
ORIGINAL SCIENTIFIC PAPER

RECEIVED: JANUARY 2021

REVISED: APRIL 2021

ACCEPTED: MAY 2021

DOI: 10.2478/ngoe-2021-0009

UDK: 005.7:001.895(497.11)

JEL: C19, L26, O31

Citation: Pitić, G., & Vučković, A. (2021). Organizational Factors of Innovativeness in Serbian Enterprises. *Naše gospodarstvo/Our Economy*, 67(2), 20-28. DOI: 10.2478/ngoe-2021-0009

Organizational Factors of Innovativeness in Serbian Enterprises

Goran Pitić

Belgrade Metropolitan University, FEFA Faculty, Serbia
gpitic@fefa.edu.rs

Aleksandar Vučković

Belgrade Metropolitan University, FEFA Faculty, Serbia
avuckovic@fefa.edu.rs

Abstract

This paper analyses correlations between several organizational characteristics and product/process innovations in enterprises in Serbia. We used the World Bank Enterprise Survey data on 339 small, medium, and large companies from various industries. Many of the factors analysed in this study are consistent with theoretical conclusions in the literature on this topic and relate to organizational maturity. Also, factors such as the size of the company and the industry to which it belongs were analysed. For correlations testing, the Chi-square correlation coefficient and the Cramer's V test were used. The analysis revealed correlations between innovativeness and many organizational characteristics. However, in some cases, contrary to theoretical claims, correlations were not confirmed. We found that the introduction of new products and/or processes in the company is influenced by business strategy, production targets, number of performance indicators monitored, establishment of quality management system, formal training programs for company's full-time employees, ease of achieving the company's production targets, level of awareness of management and employees about the company's production targets, spending on research and development activities within the company, and acquisition of external knowledge, way of promoting non-managers in a company, time frame of the company's production targets, company's size and main market.

Keywords: innovativeness, corporate entrepreneurship, correlation analysis, organizational characteristics, Serbia

**NG
OE**

**NAŠE GOSPODARSTVO
OUR ECONOMY**

Vol. 67 | No. 2 | 2021

pp. 20–28

Introduction

Issues of corporate entrepreneurship and organizational innovativeness and the factors that foster them have been the subject of numerous studies for decades. At the time of the Fourth Industrial Revolution, it seems that Schumpeter's idea of creative destruction, as a driver of economic development, has never been more relevant (Schumpeter, 1934). The Fourth Industrial Revolution, whose main feature is the fusion of digital, physical, and biological systems, changed almost all aspects of life and work (Schwab, 2016). However, the mentioned revolution encompasses technological changes and changes in economics and management (Xu et al., 2018). Increased focus on users, the application of digital technologies

to improve the efficiency of business processes, the creation of new business models based on electronic platforms are just some of the features of management in modern organizations (Li et al., 2017). The development of companies and countries in the modern economic and technological environment is increasingly viewed through the prism of their ability to create new or improve existing products, services, and processes (Liu, 2017). In this regard, corporate entrepreneurship and innovation are seen as key aspects of organizational transformation, necessary to respond to the technological, economic, and social changes caused by the Fourth Industrial Revolution (Guerra Guerra, 2018). In other words, current technological changes within the Fourth Industrial Revolution have imposed the need to improve innovativeness in organizations to respond to opportunities and threats from the business environment.

Serbia faces significant challenges in this regard, given its lag behind developed countries in some of the key elements of competitiveness. This paper aims to analyse the internal factors affecting innovativeness in enterprises in Serbia, determine the importance of each of the factors and find room for improvement in this regard. In this way, recommendations regarding the improvement of certain aspects of management practice in companies would improve their innovativeness, which would further lead to raising the competitiveness of the entire economy. This is one of the few studies of this type conducted on the example of Serbia, and its conclusions can be applied to other economies. The study examined the influence of factors that have already been the subject of previous studies around the world and analysed the influence of several new factors. In this way, it contributes to the overall fund of knowledge when it comes to research on innovativeness in organizations as a topic of increasing importance.

Chapter 2 of this paper provides an overview of the conclusions of the conducted research on this topic in the past. Chapter 3 provides a description of the methodology of the original research conducted by the authors of this paper. Chapter 4 is dedicated to the presentation of results and discussion in this regard.

