

THE INFLUENCE OF INNOVATION ON THE ENTERPRISE COMPETITIVENES

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ABSTRACT

Research subject of this paper is the establishment of innovations as a factor of competitiveness and the realization of company's market share, bearing in mind that the size of market share cannot be defined once and for all, as well as that competition is going through constant changes. Research objective of this paper is to define innovations as the crucial factor for increasing company's market share and its competitiveness in the long run. Research was carried out in 2016 based on a specially designed questionnaire on a sample of 100 organizations in the territory of Serbia. There were 96 returned and validly filled out questionnaires that were taken into consideration during data processing. Methods used in this research are hypothetic-deductive, analytic-deductive and comparative methods, historical and statistical-descriptive methods and finally methods of comparative statistics (χ^2 test, ANOVA). In key results of the research it is confirmed that the innovation of the organisation and innovative activities of its employees influence the increase of its market share and competitiveness, with significant differences of the values depending on the organisation size, years of operating, level and different kind of industry the organisation operates in. Paper contribution can be seen in support of organization's innovativeness and competitiveness as the function of business success, the linkages between innovative capacity, innovativeness and business. Positive results support also the greater investments into new and innovative projects of business subjects, from innovations of products, technology and material, organization and methods of management, to market innovations.

Keywords: *competitivenes, firm objectives, innovation, knowledge, market share, market design, statistical methods*

1. INTRODUCTION

It is difficult to ensure satisfactory business performances in the conditions of fast market and technological changes. In such challenged conditions enterprises/organizations operate innovations could represent the crucial factor of business success and achievements of superior performances. Starting from theoretical bases and successful practical experiences stating that technology is a significant factor of competitiveness and economic growth, to use and develop the potentials of innovations their adaptation and technology transfer would be the opportunity for economic growth in an organization, but in the country too.

Creation of commercially acceptable and competitive innovations is conditioned on the finding of specific sources and abilities and on achieving operative efficiency. There are numerous sources of information for realizing innovative activities, from suppliers of materials, equipment, components or software, clients, consultants, buyers/consumers, as well as other organization's stakeholders that deal with the activities of research and development. Business practice experiences show that organizations with superior business performances based on knowledge are flexible striving to create a unique value for consumers by constantly introducing innovations. In order to achieve sustainable growth and competitiveness, modern companies are increasingly turning towards the creation of different innovation networks. In that way, innovations are becoming the result of networking between all parts of one organization (internal networking) and networking with all other entities (external networking). Changes in market conditions and basis for competitiveness have led to changes in profiling and realizing innovation strategies. Thanks to new communication technologies, clients and final users are being self-initiatively involved in company's innovation activities.

They are motivated by the loyalty to the product, enthusiasm, need to explore, creativity, cooperation with the company, and all of these are becoming an increasingly important source of new ideas and changes in behaviour on the market. Hence, for a planned business success, new ways of company behaviour and innovation management have to necessarily be present. Innovativeness, researching, development and knowledge are considered important drivers of productivity and growth whereas organizations are given the leading role in the process of creating knowledge as a precondition for their business success.

Knowledge is a unique resource that increases organizations' innovation performances and competitive advantage on the market. In this sense, innovative organizations are identified as business subjects that, in the observed period, implemented a product or process innovation, innovation inside the company or marketing innovation. Low country's competitiveness context for Serbia, 90th of 138 countries measured by Global Competitiveness Index (World Economic Forum, 2017) (Table 1; Figure 1) is further motive to research the level of innovativeness of domestic enterprises, and to show how the innovation as factor of importance, influence the increase of their market share and competitiveness.

