 2019.

CONCLUSIONS

A review of the previous research shows mostly negative effects of the COVID-19 pandemic on business activities and that influence of the pandemic differs across business sectors, company size, etc. In that sense, Milošević and Marjanović (2022, 206) point out that "some industries have been affected more than others, no one has undoubtedly passed without any damage". We analyse the profitability of 98 randomly selected Serbian pharmacies of different sizes, legal forms, and ages in 2019, the year before pandemic, and in 2020, the year in which the pandemic started. We find that the profitability of Serbian pharmacies measured by ROE and ROA_{EBITDA} significantly changed in 2020 compared with 2019. Both profitability indicators on the sample level are higher in 2020 than in 2019. Generally, an increase in ROE is a consequence of an increase in ROS, whereas an increase of ROA_{EBITDA} is a consequence of an increase in the EBITDA margin. It means that control of expenses to maximize both the net income and EBITDA earned for each RSD of sales revenue generally improved in Serbian pharmacies in 2020. In the other words, both overall profitability and profitability independent of the company's financing, tax position, and accounting policies and judgments about depreciation and amortization of non-current non-financial assets generally improved in 2020. We also find that the sales revenue of nearly 95% of observed pharmacies is higher in 2020 than in 2019. An increase in sales revenue might be a consequence of (1) a sales increase influenced by an increase in demand for pharmaceutical products and/or (2) an increase in prices of pharmaceutical products. Although we find a statistically significant difference between ROE and ROA_{EBITDA} in 2019 and 2020, it does not necessarily mean that an increase in profitability is only affected by the COVID-19 pandemic. Some transactions and other events that affect the profitability of Serbian pharmacies might have happened during 2019 and 2020.

This paper has several limitations. The first limitation is the fact that the most of financial statements of observed pharmacies were not subject to external audit. Financial statements of only 17.35% of pharmacies were subject to external audit in both observed years, whereas 78.57% of pharmacies' financial statements were not audited in any of the observed years. The other pharmacies' financial statements (4.08%) were audited in one observed year (2019 or 2020). Observation for two reporting years is the second limitation. Future research should expand the observation period for at least 2018 and 2021 and also examine (a) the determinants of pharmacies' profitability before and during the COVID-19 pandemic and (b)

whether the profitability of pharmacies varies according to the size, legal form, and age of pharmacies. Observed pharmacies have used a different basis for the preparation of general-purpose financial statements. About 52% of pharmacies have used International Financial Reporting Standard for Small and Medium-Sized Entities, whereas about 27% have used full International Financial Reporting Standards. For the other pharmacies we could not find the basis for financial reporting because (a) it was not clearly disclosed (about 4% of pharmacies) and (b) the preparation of notes to financial statements is not mandatory (about 16% of pharmacies). Those pharmacies may use one of the IFRS versions, but also the Ordinance of the Minister of Finance. The different basis for financial reporting distorts comparability between the pharmacies and this is also the limitation of our research. In that sense, segmentation of the sample according to the used basis for the preparation of general-purpose financial statements can be a recommendation for future research regarding the profitability of Serbian pharmacies. Horizontal analysis of total revenues and expenses is also a recommendation for future research.

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IMPLICATIONS OF THE COVID-19 PANDEMIC ON EXAM PASSING SUCCESS¹

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Abstract: *For the last two years, the COVID-19 pandemic has become a global problem for humanity and has impacted all aspects of human life. The measures taken by the Government of the Republic of Serbia in order to prevent the spread of the pandemic, such as restricting the movement of individuals, suspending classes and social isolation, caused changes in the way of performing regular life and business activities of the entire society. In the conditions of isolation and social distance, higher education institutions, both in the Republic of Serbia and around the world, had to develop a new strategy for the new, smooth teaching process while ensuring health protection. In this sense, various online learning platforms were used, enabling partial interaction between professors and students. From the traditional way of teaching, we moved to the application of new and modern ones. A special challenge was to devise ways to test students' knowledge and evaluate them. At the Faculty of Economics in Niš, classes were held online, while colloquiums and exams were held live at the faculty's premises. The aim of the paper is to evaluate the impact COVID-19 had on the success of students in taking exams in the subjects of Management Accounting and Cost Accounting. The students' answers were divided into two groups. The control group consisted of students who took classes in the 2018/2019 school year, while the second group corresponded to students from the 2019/2020 and 2020/2021 school years i.e., to students who followed the classes online.*

Keywords: *pandemic, COVID-19, education*

JEL Classification: *M40, M41*

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INTRODUCTION

At the end of 2019, China was the first country to encounter an unknown virus – COVID-19. The appearance of the virus is a reminder that pandemics and other epidemics will obviously never cease happening. It is impossible to prevent their occurrence, but its implications on the society can be mitigated. In the first months of 2020, the pandemic gripped the entire world. The first official case in Europe was recorded on March 11, 2020. The Government of the Republic of Serbia, following the example of other developed countries of the world, started implementing measures to prevent the spread of the corona virus. Some of the measures were: wearing protective masks and gloves, increased use of disinfectants, reduced working hours of companies and working in shifts with a limited number of people. The epidemic caused by the corona virus had enormous negative consequences all over the world. It caused the emergence of a global problem, influenced changes in the lifestyle of people, and had a special impact on education. Although it is now nearing completion, it seems to us that the economy and society will have a hard time returning to the state before the pandemic.

As the school year was in progress, the management of the faculty had to find a way to provide students with satisfactory teaching quality. One of the solutions was the transition to online teaching with the help of numerous platforms. Data shows that more than 1.2 billion children or 182 countries were affected by the suspension of higher education institutions due to the pandemic (UNESCO, 2020). More than 90% of the world's population was affected by the virus (UNESCO, 2020), while the pressure on higher education systems to change their approach to distance learning was maximized (Longhurst et al., 2020).

The teaching staff had to get used to the use of new tools and technologies, so teaching began to be realized through video conferences, video training, digital library and the like. The combination of new learning methods and training ensures a high percentage of teaching, but there is still a difficulty for professors and students. Namely, it is difficult to find a way to evaluate students, but also to implement practical teaching in some branches, such as medicine. In order for higher education institutions to protect themselves from the negative impact of the pandemic on education, more specifically on teaching and learning, they organized classes online. After the country's return to regularity, classes were based on a hybrid model, either completely online or live. In Niš, teaching at some faculties was 100% online, and at some faculties, teaching took place live.

In the theoretical part of the work, a descriptive-analytical approach will be used, while in the empirical part of the work, secondary data (grades from the exam records) will be used, which will be analyzed using two-way between-groups analysis of variance (ANOVA). Therefore, the aim of the paper is to examine the impact of COVID-19 on the success of the Management Accounting and Cost Accounting exams. The control group consisted of students who took classes in the 2018/2019 school year, while the second group corresponded to students from the 2019/2020 and 2020/2021 school years, i.e. to students who followed the classes online.

In this sense, the paper is divided into three parts. In the first part of the paper, an overview of previous research by different authors is given. The second part of the paper refers to the methodology and the sample, which represent the starting point for data processing in the statistical package for the social sciences (Statistical Package for the Social Economies - SPSS). At the end, the results obtained by conducting empirical research and concluding considerations are presented.

LITERATURE REVIEW

The COVID-19 pandemic, has had an impact on all aspects and spheres of life, but certainly one of the most significant is the impact on education. As the physical presence was not possible, it was switched to online classes in order to reduce the possibility of spreading the virus. The pandemic has influenced the traditional way of teaching to be replaced by online teaching with the help of various platforms that are the result of digitization. By using different tools, online teaching managed to adapt to the closed space, and it was especially easier in those situations where online tools were already used (Ruano-Molins et al., 2015). Also, most activities such as conferences, seminars and the like were postponed or enabled online (Khacfe et al., 2020). In the Republic of Serbia, the state of emergency lasted for three months, and during that period there was no homogeneous way of teaching. The professors used different ways of distance learning so that the students could keep up with the classes and be able to successfully complete the semester. In China, the education system moved to a comprehensive distance education application from kindergarten students to doctoral students (Lau et al., 2020). Also, in the United States, more than 100 universities (Ohio State, Harvard, Duke, Columbia, Tufts) switched from formal education to distance education (Pfleger, 2020). Italy temporarily suspended classes (Togoh, 2020). On the one hand, online teaching allows students to learn, share their views and independently use and organize time and maintain a certain routine in life (Hwang et al., 2021; Evans et al., 2017), but on the other hand, in urgent and difficult times, professors and students may be less emotionally available for teaching and learning than in a normal situation (Badrasawi et al., 2018).

From the period of transition to online learning until the moment when classes began to take place live again (April 2022), numerous studies were conducted by different authors examining the success of online classes as well as distance learning success factors and learning effectiveness (Lockam & Schirmer, 2020; Pei & Wu, 2019; Lee, 2014; Yen et al., 2018).

Soffer et al. (2019) conducted a study to examine students' satisfaction with the hybrid way of organizing classes (the classes were followed live, in the traditional way, while homework and other activities were completed online). The results showed that regardless of the way the classes were organized, students had a greater desire to work and were more successful during online learning (Soffer et al., 2019). Faculty management tried to act in the best possible way, finding effective solutions to minimize the negative effects of the pandemic on education (Eva, 2020; Araújo et al., 2020). Based on our conducted research, we concluded that the pandemic caused a change in the way of learning, but that this did not have a negative impact on the effectiveness of learning, because the students successfully mastered all the teaching units. Students used different platforms for online learning, but the dominant participation is the Zoom platform (51.66%), Teams (20.53%) and Google Classroom (17.88%).

The effectiveness and efficiency of online learning is influenced by (Agoestyowati, 2020): *the role of the faculty, the support of the faculty and the readiness of the students and their motivation*. The role of the faculty is important, especially in those areas where there is a lower quality of internet. In addition to these factors, the environment for learning at home is very important, which has an impact on students' learning and their motivation to attend classes. The quality of online learning determines student satisfaction and contributes to the brand value of the institution (Tj & Tanuraharjo, 2020; Shehzadi et al., 2020). A study conducted by Zhang (2020) showed that the transition to online teaching caused the following problems: *congestion caused by the increased use of online platforms that were not ready for widespread use; lack of necessary equipment and the presence of family members who could potentially interfere with learning and following lessons*.

A review of research by different authors indicates that the results are more or less the same in different countries. With good organization and appropriate efforts, the impact of COVID-19 on the field of education, especially learning, can be overcome. The solution that was found is distance learning. Realizing classes online had the effect of reducing costs and increasing productivity. It was noted that online teaching was very well received by the students and enabled students to achieve excellent results in the exams.

SAMPLE DESIGN AND RESEARCH METHODOLOGY

From the moment the state of emergency was declared, at the Faculty of Economics in Niš, classes took place in accordance with the measures adopted to prevent the pandemic. Summer semester of the 2019/2020 school year was completed online. Professors could choose to post presentations on the student portal, use Google Classroom or the Zoom platform from private accounts. For the school year 2020/2021 it was planned that classes would take place according to a regular schedule with the help of the Zoom platform at the Faculty level. The Zoom platform made it possible with lower costs and ease of use online classes take place in real time.

Taking into account the way classes were conducted during the pandemic and its impact on the regular activities of students, the question that arises is whether COVID-19 had an impact on the success of exams in the subjects Management Accounting and Cost Accounting. When defining the sample for analysis, secondary data were used - records used when recording exam grades and professors' internal records. Data were observed for students who took the subjects in the June and September term of the 2018/2019, 2019/2020 and 2020/2021 school years.² The time period was divided into the period before the corona (school years 2018/2019 and 2019/2020) and the period during and after the pandemic (school year 2020/2021). It was necessary to know how many students applied for the exam within the given period, how many of them passed the written part, how many took the oral part of the exam and received the final grade. It should be taken into account that the analyzed subjects are taken from the written and oral part of the exam. The oral part of the exam is divided into the first and second exam questions, therefore, the final grade on the exam was authoritative in order for the results to be valid. Before using the two-factor analysis of variance of different groups to examine whether COVID-19 had an impact on the success of passing the exam, we will provide data in absolute and percentage amounts of the number of students by subject during the observed period. First, a comparison was made of the number of applications for taking subjects per school year, because it was expected that the number of applications would be lower as a result of the pandemic (problems with transportation or possible infection with the virus). Based on the data, we can notice that no decline in the number of exam applications was observed in the Management Accounting subject, nor was the number of students who passed the exams before the pandemic and after the pandemic (Figure 1). In the case of Cost Accounting, a slight decrease in the number of applicants was observed in the 2019/2020 school year and 2020/2021 compared to 2018/2019, so the problem of getting to the exam due to transportation or insufficient commitment in class or other justified reasons of the students can be cited as the reason.

² The selected terms are the first terms in which students of the current year can take exams in the subjects Management Accounting and Cost Accounting.

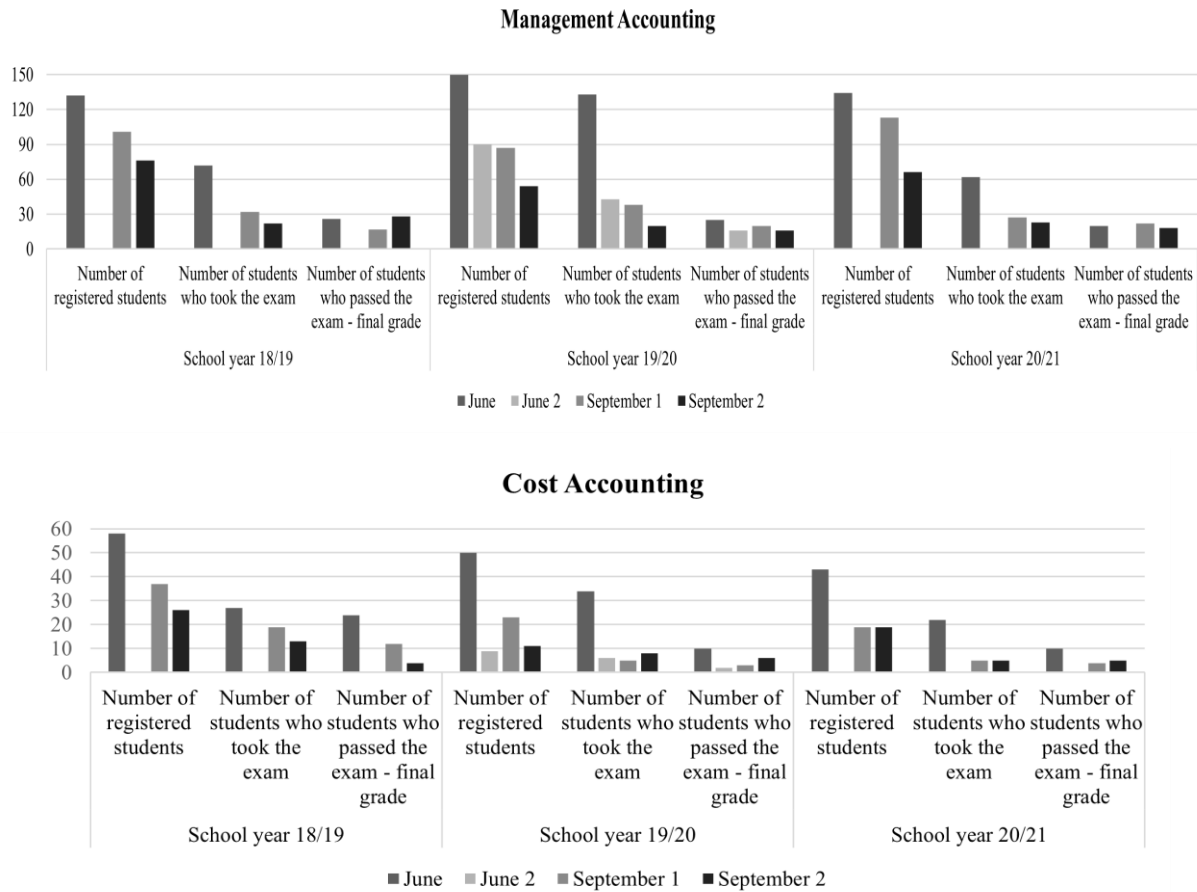


Figure 1: Structure of the number of students by subject

Source: Based on collected data of the author

The success of passing the exam can be analyzed by comparing the number of students who passed in relation to the total number of applications. The results are shown in Figure 2. A slight drop in the passing rate in the years of the pandemic was noticeable, but it is interesting that in the first year of the pandemic 2019/2020, an increase in the passing rate was recorded in the Cost Accounting subject. As a reason for the increase in the passing rate, it can be stated that the students adequately organized their time for teaching activities and took the exam more prepared. Also, in the first term after the end of the state of emergency, partial exams were allowed.

Therefore, based on the presented descriptive analysis, we can conclude that the success of passing the exam was positive before the pandemic, but it remained unchanged after the pandemic. The most successful year of the analyzed period was the first pandemic school year 2019/2020. The management of the faculty responded in a timely manner and organized the classes, so as to provide the students with maximum support during online classes and facilitate exam preparation. Whether or not COVID-19 had an impact on students' exam performance during the pandemic, we will check using a two-factor analysis of variance of different groups. Its advantage is that it can be used to examine the influence of each independent variable and the possible influence of their interaction. An interaction effect exists when the influence of one independent variable on the dependent variable changes depending on the value of the other independent variable.

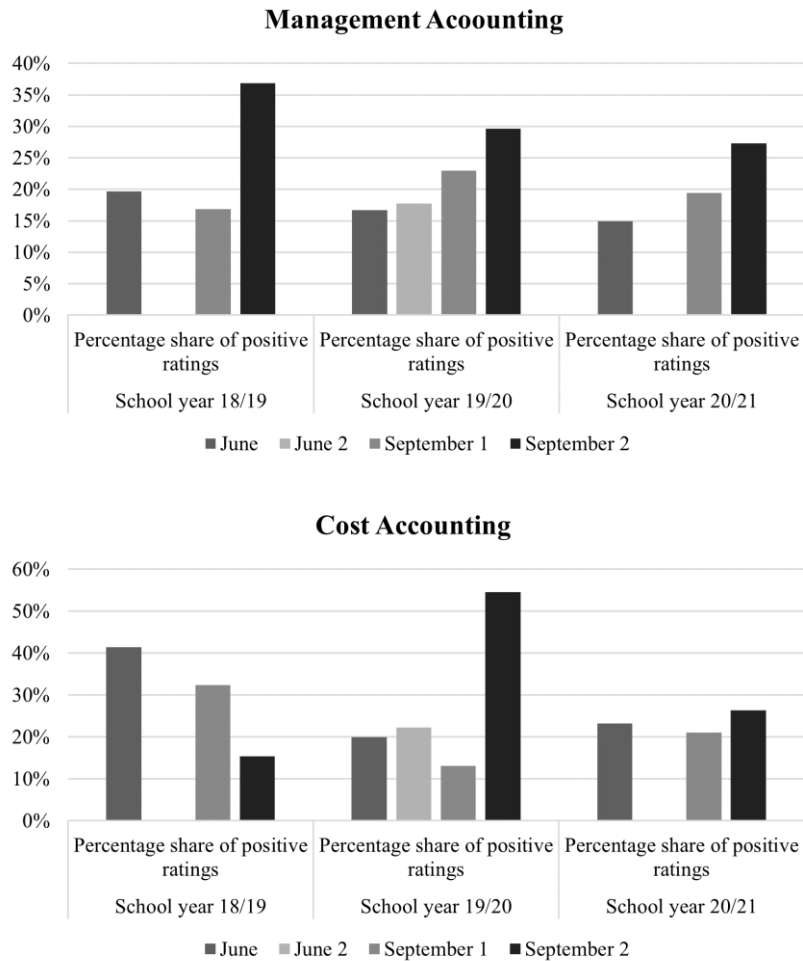


Figure 2: Percentage share of positive grades in relation to the total number of applications by subjects and deadlines before and after the pandemic

Source: Based on collected data of the author

RESULTS AND DISCUSSION

In order to examine whether there is a difference in the success of passing the exam before and after the pandemic, a two-factor analysis of variance technique is used for different groups. Two-factor ANOVA is similar to the technique of one-factor analysis of variance for different groups, except that in this model we have two independent variables and one dependent variable. Each independent variable in the model can have two or more levels. Secondary data were observed for subjects that students took in the June and September terms of the 2018/2019, 2019/2020 and 2020/2021 school years. In the sample, the independent variables are the subject the student studied and the school year in which he took the exam, and the dependent variable is whether he passed the exam or not. Within dependent and independent variables we have two groups. If the student took Management Accounting, he was assigned number 1, and Cost Accounting number 2. The year in which he took the test was divided into two groups, the year before covid was assigned number 1, for the period after covid, number 2 goes. Also, if the student passed the exam, he was assigned number 1, if he did not pass, then number 2.

An important test for variance analysis is Levene's Test of Equality of Error Variances. It represents an inferential statistic used to assess the equality of variances for a variable calculated for two or more groups. It tests the null hypothesis, that is, that the variances of the population are equal (homogeneity of variance or homoscedasticity). If the p value of Levene's test is less than 0.05, it indicates the fact that the variance of the dependent variable is not equal in all groups (Pallant, 2007). In our example, Sig=0.000 (Sig<0.05), which means that the variance of the dependent variable is not equal in all groups (Table 1). The obtained result can be justified by the fact that not the same number of students were included in the subject Management Accounting and Cost Accounting.

Table 1. Levene's Test of Equality of Error Variances^{a,b}

		Levene Statistic	df1	df2	Sig.
pass/fail	Based on Mean	7.270	3	0.622	0.000
	Based on Median	1.973	3	0.622	0.117
	Based on Median and with adjusted df	1.973	3	621.237	0.117
	Based on trimmed mean	7.270	3	622	0.000
Tests the null hypothesis that the error variance of the dependent variable is equal across groups.					
a. Dependent variable: pass/fail					
b. Design: Intercept + subject + year + subject*year					

Source: Authors's calculation using SPSS

In Table 2, with the obtained results, you should look at the subject*year position, because we use it to assess whether the influence of the interaction is significant or not, that is, whether there is a difference in passing success in relation to the subject and the year. The value of subject*year is 0.403 (Sig>0.05), which shows that the interaction effect is not significant. This means that there is no significant difference in the influence of subject and year on the success of passing the exam. Next, let us look at the individual effect of each independent variable on the dependent variable. As for the independent variable – the subject the student studied, Sig =0.018 (Sig<0.05), we conclude that there is an individual influence on the dependent variable per subject. The individual influence of the course can be justified by the fact that a larger number of students took the course Management Accounting compared to Cost Accounting. For the independent variable – the school year in which the student took the exam, partial eta square Sig=0.001 (Sig<0.05), so the separate or individual influence of the independent variable is significant. According to Cohen's criterion (Cohen, 1988), the impact can be classified as small.³

Table 2. Tests of Between-Subjects Effects

Dependent Variable: pass/fail						
Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	4.756 ^a	3	1.585	6.541	0.000	0.031
Intercept	903.705	1	903.705	3728.821	0.000	0.857
subject	1.364	1	1.364	5.629	0.018	0.009
year	2.855	1	2.855	11.779	0.001	0.019
subject*year	0.170	1	0.170	0.700	0.403	0.001
Error	150.746	622	0.242			
Total	1640.000	626				
Corrected Total	155.502	625				
a. R Squared = 0.031 (Adjusted R Squared = 0.026)						

Source: Authors's calculation using SPSS

³ You can find more details about size of the eta squared effect in the SPSS survival manual, page 210.