Literature Review

According to Covin & Miles (1999), corporate entrepreneurship includes situation where (1) an “established” organization enters a new business; (2) individuals champion new product ideas within a corporate context; and (3) an “entrepreneurial” philosophy permeates an entire organization's outlook and operations. Corporate entrepreneurship refers to the pursuit of entrepreneurial activities and initiatives

aimed at transforming the organization (Goodale et al., 2011). Namely, corporate entrepreneurship is a mechanism by which an organization adapts to changing conditions in the external environment through knowledge improvement, internal adaptation, and efficient use of resources to develop new products, services, processes, and management systems (Morris et al., 2011, p. 11). The link between corporate entrepreneurship and innovation is pointed out by McFadzean et al. (2005) so that they define corporate entrepreneurship as the effort of promoting innovation in an uncertain environment. According to the same authors, innovation is a process that provides added value and novelty to the organization, its suppliers, and customers through the development of new procedures, solutions, products, and services, as well as new methods of commercialization. Within this process, the principal roles of the corporate entrepreneur are to challenge bureaucracy, assess new opportunities, align, and exploit resources, and move the innovation process forward. The corporate entrepreneur's management of the innovation process will lead to greater benefits for the organization (McFadzean et al., 2005). Organizational innovations, according to Schumpeter (1934), include the following: (1) launch of a new product or a new species of an already known product, (2) application of new methods of production or sales of a product (not yet proven in the industry), (3) opening of a new market (the market for which a branch of the industry was not yet represented), (4) acquiring of new sources of supply of raw material or semi-finished goods, (5) new industry structure such as the creation or destruction of a monopoly position. When it comes to the importance of innovation and corporate entrepreneurship for organizations, Covin & Miles (1999) point out that corporate entrepreneurship can enable organizations to gain cost leadership through improving the efficiency of business processes. Also, organizations can gain differentiation-based advantage through creating new products and consequently strengthening their reputation. Kuratko et al. (2001) indicate that a strategic approach to corporate entrepreneurship in organizations contributes to improving the long-term performance of the organization. Zahra et al. (1999) draw attention to the fact that corporate entrepreneurship not only contributes to improving a company's market and financial performance but also contributes to the creation of knowledge and development of competencies in the company. The development of innovativeness is especially important for middle-income countries, including Serbia. Namely, in this way, middle-income countries can make a shift from a factor/efficiency driven economy to an innovation-driven economy, which is characterized by the ability to produce innovative and sophisticated products/services, primarily based on knowledge. Thus, countries can generate higher income and avoid the middle-income trap (stay at the same middle level of development due to structural constraints) (Hardiana & Hastiadi, 2019).

Corporate entrepreneurship and innovation in organizations is very common in the scientific literature. Over the past few decades, many research studies have been conducted with the aim of determining which organizational factors are the most important in terms of the development of organizational innovativeness. Also, several review papers were published, where the results of the mentioned research were sublimated and where conclusions were defined regarding the most important organizational factors affecting organizational innovativeness. Hornsby et al. (1993), based on a broad analysis of research in corporate entrepreneurship, defined an interactive model of corporate entrepreneurship, which includes organizational and individual factors that influence this process. When it comes to organizational factors, they found that five factors can positively affect the level of corporate entrepreneurship: management support (quick adoption of employee ideas, recognition of people who bring ideas forward, support for small experimental projects, and seed money to get projects off the ground), autonomy/work discretion (the extent that they are able to make decisions about performing their work in the way that they believe is most effective), rewards/reinforcement (rewards and reinforcement enhance the motivation of individuals to engage in innovative behaviour), time availability (time to incubate the new ideas), organizational boundaries (boundaries, real and imagined, that prevent people from looking at problems outside their jobs). Subramanian & Nilakanta (1996) review studies that have dealt, on the one hand, with the influence of organizational factors on the innovation in organizations, and on the other hand, with the influence of organizational innovation on organizational performance. Centralisation, formalisation, size, organizational slack, and specialisation were considered as organizational factors influencing innovation. It was found that these factors significantly affect the number of innovations and the time required for their adoption in the organization. Guth & Ginsburg (1990), in their model of corporate entrepreneurship in strategic management, defined four factors that affect corporate entrepreneurship in an organization: external environment, strategic leaders, organization form/conduct, and organizational performance. Smith et al. (2008) in their literature review on factors influencing an organization's ability to manage innovation indicate that previous research in this area has focused on factors, such as utilization of technology, technical skills and education, technology strategy, idea generation, selection and evaluation techniques, implementation mechanism, organizational strategy, innovation strategy, vision and goals of the organization, strategic decision making, organizational differentiation, centralisation, formality, communication, collaboration, attitude to risk, attitude to innovation, employees motivation to innovate, employee skills and education, employee personalities, training, utilization of slack resources, planning and management of resources, knowledge resources, technology resources, financial resources,

