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INNOVATION CAPACITIES OF SERBIAN SMALL AND MEDIUM-SIZED ENTERPRISES*

Abstract

Innovative responses of enterprises in modern business conditions become a crucial prerequisite to achieve business success and to ensure long-term competitive advantage. Innovation as a key means of competitiveness and strategic positioning is particularly important for the survival, growth, and development of small and medium-sized enterprises (SMEs) considering the fact that they are exposed to many risks. In times of globalization, risks are more pronounced and the managements of these companies are required to search for new ways to compete. Combining their flexibility with the orientation to create superior value for customers, small and medium-sized enterprises can provide competitive advantage. This paper uses the existing theoretical views on the importance of creating innovative business models to explore the innovative capacity of SMEs in Serbia and to identify opportunities for its increase in order to improve business performance and integrate faster into the global economic trends.

Key words: innovation, changes, SMEs, business models, knowledge, business success

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ИНОВАЦИОНИ КАПАЦИТЕТИ МАЛИХ И СРЕДЊИХ ПРЕДУЗЕЋА У СРБИЈИ

Апстракт

Иновативно реаговање предузећа у савременим условима пословања постаје кључни предуслов остварења пословног успеха и обезбеђења дугорочне конкурентске предности. Иновативност, као кључно средство конкурентности и стратегијског позиционирања, посебно је важна за опстанак, раст и развој малих и средњих предузећа с обзиром на то да су изложена бројним ризицима. У условима глобализације ризици су израженији и од менаџмента ових предузећа се захтева трагање за новим начинима за конкурисање. Комбиновањем своје флексибилности са оријентацијом на стварање супериорне вредности за потрошаче мала и средња предузећа могу обезбедити конкурентску предност. Намера аутора у раду је да, полазећи од постојећих теоријских ставова о значају стварања иновативних пословних модела, истраже иновативни капацитет малих и средњих предузећа у Србији и идентификују могућности за његово повећање у циљу побољшања пословне успешности и бржег укључивања у светске економске токове.

Кључне речи: иновације, промене, мала и средња предузећа, пословни модели, знање, пословни успех

INTRODUCTION

Intense changes in the modern business environment require companies to constantly search for new grounds of competitive differentiation. In markets characterized by intense competition, a successful differentiation is the one that allows for better and more profitable service to the customers. A key factor for competitive differentiation of successful companies is their innovation, in terms of both modifying the existing and developing new products, services, and business processes. New products and jobs are the backbone of ensuring long-term growth and development of companies in times of intense competitive pressures, technological changes, and increasingly demanding consumers. However, in a dynamic business environment, such as the present time, their success is uncertain, especially regarding high-risk projects that, as a rule, involve a number of actors in the enterprise and outside of it and are based on the efficient use of the so-called "scarce" resources. Due to a large number of products that are experiencing market failure, there is great interest among researchers to focus their research on identifying the reasons for such failure. The results of numerous studies have confirmed a positive correlation between the investment in R&D and the volume of sales and profits (Jaruzelski, Dehoff, & Bordia, 2005, p. 4; Pervaiz, Shepherd, 2010, pp. 258-260). Comparison of a particular enterprise with an average investment in the sector does not

guarantee any realization of competitive advantage, as the R&D expenses of many market leaders are lower than the average of the industry they belong to (Gottfredson, Aspinall, 2005, p. 66). The selection of ideas, existence of strategic orientation and innovative climate in the enterprise, and organization and timing of the development and commercialization of products are considered more important than financial engagement of the enterprise (Kandybin, 2009, p. 5; Stanković, Djukić, 2011, p. 41).

Based on the fact that innovation is the key factor of competitive differentiation of modern enterprises, this paper explores the innovative possibilities of small and medium-sized enterprises in Serbia and their competitive capacity. In this sense, starting from the specificity and factual situation in the Serbian economy, the factors of innovativeness of small and medium-sized enterprises in the Nišava District will be identified as a basis for improving their competitiveness. A wider interest in empirical research coincides with the need for more intensive involvement of small and medium-sized enterprises from Serbia in the global market trends, and thus with the necessity of finding a competitive positioning.