The Figure 3 is very practical for displaying the obtained results, because it allows a visual insight into the relations between the variables. We can notice that in the observed subjects, the pandemic had a surprisingly positive effect on the success of passing the exam. In Management Accounting it is 1.49 to 1.6, while in Cost Accounting it is 1.3 to 1.53.

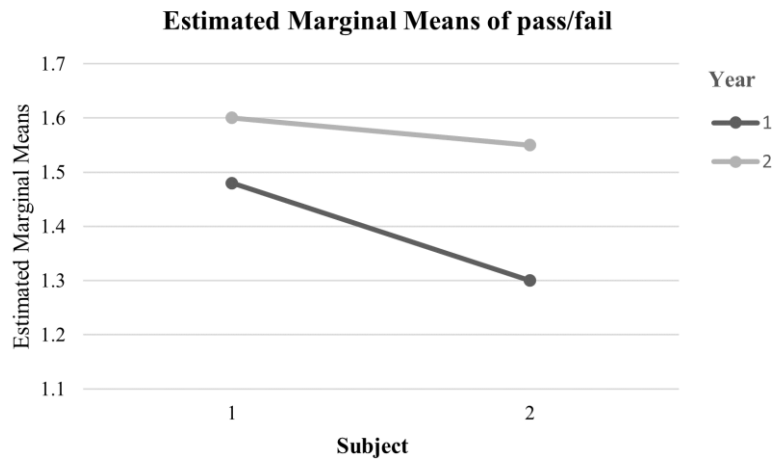


Figure 3. Exam success by subject

Source: Authors's calculation using SPSS

We can connect the obtained results with our research that we conducted through a survey where we obtained the following advantages and disadvantages of online learning. As an advantage of online learning, students cite greater comfort when following classes (94 responses, i.e. 72.90%), then point out that transportation and housing costs are reduced (83 responses, i.e. 64.30%), easier access to exam preparation materials and rational disposal time for teaching and non-teaching activities (55 answers each, i.e. 42.6%). Despite the positive aspects, there is a feeling of nervousness and shyness when giving answers (27.10), it is more difficult to concentrate, because online teaching requires spending more hours in front of the computer (69.80%), there is social isolation (63.60 %) as well as the existence of a higher risk of technical problems (63.60%). Also, the results indicate that the faculty management did a great job organizing the classes, where we also received confirmation from the students through the following question: *Did the faculty administration set clear guidelines on the transition from traditional to online teaching?* Students who answered Yes make up 95.3% of the answers. Also, the obtained results are correlated with the fact that the pandemic caused a change in the way of learning, but that this did not negatively affect the effectiveness of learning, because the students successfully mastered all the teaching units. According to the above, we can conclude the students achieved good results in the exams despite the pandemic.

CONCLUSION

The pandemic situation has made it possible to explore alternative conditions for online teaching, learning and assessment. Online learning has become a very popular method for education and organizing training courses. Taking into account the ways of teaching during the pandemic and its impact on the regular activities of students, the aim of the work was to investigate whether COVID-19 had an impact on the success of exams in the subjects Management Accounting and Cost Accounting. When defining the sample for analysis, secondary data were used – records used when recording exam grades and professors' internal records. Data were observed for students who took the subjects in the June and September terms of the 2018/2019, 2019/2020 and 2020/2021 school years. The time period is divided

into the period before the corona (school year 2018/2019 and 2019/2020) and the period during and after the pandemic (school year 2020/2021).

Therefore, the result of our work has two implications, theoretical and practical. Theoretically, the paper contributed to the existing literature on the advantages and disadvantages of online teaching as well as students' motivation to learn. Also, based on the literature review, we could see that the pandemic has prompted researchers around the world to examine how the virus has affected education. Practically, the result obtained using the two-factor analysis of variance of the group with the individual influence of the independent variable – the subject on the dependent variable – whether the student passed the exam or not indicates that there is an influence of the independent variable – the subject (Sig=0.018). At the second observed independent variables – the school year in which the student took the exam, partial eta square Sig=0.001 (Sig<0.05), so the individual influence of the independent variable is significant.

In the end, the obtained results indicate that with appropriate adjustments to teaching in pandemic conditions by the faculty management and professors, adequate use of the online platform and technical support, the students managed to prepare the teaching units provided for in the plan and program and pass the exam. One of the limitations of the research is the sample size. Also, subjectivity can be mentioned in the applied technique for data processing. Certainly, the conducted research has a practical contribution. In this way, the effectiveness of online learning for students during the pandemic has been examined and can serve as a stimulus for further research related to professional development and the development of training for online learning to support innovative learning techniques.

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SUSTAINABILITY PERFORMANCE ANALYSIS OF BANKS LISTED ON THE DJSI WORLD

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Abstract: *In most financial systems banks are key players in the financial services sector. Accordingly, as well as due to rapid changes in the competitive environment, the banking sector has received additional attention in recent decades. Namely, banks are exposed to strong competitive pressures and new claims from interested internal and external stakeholders who demand the increase of their role in environmental risk management and capital mobilization for green investments in the broader context of environmentally sustainable development. These new trends in the era of corporate social responsibility imply that banks are increasingly contributing, both directly and indirectly, to the achievement of the Sustainable Development Goals, given that they face many complex sustainability issues, from risks to green finance. Furthermore, banks are increasingly integrating the sustainability concept into business strategies, decision-making processes, business activities, risk management processes, as well as into the reporting system, which is also the starting premise of this paper. In a changed business environment, assessing and measuring banks' performance goes beyond the traditional assessment of their financial performance alone. In order to have a more complete view of socially responsible and sustainable operations of banks, it is necessary to provide disclosed information about their environmental, social and governance&economic performance. In order to develop a single framework for determining sustainable business, and thus make it easier to identify sector leaders according to their commitment to the concept of sustainability, stock exchanges and numerous other organizations have developed sustainability indices. Globally, Dow Jones Sustainability Indices (DJSI) showed the greatest analytical value. The inclusion of banks in this index basket implies meeting the criteria set out in a rigorous sustainability assessment questionnaire containing more than 100 questions specifically designed for the banking sector, after which banks receive an appropriate S&P Global ESG Scores. The methodology of including banks in DJSI World, as well as the analysis of their environmental, social and governance&economic performance, however, have not yet sufficiently captured the attention of the academic public, given that in literature there is not many papers with research on this issue. With this in mind, the aim of this paper is to fill the gap by providing answers to two important research questions: 1) Has the share of banks in the DJSI World and their S&P Global ESG Scores changed in recent years? 2) Are the environmental, social and governance&economic dimensions of sustainability equally represented in banks' operations? The research was done by applying an objective method of content analysis in order to determine the sustainable practice and performance of banks included in the Sustainability Yearbook and it refers to the period 2017-2021. The conducted research results showed that the participation of banks in DJSI World increases in the analyzed period and also that there is a change in their S&P Global ESG Scores, which implies that banks are increasingly playing an active role in sustainable development. With regard to dimensions, the governance & economic dimension of sustainability is dominating.*

Keywords: banks, sustainability, DJSI World

JEL Classification: G21, G28, Q56

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INTRODUCTION

The intermediary role of banks, their influence on other industries, as well as their key role in financing the economic activities of most financial systems give the banking sector a significant role in achieving sustainable development goals. Consequently, as well as due to increasing pressure coming from shareholders and other interested stakeholders, banks are beginning to consider and appreciate ESG issues more intensively (Houston & Shan, 2021). The gradual integration of sustainability into business strategy, decision-making processes, business activities, risk management processes, as well as bank reporting systems contributes to the sustainable development of the financial and overall economic system (Jemović & Radojčić, 2021). This signals a radical change in the way the banking industry operates on financial markets. This new, promising approach can be considered strategic in its intention and purpose, considering that it indicates that banks can be “sustainable” and that they can make a profit at the same time, i.e. that this transformation of banking operations allows adding value to the business in a sustainable way with parallel value added for society by promoting sustainable development (Carè, 2018).

The role of banks in environmental protection and sustainability issues has been emphasized during the last few years in certain international forums such as the Paris Agreement (Sarma & Roy, 2020), and in accordance with that, the concept of “*green banking*” is being increasingly discussed, which includes principles and regulations that enable banks to be economically, ecologically and socially sustainable (Srivastava, 2016). This concept seeks to improve the efficiency of banking processes using IT and physical infrastructure with zero or minimal environmental consequences (Chen et.al., 2022). In addition, “*green banking*” implies that banks incorporate environmental requirements when making loan decisions, develop new risk assessment procedures to offset potential liability for environmental damage caused by their borrowers (Coulson & O’Sullivan, 2014), as well as create new, “*sustainable*” or “*green*” banking products.

Given the fact that banks today participate in numerous national and international sustainability programs, and that there is a growing interest in their sustainable operations, initiatives to define, quantify and determine their sustainable performance are also on the rise. Accordingly, the sustainability indices developed by numerous international organizations, rating agencies and stock exchange markets are of particular importance, and after meeting the appropriate criteria, they rank financial institutions based on their economic, environmental and social dimensions of sustainability. The Dow Jones Sustainability Indices (DJSI) stand out as one of the most prominent global sustainability indices.

According to the above, the paper aims to review the sustainable practices and performance of banks included in DJSI World in the period 2017-2021. The paper is organized as follows: sustainability in banking sector and sustainability indices are reviewed in Section 2. Section 3 describes research design, DJSI’s sustainability assessment methodology, questionnaire for banks and scoring methodology. Next, Section 4 discusses the research findings. The last section concludes the paper.

LITERATURE REVIEW

SUSTAINABILITY IN BANKING SECTOR

Sustainable business is of particular importance for the banking sector, taking into account the fact that banks make profits by approving loans from funds collected mainly from deposits by the general public (Liang, Chang & Shao, 2018). Consequently, viewed from the perspective

of the regulator and the public, the engagement of banks in sustainability activities represents one of the ways for banks to “give back” to society for the use of their funds, while from the perspective of managers, sustainable operations can represent one of the approaches to improving the reputation of banks, and, therefore, gaining greater trust from clients (Wu & Shen, 2013; Shen et. al., 2016).

It was not until the 1990s that European banks focused on sustainable and environmental issues, when most banks developed more sophisticated risk assessment procedures and started implementing certain CSR practices (Coulson & O’Sullivan, 2014). American banks, unlike European banks, already in the 1980s, showed a more responsible approach to environmental protection issues after the adoption of the *Comprehensive Environmental Response, Compensation and Liability Act* (CERCLA), in accordance with which banks are required to bear the costs of environmental pollution of their clients. The banking sector became more familiar with environmental issues in 1992, when the *United Nations Environment Programme Finance Initiative* (UNEP FI) was launched, which represents a unique partnership between UNEP and the international financial sector (banks, insurance companies and investors) from over 60 countries around the world. The initiative itself promoted the integration of environmental protection issues in business activities and services of the financial sector (Yüksel, 2016), as well as the direction of investment policy towards environmentally sustainable projects. During 2015, UNEP FI members launched the *Positive Impact Manifesto*, which is a call for a new funding paradigm in order to bridge the gap in financing sustainable development (Carè, 2018). The central component of the Manifesto is a set of *Principles for Positive Impact Finance* that can be applied to all forms of financial institutions and financial instruments (UNEP FI, 2017) and through which the efforts of financiers and investors to increase their positive impact on the economy, society and environment are supported (Carè, 2018). When it comes to UN initiatives in the field of environmental responsibility and sustainable development, it is necessary to mention the *Principles for Responsible Investment* (PRI), which were adopted in 2006. Six principles were formulated, the basis of which is both the consideration of the influence of factors coming from the living and social environment on the investment process, and the incorporation of the concept of sustainability into the investment decision-making and investment processes (Jemović & Radojičić, 2021). Also important are the *Equator Principles* adopted in 2003, which to date have been adopted by 116 financial institutions in 37 countries as a framework for environmental and social risk management that may occur in project financing (Weber & Acheta, 2016). Consideration of ESG issues is a common practice for banks in the field of project financing, especially when it comes to large infrastructure or exploitation projects, given that potential environmental and social footprints increase the importance of ESG risks associated with this type of project (OECD, 2020).

Environmental issues, especially issues related to climate change, represent an incentive for banks to develop new, “sustainable” or “green” financial products and services. Although banks are not considered a direct polluter of the environment, they indirectly bear a part of the responsibility when they lend money to clients engaged in activities that have a direct impact on environmental damage. Given the evident growth of sustainable investment decisions, banks play a key role in transferring funds to companies that need funds to implement business projects, whereby banks, by imposing certain restrictions or requirements in order to preserve the environment, can consequently influence companies to operate in a socially responsible manner (Chen, Huang, & Lin, 2018). By developing “sustainable” products, as well as providing “sustainable” banking services, banks have a triple role (Carè, 2018, p. 66): (1) provide financial resources and in some situations financial advice for new sustainable projects or initiatives; (2) can support governments in implementing new sustainable policies;

(3) can improve their market position as well as their reputation. The volume of “*sustainable*” banking products, strategies and services has achieved exponential growth in the last 10 years, which is the result of increased demand from stakeholders, but also incentives from regulators that the financial sector should represent a driving force in achieving the goals of global sustainability agendas (OECD, 2020).

The beginning of the “greening” of banking products and services is related to the segment of *payment cards*. Given that card payments are on the rise, the basic idea is that when a transaction is made, a certain percentage (0.1-0.5%) of the value of each purchase or transaction is transferred to non-governmental organizations for environmental protection or a special environmental fund (Jemović & Radojčić, 2021). When it comes to the classification of “*sustainable*” loans, there are *green loans* (funds intended for environmental or climate projects such as plastic recycling), *social loans* (funds intended for projects with a social impact, such as the employment of people with disabilities) and *sustainability loans* (funds are aimed at “*green*” or social impact projects, such as providing employment opportunities for people with disabilities in plastic recycling factories (OECD, 2020). In the part of *savings accounts*, there are investment funds specialized for investing in sustainable projects in general or for investing in specific segment of sustainability, e.g. sustainable energy (Wind Fund, Solar Investment Fund) (Jemović & Radojčić, 2021).

There is no doubt that sustainable finance represents new sources of opportunities for banks, but the very integration of the concept of sustainable finance, as well as sustainability issues into the long-term strategy of banks is much more difficult due to the lack of appropriate standards, relevant indicators and sharing of best practices (BGLN, 2020). In order to overcome this, the role of the regulator is of particular importance in order to enable the smooth exchange of information, and with this in mind, *the Network of Central Banks and Supervisors for Greening the Financial System* was established, which now consists of 89 members representing central banks from countries around the world (Jemović & Radojčić, 2021).

REPORTING ON SUSTAINABILITY AND SUSTAINABILITY INDICES

The operation of banks in a socially responsible way does not only mean the development of “*sustainable*” banking products and services, but also a different approach in terms of transparency and communication. Non-financial disclosure is the main way of informing interested stakeholders about the commitment of financial institutions to sustainable issues. The OECD (2020) study on sustainability reporting in the banking sector showed that an increasing number of banks prepare sustainability reports and that their disclosure is based on appropriate standards and recommendations for sustainability reporting such as – *Task Force on Climate-related Financial Disclosures* (TCFD), *Global Reporting Initiative* (GRI), *Sustainability Accounting Standards Board* (SASB) and *Carbon Disclosure Project* (CDP).

Pronounced interest in sustainability information has resulted in the appearance of a large number of *sustainability indices* developed by stock exchange markets, rating agencies and renowned organizations dealing with consulting and/or socially responsible investments, and which, in order to include companies and financial institutions in the composition of the index, require them to, in addition to meeting rigorous criteria, disclose information on their sustainable performance as well. The term *sustainability index* itself refers to measures that are used to systematically, accurately, consistently and transparently assess the environmental, social, economic and/or governance performance of companies (Searcy & Elkhawas, 2012) and to rank them based on that. Current methods of measuring sustainability involve focusing on individual indicators (for example, water consumption, waste recycling) or formulating

composite indices, as is the case with the Dow Jones Sustainability World Index (DJSI World) (Papoutsi & Sodhi, 2020).

When creating a sustainability index, different approaches can be used. According to the first approach, better known as *negative screening*, which is generally used, companies that operate in industries that are considered unethical, such as companies that produce dangerous substances, that are engaged in the production of alcoholic beverages, tobacco processing, weapons production, use nuclear energy, do not respect workers' rights and pollute the environment are excluded. In contrast to this approach, *positive screening* represents an approach that includes the inclusion of companies whose operations are socially responsible and sustainable, that is, companies that have a positive contribution to society and the environment, as well as transparent corporate management. The last, third approach, implies the application of the *best-in-class* criteria, according to which no sector is excluded from the analysis, but the goal is to identify and take into account only those companies that are the most socially and environmentally responsible in their sector, in order to identify the "leaders" of the sector (see more: Staub-Bisang, 2012). Companies and financial institutions that are included in the sustainability index achieve not only public recognition and differentiation in relation to the competition, but also a high level of support and trust from their stakeholders.

An overview of the most important sustainability indices, which take into account all dimensions of sustainability and which were among the first to be developed by various organizations and should be reviewed due to their relevance, is given in Table 1.

Table 1. Overview of major sustainability indices

<i>Sustainability indices</i>	<i>Launched</i>	<i>Organization</i>	<i>Markets Covered</i>	<i>Methodology</i>
MSCI KLD 400 Social Index	1990	KLD Analytics	USA	Negative screening – companies whose business is related to alcohol, gambling and games of chance, tobacco, weapons and nuclear energy are not taken into account. Five categories of ESG performance are analyzed: environment; community and society; employees and supply chain; consumers; governance and ethics.
Dow Jones Sustainability Indices	1999	S&P Dow Jones Indices and RobecoSAM	Global	Best-in-class – includes companies that score highest on a comprehensive list of industry-specific sustainability criteria for each of the 61 industries. DJSI family contains one main global index, the DJSI World, and various indexes based on geographic regions.
FTSE4Good Index	2001	FTSE Group	Global	Negative screening – Companies whose business is related to tobacco, nuclear systems, uranium and weapons are not taken into account.. Environmental, social and governance dimensions are covered by over 300 indicators.
Ethibel Sustainability Index	2001	Forum Ethibel	Europe	Positive screening – companies are evaluated based on four main criteria – internal social policy; environmental policy; external social policy; and ethical economic policy

Source: Authors based on: Magner, S. (2020). Sustainability Indices and ESG-ratings, the Impact on Corporate Sustainability - a case study using the perspective of a fast-growing Swedish bank. Uppsala: Faculty of Natural Resources and Agricultural Sciences, p. 23

There are also indices that focus only on the environmental responsibility of companies. An example of this type of sustainability index is the *MSCI Global Environment Index*, which is

based on key environmental topics – alternative energy, sustainable water, green building, pollution prevention, clean technology. The index is made up of securities of companies that generate at least 50% of their income from environmentally-friendly products and services. The index serves as benchmark for investors seeking to identify companies whose primary source of income increases the efficient use of scarce natural resources or mitigates the impact of environmental degradation (MSCI, 2022). The *Toxic 100 Air Polluters Index* and *Toxic 100 Water Indexes* rank the corporations that represent the biggest polluters in the US. In April 2022, Bloomberg and MSCI presented the first indices in their joint Climate Benchmark offering with the Bloomberg MSCI Global, Euro and US *Corporate Paris-Aligned Indices* which will serve as a benchmark for investors to assess the performance of corporate bond holdings that seek to meet or exceed the minimum standards of the EU Paris-Aligned Benchmark (PAB) label (Bloomberg, 2022).

METHODOLOGY

RESEARCH DESIGN

Given that banks have a key role in financing the economic activities of most financial systems and that in the changed business environment they are increasingly facing a wide range of sustainable risks, but also opportunities for improving business on a sustainable basis, the empirical part of this paper is dedicated to the research of sustainable practices and performance of banks included in DJSI World in the period 2017-2021.

Before deciding on the index that would represent the basis of research on the sustainable performance of banks, the authors investigate several sustainability indices. After careful consideration, DJSI World is chosen for several reasons. Specifically, the index has a long tradition since it dates back more than 20 years, which makes it one of the first sustainability indices that were created and today it is accepted worldwide as a benchmark for sustainable stock investments. The selection criteria also refer to the precise explanation of the methodology used in the construction of the index, the transparency of the index, as well as the unhindered access to sustainability index data, which DJSI World fulfils. In addition, this index today, on a global level, shows the highest analytical value and focuses on sustainability issues that are directly related to the business success of companies and materially significant for the industry in which the company operates.

Bearing in mind the fact that to the best of the authors' knowledge this kind of research has not yet sufficiently captured the attention of the academic community, the authors will try to fill the gap in the literature, as well as to provide an answer to two important research questions:

RQ1: Has the participation of banks in DJSI World and their S&P Global ESG score changed over the last years?

RQ2: Are the governance & economic, ecological and social dimensions of sustainability equally represented in the operations of banks?

The method that will be applied in order to determine the sustainable practices of banks is objective content analysis, which implies the application of a number of different strategies in text analysis, bearing in mind that this method is used in studies focusing on sustainability disclosure (Caré, 2018) and classification of companies according to their contribution to sustainability issues. In this part of the paper, the methodology used to assess the viability of companies and their inclusion in DJSI will be explained first. After that, the questionnaire

specially created for banks and the methodology for weighting the criteria in the questionnaire will be briefly presented.

DJSI'S SUSTAINABILITY ASSESSMENT METHODOLOGY

In order for companies to be included in the composition of DJSI, it is necessary to pass the rigorous S&P Global Corporate Sustainability Assessment (CSA) process in order to determine their S&P Global ESG score. The annual CSA process begins in April each year, with new scores being released in September. The sustainability of companies is assessed based on their industry sector affiliation on the last business day in March. The only change in terms of CSA deadlines occurred as a result of the COVID-19 pandemic, when during 2020 and 2021 the deadlines were extended to November (S&P Dow Jones Indices, 2022).