organizational learning, knowledge of external environment, utilization of knowledge repositories, management personalities management style, motivation of employees. The authors point to the existence of a positive correlation between these factors and corporate entrepreneurship. In the literature review, as part of creating the so-called hierarchical model of corporate entrepreneurship maturity, Vučković et al. (2017) highlight the following factors as key to the effectiveness of this process: organizational culture (promoting innovativeness at all levels of the organization, participatory leadership, risk taking and work motivation), organizational infrastructure (includes the flat organizational structure, then clear and concrete policies, strategies, plans and procedures for innovation management in the organization, and finally the simple and clear communication channels for information exchange within innovation management), organizational resources and abilities (sufficient human, material and financial resources, necessary for the implementation of new ideas in the organization). When it comes to research on this topic in Serbia, Miric et al. (2019) conducted a study of factors affecting organizational innovativeness in social enterprises in Serbia. They concluded that some of the most important factors in this regard are awareness of the enterprise's social mission, perception of innovation as important, orientation towards growth, motivation to work, professional life satisfaction, etc.

According to the Global Competitiveness Index, in 2019, Serbia was ranked 72nd in the world (out of 141 countries), with its ranking among the lowest in Europe. Serbia lags behind the countries of the European Union in each of the areas of competitiveness. In terms of some of the organizational factors contributing to corporate entrepreneurship and innovation, Serbia is ranked lower than its overall rank. For example, some of these factors are attitudes towards entrepreneurial risk (107th), willingness to delegate authority (82nd), companies embracing new ideas (80th), the extent of staff training (104th), quality of vocational training (84th), reliance on professional management (114th) (WEF, 2019).

This paper aims to investigate the correlation between organizational characteristics and the level of innovativeness in the companies in Serbia. The research aims to find which organizational characteristics can positively influence the introduction of new products and processes. The main hypothesis, which will be tested in the research is: "High level of management maturity positively affects the level of innovativeness in the companies in Serbia." This hypothesis will be tested through correlation analysis, by using statistical tests to check a correlation between 15 organizational characteristics and two indicators of innovativeness. Most of the mentioned organizational characteristics refer to some aspects of management practice in companies. Thus, by examining the correlation between them and innovativeness

indicators, it is possible to determine whether the level of maturity of certain aspects of management practice affects the introduction of new products and processes in companies in Serbia. In this way, it would be possible to create a basis for establishing management models in companies in Serbia that encourage innovation.

Methodology

Based on the previous thematic review, corporate entrepreneurship and innovativeness are greatly important for company's and country's development in the modern economy. Also, a literature review established a list of factors for which there is both theoretical and practical evidence to influence innovativeness in organizations. Following the need to improve innovativeness in companies in Serbia, this paper will present an analysis of the correlation between 15 organizational characteristics and two innovativeness indicators in a representative sample of Serbian companies. The mentioned analysis was conducted on a sample of 339 organizations, included in the World Bank Enterprise Survey, which concerned the business environment in Serbia. This survey was conducted during 2019, and it covered companies of various industries, as well as sizes in terms of the number of employees. The Serbia 2019 Enterprise Survey (ES) covered the topics, such as general information of the firm/establishment, infrastructure, and services, sales and supplies, management practices, degree of competition, innovation, capacity, time use of top manager, land and permits, crime, finance, business-government relations, labour, business environment, performance, green economy module, environment-related aspects. The sample includes companies ranging in size from five to 13 thousand employees, and in terms of industry, they are divided into six categories: manufacturing, retail, wholesale, construction, hotels and restaurants, and services (The World Bank, 2019).