Table 1: Serbia GCI 2017

Rank / 138	Score (1-7)	Trend	Distance from best
Subindex C: Innovation and sophistication factors	120	3.1	
11th pillar: Business sophistication	125	3.2	
12th pillar: Innovation	108	3.0	

Source: World Economic Forum, Executive Opinion Survey 2016

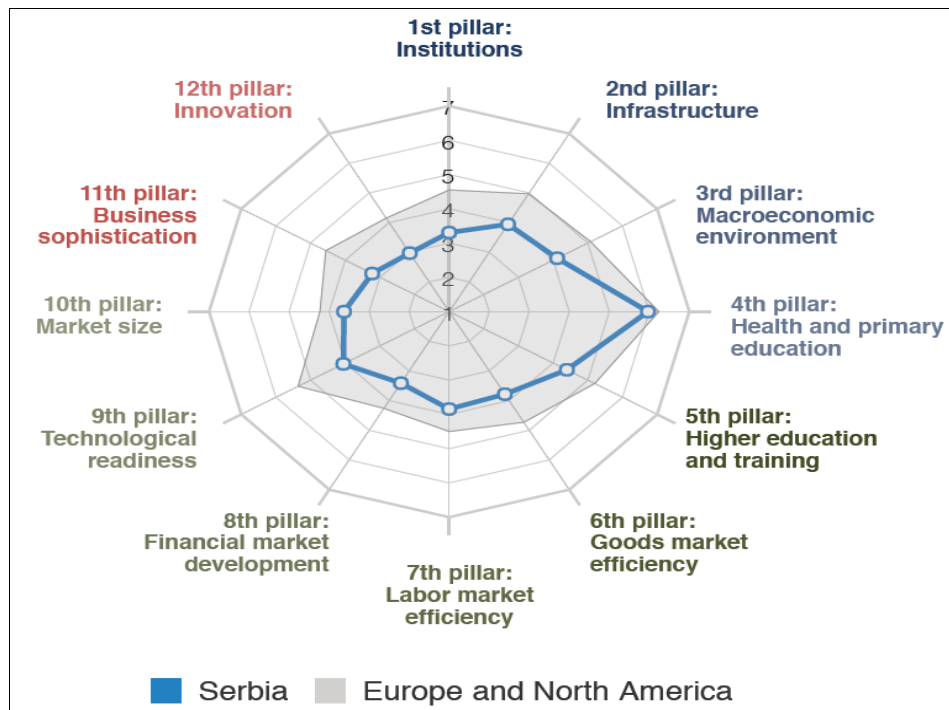


Figure 1: Innovation as a pillar of competitiveness of Serbia, 2017
Source: World Economic Forum, Executive Opinion Survey 2016, p. 314.

That is the subject of the research in the paper. In the structure of the paper, after the introduction, a literature review is presented, and key findings of the research, methodology used, sampling, discussion and conclusions.

2. LITERATURE REVIEW

Innovation is a multi-dimensional phenomenon that is both complex and context-specific involves the exploitation of new ideas. The distinction between innovation and invention is made clear by Freeman (1982, p.7; Wolfe 1994, p. 406) when he concern an *invention* as an idea, for a new or improved product, accomplishing the innovation in the economic sense with *commercial* transaction involving the new product. The main characteristic of innovation is *change*. The definition proposed by the OECD (1981, p. 15-16) propose that the innovation consists of steps (as scientific, financial, technical, sale) necessary for the successful development and marketing of new or improved products, the commercial use or the introduction of a new approach to a social service. Rothwell (1994, p. 42) called the fifth generation innovation process the *systems integration and networking process* enabled by the use of electronic toolkits in design and development (Figure 2).