The first step in the CSA process involves the selection of companies that will be invited to participate (the "Invited Universe"). For each of the indices from the DJSI family, the criteria for the sample of companies that will be considered are precisely defined, while in the case of DJSI World, which is the focus of this paper, the 2500 largest companies included in the S&P Global BMI whose market capitalization is above 500 million US\$ are invited (S&P Dow Jones Indices, 2022). After that, the invited companies are required to fill out extensive CSA questionnaires on governance & economic, environmental and social indicators specially created for each industry. The questionnaires are designed in a way that provide multiple-choice questions to limit qualitative responses. Questions that allow for qualitative responses are specifically evaluated by RobecoSAM analysts using a predefined assessment method to convert the response into a quantitative score (Sadovska, 2016). All the disclosed information in the questionnaires is confirmed by RobecoSAM based on the supporting documents that the companies must send, as well as by monitoring the media and stakeholder reports using Media and Stakeholder Analysis (MSA) (Sadovska, 2016). "The Assessed Universe" consists of all companies from the "Invited Universe" analyzed based on the CSA. The ESG score ranges between 0 and 100, on the basis of which companies are ranked in relation to others in their industry. Companies whose ESG score is less than 45% compared to the companies with the highest score are disqualified, while the remaining companies form "The Eligible Universe". Only 10% of companies from each industry that achieve the best ESG score in this analysis are included in this prestigious index. By construction type, this index is weighted by capitalization in free circulation.

Based on the obtained ESG score, companies also receive the corresponding sustainability awards (S&P Global 2022a, p. 72): (1) *Gold Class distinction* (companies that achieve an ESG score within 1% of the industry's top-performing company's score and a minimum score of 60); (2) *Silver Class distinction* (companies that achieve an ESG score ranging from 1% to 5% of the top-performing company's score in their industry and a minimum score of 57); (3) *Bronze Class distinction* (companies that achieve an ESG score in the range of 5% to 10% of the top-performing company's score in their industry and a minimum score of 54); (4) *Sustainability Yearbook member* (companies within the top 15% of their industry and an S&P Global ESG score within 30% of their industry's top performing company).

QUESTIONNAIRE FOR BANKS

The questionnaires are designed in such a way that the first part of the questionnaire is identical for all companies and involves the disclosure of general information about the companies, such as information on business activities, reporting boundaries and the denominator that will be used to normalize the data in the questionnaire (for banks, the

denominator is the total number of employees, while for companies from other industries it is production and/or revenues).

After that, the next part of the questionnaire is dedicated to *governance & economic dimension*. Within this dimension, companies from all industries, including banks, disclose information on the following criteria (S&P Global, 2022b): (1) *corporate governance* (16 questions); (2) *materiality* (3 questions); (3) *risk & crisis management* (4 questions); (4) *business ethics* (9 questions); (5) *policy influence* (3 questions); (6) *tax strategy* (4 questions); (7) *information security/cybersecurity & system availability* (6 questions). In the questionnaire specially created for banks, there are three additional criteria – *sustainable finance* (11 questions), *anti-crime policy measures* (3 questions) and *financial stability & systemic risk* (2 questions) applicable only to banks. Information security/cybersecurity & system availability and sustainable finance were added to the questionnaires during 2020 in accordance with the emergence of new initiatives and frameworks that support sustainability discussions.

When it comes to *environmental dimension* it is necessary for all companies to disclose information about (1) *environmental reporting* (3 questions); (2) *operational eco-efficiency* (8 questions); and (3) *climate strategy* (8 questions). In the case of banks, the *decarbonization strategy* (12 questions) also appears within this dimension (12 questions) (S&P Global, 2022b).

The *social dimension* in the questionnaires is covered by the following criteria: (1) *social reporting* (3 questions); (2) *labor practice indicator* (7 questions); (3) *human rights* (5 questions); (4) *human capital development* (4 questions); (5) *talent attraction & retention* (9 questions); (6) *corporate citizenship & philanthropy* (4 questions); (7) *customer relationship & management* (2 questions); (8) *occupational health & safety* (5 questions). In addition to these criteria, the banks' questionnaires also include *financial inclusion* (3 questions) and *privacy protection* (4 questions) (S&P Global, 2022b).

Bearing the above in mind, it follows that in the questionnaires for banks, the *governance & economic dimension* is covered with 10 criteria and 61 questions, the *environmental dimension* with 4 criteria and 31 questions and the *social dimension* with 10 criteria and 46 questions.

SCORING METHODOLOGY

Corporate Sustainability Assessment (CSA) is a holistic assessment, but the structure and weighting of each criterion depend on its financial materiality in a given industry. Every year, S&P Global ESG Research re-evaluates the weights used in CSA to aggregate scores from criteria level to dimension to total level, representing the S&P Global ESG Score (CSA Weights, 2022). The weights may change depending on the change in importance of a certain sustainability topic or as a consequence of the fact that a certain issue has been added or removed. S&P Global ESG Score ranges from 0 to 100.

RESULTS AND DISCUSSION

Empirical results are derived after the analysis of indices' documentation on sustainability assessment approaches and reviews of Sustainability Yearbooks published in the period 2017-2021.

As the Table 2 shows, the number of invited banks analyzed on the basis of CSA increases from year to year, with the largest number occurring in 2020 (499 banks). The number of

banks that actually joined the DJSI World and Yearbook after a rigorous CSA analysis is much smaller, and the data shows that in the period 2017-2021, that number varied significantly. It is this difference that underlines the outstanding commitment of the involved banks to sustainable business practices. The percentage participation of financial institutions in the total number of companies in the observed period is between 7.86% and 9.91% (Table 2), whereby this gradual increase shows that the banking sector as a whole increasingly recognizes the importance of its involvement in sustainability issues. The fact that even during the COVID-19 pandemic, due to the numerous challenges they faced, banks were determined to contribute to global efforts in the drive towards sustainable development is also encouraging.

Table 2. Banking industry statistics for the period 2017-2021

	2017	2018	2019	2020	2021
Number of banks assessed	165	176	228	499	475
Number of banks in Yearbook	41	39	36	55	71
Number of companies in Yearbook	478	458	458	631	716
% participation of banks in the Yearbook	8.57%	8.52%	7.86%	8.72%	9.91%
Gold class	2	2	3	1	3
Silver class	5	9	9	8	14
Bronze class	14	14	11	12	9
Sustainability Yearbook Members	20	14	13	34	45

Source: RobecoSAM (2018-2019). The Sustainability Yearbook. S&P Global (2020-2021), <https://www.spglobal.com/esg/csa/yearbook> (28 September 2022)

In 2017, South Korean KB Financial Group Inc and Australian Westpac Banking Corp. which had a score of 94 and 91 (out of a possible score of 100) were awarded the prestigious S&P Global Sustainability Award with *Gold Class distinction* in recognition of their distinctive sustainable performance and harmonious integration of environment, social and governance & economic (ESG) aspects in their activities. In the following year, in 2018, KB Financial Group Inc. maintained its position and again achieved the *Gold class distinction* together with the Colombian bank Bancolombia SA, achieving the highest score in the global index of 87. In 2019, the Spanish bank Banco Santander SA, the Brazilian Banco do Brasil SA and Taiwan E.Sun Financial Holding Co Ltd improved their position in the index, with the highest score of 86 in the global banks category and achieved the *Gold class distinction*. In 2020, the Colombian Bancolombia SA again achieved the top position in this benchmark international ranking with a score of 89, whereby its commitment even in the situation caused by the COVID-19 pandemic to develop its work in response to challenges and opportunities balanced across all sustainability dimensions was rewarded with *Gold class distinction*. In 2021, South Korean KB Financial Group Inc, Spanish Banco Bilbao Vizcaya Argentaria (BBVA) and Thailand Kasikornbank Public Company Limited stood out with the *Gold class distinction* and highest score of 89 among all banks across the globe.

In other categories – *Silver class distinction*, *Bronze class distinction* and *Sustainability Yearbook Members*, there are banks whose ESG score is lower compared to the top ranked companies with *Gold Class distinction*. There are also variations in the number of awarded banks within each of these categories (Table 2), as well as changes in the positions of banks according to whether they achieved a higher or lower ESG score during the observed period, which reflects the extent to which sustainability was a strategic priority for them.

The data in Table 3 shows that in the observed period 2017-2021 there were changes in the movement of the S&P Global ESG score. As can be seen, the minimum S&P Global ESG score in the banking sector ranged from 62 to 78 and refers to the score achieved by banks awarded with the *Sustainability Yearbook Members* distinction. The minimum score was achieved in 2020 by Banco del Estado de Chile. Also, based on the data presented, it can be seen that the maximum S&P Global ESG score of 94 was achieved in 2017 (KB Financial Group Inc), which in the observed period represents the best result for the banking sector. After that, the maximum ESG score of the best-ranked banks gradually decreased in 2018 and 2019, with a gradual improvement in 2020 and 2021.

Table 3. S&P Global ESG score for the banking sector during period 2017-2021

	2017	2018	2019	2020	2021
Min ESG score	78.00	72.00	72.00	62.00	63.00
Max ESG score	94.00	87.00	86.00	89.00	89.00
Average ESG score	85.31	79.79	79.33	76.42	75.42

Source: S&P Global, <https://www.spglobal.com/esg/solutions/data-intelligence-esg-scores> (28 September 2022)

As Graph 1 shows, when it comes to the dimensions of sustainability in the banking sector, in the period 2017-2021, the highest weight in % of total score was achieved by the governance & economic dimension (55% in 2020 and 2021). Among the criteria that stood out within this dimension in 2017 and 2018 there are *codes of business conduct, corporate governance, risk & crisis management, customer relationship management*, and as of 2019, in addition to the previously mentioned criteria, *anti-crime policy & measures* and *sustainable finance* stand out. This result is a consequence of the fact that, in response to increased regulatory controls, banks increasingly switch to sustainable business models and focus on core principles of ethics and client trust. Also, issues of corporate governance and banking culture are extremely important items on board agendas, whereby establishing effective incentive schemes is increasingly seen as a form of harmonizing investment professionals' attitudes and behaviors with the long-term interests of shareholders and society (S&P Global, 2021).

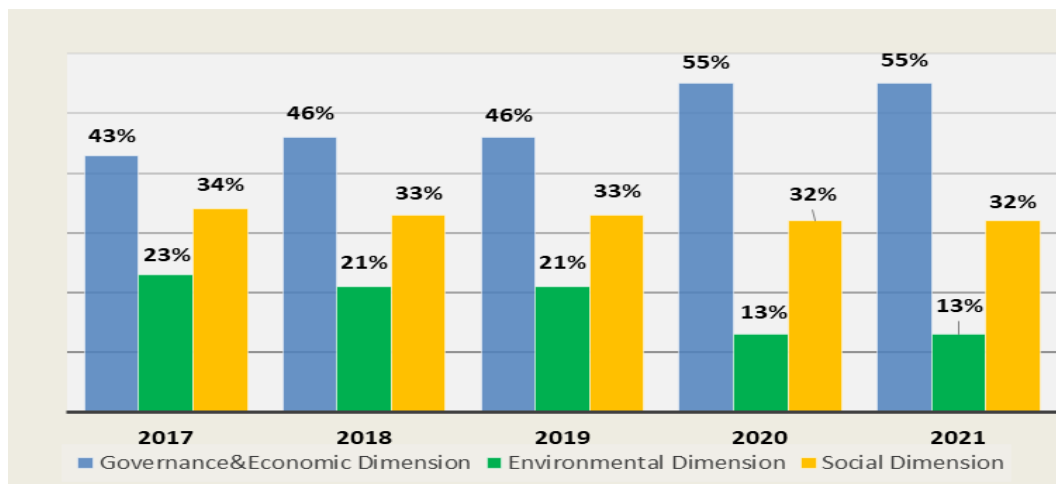


Figure 1: Governance & Economic, Environmental and Social Dimension weights

Source: RobecoSAM (2018-2019). The Sustainability Yearbook. S&P Global (2020-2021), <https://www.spglobal.com/esg/csa/yearbook> (28 September 2022)

In terms of social dimension, S&P Global has assessed the weight of this dimension at 34% in 2017, 33% in 2018 and 2019, 32% in 2020 and 2021 (Figure 1). The most represented criteria are *controversial issues, dilemmas in lending & financing, human capital development, talent attraction & retention, financial inclusion*. Representation of the previously mentioned criteria is in line with the idea that banks, in order to implement their long-term strategy, as well as to integrate sustainability issues, increasingly use well-designed human capital schemes in order to promote appropriate skill sets and help improve talent attraction and retention (S&P Global, 2021).

Environmental dimension achieves the lowest weighting in the overall ESG score in the banking sector. In the period from 2017-2019, estimated weights are at the level of 21% and in that period *business risks and opportunities* and *climate strategy* stand out as the most relevant criteria within this dimension, and as of 2020 the weight of this dimension in the overall score is reduced and only *climate strategy* is emphasized as the most represented criterion.

Despite the lower representation of the environmental dimension in the operations of banks, their public character and responsibility for achieving not only microeconomic, but also macroeconomic and financial stability, makes it imperative to strengthen their environmental responsibility in the future. In that sense, the observed analysis is only a landmark for understanding their quantitative score of environmental responsibility. We should certainly not ignore their activities, projects, campaigns that have become more frequent lately and are aimed at strengthening their environmental and broader social responsibility.

CONCLUSION

Banks are currently facing a change in their traditional roles in society, whereby they increasingly have a proactive role and make their activities have a positive impact on the environment and society as a whole. This is precisely what enables banks to become active market participants in the further implementation of the sustainability agenda. The fact that elements of sustainability are present in the banking sector through the integration of social, environmental, economic and/or governance issues in the business activities of banks is an important basis for the successful implementation of the policy of sustainable finance, which is reflected in the digitization of banking activities, reducing carbon footprints in their daily activities, as well as the creation of “*sustainable*” or “*green*” banking products (Sredojević & Sredojević, 2021). Consequently, there is a growing interest in measuring and analyzing the sustainable performance of banks. With that in mind, a survey was conducted that aimed to analyze the sustainable practices and performance of banks included in DJSI World in the period 2017-2021.

The results obtained from the conducted content analysis showed a gradual increase in the participation of banks in the total number of companies included in DJSI World in the observed period, which implies that during the last years these financial institutions intensively considered and integrated ESG issues into their business strategies, decision-making processes and risk management processes. This also indicates that sustainability is increasingly a strategic priority for banks and that they represent responsible financial intermediaries, who are aware of the fact that the development of new, “*sustainable*” products and services and their socially responsible operations can reduce the impact of phenomena such as climate change and dramatic growth of social inequality on society (Carè, 2018).

In the observed period, there were also changes in the movement of the S&P Global ESG score. The minimum S&P Global ESG score in the banking sector ranged from 62 to 78,

while the maximum S&P Global ESG score of 94 was achieved in the first year of the analyzed period, and after that it gradually decreased in 2018 and 2019, with a gradual improvement during 2020 and 2021.

Governance & economic, environmental and social dimensions of sustainability were not equally represented in the operations of banks. Governance & economic stood out as the most represented dimension, followed by social and then the ecological dimension. Greater representation of governance & economic and social dimension can be considered quite justified in the observed period, given that the banks were focused on implementing sustainable business models, which required a focus on core principles of ethics and client trust (economic dimension), as well as on well-designed human capital schemes in order to attract and retain the necessary personnel who possess an adequate set of skills (social dimension).

In the coming period, however, banks can be expected to focus more on the ecological dimension of sustainability, given the results that show that as of 2020, the most represented criterion within this dimension is *climate strategy*, and the role of banks in responding to climate change challenges is unavoidable. Climate change poses a threat to the stability and security of banks, and consequently a threat to the stability of the broader financial system. Tackling climate-related and environmental risks is one of the key supervisory priorities of the European Central Bank for the period 2022-2024, so proactive integration of climate and environmental risks into their business strategies and risk management frameworks is set as a strategic goal for banks (ECB, 2022). Also, in April 2021, UNEP FI prepared the Guidelines for Climate Target Setting for Banks, where banks are expected to align long-term targets with the temperature targets set by the Paris Agreement and support the transition to a net-zero economy by 2050, whereby banks to set intermediate goals by 2030 or earlier (Kilibarda, 2021). Due to their unique market position, in the future, banks will be expected to increasingly redirect the financing flow towards low-carbon and climate-resilient investments (Park & Dae Kim, 2020).

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**THE POLISH-ITALIAN-UKRAINIAN-SERBIAN
SCIENTIFIC SYMPOSIUM:
CONTEMPORARY CHALLENGES IN
ECONOMICS, BUSINESS AND MANAGEMENT**

INTERNATIONAL ECONOMIC SUPPORT IN UKRAINE'S POSTWAR RECONSTRUCTION

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Abstract: *Restoring Ukraine's competitiveness in the conditions of the Russian invasion requires large-scale reconstruction in all regions of Ukraine. The purpose of the study is to determine the conceptual foundations for the future post-war reconstruction of Ukraine based on the purposeful use of international economic aid. The authors use a complex of complementary methods of scientific identification of economic processes and phenomena: system-structural, comparative and statistical analysis, as well as informational, process and institutional approaches. Since gaining independence in 1991, Ukraine has continuously received bilateral and multilateral support. But between February 24 and March 27, 2022, the EU and the G7 provided Ukraine with bilateral humanitarian, military and financial support worth 13 billion euros. The importance of the research results for the formation of the mechanism of a new innovative business model based on the principles of state-public partnership is substantiated. The specifics of the provision of international economic aid to Ukraine by the USA, Canada, Great Britain, EU member states, are outlined. It has been proven that the next step should be the substantiation of the key aspects and directions of the innovative business model of cooperation of a wide range of business entities in the high-tech industry with the use of resources obtained through international technical assistance, as well as an understanding of the need for strategic changes in all areas of the Ukrainian economy. The practical significance of the study is that its results and developed proposals form a conceptual basis for the post-war reconstruction of the country's economy and can be used in the practical activities of state authorities to improve the process of forming and implementing a new innovative business model in the short and medium term.*

Keywords: *international economic support, economic reconstruction, innovation cooperation, Ukraine, European integration*

JEL Classification: *E61, F52, O50*

MAIN FINDINGS

The restoration of the Ukrainian economy in the context of the Russian invasion involves not only the restoration of damaged property, but also a complete rethinking of current approaches and developing the further strategy of sustainable development for the state. On February 24, 2022, Ukrainian cities were mostly shelled - the aggressor country launched a full-scale invasion. This led to a domino effect of future crises on a global scale. According to the Ministry of Finance of Ukraine, the damage to civil and military infrastructure is estimated at 270 billion USD (Ministry of Finance of Ukraine, 2022), with more than 7 thousand residential buildings damaged or destroyed. About 30% of Ukrainian companies have ceased their activities, and 45% are operating at reduced capacity. There is a decrease in foreign currency influx due to a decrease in exports of ore, metal, and metal products, which account for about one quarter of Ukraine's exports of goods. The International Monetary Fund (IMF) forecasts that GDP in real terms will decline by 35% this year (IMF, 2022). The challenges Ukraine is facing now therefore raise important questions for both the manufacturing sector and the government. For industry, the question is how to preserve its competitive advantages in wartime and how to best restore and reinforce the strengths of the manufacturing sector. For the government, the main question is whether the actions it takes help Ukrainian producers to do so. It is a correct state policy that could restore and stimulate the potential of the Ukrainian economy and create conditions for recovery and development, as well as for the creation of new jobs. In view of the above, the identification of new forms of cooperation on the basis of international assistance in the conditions of war and further recovery of the country is of particular relevance.

The theoretical basis of the study is the understanding that international aid includes official sources of assistance and private revenues coming through non-governmental organizations (associations, foundations). Official sources are official development assistance, which includes concessional lending, technical assistance, and commodity aid. In the context of this study, international assistance can be divided into certain groups: financial (bilateral and concessional loan agreements, grants); military support (all types of weapons and military equipment); medical assistance (medicines, special equipment for hospitals); emergency equipment (specialized equipment for emergency recovery operations, including demining); specialized equipment (everything that helps the Ukrainian security forces to defend the country, but does not directly belong to the weapons group).

The methodological basis of the study is formed by scientific works devoted to the definition of the features of international cooperation, exchange of innovations, as well as their use as driving factors of international cooperation between countries. A complex of complementary scientific methods was applied: historical and logical, system-structural, comparative and statistical analysis, information, process and institutional.

In the context of achieving the goal of the study, it is impossible to ignore publications on the Russian invasion of Ukraine that began in February 2022. Ukraine, located in the geopolitical center of Eurasia, has been an important arena for three decades after the collapse of the Soviet Union. The West, especially the United States and Europe, as well as Russia, have been actively involved in Ukraine's internal and external development since its independence. Their ideological, economic and geopolitical interests clashed in a confrontation that led to numerous political regime changes in Ukraine and ultimately to the war on the territory of the European state. The results of the analysis of the rivalry between the United States, Europe and Russia in Ukraine are noteworthy as a starting point for studying the dilemma facing European security in the context of Russia's war against Ukraine and the consequences for

both the global development model and those of individual regions of the world (Cheng, 2022). There are also publications that consider possible scenarios: either effective sanctions from the West or unlikely restrictions on energy trade between Russia and the EU. In addition to energy, the most painful sanctions are the disconnection of Russian banks from the SWIFT system and dollar markets, as well as a ban on the export of high-tech goods to Russia. According to the authors, under both scenarios, the Ukrainian economy will suffer significantly and will need serious Western assistance to maintain macro-financial stability, but the economic impact of sanctions on Russia is likely to be mitigated by even closer energy ties between Russia and China (Astrov et al 2022, Ruiz Estrada, Staniewski and Khan, 2022).

Special attention should be paid to the works that present the results of the analysis of post-war reconstruction in different countries of the world. In particular, a number of scholars have explored the potential for development, analyzing conceptual frameworks and practical cases to understand possible tools for post-war reconstruction (Aboushala, Haj Ismail, 2022) or technological cooperation in the defense industry as a factor of sustainable development of a country (Callado-Muñoz ets, 2022; Holtström, 2022).

Exploring the relationship between international aid, economic policy, and growth, K. Burnside and D. Dollar proved that such aid will be more effective if it is supported by appropriate policies: "aid has a positive effect on growth in developing countries with appropriate fiscal, monetary and trade policies and a negligible effect in the presence of weak policies" (Burnside, Dollar, 2000). At the same time, some authors point out that the main problem of international assistance is not the economic or financial efficiency of investments, but the lack of systemic transformation and real changes in the economy and social life of the assisted countries (Deutscher, Fyson, 2008).