The sample for 2019 Serbia ES was selected using stratified random sampling. Three levels of stratification were used in this country: industry, establishment size, and region. As it is standard for the ES, the Serbia ES was based on the following size stratification: small (5 to 19 employees), medium (20 to 99 employees), and large (100 or more employees). Regional stratification was done across four regions: Belgrade, Šumadija and Western Serbia, Southern and Eastern Serbia, and Vojvodina. The ES indicators are calculated with some regions combined to achieve the thresholds for representativeness. Particularly, Šumadija and Western Serbia, and Southern and Eastern Serbia are combined. The survey was implemented following a 2-stage procedure. Typically, first, a screener questionnaire was applied over the phone to determine eligibility and make appointments. Then a face-to-face

interview took place with the Manager/Owner/Director of each establishment. The Questionnaires have common questions (core module) and respectfully additional manufacturing- and services-specific questions. We have surveyed the eligible manufacturing industries using the Manufacturing questionnaire (includes the core module, plus manufacturing-specific questions). Retail firms have been interviewed using the Services questionnaire (includes the core module plus retail-specific questions). The residual eligible services were covered using the Services questionnaire (includes the core module). The response rate was 36.5%.

Correlation analysis was performed in the SPSS program, using the Chi-square coefficient and the Cramer's V test. Fifteen organizational characteristics, representing independent variables in correlation analysis, were selected from the questionnaire based on a review of the relevant literature (similar research) and the assumption that these organizational characteristics may impact innovativeness. When it comes to innovativeness indicators (dependent variables), indicators which were chosen, directly express the outcome of innovation activities in companies. All variables are categorical since all questions in the questionnaire were closed.

Results and Discussion

Table 1 shows the organizational factors and innovativeness indicators that are included in the correlation analysis. Also, the value of the correlation between each of the variables is given.

A formalized, written business strategy with clear key performance indicators in companies in Serbia positively contributes to product and process innovation. A strong correlation in terms of process innovations and somewhat weaker in terms of product innovations indicate that Serbian organizations are primarily oriented towards creating a cost advantage through the so-called managerial innovations, driven primarily by market forces and less by technology. Managerial innovations concern approaches to devise strategy and structure of tasks and units, modify the organization's management processes and administrative systems, motivate and reward organizational members, and enable organizational adaptation and change (Damanpour & Aravind, 2012). Although almost 44% of surveyed companies stated that they had introduced a new product in the previous three years, a large percentage of them do not have a defined strategy (42%). This result indicates that product innovations in Serbia are not often the result of companies' long-term and strategic orientation but ad hoc activities, which respond to current market demand. To improve competitiveness, companies in Serbia should pay more attention to long-term

Table 1. Correlation between organizational characteristics and innovativeness indicators

Organizational characteristics \ Innovativeness indicators	Introduction of new or improved products or services during the last three years (Yes/No)		Introduction of any new or improved process during the last three years (Yes/No)	
	Chi-square	Cramer's V	Chi-square	Cramer's V
Formalized, written business strategy with clear key performance indicators (Yes/No)	6.536*	0.140*	12.857**	0.197**
Production targets such as production volume, quality, efficiency, waste, or on-time delivery (Yes/No)	15.791**	0.275**	5.739*	0.166*
Number of performance indicators that are monitored at the company (1-2 indicators / 3-9 indicators / 10 or more indicators)	14.002**	0.292**	24.104**	0.383**
Ease of achieving the company's production targets (Achieved without much effort / Achieved with some effort / Achieved with normal amount of effort / Achieved with more than normal effort / Achieved with extraordinary effort / Not achieved)	15.398**	0.289**	20.994**	0.338**
Internationally recognized quality certification (Yes/No)	8.914**	0.165**	7.398**	0.150**
Formal training programs for company's permanent, full-time employees (Yes / No)	38.012**	0.336**	19.549**	0.241**
Awareness of management and employees about the company's production targets (Only senior managers / Most manager and some production workers / Most managers and most production workers / All managers and most production workers)	4.272	0.152	16.733**	0.302**
Time frame of the company's production targets (Long-term / Short-term / Both)	6.579*	0.189*	5.188	0.168
Main market in which the company sells its main product (Local / National / International)	15.169**	0.213**	8.975*	0.164*
Spending on the acquisition of external knowledge (Yes/No)	29.714**	0.298**	47.011**	0.375**
Spending on research and development activities within the company (Yes/No)	37.519**	0.335**	24.995**	0.273**
Frequency of meetings of top managers with employees involved in production activities (Never / Once a week / 2-4 times a week / Daily / More than once a day)	5.064	0.199	1.747	0.117
Way of promoting non-managers in a company (Based solely on performance and ability / Based partly on performance and ability, and partly on other factors / Based mainly on other factors / non-managers are normally not promoted)	10.944*	0.238*	6.353	0.181
Company's main activity and product (Manufacturing / Retail trade / Wholesale trade / Construction / Hotel or restaurant / Services)	9.863	0.171	4.050	0.110
Company's size - number of employees (Small / Medium / Large)	8.629*	0.160*	30.151**	0.300**