INNOVATIVE BEHAVIOUR OF ENTERPRISES IN NEW BUSINESS CONDITIONS

The key trends that marked the business environment in recent decades have significantly changed the way enterprises conduct their innovative activities. In times of mass production and consumption, enterprises were trying to ensure growth and development through sophisticated techniques of investigating the needs and demands of their customers, business reengineering, and appropriate innovation management. Stages of production and consumption were in a symbiotic relationship. Innovative activities of enterprises were focused on addressing the identified problems of customers by developing products/services with superior performances compared to the competition and with reasonable investment. New products/services and business processes resulted from incremental and radical innovations. Unlike the incremental innovations that do not provide long-term maintenance of competitive advantage in the market, radical innovations are disruptive and have the potential for a profound impact on the competitiveness of enterprises (Srinivasan, Lilien, & Rangaswamy, 2002, p. 55; Tellis, Prabhu, & Rajesh, 2009, p. 3). Radical innovations are particularly important in rapidly changing markets, due to the impact of technology and demanding customers, short product life cycles, and intense global competition. Therefore, radical innovations are recognized as agents of creating economic growth of national economies (Story, Hart, & O'Malley, 2009, p. 952).

Orientation towards meeting the needs of customers better, faster, and more cheaply than the competition signified the dominance of the

Structural Innovation Paradigm, i.e. connecting specialized knowledge and skills within the enterprise and structuring business processes in order to generate market-friendly innovations (Simanis, Hart, 2009, p. 80). This innovative paradigm has the following characteristics: the focus on satisfying latent needs of customers; the consumption-based value; and transactional engagement of stakeholders. Focusing on meeting the latent needs of customers implies that customers, or society, have many hidden needs and desires they want to satisfy. Society legitimizes the role of enterprises to direct their activities towards meeting these needs and developing business models focused on the existing and latent needs. Latent needs are often the result of hesitation and scepticism of customers in relation to alternative products on the market. The role of marketing stimuli in transforming the latent into actual needs was critical in view of recognizing and understanding such needs by the consumers.

Enterprises that have adopted the structural pattern of innovative behaviour see themselves as entities that compete in the market by creating superior value for customers. This value is perceived by customers as a quality that the customer receives for the price paid. Customers are trying to establish a balance between the money they give and the quality that is delivered to them. Enterprises attempted to achieve their business goals by implementing cost leadership and differentiation strategies. Their implementation often depended on finding the specific sources of inputs and achieving operational efficiency. The interrelation of marketing and R&D functions was critical in the creation and commercialization of innovations.

The role of stakeholders in such conditions is crucial in bridging the gaps of knowledge, resources, and skills that may be essential in creating value for customers. The gaps include capabilities and tangible and intangible resources owned not by the enterprise but by different participants in the value chain. The knowledge gap pertains to the lack of information about the needs and requirements of consumers. The gap of resources includes tangible resources such as, for example, new technologies, but also intangibles such as social capital, trust, and cooperation. The skills gap can be internally oriented, like the efficiency of the supply chain management, or externally oriented, like the management of different contractual relationships with various partners. Relationship with stakeholders in the structural form of innovative behaviour is of a transactional character, whereby each party gives and receives value from another party, but with a low degree of interdependence and adjustment of values. Such behaviour results in numerous innovations that have changed the way people live and provided a better quality of life (computers, cars, etc.).

The environment in which contemporary enterprises operate continuously creates threats and challenges. Integration processes among the participants in creating value for consumers are increasingly intense. The

legislation, on the other hand, has drastically changed many markets and led to accelerated procedure of introducing new products (e.g. food or medical products). In order to avoid threats and challenges that the management of an enterprise faces and convert them into opportunities, it is necessary to continually train participants in the exchange to handle challenges in a new way. Intense competitive pressures have increased the risk of innovation and possible failures, particularly regarding high-risk projects based on new technologies and implemented in unknown markets. On the other hand, the requirements for rational use of resources and reduction of innovation risk to acceptable limits further increased under the influence of the current economic and financial crisis. A large number of business failures and inadequate returns on investment in innovation projects require new ways of enterprise behaviour and innovation management from managements of enterprises (Sinfield, Calder, Mcconnell, & Colson, 2012, p. 85; Bessant, Tidd, 2007, pp. 84-86; Bessant, 2003, p. 130).