Thus, we can assume that not only the amount of international aid is important, but also the activities of the relevant institutions regarding its use and effective financial control. Coordination of sectoral policies also requires a change of emphasis. The active phase of the war with Russia has shown the need to militarize the economy, first of all, as well as changes to the policy of demining, decontamination of territories, and disposal of military waste. Accordingly, on the instructions of the President of Ukraine, work has begun on the formation of the Funds for the Restoration of Ukraine in connection with the military aggression of Russia, the funds from which will be used to solve several problems of Ukraine depending on their group of specialization (President of Ukraine, 2022). Possible sources of financial filling of these Funds are the arrested and confiscated assets of the Russian federation, international assistance, direct contributions of partner countries, contributions of international organizations, investors, private donors - potential strategic investors, public organizations, business representatives and citizens, the state budget of Ukraine. In addition, the funds may be replenished by the EU structural and investment funds, preferential (non-repayable) financing from international financial organizations, etc. In order to strengthen the institutional capacity of the state in the implementation of the state policy of economic recovery, the National Council for the Restoration of Ukraine from the Consequences of the War was created (Ukraine's Governmental portal, 2022). But the question remains unresolved whether it is entrusted with the task of forming the directions of use of the funds of the post-war recovery funds, or its activities relate only to the development of an action plan for post-war recovery and development of the state.

It should be noted that since gaining independence in 1991, Ukraine has constantly received bilateral and multilateral support (for more details see Duginets, Nizheiko, 2022). At the same time, a few months before the aggressor's invasion of Ukraine, some governments and institutions began to increase international assistance. In particular, on January 21, 2022, the

Government of Canada offered to provide the Government of Ukraine with a loan of 87 million euros (hereinafter all aid is in euros), and on February 14 - another loan commitment of up to 362 million euros (Department of Finance Canada, 2022). In addition, on January 26, Canada allocated €246 million for immediate support to Ukraine, military training and capacity building (under "Operation UNIFIER"), as well as €36 million for development and humanitarian assistance (National Defence, 2022a). Finally, on 14 February, Canada announced a €5 million donation of lethal weapons and equipment to the Ukrainian Armed Forces (National Defence, 2022b). If these commitments are taken into account, Canada would rank 3rd among the countries that provided the most bilateral support in the first months after Russia's invasion of Ukraine.

The World Bank also provided support to our country from the first days of the full-scale war of Russia against Ukraine. In particular, three loans totaling EUR 1.85 billion and USD 91.16 million were approved. Also, with its support, a new effective financial mechanism was created on a non-repayable basis - the Multi-Donor Trust Fund, which allowed to attract grants totaling 1.1 billion euros and 7.5 billion dollars. In addition, the United States, the United Kingdom, Denmark, the Netherlands, Austria, Norway, Lithuania, Latvia, and Iceland have provided \$7.5 billion (Ministry of Finance of Ukraine, 2022). In total, since the beginning of the war, Ukraine has received USD 18.9 billion. of external grant and credit assistance (Fig. 1).

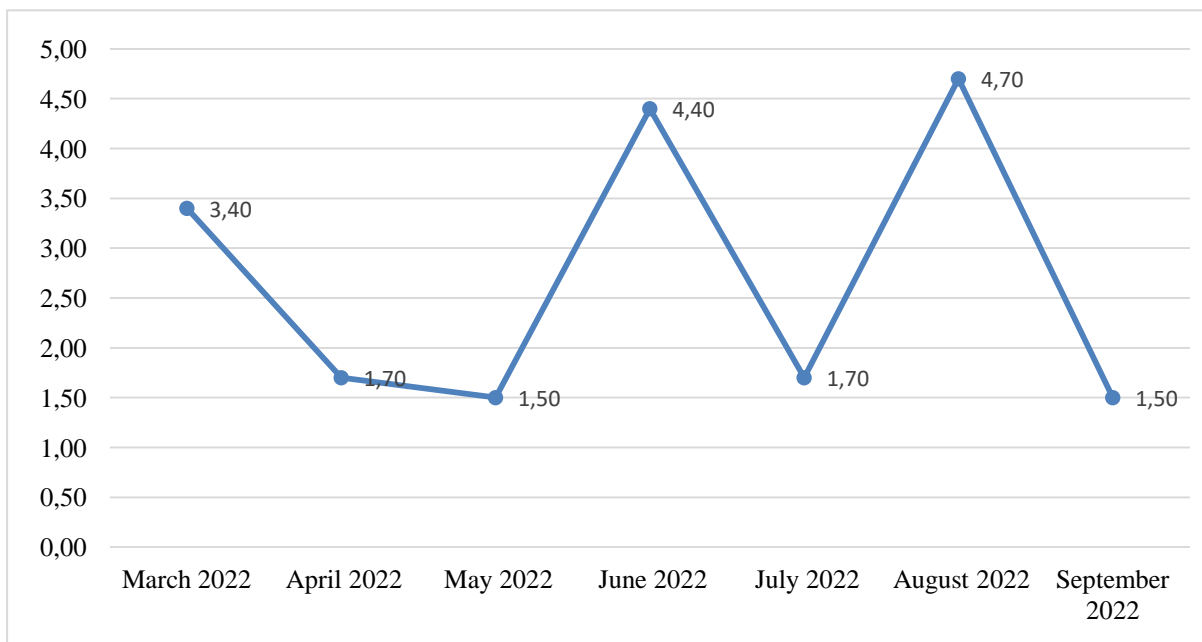


Figure 1: Dynamics of external grant and credit support to Ukraine, March-September 2022, billion USD

Source: compiled by the authors according to (Ministry of Finance of Ukraine, 2022).

The main foreign donors of the state budget of Ukraine, as of 29.09.2022, were under bilateral agreements and grants - the USA (USD 8.5 billion — grant), the EU (USD 2.43 billion, including a grant of EUR 132 million), Canada (USD 1.5 billion), Germany (USD 1.37 billion, including a grant of EUR 1 billion), Japan (USD 0.6 billion); under preferential loan agreements with IFIs: IMF (USD 1.4 billion), World Bank (USD 0.9 billion), and EIB (USD 0.7 billion) (Ministry of Finance of Ukraine, 2022).

In view of this, we can conclude that Ukraine now has the conditions for the recovery and further sustainable development of the economy. Despite the fact that the defense industry is characterized by the technological complexity of the products and services offered, as well as by the constant innovation process, the existing cooperation with technological partners (technological development and training of the Ukrainian military) will also allow to maximize the involvement of domestic industries in the recovery.

But how can a recovery strategy be formulated when almost 5 million Ukrainians left the country after the start of the Russian invasion (Grossi and Vakulenko, 2022)? The vast majority are women and children of primary and secondary school age - and it is the latter whose departure poses the greatest threat to the implementation of any recovery strategy for Ukraine. A lot of these children may not return to the country, not graduate from Ukrainian schools and not enter Ukrainian universities. As a result, we could have a demographic catastrophe, the potential consequences of which are not difficult to assess in the context of long-term economic recovery. A key aspect of recovery is who will carry out its main business processes, and how to support the development of Ukraine's human capital so that it would be able to most effectively use the international assistance provided for the restoration and recovery. World practice shows that sustainable economic development is based on the accumulation of personalized human capital, which is carried out in a special segment of the education system. Therefore, this segment should play one of the key roles in any version of Ukraine's recovery strategy.

Despite the fact that the government of our country has enough ideas and policy tools to deal with the immediate consequences of the Russia-made disaster in the country, in the long run it may lack both the potential for economic use of these tools and appropriate strategies to meet the needs of society in a responsible and accountable manner. Therefore, the conceptual basis of the post-war reconstruction of the country's economy should be the development of knowledge/technologies/innovations transferred to Ukraine within the framework of international assistance to combat Russian aggression, which will form the basis of a new innovative business model based on the strategic transformation of the socio-economic system of Ukraine. The key parameters of such a business model are the following factors (Table 1).

Table 1. Multilevel structure of the innovative business model of Ukraine's recovery based on international assistance

Level of cooperation	Business model efficiency factors
National	availability of a national strategy for innovation development; availability of reliable and transparent national systems of product quality control; ensuring quality state financial control and management; developed knowledge-intensive infrastructure of the military-industrial complex; developed educational infrastructure that steadily fills the labor market with highly qualified specialists who are able to generate and patent innovation; availability of recognized competitive products and well-established export and import routes; Increased labor productivity by channeling most of the savings into production

Level of cooperation	Business model efficiency factors
International	coherence of international assistance with national priorities; harmonization of legal frameworks and international security standards; increasing the timeliness and stability of international assistance by different types; understanding the need to transform the global institutional system in accordance with the challenges of human security;
Partnership policy	functioning of platforms for research and development of new technologies; ensuring mutual accountability for security and economic recovery goals; ensuring the participation of all stakeholders in achieving the goals of economic recovery; ensuring results-oriented management of European security and economic recovery of Ukraine

Source: developed by authors

It is the integration of technological developments with European partners that will help to restore the destroyed and bring Ukrainian economy to a new level of development in a short time. Such processes as development, acquisition, exchange and implementation of knowledge, thanks to the already established international cooperation, will become simplified and accelerated. As a result - rapid recovery of the country without complex, multi-level, bureaucratic and countless actions.

The next step should be to substantiate the key tools/mechanisms for the implementation of an innovative business model of cooperation between a wide range of business entities using knowledge, information, and technologies obtained through international assistance, as well as understanding the need for strategic changes in all areas of activity with a clear outline of implementation deadlines, reporting mechanisms and indicators of achievement of the goal at each stage.

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VALUE CHAIN FROM PERSPECTIVE OF VALUE-BASED MANAGEMENT

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***Abstract:** One of the most effective tools for an analysis of enterprise's development determinants and value growth is the concept of a value chain, which is based on the separation of strategic tasks through an analysis of the functioning of an entire enterprise; this allows for an understanding of the principles of cost formation and the specifications of current and potential sources of competitive advantage. The idea of a value chain was formulated by M.E. Porter in the 1980s; owing to its high application value, it quickly became one of the leading concepts of strategic management. The concept was born out of transformations of the market, economies, and enterprises and, above all, the internationalization of enterprises, the process of intensifying competition and technological progress, and wider opportunities for accessing information for all market entities and a wide range of their stakeholders. As a result, the basic indicator of a firm's success (which until now had been market share) has been replaced by the measure of creating value. Enterprise value creation is process that is implemented through the sequence of actions that create an enterprise's value chain; therefore, it will be justified to present the scope and conditions of using the value chain for the needs of value-based management (with a particular emphasis on the strategic perspective). Therefore, the main goal of this study is to present the meaning and conditions of using the value chain for the purposes of the value-based management concept. The implementation of this goal requires answers to the research questions connecting the operational and strategic perspectives of value-based management, configuration of the value chain and mechanisms of integrating the value chain with enterprise value account and value drivers.*

***Keywords:** value-based management, value chain, value drivers, value creation*

***JEL Classification:** G32, L22*

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INTRODUCTION

Contemporary strategic management treats gaining a competitive advantage as a challenge for each enterprise that operates in the current turbulent environment, as it is related to the nature of all of the functions that are performed in a business entity. The effective implementation of individual tasks ensures the continuous development of a company and the growth of its value; therefore, it becomes important to identify the sources of competitive advantage through a systematic analysis of all of the activities that are carried out within a given enterprise and the identification of those relationships that occur among the individual processes. One of the most effective tools for such an analysis is the concept of a value chain, which is based on the separation of strategic tasks through an analysis of the functioning of an entire enterprise; this allows for an understanding of the principles of cost formation and the specifications of current and potential sources of advantage. To gain a competitive advantage by a business entity, an enterprise must perform one of its key tasks better or at a lower cost than its competitors (Porter, 2004).

The idea of a value chain was formulated by M.E. Porter in the 1980s; owing to its high application value, it quickly became one of the leading concepts of strategic management. The concept has its methodological roots in its approach to an enterprise as a system; it is based on the principle that all market undertakings are certain interrelated sequences of activities (Dilip, Rajeev, 2016). The concept was born out of transformations of the market, economies, and enterprises and, above all, the internationalization of enterprises, the process of intensifying competition and technological progress, and wider opportunities for accessing information for all market entities and a wide range of their stakeholders. As a result, the basic indicator of a firm's success (which until now had been market share) has been replaced by the measure of creating value.

Enterprise value creation is process that is implemented through the sequence of actions that create an enterprise's value chain; therefore, it will be justified to present the scope and conditions of using the value chain for the needs of value-based management (with a particular emphasis on the strategic perspective). Therefore, the main goal of this study is to present the meaning and conditions of using the value chain for the purposes of the value-based management concept. The implementation of this goal requires answers to the following research questions (which have determined the structure of this study):

- What are the operational and strategic perspectives for value-based management?
- How is the enterprise value chain configured?
- What are the mechanisms of integrating the value chain with enterprise value account and value drivers?

OPERATIONAL AND STRATEGIC VALUE-BASED MANAGEMENT

The concept of value-based management was developed in order to increase the effectiveness of enterprise value creation under the conditions of the domination of enterprise shareholding by institutional investors and the resulting common separation of enterprise ownership and management.

The creation and development of applications of the above-mentioned concept were primarily related to pioneering works in this area such as T. Copeland, T. Koller, J. Murrin (1990), J.M. McTaggart, P.W. Kontes, M.C. Mankis (1994), A.P. Black, P. Wright, J.E. Bachman (1998), J.A. Knight (1998), and J.D. Martin, J.W. Petty (2000). At the same time, the concept of value

management contributed to the creation and development of measures of effectiveness in creating enterprise value; these constitute the basis of the market perspective of researching effectiveness. In this regard, the most important were those works by G.B. Steward (1991), A. Ehrbar (1998), and S.D. Young and S.F. O'Byrne (2001); these indicated the new direction of the evolution in perceiving and diagnosing enterprise efficiency that is related to a new paradigm of economic value measurement.

The permanent focus of the management process on the striving for the growth of enterprise market value requires actions to be taken – both in the short and long terms; this is the basis for distinguishing between operational and strategic perspectives as related to value-based management.

Operational value management focuses on measuring and assessing the partial effects of creating enterprise value; it is therefore related to such sub-issues as the following:

- generating partial effects of value creation;
- measuring and evaluating effectiveness of value creation;
- business valuation;
- enterprise value analysis;
- operational value controlling.

The long-term reference of the above-mentioned activities is directly related to the implementation of the superior financial objective, which is the multiplication of an enterprise's market value. Therefore, we are dealing with strategic value-based management here, which is connected with both supporting the process of formulating the strategy of enterprise value creation and stimulating activities that are related to the effectiveness and efficiency of implementing this strategy. Therefore, this value-based management perspective includes the following:

- identification and exemplification of value drivers;
- integration of value drivers and enterprise value account with value chain;
- identification and exemplification of enterprise value growth strategy;
- realizing value-focused restructuring;
- creating and implementing pro-value motivational systems;
- strategic value controlling.

Strategic value-based management therefore concentrates on monitoring, analyzing, and evaluating long-term undertakings that are aimed at creating an enterprise's value and preventing its destruction.

VALUE CHAIN CONFIGURATION

The value chain concept assumes that individual activities that make up the processes that are implemented by an enterprise should lead to the creation of value added for customers and, thus, contribute to the implementation of value added for the enterprise (Zamora, 2016). In general terms, a value chain represents the process of "adding" value to a product, starting with those activities that are related to a company's purchase of raw materials, materials, semi-finished products, etc. that are necessary for the production process. Then, a value chain includes production, logistics, and marketing activities and ends with the provision of additional services to customers; thus, it becomes necessary to distinguish strategically important "carriers" of added value creation within an enterprise. These are successive activities that are related to the creation and delivery of value for the customer and the creation of value for an entire entity. Therefore, the value chain concept fits into both the

strategic management stream (through its reference to the construction of strategic advantage) and the competitiveness of an enterprise; this has become one of the tools of an enterprise's value-based management (actively participating in this process). The application of the value chain manifests itself as the separation of key tasks of strategic importance from the entirety of the processes that take place in the enterprise. Owing to the application of the value chain concept, managers can learn and understand the specificity of costs and, what follows, identify the existing and potential sources of their diversity. It should be remembered that the competitive advantage of an enterprise is built by performing key tasks better or in a less capital-intensive way than one's competitors. A value chain allows one to present a certain sequence of activities that are grouped into characteristic processes, creating added value from the point of view of the customers (the consequence of which is the creation of added value for enterprises) (Zamora, 2016).

The value chain concept implies viewing an enterprise as the totality of all of the tasks and activities that an economic entity performs in the conduct of its business activity. In light of this theory, an enterprise is a set of certain operations and undertakings that are related to the creation of projects, the production process, marketing activities, supplies, and service (Porter, 2004).

Within the value chain, M.E. Porter isolated two types of activities that he defined as primary activities (forming a value system) and support activities. As a result, the classic value chain model is based on the integration of five categories of basic activities and four categories of support activities. This model is presented in Figure 1.

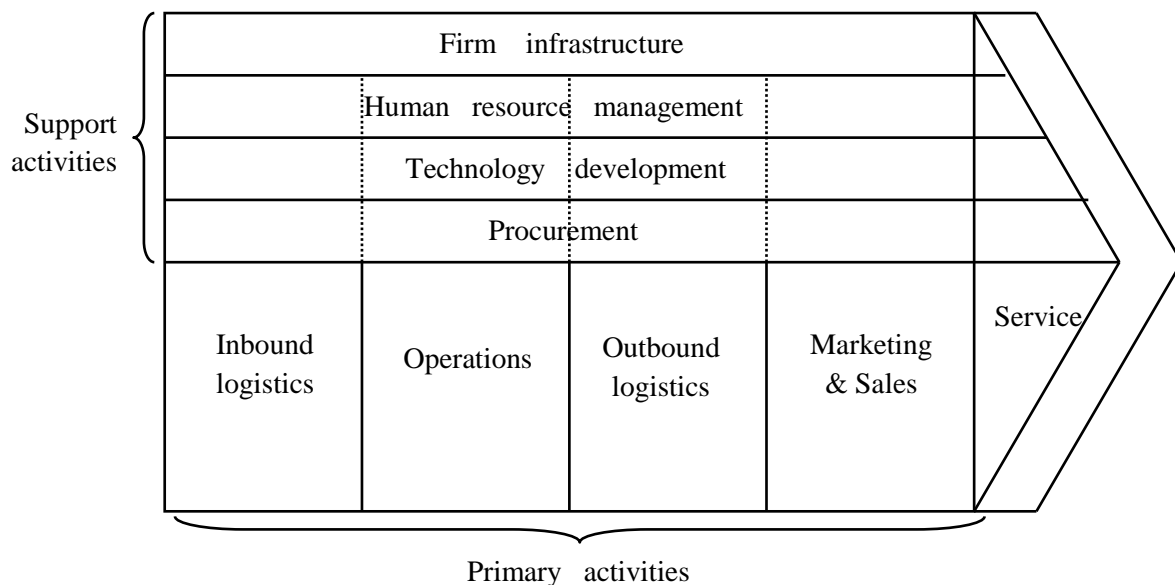


Figure 1: Porter's value chain model

Source: Porter (2004)

The primary activities of an enterprise that are related to value added fall into the five categories that are shown in Figure 1. These are activities that are related to the procurement of raw materials and supplies and the physical manufacture of a product as well as its marketing, distribution to buyers, service, and after-sales service. Each basic activity consumes outlays, human resources, and technologies. In each of these activities, an

enterprise also performs a number of separate activities that depend on the specific type of its activity (Nagy et al., 2018). In this approach, the value chain should be regarded as a system of value-adding functions. The primary activities are primarily related to the physical processing of raw materials, materials, semi-finished products, and the delivery of manufactured products to customers; i.e., the entire transition from the acquisition of raw materials and materials to the delivery of the end product to the customer. These include the following:

- inbound logistics – planning transport from suppliers, acceptance, storage, and distribution of raw materials, materials, and components as well as stock control and preparing returns;
- production – processing raw materials and semi-finished products, including machining, assembly, testing, and packing products as well as maintaining machines and devices;
- outbound logistics – storing and distributing products as well as providing services, accepting and processing orders, and planning for the necessary supplies;
- marketing and sales – defining assortment, pricing, choosing distribution channels, various forms of promotion, sales, and settling invoices;
- after-sales services – service, installation, repairs, procurement of spare parts, and training.

Support activities within the value chain concept mainly concern the information processing that accompanies the basic activity. These support an enterprise's operational activity in the field of securing material needs, human resources policy, and research and development works as well as elements of a management system infrastructure such as general management, planning, finance, accounting, legal services, and relationships with external stakeholders. Support activities do not directly participate in value creation, but they perform a protective function for the progression of primary activities (Zamora, 2016). Support activities in the value chain include the following:

- procurement;
- R&D management;
- HR management;
- management infrastructure.

Within the afore-mentioned sequence of activities that form the value chain, an enterprise generates profit margins that enable value creation; therefore, it is necessary to integrally look at the entire value-creation mechanism – not only from the perspective of the value chain, but also from the value-creation account and its determinants.

INTEGRATION OF VALUE CHAIN WITH ENTERPRISE VALUE-CREATION ACCOUNT AND VALUE DRIVERS

The process of creating enterprise value takes place within an entire vertical value chain. By analyzing this process and the mechanisms of its integration with the value chain, it becomes necessary to examine the complex conditions of value creation that determine the value of an enterprise and its determinants (referred to as value drivers). The author of the classic concept of value carriers was A. Rappaport (1986), who distinguished ten record value drivers

(dividing them into operational, investment, and financial drivers). This concept became the starting point for further research on the determinants of enterprise value. The result of this research was the isolation of non-record value drivers that are related to the following:

- The increasing importance of intellectual capital as a unique component of an enterprise's resources and the value-creating role of this capital (Edvinsson, Malone, 1997; Rojek, 2013).
- The emergence of the concept of value-based marketing and its related marketing value drivers (Doyle, 2008).
- The increasing importance of innovation as a factor in increasing the efficiency and competitiveness of an enterprise and its related innovative value drivers (Dziura, Rojek, 2021; Stanisławski, 2020).
- The impact of the Fourth Industrial Revolution and the related era of Industry 4.0 on the increase in the importance of innovative value drivers (Nagy et al., 2018).

As a direct result of such an approach to the process of creating value, it is possible to present a comprehensive scheme of conditions for creating enterprise value; this is shown in Figure 2. Taking the value-chain model that was developed by M.E. Porter as a starting point, it should be noted that the basic and supportive activities that are presented in the model constitute the basis for an enterprise's operating activities and, thus, its generation of sales revenues. At the same time, these require operating costs; the ratio of revenues to costs illustrates the amount of an operating margin that can be obtained by the enterprise. The fact that the enterprise conducts a specific scale of activity and that its possible growth generates the necessity to incur capital expenditures in the field of fixed assets and outlays at the same time secure the coverage of the needs in the field of net working capital. In this way, the aforementioned concept of the value chain is combined with the calculation that reflects the process of creating the value of an enterprise and its determinants based on the concept of value drivers that is presented in Figure 2. As a result, Figure 3 shows all of the mechanisms of integrating the value chain with an enterprise's value account and value drivers.