Notes: A mark (*) indicates a correlation where the significance is less than 0.05, while (**) indicates a correlation with a significance less than 0.01. The brackets show the answers offered in the questionnaire for each of the question concerning the given organizational characteristics.

planning by defining appropriate business strategies. Also, in line with the challenges of modern business, an integral part of these strategies should be constant innovation, both process and product.

The existence of defined production targets has a positive effect on product and process innovation in companies in

Serbia. Namely, defining clear, precise, and quantitative production targets contributes to the efficiency of management by monitoring the production flow and taking preventive and corrective measures to achieve the goals. The factors closely related to the production goals are the performance indicators, monitored by an organization. Correlation analysis found that organizations that monitor more indicators are

more likely to innovate than those that monitor fewer indicators. Among the organizations that monitor 1-3 indicators, most organizations have not innovated their products and processes in the previous three years. However, among organizations that monitor 3-9 indicators, innovative organizations are in a slight majority. When it comes to organizations that monitor ten or more indicators, innovative organizations are in the significant majority. Production targets and indicators that an organization monitors reflect the level of management systematicity in the organization. Organizations that define production targets and monitor a larger number of indicators are more committed to sustainable business. Therefore, these organizations are aware of the space for improvement in their products and processes, and consequently, more often innovate in this field.

Companies in Serbia that have difficulties in achieving production targets more often implement product and process inventions. This is logical since companies that face difficulties in their work are almost "forced" to innovate their products and processes to achieve their targets more easily. On the one hand, this indicates that companies with difficulties in achieving their targets often see a way out of this situation by innovating their products and processes. On the other hand, with companies that easily achieve their goals, there is not enough awareness that innovation is a continuous process, which provides a long-term competitive advantage. In other words, one company needs to innovate continuously and not only when it has business problems.

Establishing a management system, which is in line with the requirements of international standards, contributes to the introduction of new or improved products and/or services and the introduction of new and improvement of existing business processes. Namely, the requirements of international standards, created according to the Standard ISO 9001, imply the organization's orientation towards its customer's requirements and the commitment to continuous improvements. In this regard, organizations, to certify their management systems, must demonstrate compliance with the requirements of the standard. Monitoring and respecting customer requirements is one of the conditions to create a new product or improve an existing one since these activities are carried out to increase customer satisfaction and thus higher sales. The improvement of the processes is partly aimed at improving customer satisfaction because by improving the efficiency and the quality of production, a cheaper but also a higher quality product is created.

Employee training is another factor that affects the introduction of new products and improved business processes. Namely, the precondition for anything to be innovated is adopting as much existing knowledge as possible in a certain area. Only when organizations master existing knowledge

can they see opportunities for creating something new. In this regard, through regular employee training, they stay in touch with current innovations in their field of work, which encourages their creativity in creating new or improving existing products and processes.

Companies in Serbia where all managers and workers are familiar with production targets, more often innovate their processes, unlike those companies where only top management or a small circle of employees is familiar with the mentioned goals. By presenting production targets to employees at all levels in the company, it provides employees with the opportunity to gain insight into the broader picture of the company's functioning and, accordingly, to undertake activities to make improvements beyond their standard work tasks. Awareness of production targets allows employees to propose and implement inventions in the production process to achieve these targets. However, this factor does not affect product innovation in companies in Serbia. This can be explained by the fact that the process of developing new products and services is most often concentrated in departments such as research and development and/or marketing, so the workers in production and other departments are more committed to improving their work efficiency through process innovation.