Redefinition of the innovation paradigm is generated by the development of new technologies, which have changed the way of performing business activities and managing market relationships. Competitive success of enterprises in many markets and sectors depends on the development and application of new technologies (Tellis et al., 2009; Story et al., 2009). The decisions considering the choice of technology affect the efficiency of use of existing resources and competences, capabilities of enterprises' entry in new markets, conduct of new businesses, and definition of strategic priorities. The choice of technology is connected with limits to investment in programs regarding the development of technology that are implemented in new products sold by enterprises in the market, as well as with a decision whether enterprises will conduct business independently or jointly with other enterprises, horizontally and vertically in the value chain.

Additional requirements from an enterprise are caused by criticism from society and the active attitude of customers towards its overall activities. Responsible behaviour of the enterprise towards society, in terms of sustainable development and meeting ethical and environmental requirements, is a condition for its survival in the market. Enterprises reconfigure their business models in order to be successful in developing next generations of products based on the use of scarce resources on the one hand, and in order to meet environmental and ethical requirements on the other hand. To achieve sustainable growth, enterprises are turning away from the structural paradigm towards creating different innovation networks. Innovations in the new millennium will be the result of interconnection of all parts of the organization (internal networking) and connection with other entities (external networking) (Henke, Zhang, 2010, p. 3; Huston, Sakkab, 2009, p. 62; Ulwick, 2002, p. 13; Prandelli et al., 2008, pp. 17-18).

Networking of innovation resources within an organization or between organizations helps in sharing useful knowledge and skills, but also reduces the risk of innovation. This is particularly important for small

and medium-sized enterprises due to their lack of the resources needed to independently develop and commercialize innovations. Formal and informal innovation networks have the potential to generate a range of benefits that cannot be obtained by individual engagement of enterprises: innovative ideas, risk sharing, access to new technologies, lower costs, innovation development rate, and acquisition of innovation resources (Goffin, Mitchell, 2005, p. 85; Hoffman, 2005, p. 125). Such innovation paradigm is called the *Embedded Innovation Paradigm* (Simanis, Hart, 2009, p. 80). Its key features are: the focus on latent potentials; transformational engagement of stakeholders; and value based on relationships.

An enterprise that adapts its behaviour to new environmental conditions is guided by the core belief that there is a huge latent potential in today's society and economy for generating new forms and varieties of business and creating new types of enterprises and markets. The role of enterprises in contemporary society is reflected in ensuring economic growth of the society and creating opportunities for a greater participation of people in the economic activities. An important segment of these activities are innovations whose potential lies in all aspects of human life. Access to and release of this potential requires the exploitation of knowledge and experience of people and the design of different situations that they can face.

The new innovation paradigm significantly changed the role of stakeholders of enterprises. Enterprises see their chances to compete successfully in connecting with those who are crucial and in creating different types of business networks that are based on cooperation and partner relationships. Such engagement is a transformational process that creates a new behaviour of stakeholders. Effective management of innovations in the new millennium will take the form of the so-called "spaghetti model", which involves the construction and development of complex networks through which knowledge flows (Goffin, Mitchell, 2005, p. 91). The results of a survey that included world's 750 top managers have shown that 76% of the interviewed managers regard business partners and cooperation with customers the most important sources of new ideas, while internal R&D activities ranked only eighth in importance. This is understandable considering the fact that the same survey found that 30% of the revenue was generated by ideas from external sources (Boudreau, Lakhani, 2009, pp. 70-72).

The practice of many successful enterprises proves that the cooperation with different organizations and institutions contributes to the creation of added value for consumers and enhances the synergic effects of included enterprises. Formed knowledge networks are much more prepared for continual innovation of products and process services. They are more focused on consumers, react faster to their demands and market changes, decrease the risk, and enhance operating efficiency (Hakansson et al., 1999, p. 445). There are different forms of business networks depending on the

characteristics of included organizations and their aims and interests. The constituents of business networks can be in competitive relationship in the market (horizontal networks) or can be at different levels of a value chain (vertical networks) entering various forms of cooperation for the purpose of creating strategic and/or operative aims. The motives of external participants for becoming involved in the innovation process of a focal enterprise can be external and internal. Internal motives are related to building professional and personal identity, autonomy, intellectual challenges, entertainment and leisure, while external motives include:

- Realization of financial benefits, i.e. achievement of desired return on investment;
- Greater satisfaction of users' needs;
- Acquisition of skills and generation of interactive learning;
- Enhancement of reputation and generation of goodwill,
- Building of professional and personal identity;
- Intellectual challenge;
- Improvement of market position;
- Enhancement of mutual reciprocity (Sinfield et al., 2012, p. 71).