Figure following on the next page

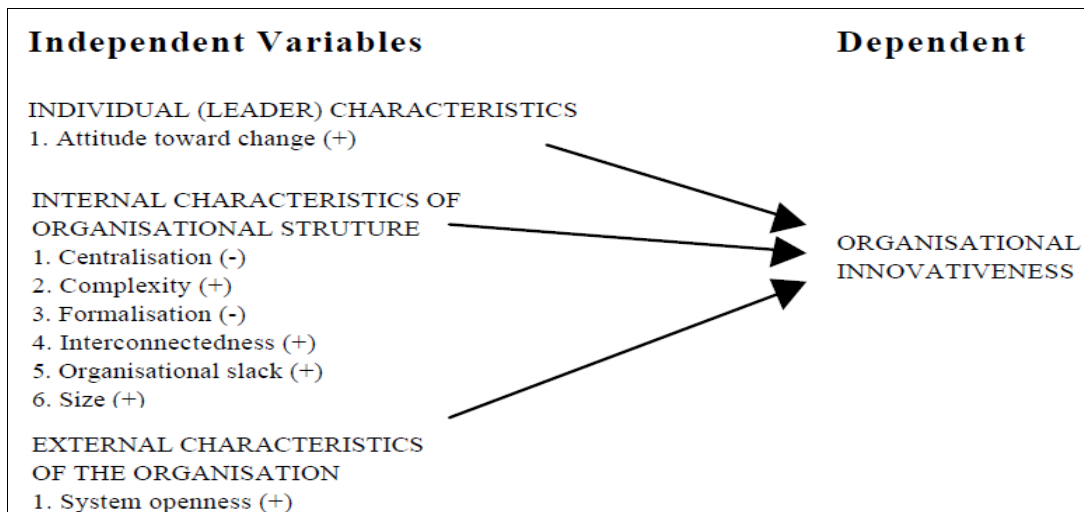


Figure 2: Independent variables related to organisational innovativeness

Source: Rogers (1995, p. 380)

To be important to innovation activities in firm (Von Hippel, 1988; Lundvall, 1988; Normann, 1991; Stevens, 1997) are showed the firm's linkages to external networks and the relations to customers have been shown Stevens (1997, p. 17) emphasizes the importance of networking among firms and the role of competition in advancing innovation. The 5G process of innovation is relatively new in the literature. The literature on innovation at the firm-level can be classified into three streams: *diffusion*, *organizational innovativeness* and *process theory* studies, each dealing with the phenomenon of innovation but they differ in terms of the research question, unit of analysis, and dependent variable used, reviewed and summarised in Table 2.

Table 2: Distinguishing features of diffusion studies (DI), organisational innovativeness studies (OI), and process theory studies (PT) research

Research stream	Question	Innovation stage focus	Unit of analysis	Variables		Research model	Data collection method	Studies
				Independent	Dependent			
Diffusion	What is the pattern of diffusion of an innovation through a population of potential adopters?	Adoption	An innovation (extra-organisational focus)	Organisational characteristic innovation characteristic promoter characteristic	Diffusion pattern Diffusion extent Diffusion rate	Logistics growth model(based on contagion within the social system and /or change agent influence from without	Cross-sectoral surveys Secondary data	Teece(1980) Easingwood et al.(1981) Norton and Bass (1987) Tolbert and Zucker (1986) Attewell (1992)
Innovativeness	What determines organisational innovativeness?	Adoption or implementation	Organisational	Organisational characteristics Innovation characteristics Managerial characteristics Environmental characteristics	Innovativeness-Number or speed of adoptions	Variance/regression models	Cross sectoral surveys	Kimberly and Evanisko(1981) Balbridge and Burnbam (1975) Ettile (1983) Moch and Morse (1977) Meyer and Geecs (1988)
Process steps	What are the stages organisations go through in implementing innovations	Adoption through implementation	Innovation process(intra-organisational focus)	Innovation characteristics	Stage: existence and /or sequence	Stage models	Cross-sectoral retrospective surveys	Pelz (1983) Ettlic (1983)
Process	What factors explain the chain of events which result in innovation implementation?	Adoption through implementation	Innovation process (intra-organisational focus)	Precursor Organisational context: strategy, structure, resources, technological strength	Outcome The innovation process, stages	Process models	In-depth field studies	Dean (1987) Dyer and Page (1988) Schroeder et al. (1989)

Source: Adapted from Wolfe (1994, p. 413)

Innovation and competitiveness. Innovation is the key to competitive advantage in a highly turbulent environment. It is a major driving force for economic growth of nation states. The ability to innovate has direct consequences for the ability to compete at the individual, firm, regional and national level. The values created by innovations are often manifested in new ways of doing things or new products and processes that contribute to wealth. Hence, innovation enhances business performance because the product of innovative activities makes a firm more competitive and the process of innovation transforms a firm's internal capabilities. When we consider a firm as a bundle of resources, skills and competencies, then the effect of innovation is to transform a firm's inner capabilities for new ideas exploitation. This enhanced flexibility is crucial in the face of changing market conditions. Thus competitiveness of firms is enhanced by innovation having a direct influence on competitiveness.