This research showed that companies in Serbia, which are simultaneously focused on short-term and long-term goals, introduce more new products than organizations focused only on short-term or long-term goals. However, this factor also does not affect the frequency of business process improvements. One of the characteristics of successful strategic management is the combination of long-term and short-term perspectives. In other words, managers must have a vision of the future of their organization, while focusing on its current operational needs (Dess et al., 2008, p. 11). As one of the main conditions for competitiveness in today's economy, innovation can improve the organization's competitiveness long-term and short-term (depending on the type and scope of innovation). In this regard, the improvement of innovativeness in Serbia requires applying a strategic approach in companies, i.e., focusing on long-term and short-term perspectives.

When it comes to the main markets, companies that are primarily focused on the local market much less often create new or improve existing products and processes, unlike companies that operate in the national and international market. There are more competitors in national and international markets than in local ones, and there are also a larger number of customer groups with their own specific needs. The intensity of rivalry is exactly what leads companies in national and international markets to create new products more often since, in that way, they can maintain or improve

their competitive position in dynamic market conditions. Also, companies operating in larger markets are aware that process innovations can improve production efficiency and lower prices, which also contributes to a stronger competitive position.

The analysis found that the collection of external knowledge in purchase or licensing of patents and non-patented inventions, know-how, and other types of knowledge from other businesses or organizations contributes to innovation in terms of products and processes. Namely, by collecting external knowledge, organizations in many cases, directly gain the knowledge necessary to implement a particular invention, which could not be implemented with the existing knowledge fund.

A strong correlation was also found in organizations' investment in research and development and product and process innovation. Namely, organizations that have invested in research and development are more likely to innovate their products and processes. This information seems logical because for the implementation of radical inventions in an organization it is necessary to invest significant financial resources. However, it was noted in the sample that many organizations in Serbia implemented inventions without any investment in research and development. It is obvious that these are most often incremental innovations (innovations that aim at small and gradual improvements of products and processes). This information is encouraging because it indicates that companies in Serbia are aware that various types of innovations do not require financial investments. Through these innovations the company can be improved. Due to not-so-great strength of the Serbian economy, many companies face a lack of financial resources needed to invest in research and development. In this regard, the solution to improve innovativeness in Serbian companies should be sought in networks of innovations, i. e. cooperation of several companies in creating innovations, which shares costs, reduces risk, combines complementary knowledge and skills, and speeds up launching products, etc.

The number of meetings per week that the top manager holds with low-level managers and production workers has shown no impact on product and process innovation in companies in Serbia. Theoretically speaking, this factor can encourage innovation, since more frequent meetings of this type can reduce the barrier between employees at different levels of the organization and thus improve mutual communication. This can contribute to greater freedom of employees in creating new ideas and faster flow of information necessary for development and implementation of ideas. However, based on the obtained data, it is obvious that the frequency of meetings does not contribute to the improvement of innovativeness. Namely, the meetings' content themselves is also

important, i. e. the existence of two-way communication, which, in addition to simply issuing orders and reporting on the workflow, would include the exchange of ideas for innovation in products and processes.

The way non-managerial employees are promoted in Serbian companies impacts product innovations, but not on process innovations. Namely, companies where promotions were made solely based on performance and ability and not based on tenure and family connections more often introduce new or improve existing products. Fairness and ethics in employee promotion are a way to create a healthy work environment and greater motivation for employees. Also, employees interested in doing their job successfully are more willing to contribute to the organization by creating and implementing inventions. Based on the research results, promotion in an organization should include criteria regarding the ability to innovate, which would encourage employees to think more often about potential innovations in their work environment.

In the analysed sample of companies, no correlation was found between the companies' industries and their innovativeness. However, the organization's size was found to play a significant role in introducing new products and processes. Namely, it has been found that large organizations in Serbia introduce new products and processes more often than medium and small ones. This information is understandable when we consider that implementing innovations in the development of new products and radical improvement of processes is necessary to have sufficient financial resources and appropriate organizational infrastructure. For that reason, large companies in Serbia have an advantage in terms of the ability to implement product and process inventions.

Conclusion

Factors that contribute to innovativeness in Serbian companies coincide with the theoretical framework in this area. However, there is still room for improvement in the connection of corporate entrepreneurship with strategic management. Namely, the organization with a high level of management maturity aims to create a sustainable and long-term competitive advantage. As pointed out in the paper, innovativeness is one of the main conditions for competitiveness in today's economy. In this regard, creating innovations in an organization must be based on mature management practice, which combines long-term and short-term perspectives, precisely through the definition of strategy, and then through clear goals and performance indicators. Also, it is necessary to free the organizational structure and culture from bureaucratic barriers and simplify the communication between top management and

employees. Special attention needs to be paid to innovation networks, as this can address the lack of resources needed for research and development in Serbian companies.