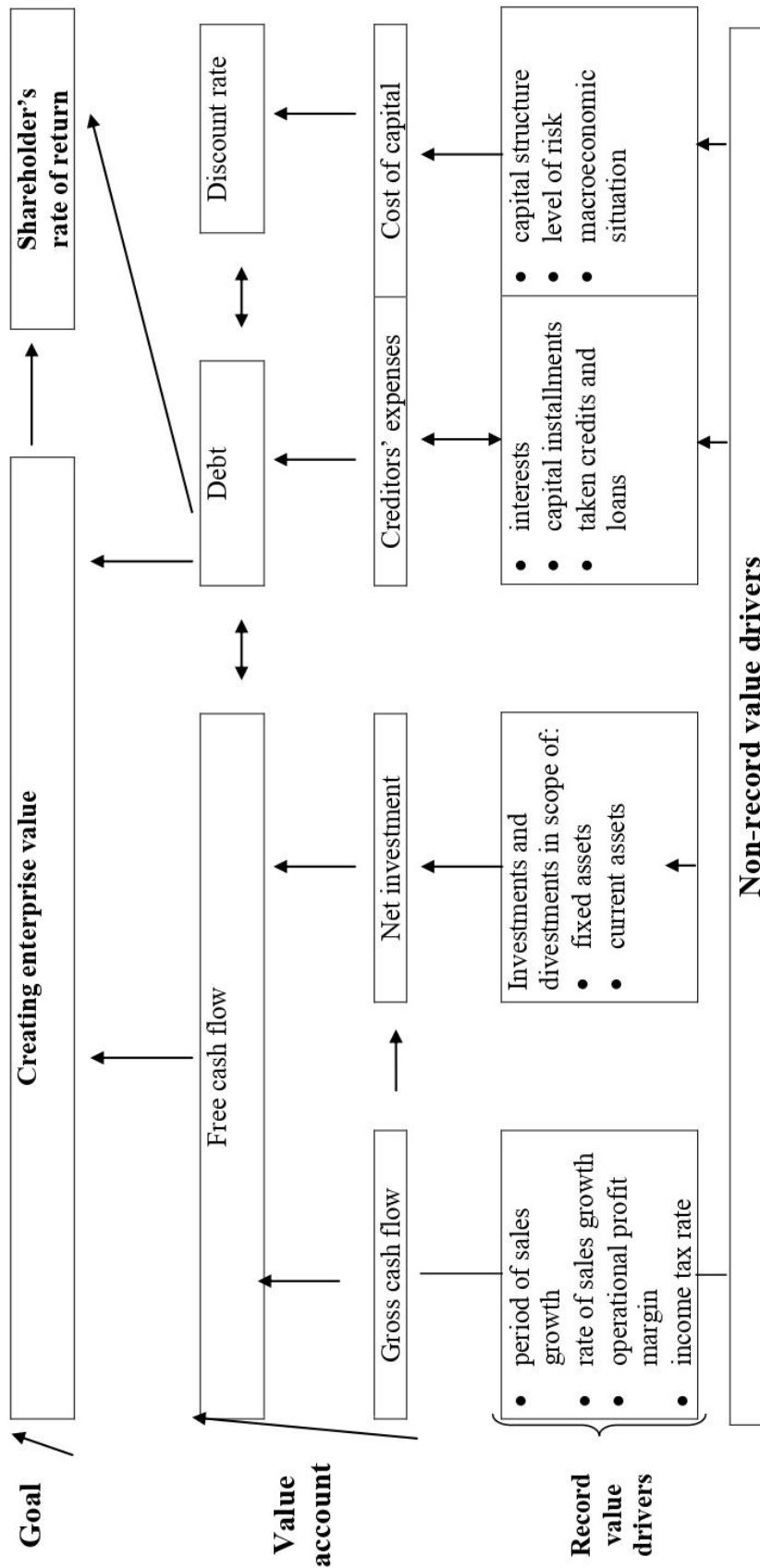


Figure 2: Conditions for creating enterprise value

Source: own study based on Rappaport (1986)

Value chain				Value-creation account	Value drivers
Support activities	Management infrastructure			Sales revenues	<ul style="list-style-type: none"> • period of sales growth • rate of sales growth • operational profit margin • developing intellectual capital in operational sphere • marketing value drivers in operational sphere • innovative value drivers in operational sphere
	R&D management				
	HR management				
	Procurement				
Primary activities				– Operating cost = EBIT – Income tax = NOPAT	
Inbound logistics	Operating activity	Outbound logistics	Marketing, Sales, & Service		
<ul style="list-style-type: none"> - purchase - transport - storage - administrative service 	<ul style="list-style-type: none"> - production - assembly - testing - packing 	<ul style="list-style-type: none"> - transport - storage - administrative service 	<ul style="list-style-type: none"> - advertising - promotion - after-sales service - administrative service 		
<ul style="list-style-type: none"> - inventory of raw materials and materials - liabilities 	<ul style="list-style-type: none"> - inventory of unfinished production in progress and intermediate products - productive fixed assets 	<ul style="list-style-type: none"> - inventory of finished goods - warehouses - means of transport - technical equipment 	<ul style="list-style-type: none"> - receivables - means of transport - technical equipment 		
<ul style="list-style-type: none"> - warehouses - means of transport - technical equipment 	– Demand for working capital – Investment expenditure in fixed assets + Amortization & Depreciation = Free cash flow			<ul style="list-style-type: none"> • net investment in fixed and current assets • developing intellectual capital in investment sphere • marketing value drivers in investment sphere • innovative value drivers in investment sphere 	

Figure 3: Mechanisms of integrating value chain with enterprise value-creation account and value drivers

Source: own study based on Jaki (2012)

CONCLUSION

The use of the concept of an enterprise's value chain for the purposes of managing its value based on the linking of this concept with the account of the creation of the enterprise's value and value drivers is an important component of strategic value-based management. It follows that the previously separately conducted studies that were related to the use of the value chain for the purposes of strategic enterprise management, business valuation accounts, and value management conditions may be related to the form of a model that illustrates the mechanisms of integrating the results of these studies. Such an approach also creates conditions for conducting a comprehensive analysis of the potential of the growth of enterprise value and, on its basis, indicates the scope of the necessary actions that are focused on activating this potential in order to multiply the enterprise value. The integrative approach to the value chain and value drivers as well as the account of enterprise value creation creates a framework structure for strategic value-based management that also uses such instruments as business valuation, the analysis of enterprise value, and value controlling. In effect, it enables the identification and exemplification of complex mechanisms of enterprise value-based management.

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AN OVERVIEW OF WOMEN-LED STARTUPS IN THE WINE DOMAIN

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***Abstract:** Women's entrepreneurship is a lively field of research. The literature emphasizes the significant contribution of women entrepreneurs to societal advancement, business innovation, and economic development in all countries by creating startups in different sectors. Although women are increasingly engaged in entrepreneurship, there is still a gap in the literature related to traditionally male-dominated startup activities. In this spirit, our research aims at providing an overview of Italian women-led startups in the wine industry, through a multiple case studies analysis, based on secondary data.*

The wine industry is one of the most ancient contexts that has excluded women from leadership positions for so long, even if more and more women have been involved in the management of wine firms. Nowadays, cases of women who entered self-employment and embraced entrepreneurship are more frequent, becoming successful. By gaining from individual experiences, our results deepen the understanding of the wine landscape by better profiling the women-led startups existing at the different levels of the wine supply chain (winery growers, winery owners, winemakers, winery marketplace, service providing, etc.). Our results underline a women's leadership style, with own characteristics coming from socio-demographic dimensions and personal entrepreneurial traits that impact the startup creation and the firm's management. Specifically, women have been able to break some traditional barriers in the wine industry and overcome ancient prejudices, by conquering positions of influence in the company. Moreover, our results suggest the existence of a women-driven innovation that originated from creativity and included marketing, digital channels, technological advancements, or generational changes. Some theoretical and managerial implications are discussed, by providing several future research directions.

Keywords: Women entrepreneurship, women-led startups, wine industry, multiple case-study, Italy

JEL Classification: J10, Z32

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INTRODUCTION

According to Sarfaraz et al. (2014), women can play an essential role in the phenomenon of entrepreneurship and economic development by arousing a compelling need to explore the different dimensions of women's entrepreneurship (Yadav and Unni, 2016).

Women's entrepreneurship is expanding worldwide, highlighting several definitions by different governments. As stated by Ambrish (2014), in the Indian context, a woman entrepreneur possesses at least 51% of a business and ensures that at least 51% percent of employment provided by the business should be to female employees. In the United Kingdom and the United States, a woman-owned enterprise refers to a company wholly or substantially (51% or more) owned by women (Meyer, 2018). In the Italian context, according to Law 215/92, women entrepreneurship refers to the following cases: i) individual enterprises managed by women; ii) cooperatives and partnerships made up of at least 60% women; and iii) companies with capital whose shares are not less than two-thirds of women and management bodies are at least two-thirds of women.

The literature examines the phenomenon of women entrepreneurship only in the late 70s (Schwartz, 1976), even if the literature on entrepreneurship has very distant origins, starting with male entrepreneurship (which emerged in the 1930s) (Jennings and Brush, 2013).

To date, the literature on women's entrepreneurship does not offer a single definition (Deng et al., 2020). Dolinsky et al. (1993) define the construct as corporate ownership by self-employed women. Jennings and Brush (2013) define it as the processes through which women create and/or operate their own enterprises (including those that are self-employed). Adom and Asare-Yeboah (2016) highlight that women's entrepreneurship is a process through which women initiate, organize and manage an enterprise, while Santos et al. (2018) define woman's entrepreneurship as women embracing self-employment by creating their own businesses. Trying to synthesize the different definitions offered in literature (Jennings and Brush, 2013; Adom and Asare-Yeboah, 2016; Hechavarria et al., 2019), it could be helpful to refer to a broad definition of women's entrepreneurship that embraces both "self-employment" (where women are small business owners but do not create a new venture) and "entrepreneurship" in the classic sense (where women take the initiative, mobilize resources and take risks to create a new venture).

Several studies provide evidence about the role of women entrepreneurs in several domains, such as: in the entrepreneurial ecosystems (e.g., Brush et al., 2019; Foss et al., 2019); in the firm internationalization process (e.g., Moreira et al., 2019); in developed and developing economies (e.g., Acs et al., 2011); and in startup activities (e.g., Kuschel and Labra, 2018; Sperber and Linder, 2019).

Regarding to the entrepreneurial ecosystems, Mazzarol (2014) states that policy activities are particularly crucial for the maintenance of the ecosystem. In this direction, Foss et al. (2019) stress that some policies may unintentionally discriminate against women's businesses, for example, favoring male-dominated business industries (Anna et al., 2000) typically.

Concerning women's entrepreneurship and internationalization, previous studies highlight that different cultural contexts assume relevance for defining the role of women entrepreneurs in the international market. Moreira et al. (2019) identified three elements, which impact on the degree and level of internationalization: i) epistemological position and gender, ii) cultural and social reasons, and iii) motivations, business characteristics, and performance.

By considering the significant role of women in creating, running, and growing businesses as a fundamental driver for economic growth, Acs et al. (2011) focused on women

entrepreneurship in both developing and developed countries by examining the reasons for differences in gender participation across levels of country development (e.g., Bardasi et al., 2011; Estrin and Mickiewicz, 2011; Aterido and Hallward-Driemeier, 2011).

Finally, concerning women's entrepreneurship in the startup domain, which is scarcely examined in the existing literature, the research highlights, on one side, the difficulties for a woman entrepreneur in creating a startup due to its limited resources (Fairlie and Robb, 2009), more significant trouble in accessing the capital market (Gatewood et al., 2009) and social networks (Autio et al., 1997); on the other side, the women entrepreneur in a startup is more involved in accomplishing a work-life balance, workers' well-being, and community welfare concerning mere corporate profit (Justo et al., 2015). Additionally, although the limited scientific contributions emphasize the significant contribution of women entrepreneurs to societal advancement, business innovation, and economic development in all countries by creating startups operating in different sectors (Elam et al., 2021), the role of these entrepreneurs needs to be better understood in order to fill the existing gap in the literature more oriented to examine traditionally male-dominated startup activities. With this in mind, the present research aims at gaining a more structured understanding of the complex phenomenon of women startups by exploiting the linkage between women's entrepreneurship, innovativeness, and territory. Specifically, this research intends to address the following research questions: *who are women startupper?* *What are the paths followed by women in creating (or succeeding in) an entrepreneurial business?* *What are the innovation trajectories of startups created and managed by women entrepreneurs?* *What are the relationships between women startups and territory?*

This study focuses on women-led startups by combining the definition of women-led firms as companies having "at least one female executive", in other words, at least one woman currently holding a C-level, founder/founding partner, president and/or chairperson position (Fackelmann and De Concini, 2020), with those of startups, as entities designed to create new product or service under conditions of uncertainty (Ries, 2011, p.27), in the attempt to develop a reputable and scalable business model (Blank, 2013 p.69)

To achieve the research objectives, it analyzes the women-led startups in the Italian wine industry, which strongly contributes to the economic development of the country (Broccardo and Zicari, 2020). Italy is the first largest wine-producing country, with more than 50 million hectoliters in 2021 (Mediobanca Research Area, 2022), and the second wine-exporting nation, with 22.2 million hectoliters.

This study performs a qualitative research approach based on the multiple case studies analysis (Yin, 2004), moving from the collection of data and information on Italian women-led startups by using secondary sources. Specifically, it selects seven startups led by women in the wine landscape with different operativity and characteristics.

The contribution of this study is threefold: (i) it provides a unique profile of a female startupper by the combination of sociodemographic dimensions, contextual factors, and entrepreneurial personality traits. Additionally, the results highlight the main characteristic of a typical women leadership style; (ii) it identifies the management paths and innovation trajectories followed by micro and small-sized companies that are usually family-own and have a long history of ancient traditions while facing the digitalization of services and processes in a more turbulent competitive environment; (iii) it spots gaps in the existing literature and explores the linkages among women's entrepreneurship, innovativeness, and territory.

This paper is structured as follows. The next session introduces the literature about women entrepreneurship and women-led startups, followed by a section that shows the research setting. Section 3 introduces the methodology, and the section about results follows it, declined in terms of the characterization of our women-led startups and case study results. Finally, in the last section, discussions and conclusions, with theoretical and managerial implications, are presented and the line of future research.

LITERATURE REVIEW

Women-led startups

In the definition of Europe, women-led companies have been identified as companies having “at least one female executive”; in other terms, at least one woman currently holding a C-level, founder/founding partner, president and/or chairperson position (Fackelmann and De Concini, 2020). Based on this preliminary definition, this study declined the concept of women-led companies into the context of a startup as a company in the first stage of its operativity, conceived as “*a human institution designed to create new product or service under conditions of extreme uncertainty*” (Ries, 2011 p.27). It is also “*a temporary organization designed to search for a repeatable and scalable business model*” (Blank, 2013 p.69).

Regarding the academic research on women-led startups, the mainstream literature is mainly focused on the well-known gender gap hypothesis (Guzman and Kacperczyk, 2019) and the relative consequences. Moreover, even if several differences and similarities still persist between male-owned and female-owned business activities due to different behaviors, values, and attitudes, the recent literature seems to overcome the gender gap (Ahl, 2006; Mitchell, 2011; Kanze et al., 2018), by focusing on women-led enterprises as an important key to generate economic and non-economic returns.

Although the creation and management of startups is an individual personal choice, several studies have focused on a variety of factors potentially contributing to an individual propensity to create a new business. On the one hand, the literature stressed the importance of financial, human, and social capital (Cooper et al., 1994; Langowitz and Minniti, 2007) by emphasizing the influence of some demographic characteristics (i.e., level of education, past professional experiences, and age) in the lens of gender-specific segregation of the labor market (Furdas and Kohn, 2010). On the other hand, entrepreneurial personality has been found to be crucial for the decision to create a startup (Schumpeter, 1912, 1934; Shane, 2003). Women are as likely as men to desire growth, even though women seem to prioritize less prior business ownership experiences and less freedom from domestic responsibilities and are less likely to measure success by the size of their firms (Cliff, 1998).

Compared to men, women startupper have fewer professional experiences due to maternity leave spells and resulting discontinued employment histories (Furdas and Kohn, 2010). In addition, women who have already experienced self-employment are better able to reconcile family with participation in the labor market (Kuschel, 2019; Naldi, 2021), also benefiting from the higher self-employment flexibility. Deepening the investigation of the sociodemographic characteristics influencing women's propensity to create their own startups, the literature suggests that the choice of self-employment for women is higher for those who have fixed costs of work, such as women who have younger children (Edwards and Field-Hendrey, 2002; Koellinger et al., 2013).

Women with previous differentiated working experience show a higher ability to foster startup survival because of the combination of the experience-based knowledge components needed for innovation processes (Serban et al., 2022). Among entrepreneurial aspects, general personality traits and attitudes toward entrepreneurship are crucial for women's startup decisions (Katongole et al., 2013; Lin et al., 2018).

Women are more forward-looking in strategic choices (Shropshire et al., 2021) and not- as traditionally stated- more risk-averse (Schubert et al., 1999; Adams and Funk, 2012). This means that they have higher capabilities to balance short-term risks with long-run benefits better, even if this often translates into a lower propensity to start a self-owned business activity and the related tendency to create a startup in sectors that require less initial capital investments (Orobia and Rooks, 2011), thus maximizing the chances of survival (Rey-Martí et al., 2015). Moreover, when using a gendered lens to exploit the link between risk aversion and women's propensity to create a startup, the moderating role of country-level cultural norms and gendering stereotyping of occupations have to be considered because they could lead individuals to create a new startup in sectors that are socially acceptable for their gender and if and only if there are supporting environmental conditions (Brindley, 2005; Gimenez-Jimenez et al., 2020). Environmental and networking supports, especially at local levels, are crucial in boosting women's attitudes concerning business leadership and new startup creation (Filden and Dawe, 2004; Welsh et al., 2016).

On the other hand, women startupper put more emphasis on personal abilities (Loden, 1985) and autonomy (Babcock et al., 2009; Coleman and Robb, 2012; Kwapisz and Hechavarría, 2018) and are more prone to cooperate with other managers, by stretching the social and human resource base as a driver of success (Filden and Dawe, 2004; Kickul et al., 2007; Linehan and Scullion, 2008). They are not always profit-driven because of their cognitive heuristic behavior in decision-making processes (Busenitz and Lau, 1996).

In analyzing the success of women's startups, literature has mainly focused on the quantitative measurement of performances. Lee and Marvel (2014) showed that male startups have higher capitalization and higher revenues than female startups. However, since startups do not necessarily have sales and they might not have employees, especially in the early stages, the literature suggests focusing on different performance measures, such as the funding team size (Kaiser and Muller, 2015), starting from the evidence in empirical studies that male-led teams were traditionally bigger than teams led by women.

Moreover, a stream of research considers that women in business and entrepreneurs aim for different goals than men, attributing a different meaning to corporate success (Cohoon et al., 2010; Justo et al., 2015). Previous studies revealed that male entrepreneurs measure success mainly economically, while women perceive success in non-economic terms (Cliff, 1998). This requires the development of a qualitative measurement of performance or a composite measure accounting for both extrinsic and intrinsic measures of performance (Eddleston and Powell, 2008; Orser and Dyke, 2009; Robb and Watson, 2012; Hong and Kim, 2021). In particular, Buttner and Moore (1997) stated that women entrepreneurs tend to measure success in terms of self-fulfillment and goal achievement and that profits and business growth are less critical, while Weber and Geneste (2014) suggested evaluating complementary intrinsic measures (i.e., working time flexibility, work commitment, corporate survival and stability, and family outcomes) to control for key demographic differences.

Given those considerations, only some studies provide an exhaustive and not conflicting overview of the women-led startups' phenomenon. In addition, the already complex scenario is exacerbated by specific context-related factors that do not allow generalizations in drawing gender-specific conclusions. This is particularly true in traditionally men-dominated

industries that nowadays face changes in the corporate environment and in their innovation activities.

In those industries, there are enormous benefits to be gained if women are encouraged to maximize their competencies and skill in a startup business. Specifically, when dealing with innovation, women have been found to have greater resilience in the face of rapid changes than men due to their higher creativity and innovation attitudes through new ideas, new product development, and creative practices (Manshani and Dubey, 2017; Audretsch et al., 2022; McCausland, 2022). Dezsö and Ross (2012) suggest that female ownership and leadership style positively impact firm performances, but “*only to the extent that a firm’s strategy is focused on innovation*” (p. 1072). The participatory leadership styles increase motivation and creativity, thus stimulating the generation of innovative ideas, and this propensity to collaboration is typical of women’s management. Torchia et al. (2018) focused on organizational innovation as the outcome of complex cognitive processes influenced by learning processes and organizational knowledge, through which women could positively contribute due to their different attitudes, opinions, and problem-solving skills. Moreover, in the group of small companies managed by female entrepreneurs, Zastempowski and Cyfert (2021) found that the chances of introducing product innovation are higher by 83.7%, process innovation by 56%, and product and process innovation together by 82.1%.

RESEARCH SETTING

In Italy, only 1 out of 2 women works. The National Bank has estimated that if female employment rose to 60%, it could possibly have a 7% increase in GDP (Cariplo Factory, Pow(H)er Generation report 2022, p.3) Although the enormous benefit could arise, women’s involvement in the labor market is still limited.

Unfortunately, data on the women entrepreneurship phenomenon is not comforting. Although women are increasingly engaged in entrepreneurship, their ownership still lags behind that of men (Pandey and Amezcua, 2020), and only one out of five entrepreneurial activities are led by women. The same trend is confirmed for startups and reflects the delay that, in the context of innovation, persists in gender diversity (Elam et al., 2021). Many researchers stated that women-led startups are more likely to search for funding opportunities and to receive investments because they are recognized to be more market-needs-oriented (Gatewood et al., 2009; Johnson et al., 2018; Balachandra, 2020).

This trend is also in line with the public initiatives and funding programs favoring women’s entrepreneurship and women-led startups (e.g., Women’s Businesses Fund, Women’s Entrepreneurship Fund). Moreover, even though the literature mainly focuses on high-tech companies, low-tech startups make up the majority of firms in developed economies and require more attention and support (Robertson and Jacobson, 2011; Schwinge, 2015; Hirsch-Kreinsen, 2015; Bertello, 2022). Particularly, low-tech startups evolve and innovate to maintain profitability through particular routines and practices, including agile and continuous innovations on process and service levels (Dooley and O’Sullivan, 2018).

By using the Crunchbase (2022) database, it is possible to state that there are 1147 active startups in the food and beverage industry that raised \$58 million of funding: 97.5% are profit-oriented firms, and 0.4% are non-profit. The majority (33.7%) are micro-sized companies, with a maximum of 10 employees, followed by 22%, with a maximum of 50 employees, and only 14.5% are bigger, with a number of employees between a minimum of 51 and a maximum of 250. On average, they have two founding members.

