



ANALYSIS OF THE ELEMENTS OF PROCESS ORIENTATION AND ITS INFLUENCE ON THE PROFITABILITY OF COMPANIES IN THE REPUBLIC OF SERBIA

Ivana Brajdić

Puppet theatre, Niš, Republic of Serbia

Aleksandra Stoilković Randelović

Private company, Leskovac, Republic of Serbia

✉ aleksandras.randjelovic@gmail.com

Marija Radosavljević

University of Niš, Faculty of Economics, Republic of Serbia

✉ marija.radosavljevic@eknfak.ni.ac.rs

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Abstract: The fourth industrial revolution represents a challenge for most companies in terms of creating new business models that will be more flexible, adaptable and dynamic. This is why business process management has become an area of highest priority for most companies in recent years. Business process management can lead to business success by applying process orientation. Thousands of companies have adopted a process meaning. Business process-oriented companies outperform competitors in terms of financial and non-financial performance. Despite the topicality of the issue of process orientation, there is a lack of research on its presence in companies in the Republic of Serbia. The subject of this paper is the research of process orientation through the analysis of the key factors of Business Process Management and their impact on the profitability of the company.

Keywords: Business angels, angel investment, entrepreneurship

JEL classification: L25, M12, M21

1. Introduction

The competitive advantage of a company in the conditions of global competition is based on a complex set of accumulated knowledge and skills that find application in the business process of the company.

Companies are no longer a set of functional areas but a combination of highly integrated business processes. A continuous improvement of business processes is the basis of maintaining competitiveness. Hence, there is an increasing prevalence of the concept of process orientation.

According to Kohlbacher et al. (2011) process orientation means the level at which the company directs attention to its business processes, rather than highlighting the functional structure or hierarchy. Processes imply sets of activities in which employees and technology together create value (Dumas et al., 2018). Businesses must understand how processes work, how they are executed and how they are interconnected (Benraad et al., 2022). A higher level of business process maturity results in better control of results, achievement of set goals, improved prediction of business success (McCormack et al., 2009).

Improving process orientation is a common goal of numerous companies (Vom Brocke & Mendling, 2018). Empirical studies provide evidence that companies by improving their orientation towards business processes achieve a positive impact on the quality of processes and products (Raschke & Ingraham, 2010), customer satisfaction (Kohlbacher, 2009), financial results (Skrinjar et al., 2010), increase in innovation (Tang et al., 2013) and overall business performance (Kohlbacher et al., 2013). In order to improve process orientation, many companies are taking initiatives for Business Process Management (BPM) (Vom Brocke & Mendling, 2018).

BPM is an important topic of modern companies. As such, it has been present for many years among companies striving to improve business performance (Malinova et al., 2014). BPM can be defined as a set of methods, techniques and tools for identification, discovery, analysis, redesign, execution and monitoring of business processes in order to optimize their performance (Dumas et al. 2018). At the same time, BPM deals not only with analyzing, designing, developing and executing processes, but also considers the interaction between processes, controls, analyzes and optimizes them. This implies a permanent and constant commitment to directing and improving business processes of the company.

Although there are many advantages associated with BPM, the adoption of this concept is a complicated and time-consuming process (Buh et al., 2015). A large number of researches talk about how BPM should be used and implemented in companies (Trkman, 2010). Although the process orientation, and the BPM based on it, is characterized by topicality, in the Republic of Serbia (RS) the presence and level of BPM has been insufficiently examined. Therefore, the main task of this paper is to identify the key maturity factors of business process management in RS and their analysis. The aim of the study presented in this paper is to investigate the presence of process orientation through the analysis of the reached level of maturity of the key factors of BPM in the RS, their interrelationship and influence on the profitability of the company.

2. Elements of process orientation maturity

Extensive literature in the field of BPM (Bosilj Vuksic et al, 2008; Kohlbacher & Gruenvald, 2011; Milanovic Glavan et al, 2023) suggests that companies can improve business success by adopting a process orientation. Examining the presence of a business process view and its impact on business profitability involves monitoring the elements or maturity factors of BPM. Maturity factors function as levers on the BPM maturation path. Their importance is different when moving from a lower level of maturity. At the same time, by monitoring the level of maturity of individual factors, one can come to the conclusion that the company is at one level of maturity, while other factors may indicate the achievement of a different level of maturity of the company.

Numerous studies have been conducted in the area of BPM maturity elements and various BPM maturity factors have been identified (Trkman, 2010, Radosavljevic, 2015, Stoiljkovic Randjelovic et al., 2018, Milanovic Glavan et al, 2023). By reviewing the relevant literature, there are 3 to 16 maturity factors of BPM. In their work, McCormack & Johnson (2001) investigated the connection between process orientation and business success using three elements of process orientation. Certain authors (Bandara et al., 2009) list nine key factors of the Maturity method - Culture, Society, Communication, Information Technology, Strategic alignment, Employees, Project Performance Management, Measurement. In his research, Skrinjar (2011) also recommends including nine elements of BPM. A study conducted in 2013 (Bai & Sarkis, 2013) lists four key factors: Strategic alignment, Top Management SBPMort, Project Management and Collaborative Environment. Some authors (Rosemann & vom Brocke, 2015c) state as the basic elements for the successful implementation of BPM: Strategic alignment, Management, Methods, Information technology, Employees and Culture. Milanovic Glavan et al. (2023) propose nine elements, i.e. process orientation factors that the company must take into account in order to implement and improve BPM. These are the following factors: Strategic view, Defining and documenting business processes, Measuring and managing processes, Process-oriented organizational structure, Human resource management, Process-oriented employee culture and Process-oriented information technology.