The research presented in this paper was limited because it relied on a sample and questionnaire previously defined within the World Bank Enterprise Survey. In terms of innovativeness indicators, only product and process innovation were analysed. However, the issue of innovativeness is much more complex and requires a deeper analysis. Future research of this type in Serbia can be expanded and

focused on top management's attitude towards innovation, the existence of organizational infrastructure and human resources necessary for creating innovations, developing new ideas, etc. Additionally, the new survey may include other industries, in addition to those included in this one. Also, research of this type with the use of data from the World Bank Enterprise Survey can be conducted for other countries, which allows mutual comparison of management practices and defines universal conclusions about the impact of individual organizational factors on innovativeness in companies.

References

- Covin, J.G., & Miles, M.P. (1999). Corporate entrepreneurship and the pursuit of competitive advantage. *Entrepreneurship Theory and Practice*, 23, 47-63. DOI: <https://doi.org/10.1177/104225879902300304>
- Damanpour, F., & Aravind, D. (2012). Managerial innovation: Conceptions, processes, and antecedents. *Management and Organization Review*, 8(2), 423-454. DOI: <https://doi.org/10.1111/j.1740-8784.2011.00233.x>
- Dess, G. G., Lumpkin, G. T., & Eisner, A. B. (2008). *Strategic management: Creating competitive advantages*. The McGraw Hill Companies, Inc., New York.
- Goodale, J. C., Kuratko, D. F., Hornsby, J. S., & Covin, J. G. (2011). Operations management and corporate entrepreneurship: The moderating effect of operations control on the antecedents of corporate entrepreneurial activity in relation to innovation performance. *Journal of Operations Management*, 26(5), 669-688. DOI: <https://doi.org/10.1016/j.jom.2010.07.005>
- Guerra Guerra, A. (Ed.). (2018). *Organizational transformation and managing innovation in the fourth industrial revolution*. IGI Global. DOI: <http://doi:10.4018/978-1-5225-7074-5>
- Guth, W., & Ginsburg, A. (1990). Guest editorial introduction: corporate entrepreneurship. *Strategic Management Journal*, 11, 5-15.
- Hardiana, S. N., & Hastiadi, F. F. (2019). Overcoming the Middle-Income Trap: The Role of Innovation on Switching onto a Higher Income Group for ASEAN Member States. In *Globalization, Productivity and Production Networks in ASEAN* (pp. 57-86). Palgrave Macmillan, Cham. DOI: https://doi.org/10.1007/978-3-030-16510-9_3
- Hornsby, J., Naffziger, D.W., Kuratko, D., & Mantagno, R.W. (1993). An interactive model of corporate entrepreneurship process. *Entrepreneurship Theory and Practice*, 17(2) 29-37. DOI: <https://doi.org/10.1177/104225879301700203>
- Kuratko, D. F., Ireland, R. D., & Hornsby, J. S. (2001). Improving firm performance through entrepreneurial actions: Acordia's corporate entrepreneurship strategy. *Academy of Management Perspectives*, 15(4), 60-71. DOI: <https://doi.org/10.5465/ame.2001.5897658>
- Li, G., Hou, Y., & Wu, A. (2017). Fourth Industrial Revolution: technological drivers, impacts and coping methods. *Chinese Geographical Science*, 27(4), 626-637. DOI: <https://doi.org/10.1007/s11769-017-0890-x>
- Liu, C. (2017). International competitiveness and the fourth industrial revolution. *Entrepreneurial Business and Economics Review*, 5(4), 111-133. DOI: <https://doi.org/10.15678/EBER.2017.050405>
- McFadzean, E., O'Loughlin, A., & Shaw, E. (2005). Corporate entrepreneurship and innovation part 1: the missing link. *European Journal of Innovation Management*, 8(3), 350-372. DOI: <https://doi.org/10.1108/14601060510610207>
- Miric, A. A., Petrović, M., & Aničić, Z. (2019). Organizational innovativeness: factors that drive innovations in social enterprises in Serbia. *Management: Journal of Sustainable Business and Management Solutions in Emerging Economies*, 24(3), 47-59. DOI: <https://doi.org/10.7595/management.fon.2019.0014>
- Morris, M., Kuratko, D., & Covin, J. (2011). *Corporate entrepreneurship and innovation* (3rd ed.). Mason, OH: Cengage/South Western.
- Schumpeter, J. A. (1934). *The Theory of Economic Development*. Harvard University Press, Cambridge, MA.
- Schwab, K. (2016). *The Fourth Industrial Revolution*. World Economic Forum, Geneva, Switzerland.
- Smith, M., Busi, M., Ball, P., & Van der Meer, R. (2008). Factors influencing an organization's ability to manage innovation: a structured literature review and conceptual model. *International Journal of Innovation Management*, 12(04), 655-676. DOI: <https://doi.org/10.1142/S1363919608002138>
- Subramanian, A., & Nilakanta, S. (1996). Organizational innovativeness: Exploring the relationship between organizational determinants of innovation, types of innovations, and measures of organizational performance. *Omega*, 24(6), 631-647. DOI: [https://doi.org/10.1016/S0305-0483\(96\)00031-X](https://doi.org/10.1016/S0305-0483(96)00031-X)
- Vučković, A., Marinković, E., Majdarević, A. (2017). *Analysis of corporate entrepreneurship maturity – hierarchy based model*. II National conference with international participation „Information technologies, education and entrepreneurship – ITOP17“, Čačak, April, 8th-9th, 2017. (pp. 49-56) (In Serbian).