3. EMPIRICAL RESEARCH RESULTS

3.1. Sample description

In a research sample consisting of 96 companies, 42.7% are micro organizations (organizations having no more than 9 employees), 25% are small organizations (having between 10 and 49 employees), 15.6% are medium organizations (having from 50 to 249 employees), while the percent of large organizations (having over 250 employees) is 16.7. 18.8% of companies are operating on a national level, 22.9% on a regional level, 26% locally, while there are 32.3% of organizations operating on an international level. The largest number of organizations have existed for more than 15 years (38.5%), percent of organizations operating from 8 to 15 years is 31.3, percent of organizations operating from 4 to 7 years is 19.8, while there are the least organizations operating from 3 to one year (19.4%). Most organizations are carrying out service-based activities (61.5%), then we have organizations carrying out both service and product-based activities (22.9%) and there are the least of those with exclusively product-based activities (15.6%).

3.2. Hypothesis and Methodology

Main research hypothesis is: Company's business success, increase in company's market share and competitiveness are related to the level of innovations as an operating factor.

Research methods: The following scientific methods were used in this paper: hypothetic-deductive methods, analytical-deductive methods, comparative methods, historical and statistical descriptive methods and methods of comparative statistics (χ^2 test, ANOVA). Factors of significance for the achievement of competitive position were evaluated by the interviewees with grades ranging from 1 to 5, wherein they evaluated each factor in regards to their level of significance (1 – the least important among the listed factors, 5 – the most important).

3.3. Key results

Alongside good-quality management, marketing, weak competition, importance of state institutional and financial support to company's competitiveness, interviewees also rated the importance of innovations for company's operations as a significant factor for achieving competitive advantage. Results show that 30.2% of organizations rated innovations in business as a factor of significance for achieving competitive advantage with 3, 28.1% organizations gave a 4, 17.7% of organizations gave a 5, mark 1 was given by 12.5% of organizations, while mark 2 was given by 11.5% of organizations. Average values of marks concerning factors of importance for organizations to enter a new market are presented in Table 3.

It can be seen that organizations find a well-designed business plan to be the most important for entering a new market (average mark value 3.83), then we have the meeting of customer demands with an average value of 3.55, then good marketing plan, innovations, while the lowest mark was given to the state support with an average value of 1.65.

Table 3: The factors of importance for entry of companies on new, mean values of scores market

	Business plan well-designed	Consumer demands satisfaction	Good marketing plan	Innovation	Government support
Mean values	3.83	3.55	3.06	2.92	1.65

Source: Authors

Average value of the level of innovative activities within organizations is rated with an average mark of 3.48. The highest number of organizations rated the level of innovative activities inside an organizations with 3 (37 organizations), while mark 4 was given by 21 organization. Ratings for innovative activities are given in Table 4. In table 4 we can see ratings for the involvement of employees in innovative activities. It can be seen that the highest number of interviewees rated the involvement of employees with 3. Average value of marks is 3.09. It's evident that the involvement of employees in innovative activities is rated with a mark slightly above the average.

Table 4: Estimates level of innovative activity in the organization

Innovative activities level in organization			Employees involvement in innovative activities of the organization		
Scores	Absolute frequency	Relative frequency	Scores	Absolute frequency	Relative frequency
1	2	2.1	1	10	10.4
2	11	11.5	2	14	14.6
3	37	38.5	3	40	41.7
4	31	32.3	4	21	21.9
5	15	15.6	5	11	11.5
Total	96	100.0		96	100.0

Source: Authors

Differences in marks for factors which are of significance for the competitiveness and market share are presented with the Chi-Square test (χ^2) with the existence of the significance of differences for values Sig. (significance of differences) $\leq 0,05$. Bond strength between variables was determined with Cramer's indicator (Cramer's V). Values for the bond strength of variables are:

- 0 - 0,1 weak association
- 0,1 - 0,3 small association
- 0,3 - 0,5 medium association
- $V > 0,5$ strong association

Opinions of interviewees and differences in values of factors of importance for the competitiveness and market share of organizations of different size (micro, small, medium and large) are presented in Table 5:

- Significance of the factor for entering a new market (well-designed business plan, meeting customer requests, good marketing plan, innovations and state support) don't differ in organizations of different size.