Starting from the above-mentioned universe of 1147 startups in the Italian food and beverage industry, this study restricted the focus on the startups operating in the wine domain. The Italian wine industry was chosen because it strongly contributes to the economic development of the Country (Broccardo and Zicari, 2020). Italy is the first largest wine-producing Country, with more than 50 million hectoliters in 2021, followed by France with 37.6 million hectoliters and Spain with 35.3 million hectoliters (Mediobanca Research Area, 2022) and the second wine-exporting nation, with 22.2 million hectoliters (+7.3% respect to 2020). Italian wineries are often medium and small businesses, with family ownership and centennial traditions handed down from generation to generation. Even if research about women's presence in the wine industry is still recent and scarce, the Italian industry has embraced this new challenge, such that the traditionally once male-dominated industry now abounds with successful women from a traditionally patriarchal sector that has excluded women from positions of power for so long (Matasar, 2006). Recently, the rapid growth of the industry, together with the consolidation of family businesses into corporations, have opened new opportunities for women (Matasar, 2006) and successful stories of unique women who have acquired powerful working positions are becoming more and more frequent, assuming the role of vineyard ownership, winegrowers, winemakers, and winery services providers.

Moreover, in Italy, most wine businesses are historically inherited, meaning that if there is a women leadership, it must represent an exception to the privilege of male heirs (Bessière, 2014) even if they have been recognized as better able to deal with both technological and market uncertainty (Benedetto and Corinto, 2015; Livat and Jaffré, 2022).

METHODOLOGY

Research approach

This exploratory study follows a qualitative design in line with previous research seeking to gather a more exhaustive understanding of the women-led startup phenomenon. The qualitative research approach, using small samples of units belonging to the reference population, aims to analyse in depth the knowledge of a particular topic of interest (Travers, 2001). Qualitative research methods, although poorly structured, are highly flexible (Broom, 2005). This aspect makes it possible to obtain substantial information able to represent the many facets of a complex phenomenon. Although they fail to generalise the results obtained, qualitative research provides an excellent base of in-depth knowledge of the phenomenon under investigation and fundamental support to develop the subsequent quantitative phases of a larger research project (Creswell et al., 2007; Basias and Pollalis, 2018).

This research is based on an exploratory multiple-case study analysis of 7 Italian startups operating in the wine sector. In this perspective, the results of the case studies can be interpreted as an inspiration for developing new models (Eisenhardt, 1989; Siggelkow, 2007).

According to Yin (2018), the analysis of multiple-case studies is useful to answer "how and why questions" related to the specific topic. Moreover, this methodology is particularly suitable for comparisons between exemplary cases (Chiesa et al., 2007), intending to maintain a holistic perspective of the investigated phenomenon within its real contexts (Yin, 2018).

The underlying logic of the methodological approach used for this paper considers the different cases as if they were individual experiments concerning the theory on which they are based. In addition, the choice of this design fits with the need to gain a more structured, although preliminary, characterization of some dynamics within single settings (Eisenhardt,

1989) and provides a detailed description of the phenomenon under analysis (i.e., women entrepreneurs' startups and their development).

The multiple case study analysis focused on data collected through secondary sources. In particular, secondary information is derived from a detailed online review (institutional website of the selected startups), scientific publications, dossiers produced by the same organisations or by another entity in response to specific learning objectives, technical reports, reports drawn up by trade associations, articles published in national and local newspapers, specialised journals and periodicals.

Research design

As stated before, this study focuses on women-led startups in the wine sector. It combined information from Linked Crunchbase, online BestStartup.eu, and the Bureau van Dijk AIDA database to get an exhaustive list of wine startups. In particular, Crunchbase possesses a comprehensive database for existing startups at every funding stage (seed, early stage, M&A, private equity, IPO). The information reported consists of the company name, location, primary role, and all the related available social authentication links (Facebook, Twitter, and LinkedIn). We extracted all the data available on October 30, 2022.

We filtered data by simultaneously using two research queries - "Italy, Europe" as the headquarters location and "Food and Beverage" as the industry - that led to a sample size of 1147 companies. Inactive companies were excluded through the additional filter related to Operational Status. We downloaded all the selected companies and filtered the organization by applying "wine" as a research term in the description of company activities. We retrieved a list of 65 organizations that we integrated with the information about the online list of the best 36 Italy-based wine and spirits companies, detected based on innovation, growth, and management². By controlling for companies' overlap among the sources of information, we got 61 organizations. Additionally, we manually screened the companies for individuating all the women-led startups by controlling among founders and board managers.

The final sample consists of 7 women-led startups:

1. Piccini 1882;
2. Casa Vitivinicola Botter (legal name Botter S.p.A);
3. Vino.com (legal name 3ND S.r.l.);
4. Digital Wines (legal name Digital Wines S.r.l.);
5. Enologica Vason (legal name Enologica Vason S.p.A);
6. Viniamo Eno Lab (legal name Viniamo Enoteca Srls);
7. B&M Great Italian Wines-Emporio Liquoreria Mainardi.

Piccini 1882 and Casa Vitivinicola Botter have NACE code 11.02 - Manufacture of wine from grape - meaning that they are two typical examples of wineries: the former has two women current managers in the board and the latter has a female founder.

Vino.com and Digital Wines - NACE code 47.91 - operate in retail sales, even if they have different specializations. In particular, Vino.com is an online wine shop that sells wines, cocktails, and other beverages and offers packaging and delivery services. At the same time,

² The list of the wine and spirits best startups of 2021 is publicly available at the following link: <https://beststartup.eu/>

Digital Wines provides marketing and communication services to wine-related businesses. Enologica Vason, with NACE code 46.75 - Wholesale of chemical products - is a family-run business that offers specialized services for companies in the beverage industry (selection of raw materials and the formulation of products for oenological uses). Viniamo Eno Lab, with NACE code 47.11 (another retail sale in non-specialized stores), is the perfect combination between a traditional wine shop that privileges small artisanal wine productions and a creative laboratory that offers experiences in the wine industry. Finally, B&M Great Italian Wines (NACE 82.3 - Business support activities) manufactures different varieties of wines, such as Vermouth di Turino, Ottocento Liberty, Ippocrasso, Bitter Americano, Grappa Stilla di Moscato Argento and Grappa Stilla di Moscato Oro.

RESULTS

In these cases, women have been able to become successful at the different stages of the wine supply chain. Women hold and manage wineries, make wine, contribute to the progress in viticulture and oenology and promote the education of the increasingly digital consumers to the culture of wine worldwide.

From a sociodemographic point of view, the selected women-led startups are small and medium-sized companies, with a minimum of only one employee to a maximum of 166 employees. These findings align with previous literature suggesting that female entrepreneurs prefer to remain small (Katongole et al., 2013). Additionally, companies' team size is small, going from only the unique manager of either Viniamo and Eno Lab and B&M Great Italian Wines to a maximum of 25 of Botter S.p.A.

Moreover, 5 out of 8 companies are relatively young: their foundation year ranges from 2010 for Vino.com to 2020 for Viniamo Eno Lab. Interestingly, it has been noticed that younger women-led startups are operating in the downstream businesses of the wine supply chain, with mostly services-related activities heavily based on digital solutions (Spadoni et al., 2019). The remaining companies are older ones. As a family-owned company, Botter has its roots in 1928, when Carlo Botter and his wife Maria Botter created a small business selling local wines in barrels and demijohns. Following a similar pattern, Tenute Piccini was founded in Poggibonsi by Angelo Piccini in 1882. In the same way, Enologica Vason is a family-run company founded in 1966 by the oenologist Giancarlo Vason, whose idea was to integrate biotechnologies and plant technologies in winemaking practices.

None of our women-led startups is located in the southern regions. As expected, they are concentrated in Central Italy (Tuscany, Lazio, Umbria) and Northern Italy (Lombardy, Piedmont, and Veneto), reflecting the well-known regional distribution of the firms of the industry (ISMEA data, 2022)³.

Finally, considering the companies' financial results, wineries generally present higher revenues and profits than companies at lower stages of the wine supply chain. In particular, compared to companies offering wine-related services, primarily through online channels, it should be noticed that they close with an economic loss very often. The summary of the selected companies is reported in Table 1.

³ The sectorial wine study is available at the link <https://www.ismeamercati.it/vino>

Table 1 - Summary of Selected Women-led startups

Company name	Headq.-Regions	Year of Found.	Women Role	Team Size	Empl.	Sales Revenues (migl USD)	Profits/Losses	Active Tech Count
Botter	Veneto	1928	Founder	25	166	322.196	11.327	44
Piccini 1882	Toscana	1882	Current Manager	10	85	115.400	1.983	7
Enologica Vason	Veneto	1969	Current Manager	9	64	33.443	3.738	30
Vino.com	Toscana	2010	Current Manager	5	24	36.854	-3.795	14
Digital Wines	Lazio	2018	Current Manager	5	8	4.363	-451	40
Viniamo Eno Lab	Umbria	2020	Current Manager	1	-	9	-5	-
B&M Great Italian Wines	Piemonte	2013	Founder	1	1	-	-	6

Note: Active Tech Count is the total number of technologies currently in use by this company, as detected by BuiltWith (Crunchbase)

Starting from this preliminary characterization of the selected women-led startups, the research protocol consisted of a more in-depth analysis of secondary data sources related to the firms without any preconstructed theoretical framework in mind. Consequently, we could capture the richness of the cases and then compare the emerging evidence with the most recent thematic in the wine domain literature.

Botter

Botter is a traditional family-owned winery, founded in 1928 by Carlo Botter and his wife Maria, as a small business for sales retailer of wine. It has been guided by the hands of three generations, for whom wine symbolized passion, creativity and talent. Since the end of the '90s, Annalisa, Luca and Alessandro, who represent the third generation of the family, have been guiding the company. With their support, an interesting company evolution started: the new leadership has introduced a new and more customer-oriented business model that could support the company's growth over time.

“Botter’s story has an indissoluble bond with that of my family, but it couldn’t have the same success it has today without the long-term relationships with producers and oenological consultants who support us in the various production sites, as well as with the partners with whom we have been working together for several years. Our intention now is to grow on the national market, making our products known and appreciated by an ever-increasing number of consumers”- (Annalisa, interview of 2022, May 15 in GDOnews - “Botter una storia di famiglia, un successo internazionale”).

Therefore, the new further development of the company is based on three main pillars: i) closeness to consumers; ii) high-quality production; iii) made in Italy.

“Is one of the key values we can boast, and which helps us to stand out and has allowed us to growth”. (Annalisa, 2022 - Botter website).

In particular, despite the strong link with the territory, Botter has shown a high propensity to export to consolidate its presence in new foreign markets but always protecting Italianness (interview of 2020, Capital). In this spirit, Annalisa became the representative of the *“BRILLA! project”*, born in the marketing area - her second family - from a particular bottle with a texture that is reminiscent of diamonds and a new type of label: *“The goal was to make a global brand, and in order to be something recognizable and linked to us, it had to embody the essence of Italiannes. Thus, when you open a bottle of Brilla, you actually bring a small part of our Italian spirit around the world”* - (Annalisa, 2022 - Brilla! - stories of LinkedIn).

BRILLA! synthesizes Annalisa's marketing and communication competencies, together with her fantasy of rethinking the elegance and purity of diamonds within the uniqueness of a bottle of Prosecco for special moments. In the same way, *BRILLA!* signed a change in the wine domain because women ideate it, and it also satisfies women's taste, ideally in link with the idea of Annalisa of *“being independent of industry stereotypes”* (2021, May 6). Moreover, Annalisa Botter means attention to the environment and sustainability: *“My vision would be to launch an organic line because it will surely become a trend, even in the long term”* (Brilla! - stories of LinkedIn, 2022).

Nowadays, Botter is one of the main organic wine producers, actively engage in protecting and preserving the environment.

Piccini 1882

Piccini 1882 represents the Italian wine family and its century-old history: it is a historic Tuscany winery owned by the Piccini family, who have lived and worked in the heart of Chianti area since 1882. Founded by Angiolo Piccini together with his wife Maria Teresa Totti, with a small family plot of only 17 acres, since then, each of the following four generations has embraced Angiolo's principle *“It does not matter how much you do, but how much passion you put into what you do”*- (Piccini 1882 website).

In 1963, Pierangelo Piccini and his wife Marcella Sammicheli- the current president of Piccini 1882- entered the company's management and continued to make dynamic changes by expanding the assortment of products and concentrating on value wines. Since 2004 the fourth generation of the family, with Mario Piccini (current CEO) and his sisters, Martina and Elisa, has taken over the company's reins. Mario keeps the company's DNA unchanged: *“Knowing to enclose in every bottle the uniqueness of our territory is the greatest satisfaction because only by preserving a great present will we be able to ultimate a great future”*- (Piccini 1882 website)

A double glance that over the years has forged Piccini's leadership, that nowadays combines the fourth and the fifth generations of the family: Mario, Martina and Elisa, together with his children Ginevra, Benedetta and Michelangelo, who are personally involved in the business activities. Piccini 1882 is the expression of the ability to work in a team: *“My father told us very clearly that we would not go anywhere without energy and passion. There is a big difference between inheriting and building a winery; following his lead, we built it as a team”* - Martina (E-KONomy, Raccontare l'impresa per crescere, 2016 p.6).

All the company's work is teamwork, but it is also the result of intermediation between generations: *“My father wanted a red label, in respect of the Chianti tradition, my brother insisted on yellow, to convey a new approach to this wine. My task was to lead him to a compromise and therefore adopt orange. Orange is a colour that transmits energy, youth and*

a proactive approach. We have taken this orange and apply it to everything we do” - Martina (E-KONomy, Raccontare l’impresa per crescere, 2016 p.6).

This emphasizes that, in honor of her great-grandmother and her mother, following an ancient tradition of the company, there is a sizeable group of women both in administration and in the winery.

Enologica Vason

Enologica Vason is another traditional example of a family-run business in wine. Giancarlo Vason founded it in 1966, and it is currently managed by her wife, Valentina Cubi, and their sons, Albano and Paola Vason. It specializes in selecting raw materials and formulating products for specific oenological use and the beverage industry: biotechnologies, adjuvants, traditional and allergen-free clarifying agents, stabilizers and natural preservatives. Differently from the previously mentioned companies, Enologica Vason was founded to rapidly respond to the needs of companies in the beverage industry through a new business model based on the regular and continuous exchange of information with the external environment. The company has yet to focus on a specific stage of the wine supply chain. However, with its expertise, it has been able to configure a more complex offer through integrated services in the whole production process: research, chemic and biochemical analysis, custom-made applications, support network, real-time monitoring carried out by skilled technicians and laboratory tests aimed at the optimization of industrial processes.

Given that every transformation is an opportunity for the entire ecosystem, Enologica Vason SpA stands alongside those who love wine and make it without forgetting tradition and territory. Based on ancient traditions of winemakers, the company focuses on expressive oenology to give voice to wine, enhancing its individual character and best notes: it promotes innovative solutions and products that, throughout the transformation processes, aim to maximise the expression of the wines and the originality of the vine and the territory: *“The vineyards are the most important assets of my company, to which we apply only organic agronomic techniques... My goal is to get in tune with nature and leave future generations a healthier environment that can still give satisfaction”* – Valentina Cubi said when talking about the philosophy behind the company’s origins. (Azienda Agricola Valentina Cubi website, interview of 2018).

They know wines and all the production stages; therefore, they have been able to individuate and anticipate all the main trends affecting wine markets. They know what wines could and should communicate and what could be done to meet growingly markets’ expectations: *“Being innovative in the wine means being winemakers and using a scientific approach to give concrete and appetible answers to the actors of wine. Nowadays, Enologica Vason has three main pillars: i) transparency; ii) responsibility; iii) sustainability”* - Albano Vason (Vason Group website, interview of 2022, February).

It is a natural philosophy and a concrete answer to the market and the environment to get a sustainable growth pattern in the wine industry. In this respect, Enologica Vason represents the innovative part of a traditional business, where wine is the absolute protagonist: oenological products (yeasts, fermentation activators, enzymes, acids and acidifiers, stabilisers, etc.) for different wine processes, but also mobile services (self-enrichment of musts, dealcoholisation, gas management, microbiological stability, cross-flow filtration) which allow anyone to test out and to take advantage of modern technology for the preparation of wines.

With its atypical catalogue of products and services, Enologica Vason has been able to take advantage of the in-depth knowledge of wine and vineyards, making profitable use of the experience of Valentina Cubi-also founder of Azienda Agricola Valentina Cubi (NACE code 01.20) - that defined herself a *wine artisan*, because as she explained: “*I produce only with my own grapes. I carefully control every moment of the life of my Valpolicella and Amarone, from the vineyard to the consumer’s table. I am proud of my land and I am dedicating my whole life to it because I believe that only true commitment leads to excellence*” (Azienda Agricola Valentina Cubi website, interview of 2018).

In this way, this company operates for complementing its competences with innovativeness and the technologies specifically conceived and designed to reduce the impact of winemaking practices on vineyards and to celebrate the new authenticity of wines: “*We have been observing history for fifty years of wine and we are its protagonists. While old technologies and traditions changed, we were there, supporting the change with study, commitment and the passion that distinguish us. And with this legacy the family, the management and all our collaborators lead the Group and its internationalisation towards the future*” - Paola Vason (VasonBook22).

Vino.com

Vino.com is an online wine shop for wine, cocktails and other beverages. It is based in Varese (Lombardy) and founded by Andrea Nardi Dei, Francesco Limberti, Diego Di Sepio and Elisa Scarpin. The global wine shop was born in 2010 with the development of its technological platform (as Vino75.com). In 2014 it launched its proprietary multi-brand and multi-channel platform, with an ever-expanding catalogue of national and international wineries and over 4000 labels. In 2014 it launched its internalization strategy, setting off its operations in China through Alibaba’s Tmall Choice and Tmall Global. In 2020, after the rebranding of Vino.com, the startup assumed a global dimension, and nowadays, it operates internationally. Vino.com (Vino75.com in its early stage) comes from the accelerator program of Nana Bianca, a digital incubator of innovative business models that helps startups develop their ideas and grow in the digital area (Montauti, 2013).

Nowadays, Vino.com is not only a wine e-shop, but in the idea of its founders, it is a “*virtual sommelier*” that accompanies consumers in their purchasing process through a comprehensive catalogue of national and international wines, still maintaining a solid anchorage to the territory. Its strength lies in the ability to translate all the characteristics of a traditional business into digital, without debasing the wine product but enhancing its value through communication. The communication strategy is another key-value point of Vino.com: since all the proprietary platform was developed in-house, based on the personal digital competencies of its founders, all the available information for consumers is easy to understand, without more technicism and reflects a traditional tasting experience.

Starting from the winemaking tradition of Tuscany, and despite its global size, Vino.com maintained its links with the territory and small wine producers, personally selecting all the wines from their offerings, allowing wineries to take advantage of international sales channels, but without the burden of having to manage new and more complicated markets. With “*Al fianco delle cantine*”, Vino.com aims to strengthen its partnerships with local wine producers, allowing them to make their excellences.

Moreover, as a startup, Vino.com was able to reshape its business and to be resilient, especially during the pandemic period, which boosted the digital transition in the wine industry: it is undeniable that e-commerce now represents a channel from which wine producers can no longer ignore and Vino.com was able to individuate the new emerging

consumers' trends, through the Italian Observatory on wine e-commerce (created together with Nomisma Wine Monitor). Digitalization and innovation drive the success of Vino.com. The startup goes further with the idea of a digital wine shop for offering consumers a wine experience and of a showcase for wine producers. In fact, it signed a partnership with Google for marketing and communications and, more recently, together with Nomisma Wine Monitor, created the Observatory on the e-commerce of wine, for gaining a better understanding of consumers' values and attitudes towards online purchases of national and international wines.

Digital Wines

Digital Wines Srl was born in 2019 by Michele Trotta, Marco Guerrini and Alessia Ammassari, in Sacrofano. It was founded to bring innovation in the oenological industry through the development and the commercialization of digital platforms to facilitate both promotion and commercialization processes of wines to the consumers by combining the proactive aggregation of wine products concerning product types, geographical origins and taste with historical purchases and/or searches carried out by the end-users.

Through machine learning algorithms and big data techniques, Digital Wines helps firms convey their value proposition to potential consumers, influencing their purchasing choices. It contributes to constructing a real “*digital identity*” and designing personalized marketing and promotional services to increase the winery's prestige when reaching the table of thousands and thousands of consumers every day. It benefits of the economics, and oenological competencies of Marco Guerrini, the leadership skills of Marco Trotta in Information and Communication Technologies business realities, and both managerial competencies and expertise in digital transformation applied to the production and distribution process of viticulture products of Alessia. As a result, Etilika.it - the online wine shop (similar to Vino.com) of Digital Wines-with its own warehouses and its logistic team, boomed positioning as one of the most relevant Italian players: it's the unique business reality that acts for B2B and B2C: “*This is the best historical moment for investing in vertical e-commerce like ours, stable and business thanks to our commercial strength of the high-quality product we sell. On the one hand, more and more consumers are becoming familiar with online purchases also in Food & Beverage, and customers are appreciating its undoubted advantages; on the other hand, wineries and producers are significantly increasing their investments in digital platforms.... Our online wine shop boasts a ten-year commercial relationship with all the most important Italian wineries. It is clear that there is room for growth, both in Italy and abroad, where we intend to expand our offer with a clear and measurable development plan*” - Michele Trotta (December, 2020 in EFA NEWS).

Digital Wines follows the most-updated market trends: from the rediscovery of red bubbles to that of reduced alcohol content, passing through sustainability, communication and online purchases. In particular, Digital Wines gives voice to social wineries' producers, guardians of their territory, capable of transmitting contents and values related to their wines through “*I Winecast di Etilika*” - a unique and original wine experience for shortening the distances between wine producers and wine lovers.

Viniamo Eno Lab

Viniamo Eno Lab, in Foligno, is not simply a wine shop but an eclectic project on wine, as a showroom for all small artisanal wine productions. It is a laboratory where wine is the absolute protagonist, from guided tasting experiences and tasting courses to aperitifs and private events. In the idea of its founder, Silvia Amoni:

“Viniamo would be a meeting place for enthusiasts and also for young people who want to get closer to the culture of wine or deepen it” (Viniamo Eno Lab website, 2022).