Based on a review of the literature studying BPM maturity factors (Fisher, 2004; Rosemann et al, 2004; Rosemann & De Bruin, 2005a; Melenovski & Sinur, 2006; Trkman, 2010; Kolisa, Rosemann, 2010; – Tarhan & Turetken, 2016) and the author's previous research, the following processes are most often singled out as the key factors of BPM: Information technology, Organizational culture, Strategic alignment, Tools and techniques, Human resource management, Process leadership and Performance measures. The reached level of maturity of the BPM is precisely determined by the quality and presence of these factors. The aforementioned seven

factors will be the subject of research in this study in order to examine the presence of process orientation and their impact on the company's profitability.

Information technology - has a vital role in the implementation of BPM. In BPM, information technology means technologies and tools intended for modeling, analysis, simulation, control, automation and process management (Gabryelczyk & Roztock, 2018). The essence of information technology is reflected in the creation of a basis for the realization of business processes and activities and tasks within them, as well as for their monitoring and improvement. Its role is particularly important in connecting organizational units and establishing cross-functional cooperation. Numerous technologies appeared as part of the 4th industrial revolution. Their capabilities are promising in the field of integration and improvement of business processes both within companies and between different companies. These are the following technologies: Internet-of-Things (IoT), blockchain, embedded systems, wireless sensor network, industrial robots, artificial intelligence and other (Al-Rakhmi & Al-Mashari, 2020). A successful application of the mentioned technologies requires customized business processes.

Strategic alignment - BPM should be aligned with the company's strategy, that is, business processes must be designed, implemented, managed and measured in accordance with strategic priorities (Burlton, 2010), because this is the only way to achieve goals of the company. Compatibility with the strategy implies a tight connection of the company's priorities and business processes, enabling continuous and effective activities to improve business performance (Rosemann & de Bruin, 2006).

Organizational culture - often considered one of the strongest determinants of BPM success (De Bruin, 2009) and process performance (Schmiedel et al., 2020). Organizational culture is focused on the values shared by employees in the company (Tran, 2023). From the point of view of BPM, Organizational culture should create a favorable environment for cooperation and participation of all company members in accepting process orientation. An effective Organizational culture will include successful strategies, effective leadership, excellent employee performance and ethical philosophies (Kwarteng et al., 2022).

Human resource management - BPM must be supported and operationally managed by all employees in the company, starting from top and middle to lower management levels and employees in all units or departments in the company (Hrabal et al, 2020). Human resource management involves effective and efficient supervision of employees from the lowest levels up to managers, in order to achieve organizational goals (Steffensen et al, 2019). A strong HR system can create a context that leads to employee attitudes and behaviors that align with how the company wants employees to deal with change (Alfes et al, 2019). Human resource management can motivate and direct leaders into the desired direction (Leory et al, 2018). Therefore, alignment between HRM and BPM is significant

from the point of view of ensuring the contribution of employees (including managers) to the long-term success of BPM.

Tools and techniques - BPM as a complex undertaking aimed at optimizing business processes requires knowledge of a specialized set of tools or techniques. An effective use of these tools and techniques implies their application by the employees who are involved in business process improvement projects and possess adequate knowledge, abilities, skills and experience. Managers must demonstrate that they are committed to improving business processes by providing the necessary training to employees and supporting the implementation of the necessary tools. The tools and techniques that are most often used in process management are: Problem Solving Methodology (DRIVE), Process Mapping, Process Flow Diagram, Cause and Effect Diagrams, Brainstorming, Pareto Analysis, Statistical Process Control (SPC), Control Charts, Charts, Histograms...

Process leadership - refers to the establishment of relevant and transparent responsibilities, in terms of roles at different levels of BPM, with the aim of harmonizing rewards and directing actions. It represents an important link in the inter-functional connection in the company. Also, it can influence the reduction of resistance by participating in the elimination of potential conflicts within the company due to non-acceptance of the changes implied by the implementation of BPM. Process leadership should be focused on the interests of employees, management, suppliers and customers, all in order to achieve more efficient business processes and company performance (Seyffarth & Kuehnel, 2022).

Performance measures - represent a metric method that finds its way to application in order to quantify the efficiency and/or effectiveness of activities. Process performance measurement contributes to a better understanding of the process, the elimination of activities that do not contribute to the creation of value, enables the control of process realization and the alignment of strategic and process goals. In addition to financial, process performance measures also consider non-financial indicators such as: quality, time, costs, customer satisfaction - i.e. usefulness, process capability index and the like.