Table 5: Ratings of the factors of importance for the competitiveness and market share of the organizations of different sizes

Factors of importance		Value	df	Sig.	Cramer's V
For competitive advantage	Good management	8,351	12	0,757	0,170
	Good marketing	21,040	12	0,050*	0,270
	Weak competitors	12,838	12	0,381	0,211
	State support	10,276	12	0,592	0,189
	Business innovation	6,180	12	0,907	0,146
For competitiveness of products/services	Competitive price	9,877	12	0,627	0,185
	Good design	4,106	12	0,981	0,119
	Good functionality	13,414	12	0,340	0,216
	Fast service	25,807	12	0,011*	0,299
	Good marketing	17,441	12	0,134	0,246
To enter the market	A well-designed business plan	16,636	12	0,164	0,240
	Monitoring consumer demands	16,513	12	0,169	0,239
	A good marketing plan	15,060	12	0,238	0,229
	Innovation	19,492	12	0,077	0,260
	Government Support	18,936	12	0,090	0,256
Determining the level of market share	Company reputation	28,730	12	0,004*	0,316
	Other companies on the market	19,129	12	0,085	0,258
	market characteristics	24,324	12	0,018*	0,291
	market Size	14,950	12	0,244	0,228
	time presence in certain markets	9,352	12	0,673	0,180

Source: Authors

Differences in the significance of the factor for competitiveness and market share of organizations operating on a different level (local, national, regional, international) are showed in Table 6:

Table 6: The importance of innovation as a factor, ratings

Factors of importance		Value	df	Sig.	Cramer's V
For the competitive advantage	Business innovation	26,008	12	0,011*	0,301
To enter the market	Innovation	23,351	12	0,025*	0,285

Source: Authors

- Good-quality marketing differs significantly in organizations of different operating level as the factor necessary for the achievement of competitive advantage Sig. = 0.008<0.05, with a medium association between variables V=0.305. Weak competition as a factor necessary for the achievement of competitive advantage differs within organizations of different operating level Sig. = 0.008<0.05, with a medium association between variables V=0.305. *Significance of innovations in business operations as a factor necessary for the achievement of competitive advantage differs significantly within organizations of*

different operating level Sig. = 0.011 < 0.05 with a medium association between variables V=0.301. Values for good-quality management and state support as factors necessary for the achievement of competitive advantage don't differ significantly within organizations operating on a different level;

- Values for meeting customer demands as a factor of significance for entering a new market differ significantly within organizations of a different operating level Sig = 0.001 < 0.05 with a medium bond strength between variables V = 0.344. **Innovations as a factor of significance for entering a new market differ significantly within organizations operating on a different level Sig = 0.025 < 0.05 with a weak bond strength between variables V=0.025.** Values for state support as a factor of significance for entering a new market differ significantly within organizations of a different operating level Sig. = 0.024 < 0.05 with a weak bond strength between variables V=0.286.
- Significance of a well-designed business and marketing plan doesn't differ to a large extent within organizations of a different operating level;

At table 7, the differences in values of factors of significance for the competitiveness and market share of organizations of different operating duration are presented:

- Significance of a good-quality management differs within organizations operating for a different time period as a factor necessary for the achievement of competitive advantage Sig = 0.018 < 0.05 with a weak bond strength between variables V=0.291. **Innovations in business operations differ significantly, according to the level of importance, as a factor necessary for the achievement of competitive advantage within organizations operating for a different time period Sig = 0.050 ≤ 0.05 with a weak bond strength between variables V=0.270.** Significance of a good-quality marketing, weak competition, state support doesn't differ significantly within organizations operating for a different time period as factors necessary for the achievement of competitive advantage;
- State support differs significantly as a factor of significance for entering a new market within organizations operating for a different time period Sig = 0.003 < 0.05 with a medium bond strength between variables V=0.322. Well-designed business plan, marketing plan, meeting customer demands and *innovations don't differ significantly, by the level of importance, as factors of significance for entering a new market within organizations operating for a different time period.*