There are numerous companies that are dominantly oriented to external sources of innovation. One of them is the company *Procter&Gamble*, which turned away from internal innovation generation and innovations, by means of creating a strong function of R&D and the alliance with other business functions (especially the marketing function), towards open innovations (Huston, Sakkab, 2009, p. 62). High expenses of R&D, low productivity of this department, and low profitability of innovations made the management of the company focus on development and connection with different organizations and individuals in generating innovation, and not on mere outsourcing. This resulted in the development of numerous successful new products. As a result of this approach to innovations, the company currently generates more than 35% of new products from external export, increases the productivity of R&D by 60%, doubles the rate of innovation, and significantly reduces business expenses.

LIMITING FACTORS OF BUSINESS OPERATIONS OF SMES IN SERBIA

The role of small and medium-sized enterprises (SMEs) in the process of restructuring the economy of Serbia and preparing for European integrations is becoming increasingly important. Their comparative advantage lies in the flexibility, entrepreneurship, and innovativeness, or the ability to rapidly adapt to the changing environment. However, the comparative advantage of SMEs is not always transformed into a competitive advantage, due to exposure to risks. In times of business and markets globalization, the risks are more pronounced and require that the

management of these enterprises search for new ways of competing and focus on creating superior value for customers. A unique, distinct, and specific market value can be created only by innovative strategies (Stanković, Đukić, 2008, pp. 69-71). Such a reaction requires the creation of an organization that is ready to face two major challenges: adaptability, i.e. capacity to adapt to unstable market conditions, and arrangement pertaining to the organization's ability to effectively utilize its resources (Cunningham, 2008, p. 43; Siu, 2001, pp. 290-292).

A limiting factor for successful implementation of innovation strategies of SMEs in the Republic of Serbia is the creation of a stimulating business environment. The process of developing market infrastructure is a strategic goal of Serbia, i.e. its organizations and institutions at all levels. Establishment of the Agency for the Development of SMEs and Entrepreneurship by the Government of the Republic of Serbia in 2001 was aimed at supporting and helping their development.

Such an environment encourages enterprises to develop market orientation, transform into market managing systems (Stanković, 2004, p. 189), and contribute to counterbalancing regional development, thus increasing the standard of living and reducing unemployment. On the other hand, given the size of the SMEs and their inability to themselves perform a number of innovative activities, a limiting factor to improving their innovativeness is reflected in the existence of organizations dealing with research. According to the data of the Statistical Office of the Republic of Serbia, there were nearly 300 such organizations in Serbia in 2009, but there was also a large geographic unevenness in their number (the number is much higher in the northern than in the southern parts of Serbia) (SORS, 2011). The situation is similar with organizations that are registered as development centres. The data on registered development innovation and innovation centres reveal that the majority of such organizations are situated in Belgrade and Novi Sad and that they realized the largest number of projects funded by the state through authorized ministries; hence, the largest part of financial assets has been directed to these two centres.

The opportunities for the development of small and medium sized enterprises stem from different reasons. One of the most important reasons is an intensive orientation of large enterprises towards freeing themselves of activities (outsourcing) for which there is no key competitiveness and towards transferring them to small and medium sized enterprises. New business models and the Internet have reduced the imbalance in the information and resources of small and medium-sized enterprises, as well as in their competitiveness. The significant opportunity for the development of these enterprises comes from the decrease in entry impediments in the sectors that have traditionally been protected by state regulation. The advantage in the networking and connecting of competitiveness can be especially realized in the areas where R&D is the basic determinant of a

business success. Networking helps obtain the resources that represent a source of competitive advantage. A comparative advantage is reflected in faster generation of new products, access to new markets and technology, and reduction in expenses and risks in business, owing to the synergy of key competences, knowledge acquisition in the global market, etc.