3. Research framework

The aforementioned key factors of BPM represent the framework for the conducted research. The aim of this study is to investigate the presence of process orientation in companies in the RS by analyzing the state of maturity of the key factors of BPM companies in the RS. Also, their interrelationship was examined in order to find opportunities for improving lagging factors. In this connection, by applying adequate analyses, the existence of the influence of the maturity factors on the profitability of the company was investigated.

The research is guided by hypotheses formulated on the basis of the research of other authors and the author's own research. Today's global market has raised awareness of the importance of business processes as the most important management concept. BPM can help a company to carry out business activities when faced with global challenges and competition (Rosemann & Vom Brocke, 2015). In the conditions of globalization of the world economy, the implementation of quantitative and qualitative changes in the business environment of a specific country is the basis of its competitiveness. With the increase in the competitiveness of the companies of a country, the growth of the profitability of its economy is ensured. According to the Competitiveness Index for 2019, the Republic of Serbia is successfully working on the adoption of information and communication technology and the improvement of the skills of the workforce, along with the development of digital literacy, which created critical conditions for the implementation and advancement of the BPM. The stated facts provide the basis for setting up the first hypothesis:

H1: Process orientation is present in companies in the RS.

Each of the discussed BPM maturity factors has a role in the company's progress on the maturity path. At the same time, it is possible to determine the level of maturity at which each element of the BPM is located individually. Namely, not all factors are at the same level of maturity. Discovering the factors that are a brake on the movement of companies on the path of maturity is significant. At the same time, it is important to emphasize that the company should take into account various factors of BPM, as well as the connections between them, and not to emphasize only some of them. Research conducted in 2013 (Bai & Sarkis, 2013) reveals a number of direct and indirect connections between the factors. Finding the interrelationship of BPM factors allows managers to focus on improving lagging factors by using the established correlation. Hence, the next hypothesis is formulated as follows:

H2: There is an interrelationship between all the key maturity factors of the BPM in the RS;

Extensive literature (Nyameboame & Haddud, 2017; Christiansson & Rentzhog, 2020) states that improving business processes contributes to a greater business success. McCormack & Johnson (2001) conducted an empirical study and confirmed that process orientation contributes to the connection of business processes and, at the same time, has a positive effect on business results. Skrinjar (2011) conducts research in the Republic of Slovenia and reveals the existence of a positive influence of process orientation on the success of business operations in this country. The research carried out by Milanovic Glavan and associates (2023) in the Republic of Croatia found that process orientation has a strong and direct influence on non-financial business success, while it has an indirect influence on financial success. The empirical analysis carried out by Benraad et al (2022)

provides similar findings, i.e. BPM directly contributes to the financial success of companies. Based on the previous claims and the author's earlier research, a third hypothesis was presented:

H3: The key factors of process orientation have an impact on the profitability of companies in the RS.

The research was conducted in 2023. The number of companies that participated in the survey is 54. The distribution of companies in the sample in terms of size is fairly even. Data collection was done using surveys. A survey questionnaire was used as a research technique.

Data were collected using one form of electronic questionnaire (email attachment). Namely, the questionnaire was created on the *Google docs* website and sent to the email addresses of companies in Serbia. This method of data collection is flexible in the sense that respondents fill out the survey in the part of the day when they are available. The data was collected by surveying mainly the owners and top managers of the company. Their participation ensures the success of the data collection process since they have the best insight into the company's current operations.

For the purpose of analysis, a scale from 1 to 5 was used, where 1 means that the statement is completely false, while 5 means that the statement is completely true. The questionnaire used for data collection contains two parts. In the first part of the questionnaire, the questions asked were aimed at collecting basic data about the companies and information about the interviewed managers (function of the manager, gender, age and years of work at the BPM...). The second part of the questionnaire included questions aimed at identifying the level of maturity of each of the key factors of BPM (Information technology, Organizational culture, Strategic alignment, Tools and techniques, Human resource management, Process leadership, Performance measures). By processing the data collected in this way, it is possible to investigate the degree of development of each factor individually and determine whether some of the factors lag behind in comparison with others. In this way, factors that are at a lower level of maturity are discovered and the need to emphasize their correction and improvement is observed.

The data collected using the survey questionnaire were processed with the help of SPSS (Statistical Package for the Social Sciences - SPSS) data analysis software. Specifically, descriptive statistics of the collected data were performed. Then, correlation and regression analysis were applied.

4. Research results and discussions

In order to investigate the reached level of maturity, it is necessary to use adequate interval groups. Based on the research on the elements of maturity and the level of

maturity of the BPM (Andjelkovic Pesic et al., 2012; Radosavljevic, 2015, Stoiljkovic Randjelovic et al., 2018), the application of the following method for determining the level of maturity reached is accepted (Table 1).