Table 7: The differences in assessments of factors of importance for the competitiveness and market share of the organizations of different years in business

Factors of importance/ ratings importance of innovation as a factor		Value	df	Sig.	Cramer's V
For the competitive advantage	Business innovation	21,027	12	0,050*	0,270
To enter the market	Innovation	19,664	12	0,074	0,261

Source: Authors

In Table 8, the differences in values of factors of significance for the competitiveness and market share within organizations of different activity type (service, product and both service and product-based) are presented:

- Regardless of the field of activities, factors necessary for the achievement of competitive advantage don't differ;
- Regardless of the field of activities, values of the significance of factors for competitive advantage don't differ;

- State support differs significantly as a factor of significance for entering a new market within organizations of different field of activities Sig = 0.001<0.05 with a medium bond strength between variables V=0.375. A well-designed business plan, meeting customer demands, good marketing plan and **innovations don't differ by the significance for entering a new market within organizations of different field of activity;**

Table 8: The differences in assessments of factors of importance for the competitiveness and market share of the organizations of different economic activities

Factors of importance/ importance of innovation as a factor		Value	df	Sig.	Cramer's V
For the competitive advantage	Business innovation	3,968	8	0,860	0,144
To enter the market	Innovation	14,906	8	0,061	0,279

Source: Authors

Market share and competitiveness of organizations were analysed by applying the ANOVA test with the level of significance of 0.05 (there is a statistically important difference for values Sig≤0.05). It was established, by a subsequent Turkey test, between which organizations there was a significant difference in values.

At table 9, it can be seen that within organizations of different sizes (micro, small, medium and large organizations) there are differences between:

- values of significance of organization's market share for business success (Sig = 0.028<0.05);
- significance of the level of innovative activity in organization, and the involvement of employees in innovation activities

Table 9. Differences in estimates of market share and competitiveness of organizations of different sizes

Ratings importance of innovation as a factor		Sum of Squares	df	Mean Square	F	Sig.
The importance of market share for the business success of the organization	Between Groups	9.242	3	3.081	3.170	.028*
	Within Groups	89.414	92	.972		
	Total	98.656	95			
The level of innovative activity in organization	Between Groups	1.065	3	.355	.376	.771
	Within Groups	86.893	92	.944		
	Total	87.958	95			
The involvement of employees in innovation activities	Between Groups	5.593	3	1.864	1.524	.214
	Within Groups	112.564	92	1.224		
	Total	118.156	95			

Source: Authors

In Table 9 is presented, how the organizations of different sizes differ in values of the significance of market share. There is an important difference between micro and medium-sized organizations (Sig = 0.016<0.05).

Correlation analysis

Purpose of the correlation analysis was to describe the strength and direction of the bond between two variables (size of organizations, operating level and duration of business with factors of significance for the achievement of competitive advantage, increase in organization's innovative activity and entering and conquering new markets). Pearson correlation coefficients (r) can have values from -1 to +1. Signs show whether the correlation is positive (both variables are decreasing or increasing simultaneously) or negative (one variable is increasing when the other is decreasing and vice versa). Absolute value of that coefficient (when we replace the sign) shows the strength of the bond as follows (Cohen, 1998):

- weak correlation r= from 0.10 to 0.29;
- medium correlation r= from 0.30 to 0.49;
- strong correlation r=from 0.50 to 1.0.