- WEF (2019). *Global Competitiveness Index 2019*. World Economic Forum. Retrieved from: http://www3.weforum.org/docs/WEF_TheGlobalCompetitivenessReport2019.pdf
- The World Bank (2019). *The Serbia 2019 Enterprise Survey Data Set*. Retrieved from: <https://www.enterprisesurveys.org/en/data/exploreconomies/2019/serbia>
- The World Bank (2020). *The Serbia 2019 Enterprise Survey*. Retrieved from: <https://microdata.worldbank.org/index.php/catalog/3721>
- Xu, M., David, J. M., & Kim, S. H. (2018). The fourth industrial revolution: Opportunities and challenges. *International Journal of Financial Research*, 9(2), 90-95. DOI: <https://doi.org/10.5430/ijfr.v9n2p90>
- Zahra, S. A., Nielsen, A. P., & Bogner, W. C. (1999). Corporate entrepreneurship, knowledge, and competence development. *Entrepreneurship Theory and Practice*, 23(3), 169-189. DOI: <https://doi.org/10.1177/104225879902300310>

Organizacijski dejavniki inovativnosti v srbskih podjetjih

Izвлеček

Ta članek analizira korelacije med več organizacijskimi značilnostmi in inovacijami proizvodov/procesov. Uporabili smo podatke Enterprise Survey Svetovne banke o 339 malih, srednjih in velikih podjetjih iz različnih industrijskih panog. Mnogi analizirani dejavniki v tej študiji so konsistentni s teoretičnimi dognanji iz literature na tem področju in se nanašajo na organizacijsko zrelost. Tudi dejavniki kot npr. velikost podjetja in industrijska panoga, ki ji podjetje pripada, so bili analizirani. Za preverjanje korelacij smo uporabili Hi-kvadrat test in Cramerjev V test. Analiza je pokazala korelacije med inovativnostjo in mnogimi organizacijskimi značilnostmi. V nekaterih primerih, v nasprotju s teoretičnimi dognanji, pa korelacije niso bile potrjene. Ugotovili smo, da na uvedbo novih proizvodov in/ali procesov v podjetje vplivajo oblikovana poslovna strategija, proizvodni cilji, število opazovanih kazalnikov uspešnosti, vzpostavitev sistema upravljanja kakovosti, programi usposabljanja za zaposlene s polnim delovnim časom, enostavnost doseganja proizvodnih ciljev podjetja, raven ozaveščenosti menedžmenta in zaposlenih o proizvodnih ciljih podjetja, poraba za aktivnosti raziskav in razvoja v podjetju in za pridobitev znanja iz okolja podjetja, način promocije zaposlenih, ki niso menedžerji, časovno obdobje proizvodnih ciljev podjetja, velikost podjetja in ključni trg.

Ključne besede: inovativnost, korporativno podjetništvo, korelacijska analiza, organizacijske značilnosti, Srbija