EMPIRICAL RESEARCH

Methodology of research and research questions

We conducted empirical research starting from the role and importance of SMEs in increasing the competitiveness of Serbian economy and its innovation capacities. The purpose of our empirical research is to assess the innovation capacity of SMEs situated in the region of Niš. It is particularly important to identify activities in the innovation of products, services, and business processes of the surveyed SMEs, as well as to estimate the effects of these activities on business performances. Linking innovation activities with the achieved business performances should enable the formulation of conclusions about the potential of SMEs in Serbia to perform innovative activities and identification of opportunities for their increase.

Thus conceived purpose of empirical research determined the subject of research, which is based on relevant dimensions of innovativeness of SMEs and their influence on business success. Starting from the defined purpose of research and the number of limiting factors that affect the innovativeness of SMEs in Serbia, the empirical research has focused on the following relevant questions:

1. What type of innovation (innovation of a product, service, or process) is most common in the surveyed SMEs?
2. Is there a correlation among the business success of surveyed enterprises, i.e. the amount of generated income, the number of innovations, and the size of the enterprise?
3. Is there a correlation among the business success of surveyed enterprises, i.e. the amount of generated income and investment in R&D activities?

In the on-site data collection, we applied the method of interview. The survey was conducted on a sample of 304 SMEs. The starting point for the selection of enterprises (units in the sample) was the information of the Serbian Business Registers Agency on the number and structure of SMEs in the territory of the Republic of Serbia. Based on the database of this Agency, all active SMEs in the region of Niš were identified. To ensure the reliability and relevance of the data, we used the following criteria in the sample selection: that the enterprises are registered and that they perform business activities in the region of Niš; the enterprise size (small and medium-sized enterprises); the code of prevailing activities of the

enterprise (the choice was made according to the SME structure within specific activities); that the enterprise made a profit in 2010 and that it is export-oriented. The study was conducted through personal interviews on the basis of a pre-prepared questionnaire and in-depth interviews with enterprise managers. Data collection was carried out during the period from July 25 to December 30, 2011. In most of the cases, over 80%, the study was carried out directly, face to face. This contributed to a satisfactory response of the representatives of enterprises involved in the research.

The analysis of answers of the respondents was based on the application of descriptive statistical methods, as well as on the implementation of appropriate non-parametric techniques. At the key variables, an attempt was made to comprehend the relationship between them and, given the nature of the data, a series of chi-square tests was applied. The aim was to determine statistically significant interdependence between the business success of surveyed enterprises as the dependent variable and their innovation capacities (number, type of innovation, investment in R&D, and collaboration with the enterprise stakeholders) as the independent variables. All statistical analyses were processed with the SPSS statistical package version 18.0.

Research results

Descriptive statistical analysis reveals the following profile of the surveyed enterprises. Most of the surveyed enterprises are located in the region of Niš (78%, i.e. 236 enterprises). More than 2/3 (81.90%) of the surveyed enterprises belong to small enterprises, while the rest of them (18.09%) are medium-sized enterprises. The structure of enterprises by specific activities included in the sample also corresponds to the participation of small and medium-sized enterprises per individual activities. In this respect, most of the respondents belong to the wholesale and retail trade, secondary industry, professional, scientific, innovative and technical activities, construction industry, and transportation and warehousing (103, 79, 27, 22, and 17 enterprises, respectively).

The data on the number of innovations implemented in the last three years in the enterprises of different sizes and activities are very indicative. In the past 3 years, all three types of innovation (product, service, and process) were present in 9.2% of the surveyed enterprises, mostly in small enterprises (85.7% of total innovations) (see Table 1). The enterprises that have all three types of innovation are not dominant in any branch. Most of them are from the processing industry (47.7% of all innovations), but this figure needs to be interpreted with caution considering that the sample contains a large number of enterprises from this industry (26.49%). The fewest innovations appear in the sectors of energy supply, social security and health care, finance and insurance, and real estate business, but the number of these enterprises is also the smallest in the

sample. The total number of all mentioned types of innovations is also the largest in the enterprises belonging to the processing sector.