Table 1: Interval group levels of maturity

to 2,50	The second level of maturity
from 2,51 to 3,50	The third level of maturity
from 3,51 to 4,50	The fourth level of maturity
over 4,51	The fifth level of maturity

Source: Anđelković-Pešić, M, Janković-Milić, V, Anđelković, A. (2012). Business process management maturity model: Serbian enterprises' maturity level. *Ekonomika preduzeća*. Vol. 60. No. 3-4. p. 190-198.

The collected data were processed in the SPSS program. The obtained results of descriptive statistics are shown in Table 2. Starting from the previously accepted interval groups, it is possible to determine the reached level of maturity of the BPM factors.

The obtained results suggest that four of the seven BPM factors (Information Technology, Human Resource Management, Organizational Culture and Performance Measures) are at the fourth level of maturity, i.e. in the state of an optimized company. At this level of maturity, the emphasis on business processes is present throughout the enterprise, and employees show a reduced resistance to changes. The modern implementation of an adequate information system for monitoring the implementation of business processes is crucial for the transition to the fourth level of maturity.

Table 2: Descriptive statistics of the key BPM maturity factors

	N	Minimum	Maximum	Mean	Std. deviation
Information technology	54	1	5	4.11	1.040
Organizational culture	54	2	5	3.59	1.000
Strategic alignment	54	1	5	2.83	1.225
Tools and techniques	54	1	5	2.89	1.488
Human resource management	54	1	5	3.63	1.015
Process leadership	54	1	5	3.39	1.220
Performance measures	54	1	5	3.56	1.298

Source: Authors' calculation

The other three factors (Strategic alignment, Tools and techniques and Process leadership) are at the third level of maturity, that is, in the state of process orientation. BPM is the main characteristic of companies at the third level of maturity (Radosavljevic, 2016). It implies changing the employees' way of thinking, respecting management decisions, establishing cooperation between business functions. At this level of maturity, it is necessary to form a team of leaders responsible for achieving optimization from the beginning to the end of the process. The decisions made by the leadership team are often met with resistance from employees, so it is necessary to continue improving the organizational culture.

The highest level of maturity, starting from the accepted interval groups and obtained average grades, was not reached by any of the analyzed BPM factors. The most developed BPM maturity factor is Information Technology (4.11) and is at the fourth maturity level. By looking at the state of maturity of the observed factors, it is noticeable the existence of several maturity factors that lag behind in terms of the reached level of maturity. Strategic alignment, as one of the critical factors of BPM, is at the lowest level of maturity (2.83). A lower level of maturity compared to the reached level of maturity of the other key factors was recorded in the Tools and Techniques factor (2.89). Therefore, the application of process management tools in companies, as well as the compatibility of strategy and BPM, is a brake for further progress on the path of BPM maturity. The implementation of modern information technology is the main driving force and the mainstay of BPM. The application of installed technologies for the purpose of data collection is significant in order to process them using various tools and techniques and contribute to connecting the strategy with the objectives of the BPM. The lag of these factors can represent a significant limitation to the spread of process orientation throughout the company. However, the higher level of development in terms of the maturity of the Information Technology, Organizational culture, Human Resource Management and Process Leadership factors can be used as a good base for moving to a higher level of maturity and lagging BPM key factors. Key maturity factors of BPM at the third and fourth level of maturity, according to the results of descriptive statistics, hence it follows that *process orientation is present in companies in the Republic of Serbia*.

The analysis of the relationship between the key factors of the maturity of BPM companies in the Republic of Serbia was carried out using correlation analysis. Correlation explores the type (positive, negative, or none) and degree of association (strength of closeness) between two variables (Senthilnathan, 2019).

The results shown in Table 3 allow observing the relationship between the BPM maturity factors. It is possible to identify the connection between the factors as well as the strength of the connection and to determine the direction of the established connection. A significant strong positive correlation exists between the factors Performance measures and Process leadership (correlation coefficient is 0.568). The Tools and Techniques factor shows a significantly strong correlation with the Human Resource Management (correlation coefficient is 0.549) and Organizational

culture factors (correlation coefficient is 0.538). A significant strong correlation is also present between the factors Strategic alignment and Human resource management (correlation coefficient is 0.516) and the factors Strategic alignment and Tools and techniques (correlation coefficient is 0.510). A moderate positive correlation is present between the factors of a larger number of maturity factors, according to the results shown. The presented results *confirm the existence of mutual connection between the key factors of BPM*.