In Viniamo EnoLab, Silvia brings all her past experiences, capitalising on her marketing and communication competencies, her passion for wine and her professional experience with Becerìn (Milan)- her previous entrepreneurial project. Silvia is creative and an excellent hostess with a unique passion for wine, cultivated during 13 years of research in Italy and Europe for original bottles of a small vineyard of native vines and artisan wine cellars. The project, born in collaboration with her friend and architect, Alessandra Rappacini, is also a concept store: the “Sala Milano” bottles are presented in a “wine library” where it is possible to purchase but also consume all the wines: *“Sales and tastings: there will never be the same wines, I want to leave room for everyone”* (interview of 2020, December 19 in La Nazione).

By being not only a tasting room, Viniamo Eno Lab celebrates the culture of wine: *“I like to tell the story of the winemaker, his passion. I like meeting them, and for me, every time it is a fall in love”* (interview of 2020, December 19 in La Nazione).

Her passion shines through all the attention in selecting wine labels (more than 400), with particular attention to wines from young people or women because: *“they have a different light in their eyes, you learn a lot from them”* (interview of 2020, December 19 in La Nazione).

B&M Great Italian Wines

B&M Great Italian Wines of Giusi Mainardi - heir of Giuseppe and Giovanni Mainardi - and her husband, Pierstefano Berta, is a family-own company which has developed a wide range of traditional products of the Emporio Liquoreria Mainardi: *“The quality of the wine inside is not so important, but the history of the bottle matters”* - Giusi Mainardi (article of 2013, May 11 in Cinelli Colombini website).

In order to highlight how the immaterial elements of wine (i.e., history, territory, packaging, brand, etc.) are perceived as valuable and recognizable. The range of products of the company was born from many years of historical research on the origins and the evolution of wine and spices and respect to tradition, careful selection of materials, together with deep knowledge about both extraction and processing techniques of officinal herbs are the added value elements of these artisanal wines and spirits.

When talking about Vermouth of Turin, for example, the founder underlined: *“The production of this Vermouth is really an art, the art of knowledge and experience, because you obviously must have a very deep technical knowledge, but there is something of magic, since it is connected with the scents of the aromatic herbs, of the exotic spices and other plants....you use the flowers, the leaves, the seeds, the barks, the rhizomes, the roots. I would like to say that it is not so much the number of herbs of the recipe, but the final harmony”* (interview of 2022 in Il Posto delle Parole website).

From her words, it is clear the passion for all the winemaking processes and the attention that winemakers have to pay to the products they are selling, starting from packaging and labels. In fact, when looking at products B&M Great Italian Wines sells (Vermouth di Torino, Ottocento Liberty, Ippocrasso, Bitter Americano, Grappa Stilla di Moscato Argento, Grappa Stilla di Moscato Oro), the attention is immediately captured by the particularity of historical labels, conceived as a collage of many things able to communicate company and product strengths and values, that have originated iconic symbol and advertising posters: *“The labels are something unique, something really special, that you just have to look at them and even before you read the, you already understand what product it is, just because, even in the*

diversity of the names, of the different houses, of the different brands, there are constant canons that are represented by the graphic aspects, by the colours, by the type of the writings, by the images with a specific link with some aspects of the territory of production” - Giusi Minardi (interview of 2022 in Il Posto delle Parole website).

DISCUSSIONS AND CONCLUSIONS

This section firstly discusses the findings and draws conclusions in light of theories about women's entrepreneurship and innovation, by suggesting the implications of this research for policymakers and managers.

Since early wine history, women have been systematically excluded from power positions. Despite the barriers to their participation, women's presence in wine is increasing. Firstly, women are the primary force that counts as consumers (Pavel, 2012). Secondly, since the wine industry advanced and spread from the Old World to the New World, new opportunities for women's engagement have been created.

Nowadays, we find women in all professions related to the wine industry, and more often, we hear stories of women that have broken barriers and overcome ancient prejudices to become owners of vineyards, winemakers, sommeliers, and restaurant owners. In other terms, they have conquered positions of influence, overcoming the resistance of the gender gap. Over the wine landscape, women have created a mosaic of acceptance and legitimacy, designing a women's leadership style with peculiar characteristics of traditionally male management models. Our results, in fact, outline the profile of women entrepreneurs in the wine domain.

In this study, most of the female entrepreneurs were not born as entrepreneurs: they have previous work experiences, but few are related to entrepreneurship or management. For our female entrepreneurs, business activity comes from their dreams, interests, and specific skills, even if, in traditional business, there is also the influence of family inheritance: all of our companies were born from women who love wine and know wine history. When they have a business idea, they are likely to share it with their families and team members: they see business as an opportunity to create wealth for the entire society. This is ideally in line with the tendency of women entrepreneurs not to measure their companies' performances in economic terms. In fact, they tend to judge their performances in a wider manner, meaning that they want to remain small, have a less stressful enterprise, a more flexible business model and a higher ability to stand alongside consumers.

The stories of our women-led companies outline how the perception of enterprise success is subjective and context-specific: Botter, Piccini 1882, Enologica Vason and B&M Great Italian Wines measure their success through their abilities to innovate and to reshape their offer, still preserving their families' traditions; Vino.com and Digital Wines-with Etilika.it - evaluate their success by considering digital dynamic capabilities performances (especially, resilience and operational agility in more turbulent and global markets); Viniamo Eno Lab looks at its creativeness and innovativeness, by carrying out "new Schumpeter's combinations".

Additionally, the findings corroborate the idea that women-led companies are more attractive to external funding, especially when the firm's strategy is focused on innovation. The presence of a woman in the firm's ownership promotes collaboration within the company and stimulates the creation of cooperative business networks, from which innovation could quickly arise. In this spirit, since women usually show more fragmentary employment histories with respect to men, firms should leverage the recombination of women's previous work experiences and various knowledge components that boost innovations. In fact, when

considering companies in our sample that operate downstream of the wine supply chain management (Vino.com, Digital Wines, Viniamo Eno Lab), women that lead the companies to have different backgrounds, drawing on communication and marketing studies, financial competencies, pharmaceutical expertise mixed with deep knowledge about digital transformation in productive processes, meaning that there is no a unique competences decalogue that favor entrepreneurship idea and startup creation in the wine landscape.

The only common aspect in all the histories of our women is the influence of support for business ideas, especially from families. When looking at the business histories of Botter, Piccini 1882, Enologica Vason and B&M Great Italian Wines, the support women received from their husbands and the synergies required for corporate success clearly emerges: no one history has shown resilience to changes in the ownership. On the contrary, women engaged in more traditional activities, such as winemaking, have used their competencies to frame their entrepreneurial identities to become legitimate in wine. Annalisa Botter consolidated her power through *BRILLA!* project, gaining a position of influence in marketing as a pure diamond in the company team. Martina Piccini has left its mark on the company by choosing the orange labels of their authentic Chianti productions as a way to outline and consolidate the youngness and dynamicity of women's leadership over the generations. Paola Vason, on the contrary, on the one hand, consolidates the traditional family business, bringing the oenological technologies into the wineries. However, on the other hand, she represents the milestone of the company's new feature: new productive sites, new commercial initiatives, and new biological productions.

Those different approaches to entrepreneurship reflect the motivations that drive entrepreneurship, by distinguishing between necessity and opportunity entrepreneurship. In the first case (Piccini 1882, Botter, Enologica Vason and B&M Great Italian Wines), women decide to join the family business not only as a means to contribute to the family income and to better balance work and family, but also because they come from a long history of business traditions, meaning that their entrepreneurial career is the result of the business atmosphere in which they live. In our cases, even if there already exists a successful family-owned firm and for female entrepreneurs to enter the company seemed a mandatory choice, the individual contribution each woman apported was considerable and noteworthy.

When dealing with opportunity entrepreneurship, indeed, the decision to create a new startup is a personal choice. They want to enter self-employment, for being independent, expressing their personality and their competences, satisfying their interests and curiosity, and creating opportunities, growth and wealth (Vino.com, Digital Wines, Viniamo Eno Lab).

Our stories of women-led startups have shown another key common point: innovation and local embeddedness, as sources of a stable competitive advantage, in a more and more global environment, with a solid commitment to sustainability. All the businesses analyzed show high dynamism, have high resilience during turbulent periods and a high level of flexibility and agility that allows them to anticipate, and not to follow, the emerging trends in the wine markets and to reshape their value proposition for the new digital consumers. In fact, despite their anchorage to the traditions, all the companies have been able to leverage internal knowledge and gain from external partnerships to make in-time adjustments to their productive process and internal companies functions to be competitive in the markets. In this spirit, traditional wineries have also made minor changes to their business models, gaining from external opportunities through long-run planning of the activities. In the same way, younger companies have benefitted from digital advances for expanding and internationalizing their businesses. Moreover, despite their global dimensions, our women-led companies have confirmed the existence of a strong link with the "territoire", as a valuable and

inimitable resource to promote, and the history of the bottles of wine. Our women startupper have recognized the territory's potential for defining a unique firm's identity, designing a recognizable brand, and being attractive in the global market.

Our companies have become an expression of the wine culture and its innovativeness, going beyond the value of territory as a geographic place where the activity is placed. For our women entrepreneurs, the territory became a distinctive aspect that has been integrated into the company's value proposition. With this in mind, the experiences of our women-lead companies have determined the development of such crucial values: the sense of belonging to the family and of contributing to family business growth (Piccini 1882), the sense of Italianness and unicity (Botter), the creativeness and the innovativeness in promoting the culture of wine (Viniamo Eno Lab), the technological progress (Enologica Vason), the value of the history of a bottle of wine (B&M Great Italian Wine), and the proximity to the consumers in the digital world (Vino.com and Digital Wines). It should be noted that all of those values contribute to the growth and success of the companies, but also the better attractiveness of the territory, in compliance with the goal of sustainable development.

In conclusion, our work exploited the link between women entrepreneurship and startups in the wine industry, one of the most ancient sectors in Italy that still drives national economic development. Even though the industry still exhibits patriarchal control, women's engagement in the wine supply chain has increased since the XX century. Over the wine landscape, women have created a mosaic of acceptance, and nowadays, gender cannot be considered a factor of influence in the winemaking process. The wine industry is not exclusively a male field, and many examples of noteworthy women's business activities exist. Such women have shown that a women's leadership style must be globally recognized, with peculiar characteristics.

Moreover, even if some studies are related to women's management in SMEs, the literature about women-led startups still needs to be explored, mainly focusing on low-tech industries. With this in mind, our work started from a preliminary characterization of women-entrepreneurship by considering sociodemographic and entrepreneurial personal traits in business conception and management.

With respect to men, women entrepreneurs are parsimonious when considering the trade-off between short-run investments and long-run benefits, are better able to balance work with family needs, are creative and innovative, and privilege autonomy and flexibility. They promote collaborative networks and seek family support when they have a business idea. Moreover, based on a qualitative case study analysis, we deepened the analysis of the women entrepreneurship phenomenon in terms of business startups as a way to bring and manage innovations in a low-knowledge intensity sector, such as wine. Therefore, our work has different implications, both from a theoretical and a managerial point of view.

From the theoretical point of view, our work deepens the understanding of women's entrepreneurship by individuating factors and opportunities that not only lead women to enter self-employment or join the family-own business but also boost the growth of women-led companies.

The contribution of this study is threefold: (i) it provides a unique profile of a female startupper by the combination of sociodemographic dimensions, contextual factors, and entrepreneurial personality traits, that influence both startup conception and the company's management in the wine domain. Additionally, the results highlight the main characteristic of a typical women leadership style, even if sometimes it could be difficult to clearly individuate the women's role in the management of the companies; (ii) it identifies the management paths

and innovation trajectories followed by micro and small-sized companies that are usually family-own and have a long history of ancient traditions while facing the digitalization of services and processes in a more turbulent competitive environment; (iii) it spots gaps in the existing literature and explores the linkages among women's entrepreneurship, innovativeness, and territory.

Overall, there are several limitations of this work. Firstly, our work relies on a qualitative approach, therefore results cannot be easily generalized. Secondly, the sample of analysis is very small, due to our intention to focus only on startup business activities, instead of considering the universe of small and medium-sized companies. Thirdly, these preliminary findings are referring only to the wine industry, in which companies operating at different stages of the wine supply chain coexist so there could be some traits of the women's leadership style that are specific to some business activities and cannot be generalized for multiple levels of operativity. Nevertheless, future research may deepen the analysis of women-led startups in the wine industry, by exploring the nexus between women entrepreneurship in wine and performance and/or by empirically testing the differences between women and male entrepreneurship, with a gendered lens of analysis.

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TRENDS IN INCOME INEQUALITY AND ITS POLICY IMPLICATIONS: EVIDENCE FROM CEE COUNTRIES

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***Abstract:** Over the past three decades, significant transformations have taken place in the former European communist countries, resulting in their integration into the global economy and an increase in living standards. However, the first few years of the transition to a market economy have been accompanied by a drastic drop in outputs, rising unemployment, high inflation and rising inequality. Reducing income inequalities is one of the most important economic and political issues in Central and East European (CEE) countries, as it consists of heterogeneous countries characterized by disparities in per capita income. This paper presents various data on CEE countries, as well as some data on EU-15 for the sake of comparison. It compares the changes in both distributions over time to see how much disparities and inequality increased (decreased) during the 21st century. Different levels of income inequality in CEE economies are the consequences of the process of liberalization, privatization and policies that results from it. Findings from this study may be useful in identifying the most effective policy path to address inequality in the CEE countries.*

***Keywords:** income inequality, economic policy, GINI, CEE*

***JEL Classification:** F00, F50*

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INTRODUCTION

Economic inequalities represent one of the most controversial topics within the development of economic thoughts and economic research. Unequal distribution of income and wealth has always existed in the economic history, provided that the relation to them primarily depended on predominant ideology and economic theory in the observed period. In each society various forms of inequalities can be noticed. Since there are differences among individuals, the presence of inequalities is natural to some extent. However, making a decision if an inequality is low or high is not a simple task. The limit of allowed and desirable inequalities has not been defined, and there is no possibility of defining it. The question that is often raised is when, in which conditions and what changes of inequality can be tolerated. In accordance with Pareto's thesis, changes of inequality can be more tolerated if everyone benefits from those changes. These are changes for the better. If an economy is at the lowest level of development, higher inequalities could only be tolerated if they meant higher incomes for the poor, provided that if it does not happen the "revolution of unfulfilled growing expectations" occurs (Šuković, 2017).

The issue of reducing economic inequalities is one of the most important economic and political issues in the European Union, since Europe consists of heterogeneous countries characterized by disparities in *per capita* income (Sutherland, 1986). Although inequalities are given great importance in political debates, it is still difficult to compare the levels of inequality in European countries and to say how economic growth is distributed among income groups. Taking into account the problems that income inequalities can cause in one economy and at the global level, the subject of this paper is the analysis of income inequality trends in European transition countries. In accordance with the defined subject, the goal of the paper is to examine if the inequalities are reduced in "new" member states of EU, CEE-11 (Poland, Czech Republic, Estonia, Latvia, Lithuania, Hungary, Slovakia, Slovenia, Bulgaria, Romania, and Croatia) and in the countries of the Western Balkans (Serbia, Bosnia and Herzegovina, North Macedonia, Montenegro, and Albania). In accordance with the set subject and goal of the research, the following hypothesis will be tested in the paper:

X1: Income inequality is decreasing in European transition countries.

In addition to the introductory and concluding considerations, the paper consists of three interrelated parts. In the first part, the concept of inequality is defined and the basic forms of economic inequality are pointed out. The second part of the paper analyses the income inequalities at global level. Finally, the third part of the paper is devoted to the analysis of trends in income inequality in European transition countries.

INCOME INEQUALITY: THEORETICAL ASPECT

Inequality is a multidimensional problem and can be observed in different dimensions. Ray (1998) defines economic inequality as an "essential disparity in which some have certain opportunities for economic choice, while those opportunities are denied to others". That is, economic inequality implies "unequal distribution of economic resources among individuals". There are two key concepts of inequality: inequalities in outcomes (income and wealth) and in opportunities (possibilities). The first and most frequently used concept in economic literature is the inequality in outcomes that occurs when individuals do not have identical economic living conditions or the same level of material wealth. Wealth and income represent two key variables that most often express economic inequality in outcomes. According to the opinion of economists, the difference between these variables is reflected in that the first represents

the size of the condition, and the second has the character of a flow, with the fact that both variables are based on the concept of “control over the use of scarce resources of society”. When analyzing the distribution of income, it is not only important how much individuals earn, but also in which way they earn their income. Figure 1 shows the functional and personnel redistribution.

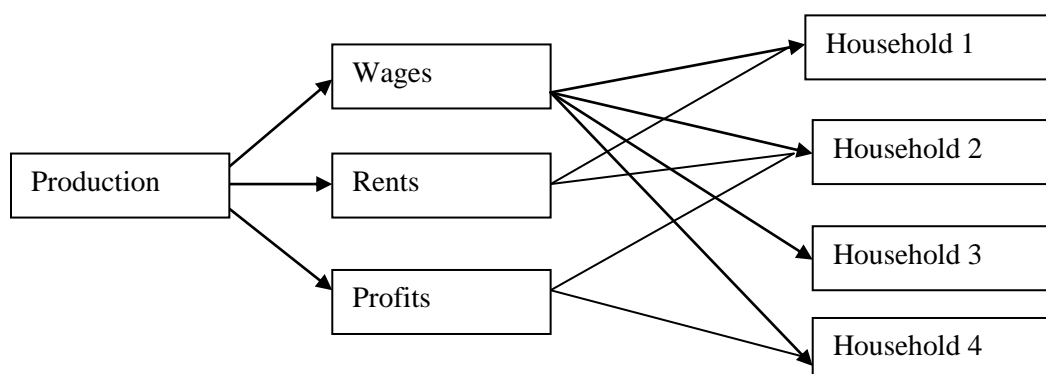


Figure 1: Functional and personal distribution.

Source: Ray, D. (1998). *Development economics*, Princeton University Press, Princeton, New Jersey, pp. 172.

Personal distribution implies the distribution of income among individuals or households, regardless of the source of income, and functional distribution of income is related to the income distribution depending on its sources, i.e. it shows the way the income is divided among production factors (labor, land, and capital), i.e. what percentage of the total income belongs to labor, and what percentage belongs to land and capital (Gavrilović-Jovanović, 2003). Giovannoni (2010) emphasizes that personal distribution of income represents a macroeconomic phenomenon, and that functional distribution of income is basically a macroeconomic issue. Different categories of income (earnings, rent, profit) originating from production are directed towards households. Ownership of production factors affects the size and direction of these flows. For example, household 3 has only labor, so that it realizes the income based only on work. Contrary to that, if households have shares in a company, own land that they lease and labor (as is the case with household 2), they generate income from all three sources. As Ray states, there are two reasons for analyzing the income distribution in a two-step manner. First, knowing the source of income is important because it can have a significant impact on the evaluation of the results. Second, functional distribution of income is important because it provides information on the relation between inequalities and other economic and social conditions.

In the book *"Worlds Apart - Measuring International and Global Inequality"*, Branko Milanović (2005) states that there are three ways (concepts) to determine economic inequalities. The first way is related to the examination of inequality among states where the states observed as identical regardless of the population or the size of territory. This is so-called unweighted international inequality. This concept is identified with beta and sigma convergence and divergence, i.e. examining the convergence and divergence of economic performance between rich and poor countries (Milanović, 2006). The second concept represents a weighted economic inequality, where the inequality between countries is determined by taking into account the population of each country. The third concept of economic inequality is global inequality that represents the inequality among individuals at the world level. In this type of inequality, individuals are observed as citizens of the world

and national boundaries are ignored. Global inequality – income inequality of citizens of the world – can be formally treated as “the sum of all internal inequalities to which the sum of all differences in average incomes between different countries is added“ (Milanović, 2016). The first component is related to the income inequality between rich and poor Americans, rich and poor Germans, and so on. The second component is related to differences in incomes between the United States of America and Germany, Serbia and Germany, and so on for all the countries of the world. Until about fifteen years ago, determining inequality in this way was not possible. However, then the data necessary to estimate and compare the income of all people on the planet was collected for the first time in human history.

ANALYSIS OF INCOME INEQUALITY AT GLOBAL LEVEL

There is no precise data about global inequality in the previous century, since there is no available data on income or data from surveys of households for the period until late 1960s. Bourguignon and Morrisson (2002) were among the first to try to analyze income distribution over a long period of time, from 1820 to 1992. Taking into account the lack of data, the authors formulated several general assumptions about the development of inequality within individual countries and adopted the estimates of GDP *per capita* as the average income of those countries proposed by Madison. The results reached by the authors, which were later confirmed in the works of Zanden et al. (2014) and Milanovic (2010) show that since the industrial revolution, global inequality had a growing trend until the beginning of the 20th century. According to the authors, the reason for the increase in global inequality throughout the nineteenth century is the increase in average income in Western Europe, North America and Australia, while other countries, primarily India and China, faced stagnation or a decline in average income.

Global inequality continued to grow throughout most of the twentieth century, right up until the 1990s, but at a slower pace. The increase in global inequality in this period was mainly contributed by the growing inequality among countries. Unlike the growth of inequality between countries, inequality within countries has decreased as a result of wars, increasing demand for labor due to stronger economic growth, more quality education, more progressive fiscal regimes and the creation of the welfare state. Global inequality has seen a modest decline since the 1990s, which is the result of two opposing trends. First, inequality among countries changed the trend and began to decline with the increase of economic growth in developing countries. Inequalities among countries are basically a consequence of various rates of economic growth. Rapid growth during the early 1980s in many developing and emerging countries, primarily in Asia, and relatively slower growth in developed countries contributed to the convergence of per capita income of developing countries towards the income of advanced economies. After two centuries of divergence, this trend is of historical importance (Pomeranz, 2000). Second, inequality within countries began to rise after several post-war decades of decline, and this upward trend has continued for most developed economies over the past four decades. Some of the factors that contributed to the convergence, like globalization and technological development, have influenced the growth of inequality within the countries since 1980s. After 2000, global inequality tends to decline, with the largest decline occurring after the 2008 global financial crisis. Such trend is a consequence of development achieved in Asia and slowdown in the West (Milanovic, 2016). To the lowest level of 60.7 it falls in 2019. Despite the decrease in global inequality, it is still at a very high level (it is close to the level in the period 1900-1910). Lakner et al. (2020) estimate that in the period between 2019 and 2030 Gini index will change between 1% and 2% per year. However, today countries face another challenge - the economic crisis caused by

the corona virus pandemic. The latest global estimates from the International Labor Organization show that more than four-fifths of people (81% of the global workforce of 3.3 billion) face full or partial job losses (ILO, 2020). Therefore, it is expected that this will affect the rise of inequality and make this topic more relevant today than it was a decade ago. Figure 2 shows the global Gini index² in the period 1850-2019.