Table 1. Total number and type of innovations in view of the enterprise size

Total number of innovations		Enterprise size			
		Micro enterprise	Small enterprise	Medium enterprise	Total
0	Number of responses	2	49	14	65
	% of total innovations	3.1%	75.4%	21.5%	100.0%
	% within this type of enterprise	12.5%	21.0%	25.5%	21.4%
1	Number of responses	8	116	28	152
	% of total innovations	5.3%	76.3%	18.4%	100.0%
	% within this type of enterprise	50.0%	49.8%	50.9%	50.0%
2	Number of responses	5	44	10	59
	% of total innovations	8.5%	74.6%	16.9%	100.0%
	% within this type of enterprise	31.2%	18.9%	18.2%	19.4%
3	Number of responses	1	24	3	28
	% of total innovations	3.6%	85.7%	10.7%	100.0%
	% within this type of enterprise	6.2%	10.3%	5.5%	9.2%
Total	Number of responses	16	233	55	304
	% of total innovations	5.3%	76.6%	18.1%	100.0%
	% within this type of enterprise	100.0%	100.0%	100.0%	100.0%

Survey results indicate that the majority of the total number of enterprises declaring that they have realized some form of innovation made innovations related to a new product (43.67%), followed by innovations in new services (36.05% of the total number of innovative activities). The smallest number of innovations was made in the field of new processes (accounting for 20.28% of the actual innovation).

It is interesting to analyze the responses showing how the managers of surveyed enterprises assessed the success of their business. Namely, the intention was to learn whether enterprises that see themselves as the most successful have at the same time the highest innovation rate. Research shows that enterprises assessed as averagely successful by their managers had the highest number of innovations (this applies to all three or at least to one type of innovation: innovation of processes, products, and services).

The result is surprising – the averagely successful enterprises also include enterprises in which no innovation of any kind has been identified in the last three years.

We tested the abovementioned assumption that there is a correlation between the total number of realized innovations and perceptions of managers related to business performance, by using the chi-square test of independence. The results of this test challenged our initial assumption, since we obtained the p-value of 0.77, which by far exceeded the initial α -value of 0.05. In addition, we calculated the value of Cramer's V statistics and obtained the amount of 0.079, which reconfirmed the absence of correlation between these two variables. This substantiated the Serbian market imperfections and indicated the problem of managers' perception of business success.

When we examined the correlation between the total revenue generated and the number of innovations, we concluded that this relationship was not statistically significant (p-value obtained is 0.85 which by far exceeds the value $\alpha = 0.05$). The value of Cramer's V statistics in this case is 0.114, which is another confirmation of the conclusion that the number of innovations realized in Serbian enterprises is not directly related to the total income generated from these enterprises. The reason for these findings should be sought in the low commercialization of innovations.

It is interesting that nearly half of all the enterprises that have introduced new products in the last three years, or 47.7% of them, belong to the group of enterprises whose share of R&D expenses amounts to up to 1% of the actual business revenues. The enterprises with R&D expenses amounting to 5% or more of their business revenues participate with only 17.4% in the total number of enterprises that have introduced a new product, service, or process. Furthermore, almost three quarters of respondents (77%) considered their business success average and most of them come from the enterprises that invest up to 1% of their total revenue in R&D (45.4%). Furthermore, managers of the enterprises investing 1% of their total income in R&D assessed their business results as highly successful (8.9%) (see Table 2).

The results of testing the interdependence of investment in R & D on the one hand and business revenue on the other hand are very indicative. Contrary to our expectations, we did not find any interdependence between the two variables. Namely, the results of Pearson's chi-square were not significant (p-value was 0.432), which was also confirmed by Cramer's V Coefficient with the value of 0.079, which clearly indicates the lack of correlation between the investigated variables. The same result is obtained when determining the interconnection between R&D expenses and the accomplished business revenue of the surveyed enterprises. In fact, no statistically significant relationship between the actual investment in R&D and business success was found in any of the two previous cases. The

corresponding p-values are far above the initial risk of error $\alpha = 0.05$, while the Cramer's V values indicate an absence of correlation between the aforementioned variables. Finally, we could not prove a statistically significant interdependence between investment in R&D and size of the enterprise (p-value is 0.183 and Cramer's V is 0.101).