Table 3: Correlation analysis of key factors of BPM

		IT	OC	SA	TT	HR	PL	PM
IT*	correlation coefficient	1.000	.332*	.358**	-.016	.181	.216	.491**
	Sig. (2-tailed)	.	.014	.008	.908	.191	.117	.000
	N	54	54	54	54	54	54	54
OC	correlation coefficient	.332*	1.000	.275*	.538**	.320*	.413**	.416**
	Sig. (2-tailed)	.014	.	.044	.000	.018	.002	.002
	N	54	54	54	54	54	54	54
SA	correlation coefficient	.358**	.275*	1.000	.510**	.516**	.299*	.475**
	Sig. (2-tailed)	.008	.044	.	.000	.000	.028	.000
	N	54	54	54	54	54	54	54
TT	correlation coefficient	-.016	.538**	.510**	1.000	.549**	.390**	.319*
	Sig. (2-tailed)	.908	.000	.000	.	.000	.004	.019
	N	54	54	54	54	54	54	54
HR	correlation coefficient	.181	.320*	.516**	.549**	1.000	.404**	.393**
	Sig. (2-tailed)	.191	.018	.000	.000	.	.002	.003
	N	54	54	54	54	54	54	54
PL	correlation coefficient	.216	.413**	.299*	.390**	.404**	1.000	.568**
	Sig. (2-tailed)	.117	.002	.028	.004	.002	.	.000
	N	54	54	54	54	54	54	54
PM	correlation coefficient	.491**	.416**	.475**	.319*	.393**	.568**	1.000
	Sig. (2-tailed)	.000	.002	.000	.019	.003	.000	.
	N	54	54	54	54	54	54	54

* Correlation is significant at the 0.05 level (2-tailed).

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

Source: Authors' calculation

Legend:

*IT- information technology

OC- organizational culture

SA- strategic alignment

TT- tools and techniques

HR- human resource management

PL- process leadership

MP- performance measures

The determined relationships between the observed factors of maturity of BPM can be used to influence the growth of the maturity of the company. The Tools and Techniques factor shows a significantly strong and moderate correlation with all maturity factors, with the exception of the Information Technology factor. A significantly strong and moderate connection with other factors is achieved by the factor Strategic alignment. As we are talking about factors that are at a lower level of maturity than other BPM factors, these connections should be used in the direction of further research into the relationship between the aforementioned factors in order to, based on the results obtained, have an impact on increasing the maturity of lagging factors Tools and techniques and Strategic alignment.

The confirmed presence of process orientation in companies in the RS represents the basis for further analysis in the direction of researching the influence of the observed BPM factors on profitability of the company. For this purpose, a regression model was formulated. The dependent variable in the model is Annual Profit. The influence of the observed independent variables on the dependent variable was investigated: Information Technology, Organizational culture, Human Resource Management, Strategic alignment, Process Leadership, Tools and Techniques and Performance Measures.

Factorial variability (variability between groups) consists of differences that arise between different levels of the factor. Residual variability (variability within groups) consists of differences within a single factor that are the product of sampling randomness or other uncontrolled influences. The obtained results show that the factor variance (10,716) is far greater than the residual (1,434), which suggests that the influence of the factor is greater than the residual influence on the dependent variable. The ratio of factor and residual variance is quantified through F-statistics, which represents the final result of variance analysis methods. As we identify the null hypothesis of the analysis of variance with the absence of the influence of the factor on the dependent variable, it means that high values of the F statistic indicate the inaccuracy of the null hypothesis. The obtained result of the analysis of variance $F = 7,471$ shows the existence of the influence of the key factors of BPM on the profitability of the company.

Table 4: ANOVA

	Sum of Squares	df	Mean	F	Sig.
Between Groups	64.296	6	10.716	7.471	.000
Within Groups	532.130	371	1.434		
Total	596.426	377			

Source: Authors' calculation

Correlation analysis focuses on the strength and direction of the relationship between two or more variables, without assuming that one change is independent and the other dependent. Unlike correlation analysis, regression analysis represents a dependency or a causal relationship between one or more independent variables and a dependent change (Djordjevic et al, 2018). Using the regression analysis, the results shown in the following table (Table 5) were obtained.

Respecting the Sig. (2-tailed), it is possible to identify factors that create a statistically significant impact on the dependent variable, i.e. the annual profit of the company. Beta (Beta) coefficients show the influence of each factor individually on the annual profit, with a significance level that must be below 0.05. Based on the beta coefficient, the biggest single contribution to the annual profit is the Information Technology factor (0.433). This means that a unique increase in the Information Technology leads to an increase in annual profit by a value of 0.433. The influence of other factors on the achieved annual profit is remarkable, because the Sig. (2-tailed) is above 0.05.

Table 5: Regression analysis of the influence of business process management factors on company profitability

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Information technology	.687	.502		1.368	.178
Organizational culture	.316	.104	.433	3.027	.004
Strategic alignment	-.252	.120	-.332	-2.102	.041
Tools and techniques	-.050	.102	-.080	-.485	.630
Human resource management	.221	.090	.433	2.451	.018
Process leadership	-.026	.123	-.035	-.211	.834
Performance measures	.169	.098	.272	1.718	.093

Source: Authors' calculation

In order to complete the examination of the impact of key factors of maturity on the achieved performance, the interdependence of annual profit and the observed factors of maturity of BPM was also investigated using the correlation analysis. In this way, the strength and direction of the agreement between the key factors of the maturity of BPM and the annual profit of the company were investigated.

The presented results of the correlation analysis show that there is a moderate positive (0.356) correlation between the Process Leadership factor and the Annual Profit variable with a significance level below 0.05. Among the other factors of BPM maturity and Annual profit, the analysis shows the presence of a moderate and insignificant correlation, but also without confidence in the obtained results (significance level above 0.05).