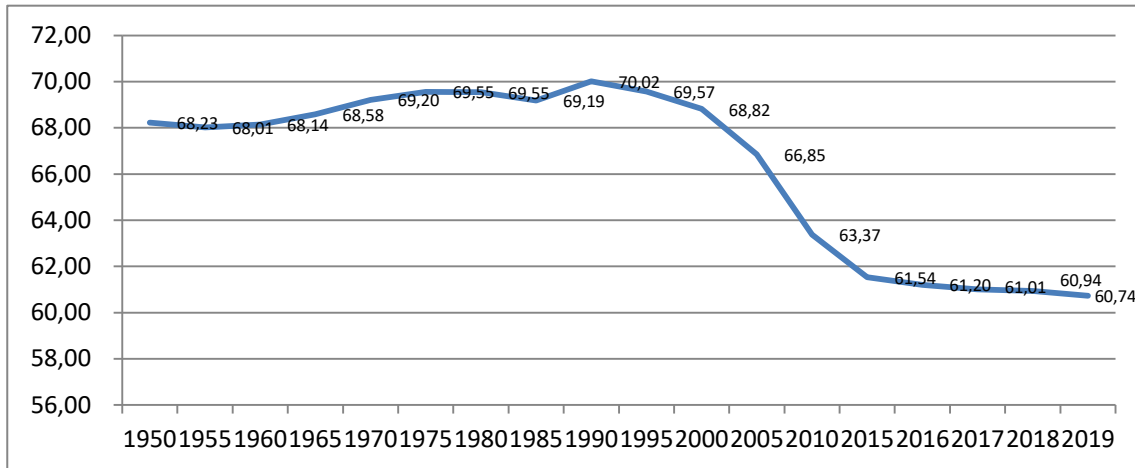


Figure 2: Income inequality measured by GINI (1950-2019).

Source: UNU-WIDER WIID

Table 1 shows the movement of the Gini index by region and selected countries in the period 1950-2019. The regions with the lowest inequalities in income distribution are North America and Europe and Central Asia, and the region with the highest inequalities is Sub-Saharan Africa. Instead of moving in one direction, inequality in all regions had a procyclical movement, that is, it went through phases of growth and decline, measured by the Gini index. Income inequality has increased in most developed countries (the US and Germany) and in some middle-income countries, including China and India, since the 1990s. Atkinson (2015) states globalization as the factor that caused inequality growth in rich countries. He points out that the globalization manifested through growing trade and financial integration and technological progress benefited highly skilled individuals, while the lower skilled workforce faced the loss of jobs that moved mainly to Asian countries characterized by cheap labor. This had as a consequence a widening of gap in earnings between the differently qualified workforce. Also, since the 1980s, the role of trade unions in the formation of wages has been reduced and tax rates on the highest incomes have been reduced, and social transfers have started to be linked more and more to activation on the labor market (Atkinson, 2015). According to Atkinson, the reduction of inequality in the developed world can be contributed by the reduction of inequality in the distribution of market income (income before taxes and social benefits).

² Gini index is the most often used measure of economic inequality defined by Italian sociologist statistician Gini Korado (*Gini Corrado*) in its work "*Variability and changeability*". It represents a measure of statistical dispersion and it measures a degree of deviation of the distribution of disposable income from fully equal distribution. When the value of this index is zero, it means that there is equality in the distribution of income, and a value equal to one means perfect inequality in distribution (all income belongs to one individual).

Table 1. GINI index by regions (1950-2019)

	1950	1960	1970	1980	1990	2000	2010	2019
North America	38.1	36.7	35.7	34.5	37.4	39.7	40.1	40.9
USA	38.0	36.6	35.5	34.7	37.9	40.0	40.6	41.4
Latin America and Caribbean	57.9	57.9	58.1	54.8	56.1	57.0	51.7	50.4
Brazil	61.5	61.5	61.5	55.9	58.1	56.2	50.3	51.3
Mexico	54.1	55.6	55.4	50.0	52.1	53.3	48.6	46.2
Europe and Central Asia	39.9	40.1	39.0	38.4	42.9	48.8	42.7	41.5
United Kingdom	32.9	32.9	32.9	29.3	35.5	36.8	35.8	33.8
France	39.6	39.6	36.8	35.8	33.0	31.4	32.2	30.9
Germany	29.9	29.9	29.9	28.3	28.7	28.8	30.6	31.6
Russian Federation	30.0	30.0	30.0	30.0	39.3	42.6	34.6	34.7
Middle East and North Africa	55.6	59.0	62.4	62.6	56.1	55.9	52.8	54.8
Egypt	42.2	42.2	41.7	39.5	36.0	36.3	33.5	36.6
Turkey	52.1	52.1	50.9	48.5	47.3	46.6	44.5	43.3
Sub Saharan Africa	66.5	66.7	67.5	67.6	68.1	66.6	65.4	61.7
South Africa	68.8	68.8	68.8	68.8	68.8	67.8	72.9	66.9
South Asia	50.7	48.4	46.4	48.3	46.9	49.9	51.2	52.1
India	51.1	48.6	46.4	48.2	45.7	49.4	51.4	51.8
East Asia and Pacific	67.8	67.8	72.2	70.6	70.0	62.4	53.7	49.0
Indonesia	36.4	36.4	36.4	36.6	34.8	32.9	38.4	39.3
China	56.2	45.4	36.7	29.5	35.9	42.0	44.2	43.6
Japan	24.2	27.7	31.6	25.6	30.2	33.7	33.5	32.9

Source: UNU-WIDER WIID

INCOME INEQUALITIES IN EUROPEAN TRANSITION COUNTRIES

Despite the increase in *per capita* income, the "new" EU member states (CEE-11) and the countries of the Western Balkans still face high levels of income inequality. Although inequality is given great importance in political debates, it is still difficult to compare the levels of inequality in European countries and to say how economic growth is distributed among income groups. Table 2 shows the movement of the Gini index in EU-15, CEE-11, and the Western Balkans in the period from 1990 to 2019. In all analyzed groups of countries, income inequality has had a growing trend since 1990. In the observed period 1990-2019 in the developed countries of the European Union, no major changes in income inequality were recorded. During the entire period, the Gini index had approximately the same value. The CEE-11 countries after the start of the transition had the largest increase in inequality and this lasted until 2000 (the Gini was 27.4 in 1990 and 31.2 in 2000), and after that inequalities continued to grow but at a more moderate pace (the value of the Gini index ranged between 31.2 and 32.5). After 2014, income inequality in this group of countries is decreasing (from 32.5 in 2014 to 31 in 2019). On the other hand, in the countries of the Western Balkans, inequalities were relatively stable until 2000 (the Gini was 31.5 in 1990, and 30.6 in 2000), but after the beginning of the process of transition from a centrally planned to a market economy, more intense changes in income inequality occurred (Gini ranged between 34 and 39 after 2000). The greatest inequalities in this region were during the global economic crisis in 2007 and 2008 (Gini had a value of 39.3). After that, in 2009 and 2010, inequalities decrease, and then have a growing trend until 2013, after which they decrease (the Gini index decreased from 38 in 2013 to 35.1 in 2019).

Table 2. Gini index in EU-15, CEE-11, and the Western Balkans in period 1990-2019

	EU-15	CEE-11	Western Balkan
1990	29,7	27,4	31,5
1991	29,7	27,9	31,6
1992	30,2	27,9	31,7
1993	30,7	28,8	31,8
1994	31,1	30,0	31,9
1995	31,5	31,1	31,9
1996	31,6	30,9	31,7
1997	31,3	31,2	31,5
1998	31,4	31,3	30,6
1999	31,5	30,9	30,9
2000	31,4	31,2	34,4
2001	31,6	31,8	31,5
2002	31,6	32,1	35,5
2003	31,4	32,1	36,6
2004	31,4	32,0	37,5
2005	31,7	32,1	38,4
2006	31,8	32,0	39,1
2007	31,6	31,7	39,3
2008	31,4	31,6	39,3
2009	31,4	31,5	38,2
2010	31,4	31,7	37,4
2011	31,3	31,8	37,7
2012	31,4	32,0	37,9
2013	31,5	32,5	38,0
2014	31,7	32,5	37,8
2015	31,5	32,3	37,3
2016	31,7	31,7	37,1
2017	31,6	31,4	36,5
2018	31,5	31,0	35,8
2019	31,4	31,0	35,1

Source: UNU-WIDER WIID

During the entire observed period, income inequality was higher in the countries of the Western Balkans than in the "new" EU member states (Figure 3). The reasons for the high level of inequality in the countries of the Western Balkans was the long and painful process of transition from a planned to a market economy. Market liberalization in both groups of countries led to an increase in inequality in income dispersion. Milanovic (1999) states the changes in labor market outcomes, i.e. the increase in inequality in the distribution of wages, as the most important factor that increases inequality during the transition. Mitra and Yemtsov (2006) state as the main determinants of inequality in the transition: wage decompression and private sector growth, restructuring and unemployment, fiscal adjustment affecting government spending and taxation, corruption, price liberalization, inflation and outstanding liabilities, technological change, increased mobility and globalization.

Also, in all transition economies, considered individually, there was an increase in inequality after the process of transition to a market economy, with the fact that there are differences between countries in income inequality depending on the institutional legacy and the chosen transition policy. Different levels of inequality in the distribution of income in transition economies are the result of different governmental approaches to stabilization, liberalization,

privatization and the policies that result from it (Bandelj & Mahutga, 2010). Certain policies had a negative impact on equality, such as policies that influenced the reduction of social services (Ivanova, 2007) and encouraged foreign investments over domestic ones (Bandelj & Mahutga, 2010). In addition, the lack of certain policies has negatively manifested itself on equality, such as the lack of educational policies that would allow adaptability to changing technology (Aghion & Commander, 1999). Moreover, some governments have been more focused on resolving rising inequality through higher rates of government effectiveness and greater financial resources (Grimalda et al., 2010). Differences in inequality between transition economies can also be explained through differences in reforms regarding the speed and order of their implementation (Aristei & Perugini, 2012; Ivanova, 2007), initial conditions before the transition (Porras, 2010) and different models of capitalism in transition economies.

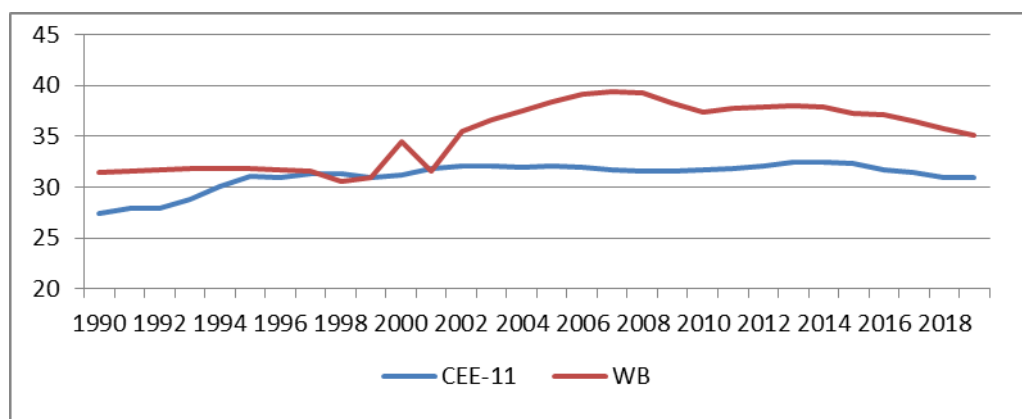


Figure 3: Movement of inequality measured by the Gini index in CEE-11 and the Western Balkans in the period 1990-2019.

Source: UNU-WIDER WIID

Palma ratio, i.e. the ratio of the share of the richest 10% of the population in the gross national income and the share of the poorest 40% as an alternative measure of income inequality is shown in Figure 4 for CEE-11 and the Western Balkans in the period 1990-2019. Like the Gini index, this measure confirms that in recent years inequalities have been decreasing in the transition economies of the CEE-11 and the Western Balkans, with the fact that the decline of this indicator is more pronounced in the Western Balkans region. In addition, there was a narrowing of the inequality gap between the CEE-11 countries and the Western Balkans, which was the largest in 2008, when the Palma ratio for the Western Balkan countries was 1.83, and the countries of Central and Eastern Europe, CEE-11 was 1.24. In 2019, the Palma ratio was 1.19 in the "new" EU members, CEE-11, and 1.42 in the countries of the Western Balkans. In the country with the greatest inequality, Bulgaria, in 2019, this indicator was 1.98, and in the country with the least income inequality, Slovakia, it was 0.82.

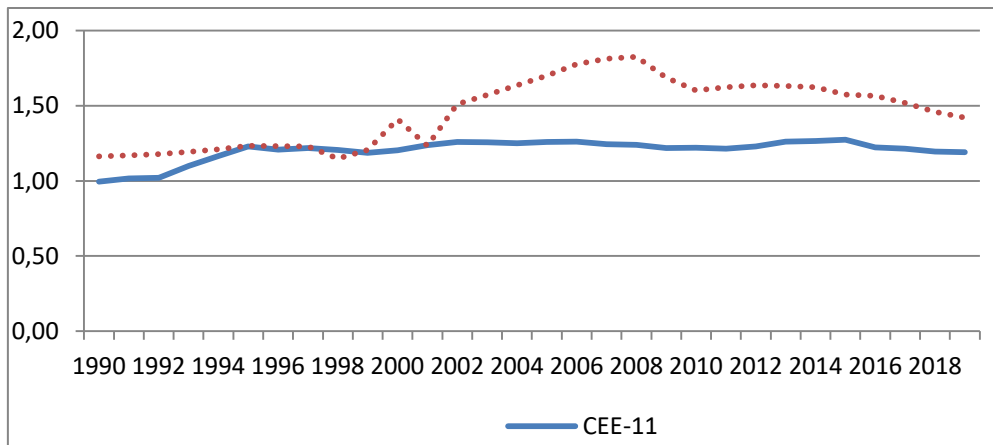


Figure 4: Movement of inequality measured by the Palma index in the CEE-11 and the Western Balkans in the period 1990-2019

Source: UNU-WIDER WIID

The decline in income inequality in the countries of the Western Balkans (from 2008 to 2019) and the CEE-11 countries (from 2014 to 2019) is also confirmed by the S80/S20 quintile ratio (Figure 5). In the period 1990-2019, there was an increase in this indicator in both observed groups of countries, however, in recent years, it has had a tendency to fall. In 2019, this indicator was 4.6 in CEE-11, which means that on average the income received by the 20% of the population with the highest income was 4.6 times higher than the income received by the 20% of the population with the lowest income. In the Western Balkans, it was 6.8.

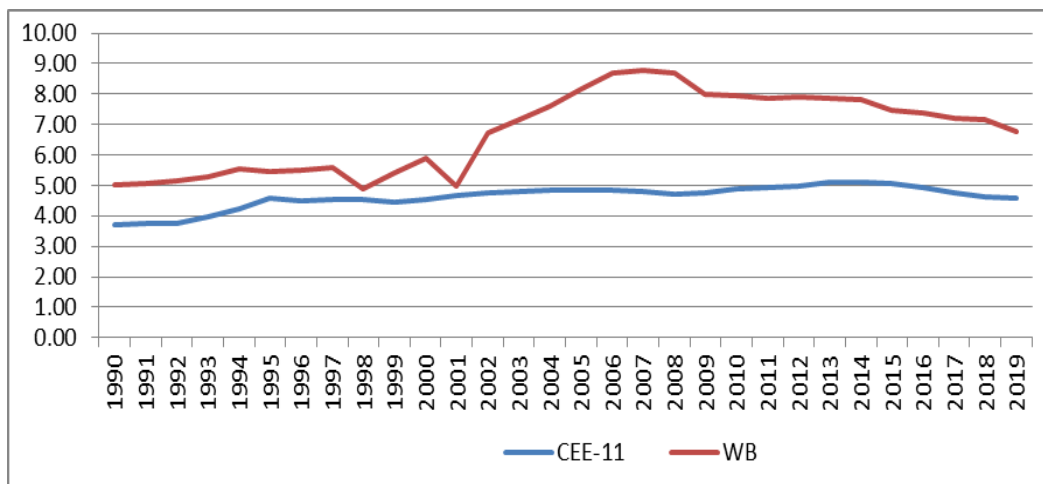


Figure 5: Movement of inequality measured by the S80/S20 quintile ratio in the CEE-11 and the Western Balkans in the period 1990-2019

Source: UNU-WIDER WIID

Figure 6 shows the share of the richest 10% in total income in CEE-11 and the Western Balkans in the period 1990-2019. In 2019, compared to 1990, the gap between the richest and the poorest in both observed groups of countries increased. The share of the richest 10% increased in 2019 compared to 1990 in the CEE-11 from 22% to 24% and in the Western Balkans from 23.2% to 25%. The share of the richest 10% in Western Balkan tended to grow until 2008, when it amounted 27%, and after that it decreased, reaching 25% in 2019. On the

other hand, in the CEE-11 countries, the share of the richest 10% in income grew until 2005 (25.1%) and has had a tendency to fall since then. In 2019, this share was 24%.

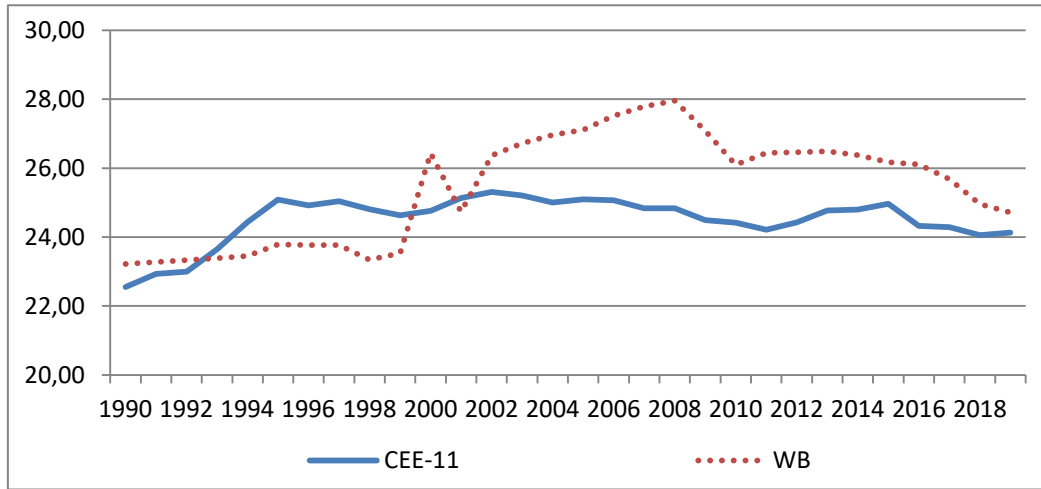


Figure 6: Movement of inequality in CEE-11 and the Western Balkans in the period 1990-2019. (the share of the richest 10% in income)

Source: UNU-WIDER WIID

Contrary to the share of the richest 10%, which has increased, the share of the poorest 40% in total income has decreased over the past thirty years from 21.8% to 20.9% in the CEE-11 and from 20% to 18% in the Western Balkans (Figure 7). However, in the last ten years, the share of the poorest 40% in the total income has a slight upward trend. In 2019, in the CEE-11, the income of the poorest 40% of the population made 21% of the total income, and in the countries of the Western Balkans, it was 18%.

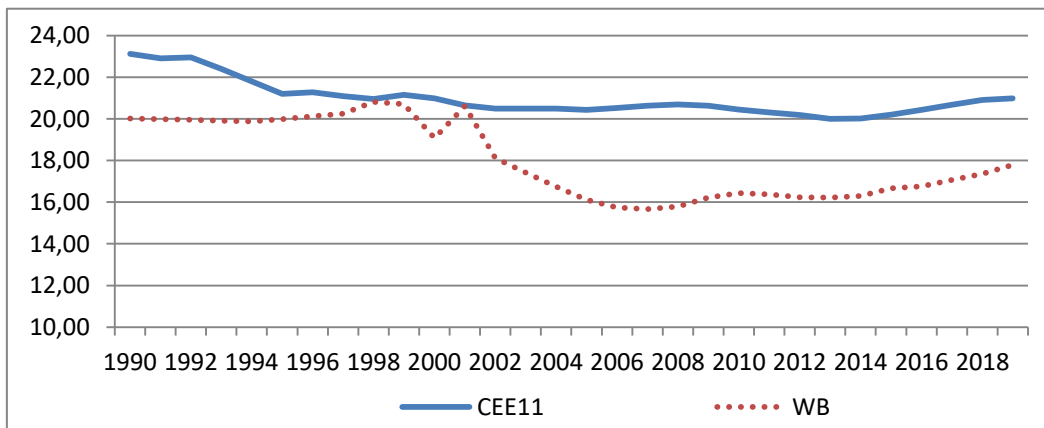


Figure 7: Movement of inequality in CEE-11 and the Western Balkans in the period 1990-2019 (the share of the poorest 40% in income)

Source: UNU-WIDER WIID

CONCLUSION

There are different opinions in economic science, both regarding the impact of economic inequality on economic efficiency, and the need to consider the issue of income distribution and inequality. Different opinions on the problem of inequality and income distribution also influenced the transformation of the conventional understanding of the relationship between

income distribution and macroeconomic activity. Unlike classical economists, among whom the prevailing opinion was that differences in income distribution are useful for economic development, neoclassicists represented the attitude that economic inequalities are unimportant for understanding macroeconomic activity and economic development. However, this attitude underwent a transformation, and the research that followed it indicated the existence of a significant impact of inequality on economic growth. Moreover, modern theory has emphasized the negative effects of inequality on economic development and growth.

Economic inequalities are related to disparity in wealth, income, spending, and other economic variables within or among societies. A certain degree of inequality can provide an incentive to work and invest in human and social capital and it stimulates growth and social progress (Grusky & Hill, 2018). However, the literature also shows that high levels of inequality hinder productivity and contribute to social problems, i.e. they have multiple negative effects on social and economic environment of a country. Inequalities reduce the creation of human capital, which negatively affects the educational attainment of those at the bottom of the scale, reduces social mobility and hinders the acquisition of new skills (Cingano, 2014).

After the start of the transition process, i.e. the transition from a centrally planned to a market economy in European transition countries, there was an increase in inequality in the distribution of income. However, in recent years, inequalities have decreased in these countries, which is confirmed by the analyzed indicators. The Gini index decreased from 32.5 in 2014 to 31 in 2019 in CEE-11, and from 38 in 2013 to 35.1 in 2019 in the countries of the Western Balkans. Like the Gini index, the palm ratio also confirms that in recent years income inequality has been decreasing in the transition economies of the CEE-11 and the Western Balkans, with the fact that the decline of this indicator is more pronounced in the Western Balkans region. The decline in income inequality in the countries of the Western Balkans (from 2008 to 2019) and the CEE-11 countries (from 2014 to 2019) is also confirmed by the S80/S20 quintile ratio. In accordance with the above, the hypothesis from which the work started can be accepted.

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