Table 2. Connection between investment in R&D and business success

Investment in R&D	Values	Business success			Total
		<i>Unsuccessful</i>	<i>Average</i>	<i>Highly successful</i>	
<i>up to 1%</i>	Number of enterprises	13	138	27	178
	% of R&D expenses	7.3%	77.5%	15.2%	100.0%
	% of success	65.0%	59.0%	54.0%	58.6%
	% of total	4.3%	45.4%	8.9%	58.6%
<i>1 to 5%</i>	Number of enterprises	3	70	18	91
	% of R&D expenses	3.3%	76.9%	19.8%	100.0%
	% of success	15.0%	29.9%	36.0%	29.9%
	% of total	1.0%	23.0%	5.9%	29.9%
<i>5+%</i>	Number of enterprises	4	26	5	35
	% of R&D expenses	11.4%	74.3%	14.3%	100.0%
	% of success	20.0%	11.1%	10.0%	11.5%
	% of total	1.3%	8.6%	1.6%	11.5%
Total	Number of enterprises	20	234	50	304
	% of R&D expenses	6.6%	77.0%	16.4%	100.0%
	% of success	100.0%	100.0%	100.0%	100.0%
	% of total	6.6%	77.0%	16.4%	100.0%

Conclusions and implications for decision makers

Numerous studies have shown that innovation is the key factor for the survival and development of enterprises, especially in the context of rapid technological and market changes. The results we obtained through empirical research indicate the existence of certain peculiarities related to innovation activities of SMEs in Serbia and their effects on business success and competitiveness in the market. The responses show that the importance of innovation activities for the strategic positioning in the market has been recognized by the surveyed enterprises. However, the intensity of such activities (determined according to the number and types of innovations) is unsatisfactory (taking into account the number of innovations and the investment in R&D). The analysis of results showed that during the period from 2008 to 2011 one fifth of the surveyed enterprises did not have any innovation, while 9.2% of the surveyed enterprises had all three types of innovations. Among the companies that implemented innovative activities, the most numerous are those whose innovations are related to products, followed by the introduction of new service and process innovations. An unsatisfactory state of affairs regarding

innovative activities was also indicated by the research results related to investment in R&D activities in view of the fact that a small number of enterprises (17.4%) allocate more than 5% of their total revenues for these activities.

Surprisingly, all types of innovation (product, service, and process innovation) are prevalent in the category of small enterprises. During the period from 2008 to 2011, the surveyed medium-sized enterprises in Serbia had problems with maintaining liquidity, which is why their investments in innovation activities were low. Broken down by industry branch to which the surveyed enterprises belong, it can be concluded that the enterprises that were rated as the most innovative (having all three types of innovations) are not dominant in any branch. In fact, most of the innovations have been made in enterprises that belong to the processing industry, which may be attributed to their number in the sample rather than to their innovativeness.

The results of determining the interdependence of the number of innovations and business success are highly indicative. Namely, searching for an answer to whether the enterprises regarded as the most successful by their managers at same time had the highest innovation rate, we obtained the results showing that the enterprises whose managers assessed them as averagely successful realized the largest number of innovations (this applies to all three or at least one type of innovation: innovation of processes, products, and services). Surprisingly, the results show that among the averagely successful enterprises there are also enterprises where no innovation of any kind was identified in the last three years. By applying the chi-square test of independence and Cramer's V statistics, we determined a low correlation between the number of innovations and perceptions of managers on their own business success. This situation can be explained by the fact that the business success of SMEs in Serbia is not predominantly dependent on the intensity of innovation, but on other factors, as well. In the first place, these are the factors caused by global economic crisis, due to which the intensity of competition weakens in certain market segments, while the flexibility of the demand is expressed in terms price, not quality.

Comprehension of highly interdependent business success and level of investment in R&D activities is not dominant because of the shift of enterprises toward the so-called open innovations and generation of innovations by connecting with various organizations and individuals. The completed empirical study shows that the increase in expenses for R&D is proportional to the number of innovations but not to the business success. Namely, we found that the enterprises that had one type of innovation allocate 1% of the realized business revenues to R&D activities, while this percentage is much higher in the enterprises that had all the three types of innovations during the past three years. On the other hand, the results of Pearson's chi-square (p -value is 0.432), confirmed by

Cramer's V Coefficient (0.079), indicate a lack of correlation between the R&D costs and realized business success of the surveyed enterprises.