Table 6: Correlation analysis of annual profit and key factors of BPM

		Annual profit
Information technology	correlation coefficient	.285*
	Sig. (2-tailed)	.037
	N	54
Organizational culture	correlation coefficient	.115
	Sig. (2-tailed)	.406
	N	54
Strategic alignment	correlation coefficient	.276*
	Sig. (2-tailed)	.043
	N	54
Tools and techniques	correlation coefficient	.303*
	Sig. (2-tailed)	.026
	N	54
Human resource management	correlation coefficient	.251
	Sig. (2-tailed)	.067
	N	54
Process leadership	correlation coefficient	.372**
	Sig. (2-tailed)	.004
	N	54
Performance measures	correlation coefficient	.313*
	Sig. (2-tailed)	.021
	N	54

Source: Authors' calculation

The obtained results provide the basis for the conclusion that there is partially a positive correlation between the achieved level of development of certain key process maturity factors and the achieved results of companies in the Republic of Serbia. Therefore, the last hypothesis is partially confirmed, i.e. *the key factors of process maturity partially influence the profitability of companies in the RS.*

Conclusion

The main goal of this study is to check the presence of process orientation in companies in the RS by analyzing the maturity of BPM factors. The collected data were subjected to statistical techniques and the obtained results were presented. Based on the presented results, the presence of process orientation among companies in the RS was confirmed.

The presence of process orientation is conditioned by the development of key factors of BPM. In this sense, the research on the maturity of the BPM factor is significant. Information technology represents the factor that is at the highest level of maturity, while Tools and techniques and Strategic alignment were identified as the lagging factors. The correlation analysis confirmed that the presence of mutual connection between BPM factors can be used for the purpose of improving the lagging factors.

The influence of the process orientation factor on profitability of the company in RS has been partially confirmed. Factors that influence the dependent variable, i.e. Annual profit, are Information Technology and Process Leadership. The results of the correlation analysis show the presence of a moderate positive correlation between Annual Profit and Process Leadership. The results of the regression analysis reveal the existence of the strongest influence on the annual profit of the Information technology factor. As it is a factor that characterizes the highest level of maturity in relation to other factors, it is important to use the established connections in order to improve the profitability of the company.

The results of this study provide practical guidance for managers. As the business environment becomes more competitive, managers must better understand the concept of process orientation and the issues of its practical application. Identifying the factor that is at the lowest level of maturity in relation to the other factors (Strategic alignment) puts before the managers the task of focusing more attention on connecting the formulated strategy with business processes, on familiarizing the employees with the strategy and increasing the interest of the employees in its successful implementation, through an improvement reward system in the company.

The conducted research has some limitations. First, the research sample is not representative for generalizations. Then, collecting data using a survey questionnaire implies the impossibility of avoiding all the shortcomings of the used technique. First of all, ambiguities in certain questions are possible, as well as respondents' reluctance to answer the questions objectively. In the future, a similar study could be conducted on a larger sample of companies using the interview method.

References

- Alfes, K., Shantz, A.D., Bailey, C., Conway, E., Monks, K., & Fu, N. (2019). Perceived human resource system strength and employee reactions toward change: Revisiting human resource's remit as change agent. *Human Resource Management*, 58(3), 239-252
- Al-rakhami, M. & Al-Mashari, M. (2020). Blockchain and Internet of Things for Business Process Management: Theory, Challenges, and Key Success Factors. *International Journal of Advanced Computer Science and Applications*. 11.
- Andjelkovic Pesic, M, Jankovic-Milic, V, Andjelkovic, A. (2012) Business process management maturity model: Serbian enterprises' maturity level. *Ekonomika preduzeca* Vol. 60, No. 3-4, p. 190-198.
- Bai, C., & Sarkis, J. (2013). A grey-based DEMATEL model for evaluating business process management critical success factors. *International Journal of Production Economics*, 146(1), 281-292
- Bandara, W., Alibabaei, A., & Aghdasi, M. (2009). Means of achieving business process management success factors. Paper presented at the Proceedings of the 4th Mediterranean conference on information systems.
- Benraad, M., Ozkan, B., Turetken, O. & Vanderfeesten, I. (2022). The influence of BPM-sBPMortive culture and individual process orientation on process conformance, *Business Process Management Journal*, 28 (8)
- Bosilj VukSic V., Milanovic Lj, Skrinjar R., Indihar Stemberger M. (2008).Organizational Performance Measures for Business Process Management: a Performance Measurement Guideline, Tenth International Conference on Computer Modeling and Simulation 2008, pp. 94-99
- Buh, B., Kovačić, A., & Indihar Stemberger, M. (2015). Critical success factors for different stages of business process management adoption—a case study. *Economic ResearchEkonomika Istraživanja*, 28(1), 243-257
- Burlton, R. (2010). Delivering Business Strategy Through Process Management. 10.1007/978-3-642-01982-1_1.
- Christiansson, M.T. & Rentzhog, O. (2020). Lessons from the BPO journey in a public housing company: toward a strategy for BPO, *Business Process Management Journal*, 26 (2), pp. 373-404
- Djordjevic V., Lepojevic V. & Jankovic-Milic V. (2018). Statistika u ekonomiji. *Ekonomski fakultet NiS*.
- De Bruin, T. (2009) Business process management: theory on progression and maturity. *PhD thesis*, Queensland University of Technology
- Dumas, M., La Rosa, M., Mendling, J. & Reijers, H. (2013). *Fundamentals of Business Process Management*. Springer, Berlin
- Dumas, M., La Rosa, M., Mendling, J. & Reijers, H.A. (2018) *Fundamentals of Business Process Management*. 2nd Edition, Springer, Berlin
- Fisher, D. M. (2004). The business process maturity model. A practical approach for identifying opportunities for optimization. *Business Process Trends*. 9(4), 11-15
- Gabryelczyk, R., & Roztock, N. (2018). Business process management success framework for transition economies. *Information systems management*, 35(3), 234-253
- Hrabal, M., Trcka, L. & Tucek, D. (2014).Process owner and his competencies, in Slavickova, P. (Ed.), *Knowledge for Market Use 2014: Media and Communication in the 21st Century*, Univ Palackeho v Olomouci, Olomouc 771 47, Czech Republic, pp. 415–428