Correlation of factors for the achievement of competitive advantage (good-quality management and marketing, weak competition, state support and innovations in business) with values for organization's market share and competitiveness is showed in Table 10. The results show:

- **There is a positive medium-strength correlation between levels of organization's innovative activities and the significance of innovations in the business (r=0.304). Results imply that with the increase in the level of innovative activities comes an increase in the significance of innovations as factors for the achievement of competitive position;**
- There is a medium-strength correlation (r=0.377) between the education of management/employees in the field of possibilities of increasing market share and creating competitive product/service and state support, as well as a weak-strength correlation between education and innovations in business operations (r=0.282). **Results imply that with the increase in management/employees education in the direction of possibilities of increasing market share comes an increase in state support and innovations in business operations as a factor of significance for the achievement of competitive position;**

Table 10. Correlation of factors of significance for the achievement of competitive position and organization's competitiveness

Correlation of innovation as a factor of importance		Good management	Good marketing	Weak competition	Government support	Innovation in Business
The importance of market share for the business success of the organization	Pearson Correlation	.193	-.236(*)	-.011	.085	-.016
	Sig. (2-tailed)	.060	.021	.917	.408	.876
	N	96	96	96	96	96
	Sig. (2-tailed)	.424	.005	.025	.216	.659
	N	96	96	96	96	96
The level of innovative activity in organization	Pearson Correlation	-.112	.070	-.219(*)	-.067	.304(**)
	Sig. (2-tailed)	.276	.497	.032	.515	.003
	N	96	96	96	96	96
	Pearson Correlation	-.073	-.185	.153	-.151	.186

The involvement of employees in innovation activities	Sig. (2-tailed)	.481	.071	.136	.143	.069
	N	96	96	96	96	96

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

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

Source: Authors

4. DISCUSSION AND CONCLUSIONS

The research carried out covered 96 organizations of different size (micro, small, medium, large), operating level (local, national, regional, international), duration of business and field of activities (service, product, both service and product-based). Objective of this research was to establish factors of significance for organization's competitiveness, among which special emphasis was placed before innovations, as well as to estimate competitiveness and market share of organizations. Sample results show that organizations consider source of competitiveness to be in the price and quality of the product. Market share of organizations has appeared as significant for the business success, and competitiveness of products/services is more severe at the national than at the international levels. Level of innovative activities within organizations, as well as marketing activities within organizations that are used to increase competitiveness, are above average. We can come to a conclusion that the level of state support for the sake of achieving competitive advantage is at an extremely low level.

Table 11. Competitiveness and market position of organizations included in the sample

Competitiveness and market position of organizations	Average values
Significance of market share for organization's business success	3,84
Level of innovative activities inside organizations	3,48
Involvement of employees in innovative activities	3,09

Source: Author

Operating level (local, national, regional and international) significantly affects differences in organization's competitiveness and market share. Among twenty observed factors a difference was noted in more than half. Good-quality marketing, weak competition and **innovations** differ as factors necessary for the achievement of competitive advantage, design, timely service and good-quality marketing as factors of significance for the competitiveness of products/services, meeting customer demands, **innovations** and state support differ as factors of significance for entering new markets, while the size of the market and duration on the market differ depending on the organization's operating level as factors which market share level depends on. Results show that, when it comes to the achievement of competitive advantage, when there is an increase in product quality and post-sale service for the product/service competitiveness there is also **an increase in the significance of innovations in business**, with an increase in organization's market share outside the national borders comes an increase in the significance of state support, when there is an increase in the influence of management on the increase of organization's market share there is also an increase in the influence of management, and a decrease in the significance of weak competition during the achievement of market position. **With an increase in the level of innovative activities inside organizations comes an increase in the significance of innovations in business. By increasing management/employees education we are also increasing the significance of state support and innovations in business operations.** Innovative companies constantly review their progress by measuring against milestones set. In the research are set clear targets and competitors benchmarked in the areas of customer satisfaction, sales trend and market share, product development times, new product introduced and R&D. it is confirmed the Hypothesis that Innovation enhances business

performance because the product of innovation increases firm competitiveness and the process of innovation transforms a firm's internal capabilities making it more adaptive to change, as well as the level of employees involvement in innovative activities in the organisation. The literature reviewed in the paper suggests an implicit relationship between innovative capacity, innovativeness and competitiveness of a firm.

Research established the linkages between innovative capacity, innovativeness and business performance. The contribution of the paper is specifically in better understanding the correlation of how can firms leverage their innovative capacity for enhancing business performance. Specifically the research output will help to relieve low innovative performance of some firms.

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