The empirical research, the results of which are presented in this paper, has several limitations that should be considered in order to conduct further research. Coverage and size of the sample are the most important limitations of this empirical study, due to which the research results cannot be considered relevant to all Serbian SMEs. Therefore, this study should be considered a pioneering attempt to analyze the innovation capacities of SMEs in Serbia and their relationship to business success, but also to point out the need for the accomplishment of future research.

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ИНОВАЦИОНИ КАПАЦИТЕТИ МАЛИХ И СРЕДЊИХ ПРЕДУЗЕЋА У СРБИЈИ

Резиме

Иновативно реаговање предузећа у савременим условима пословања постаје кључни предуслов остварења пословног успеха и обезбеђења дугорочне конкурентске предности. Иновативност, као кључно средство конкурентности и стратегијског позиционирања, посебно је важна за опстанак, раст и развој малих и средњих предузећа с обзиром на то да су изложена бројним ризицима. У условима глобализације ризици су израженији и од менаџмента ове групе предузећа се захтева трагање за новим начинима за конкурисање. Комбиновањем своје флексибилности са оријентацијом на стварање супериорне вредности за потрошаче мала и средња предузећа могу обезбедити конкурентску предност. Умрежавање иновационих ресурса унутар и између предузећа помаже дељењу корисног знања и способности и смањује ризик иновација. Ово је посебно важно за мала и средња предузећа због недостатка ресурса неопходних за самостално развијање и комерцијализацију иновација.

Улога малих и средњих предузећа у процесима реструктурирања привреде Србије и укључивања у европске интеграције постаје све значајнија. Полазна основа емпиријског истраживања је управо улога и значај малих и средњих предузећа у повећању конкурентности српске економије и њеног иновационог

капацитета. Сврха емпиријског истраживања је утврђивање иновационог капацитета малих и средњих предузећа која припадају региону Ниш. Повезивање иновационих активности са пословним перформансама требало је да омогући формулисање закључака о потенцијалу малих и средњих предузећа у Србији за обављање иновационих активности и идентификовање могућности за њихово повећање. Истраживање је реализовано на узорку од 304 мала и средња предузећа.

Резултати добијени емпиријским истраживањем указују на постојање одређених особености када је реч о иновационим активностима малих и средњих предузећа из Србије и њиховим ефектима на пословни успех и конкурентност на тржишту. Из одговора се види да је значај иновационих активности за стратегијско позиционирање на тржишту препознат од стране анкетираних предузећа. Међутим, интензитет таквих активности (процењен на основу броја и типова иновација) је незадовољавајући (имајући у виду број иновација и улагање у истраживање и развој). Најбројнија су предузећа у којима су иновације везане за увођење нових производа, следи увођење нових услуга и иновирање процеса.

Изненађује податак да су све врсте иновација (иновације производа, услуга и процеса) најзаступљеније у категорији малих предузећа. То се може објаснити чињеницом да средња предузећа у Србији имају проблем одржавања ликвидности због чега су улагања у иновационе активности мала. Посматрано по гранима којима припадају анкетирана предузећа, може се закључити да предузећа која су оцењена као најиновативнија (имају све три врсте иновација) нису доминантна ни у једној грани. Наиме, највећи број иновација је остварен у предузећима која припадају прерађивачкој индустрији што се пре може повезати са њиховим бројем у узорку, а не са њиховом иновативношћу.

Хипотеза о високој међузависности пословног успеха и нивоа улагања у активности истраживања и развоја је потврђена, што се може објаснити окретањем ове групације предузећа ка отвореним иновацијама и генерисању иновација повезивањем са различитим организацијама и индивидуама. Реализовано емпиријско истраживање је показало да је повећање трошкова истраживања и развоја пропорционално броју иновација, али не и пословном успеху предузећа.

Емпиријско истраживање чији су резултати презентирани у овом раду има неколико ограничења која треба имати у виду у циљу спровођења даљих истраживања. Обухватност и величина узорка су најважнија ограничења због којих се резултати истраживања не могу сматрати релевантним за сва мала и средња предузећа у Србији и везу са пословним успехом, али и да се укаже на реализацију будућих истраживања.