- Kohlbacher, M. & Gruenwald S. (2011). Process orientation: Conceptualization and measurement. *Business Process Management Journal*, 17(2): 267-283.
- Kohlbacher, M., (2010). The effects of process orientation: a literature review. *Business Process Management Journal*, 16(1), pp.135–152
- Kohlbacher M. & Gruenwald S. (2021). Process orientation: conceptualization and measurement, Performance measurement system design. *International Journal of Operations and Production Management*, Vol. 25, No. 2, pp. 267-283. <https://doi.org/10.1108/14637151111122347>
- Kolukısa, A. & Turetken, O. (2016). Critical success factors of business process management: investigating the coverage of business process (management) maturity models. 10.5281/zenodo.3604451.
- Kwarteng, A., Simpson, S. N. Y., & Agyenim-Boateng, C. (2022). The effects of circular economy initiative implementation on business performance: the moderating role of organizational culture. *Social Responsibility Journal*, 18(7), 1311–134
- Lamghari, Z., Saidi, R., Radgui, M., & Rahmani, M.(2021). An operational sBPMort approach for mining unstructured business processes. *Revista de In-form'atica Te'orica e Aplicada*, 28(1):23–38
- Leroy, H., Segers, J., van Dierendonck, D., & den Hartog, D. (2018). Managing people in organizations: Integrating the study of HRM & leadership. *Human Resource Management Review*, 28(3), 249–257.
- Malinova Mandelburger, M., Hribar, B. & Mendling, J. (2014). A Framework for Assessing BPM Success. *ECIS 2014 Proceedings - 22nd European Conference on Information Systems*.
- Mccormack, K. (2001), Business process orientation: Do you have it? Placing an emphasis on processes will help organizations move forward, *Quality Progress*, 34, pp. 51-58.
- McCormack, K. et al. (2009), A global investigation of key turning points in business process maturity, *Business Process Management Journal*, 15(5), pp. 792-815.
- Melenovsky, M. & Sinur, J. (2006). *Having a BPM Maturity Model is Important for Long Lasting BPM Success*. Пpеузето ca: <http://www.BRCommunity.com/a2006/b325.htm>
- Milanovic Glavan, Lj. (2023). Procesna zrelost poduzeca u republici hrvatskoj. *Ekonomski misao i praksa*, 32 (1), 261-272.
- Milanovic Glavan, Lj.SuSa Vugec, D. & Bosilj VukSic V.(2023): Ispitivanje povezanosti procesne orijentiranosti i uspješnosti poslovanja, *Zbornik Veleučilišta u Rijeci*, Vol. 11 , No.1, pp. 31-48
- Nyameboame, J. & Haddud, A. (2017). Exploring the impact of outsourcing on organizational performance, *Journal of Global Operations and Strategic Sourcing*, 10(3), pp. 362 - 387
- Radosavljevic, M. (2016). Upravljanje poslovnim procesima primenom modela zrelosti. *Ekonomski fakultet. NiS*
- Raschke, R., & Ingraham, L. (2010). Business process maturity's effect on performance. *AMCIS 2010 Proceedings*.
- Rosemann M, vom Brocke J (2015c) The six core elements of business process management. In: Rosemann M, vom Brocke J(eds) *H&book on business process management 1*. Springer,Berlin, pp 105–122
- Rosemann, M. & De BruinT. (2005b). *Toward s a Business Process Management Maturity Model*.13th European Conference on Information Systems (ECIS 2005). Regensburg, Germany

- Schmiedel, T., Recker, J. and vom Brocke, J. (2020), The relation between BPM culture, BPM methods, and process performance: evidence from quantitative field studies, *Information and Management*, Vol. 57 No. 2, p. 103175, Elsevier B.V.
- Senthilnathan, S. (2019). Usefulness of Correlation Analysis Available at SSRN: <https://ssrn.com/abstract=3416918>
- Seyffarth, T. & Stephan K. (2022). Maintaining business process compliance despite changes: A decision sBPMort approach based on process adaptations. *Journal of Decision Systems* 31: 305–35.
- Seyffarth, Tobias & Kühnel, Stephan. (2020). Maintaining Business Process Compliance Despite Changes: A Decision SBPMort Approach Based on Process Adaptations. *Journal of Decision System*.
- Skrinjar R, Bosilj Vuksic V., Indihar Stemberger M. (2010). Adoption of Business Process Orientation Practices: Slovenian and Croatian Survey, *Business Systems Research*, 1(1-2)
- Skrinjar, R. (2011). Povecanje zrelosti procesne orijentacije renoviranjem i kompjuterizacijom poslovanja. Doktorska disertacija, Ekonomski fakultet, Univerzitet u Ljubljani.
- Skrinjar, R. & Trkman, P. (2013). Increasing Process Orientation with Business Process Management: Critical Practices. *International Journal of Information Management*. 33. 48-60.
- Steffensen, D. , Ellen III, B. , Wang, G. & Ferris, G. (2019). Putting the “Management” Back in Human Resource Management: A Review and Agenda for Future Research. *Journal of Management*. 45. 014920631881617. 10.1177/0149206318816179.
- Stoiljkovic Randjelovic, A. (2021). Razvoj okvira za povecanje procesne zrelosti. Doktorska disertacija. Ekonomski fakultet, Univerzitet u Nisu
- Tang, J., L.G. Pee & Iijim, J. (2013). Investigating the effects of business process orientation on organizational innovation performance. *Information & Management*, 50(6): 650-660.
- Tarhan, A., Turetken, O. & Reijers, H.A., (2015). Do Mature Business Processes Lead To Improved Performance? - A Review of Literature for Empirical Evidence. In *European Conference on Information Systems*. p. Paper 178.
- Tran, Q. H. N. (2023). A cross-cultural comparison of organizational culture: evidence from academic libraries in Vietnam & China. *Global Knowledge, Memory & Communication*
- Trkman, P. (2010). The critical success factors of business process management. *International journal of information management*, 30(2), 125-134.
- vom Brocke J & Mendling J (2018). *Business process management cases. Digital innovation and business transformation in practice*. Springer, Heidelberg

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ANALIZA ELEMENATA PROCESNE ORIJENTACIJE I NJEN UTICAJ NA PROFITABILNOST PREDUZEĆA U REPUBLICI SRBIJI

Apstrakt: Četvrta industrijska revolucija predstavlja izazov za većinu preduzeća u pogledu kreiranja novih poslovnih modela koji će biti fleksibilniji, prilagodljiviji i dinamičniji. Zbog toga je upravljanje poslovnim procesima postalo oblast od najvišeg prioriteta za većinu kompanija u poslednjim godinama. Upravljanje poslovnim procesima može dovesti do poslovnog uspeha primenom procesne orijentacije. Hiljade kompanija su usvojile procesni pristup poslovanju. Kompanije orijentisane na poslovne procese ostvaruju bolje rezultate u odnosu na konkurente, kako u finansijskim tako i u nefinansijskim performansama. Uprkos aktuelnosti teme procesne orijentacije, postoji nedostatak istraživanja o njenoj zastupljenosti u preduzećima u Republici Srbiji. Predmet ovog rada jeste istraživanje procesne orijentacije kroz analizu ključnih faktora upravljanja poslovnim procesima i njihovog uticaja na profitabilnost preduzeća.

Ključne reči: procesna orijentacija, upravljanje poslovnim procesima, zrelost, faktori

Authors' biographies

Ivana Brajdić is currently employed at the Puppet theatre Niš. She completed her bachelor and master studies at the Faculty of Economics, University of Niš, where she also has enrolled her PhD studies.

Aleksandra Stoilković Randjelović graduated from the Faculty of Economic in Niš in 2007 and in 2012 defended her Master's thesis at the Faculty of Economics in Niš, as well. She defended her doctoral dissertation in 2021 at the Faculty of Economics in Niš. She is the author and co-author of several papers in national and international journals. Her key interest areas are the following: process management, functioning of the enterprise, risk management.

Marija Radosavljević is a full professor at the Faculty of Economics, University of Niš. She obtained both Master's and PhD degree at the Faculty of Economics, University in Belgrade. Her research interests are entrepreneurship, business process management and quality management. During her scientific research career, she published more than 150 scientific papers, two textbooks and six monographs. She has participated in the realization of a number of domestic and international projects (Erasmus+). She is currently managing a Horizon Europe project USE IPM. She coordinated one cross-border cooperation project with Bulgaria (IPA framework), as well as a few projects financed by the Ministry of Education, Science and Technological Development of the Republic of Serbia (program activity: Development of higher education), the City of Niš and the Office for Local Economic Development and Projects of the City of Niš.