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INNOVATIONS AS A DETERMINANT OF COMPETITIVENESS OF SERBIA: A COMPARATIVE ANALYSIS WITH WESTERN BALKAN COUNTRIES AND THE EUROPEAN UNION [a]

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Abstract

Innovations, as a determinant of competitiveness, are one of the fundamental presuppositions for the economic prosperity of every country and the well-being of the population. The creators of the development policies need adequate information relating to all vital determinants of competitiveness, including innovations, in order to formulate effective policies and strategies. Therefore, the World Economic Forum (WEF) annually prepares and presents the Global Competitiveness Report. Thus, based on the information from the WEF reports, the paper explores changes in the level of competitiveness of Serbia (measured by the Global Competitiveness Index - GCI) for the period from 2009 to 2014, in comparison with other Western Balkan countries. Also, an in-depth analysis of the competitiveness of Serbia is carried out in the subindex "Innovation and sophistication factors" as a component of the GCI, considering that in 2014 this subindex for Serbia recorded the lowest value compared with other two subindexes within the GCI ("Basic Requirements" and "Efficiency Enhancers"), and also with other Western Balkan countries. Therefore, there is a need for urgent and significant improvements in the field of innovations as a relevant factor of the GCI in order to improve Serbia's position in the world's rankings of competitiveness, but also Serbia's position in relation to the more successful countries in the Western Balkans. The goal of the analysis in this paper is to identify the position of Serbia in comparison with other Western Balkan countries in terms of overall competitiveness, and especially in the field of innovation and business sophistication factors as the determinants of the achieved level of national competitiveness. The methods used in this research are the following: descriptive statistics, correlation analysis, and benchmarking. The research results show that Serbia has in the aforementioned period achieved an unenviable level of competitiveness. This research

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can be useful for the creators of development policy for future guidance of the economic and social development of Serbia.

Key words: competitiveness, determinants of competitiveness, innovations, Serbia, Western Balkans.

ИНОВАЦИЈЕ КАО ДЕТЕРМИНАНТА КОНКУРЕНТНОСТИ СРБИЈЕ: КОМПАРАТИВНА АНАЛИЗА СА ЗЕМЉАМА ЗАПАДНОГ БАЛКАНА И ЕВРОПСКЕ УНИЈЕ

Апстракт

Иновације као детерминанта конкурентности јесу једна од основних претпоставки економског просперитета сваке земље и повећања благостања становништва. Да би творци развојних политика формулисали ефективне политике и стратегије, потребне су адекватне информације које се односе на све виталне аспекте конкурентности, укључујући и иновације. Стога, Светски економски форум на годишњем нивоу припрема и представља Извештај глобалне конкурентности. На основу ове информационе основе, у раду се истражују промене у нивоу конкурентности Србије (мерено Глобалним индексом конкурентности – ГИК) за период од 2009. до 2014. године, у поређењу са земљама Западног Балкана. Такође, конкурентност Србије детаљније се анализира у субиндексу „Фактори иновативности и софистицираности" с обзиром на то да у 2014. години овај субиндекс бележи најнижу вредност у односу на остала два субиндекса („Базични фактори" и „Фактори ефикасности"), али и у поређењу са другим земљама Западног Балкана. Стога, неопходна су најхитнија и највећа унапређења у домену иновација како би се побољшала позиција Србије на светској листи конкурентности, али и у односу на успешније земље Западног Балкана. Циљ је да се извршеном анализом идентификује позиција Србије у односу на остале западнобалканске земље у погледу укупне конкурентности, а посебно у домену иновација и пословне софистицираности као детерминанте оствареног нивоа националне конкурентности. Методе коришћене у овом раду су: дескриптивна статистика, корелациона анализа и бенчмаркинг. Резултати истраживања показују да је Србија у назначеном периоду остварила незавидан ниво конкурентности, а посебно у области иновација. Истраживање у овом раду корисно је за творце и носиоце развојне политике у сврху будућег усмеравања привредног и друштвеног развоја Србије.

Кључне речи: конкурентност, фактори конкурентности, иновације, Србија, Западни Балкан.

INTRODUCTION

In the last decades, the concept of competitiveness has attracted a lot of attention in academic society and in business practice. This concept has become a very important element of the success of every national economy (Shafaeddin, Reinert, 2012, p. 1). The core issues that are at the heart of the

concept of national competitiveness relate to a better understanding of the ways in which it can improve the economic well-being and achieve a more equitable distribution of wealth. This paper pays attention to national economy competitiveness as vital performance, and especially, innovations as the key factor that influences this performance. After reviewing the theoretical framework of the concept of national competitiveness, the focus is put on the importance of measuring competitiveness at the macro level. The methodology of the World Economic Forum (WEF) is used to measure the level of the achieved competitiveness of a country. GCI consists of 3 subindexes and 12 so-called pillars within these subinexes, which determine the value of the Global Competitiveness Index measured for every country. Serbia, as a country with an unenviable competitive position in the world rankings, is analysed in relation to the neighbouring countries, therefore, in comparison with the countries of the Western Balkans (Bosnia and Herzegovina, Croatia, Montenegro, Macedonia, Albania). Also, at the end of the paper there is a comparison with the European Union, bearing in mind the fact that Serbia aspires to join the EU. The aim of this research is to identify the competitive position of Serbia in comparison with other Western Balkan countries, with a special focus on innovations that require the most urgent and greatest improvements.

THEORETICAL BACKGROUND: CONCEPTUAL BASIS AND DETERMINANTS OF NATIONAL COMPETITIVENESS

Enormous differences in the standard of living of certain countries are becoming a driving force of modern national economies' development, in terms of seeking the cause of those inequalities. Understanding the factors that drive the competitiveness has developed numerous theories and it has preoccupied creative curiosity of numerous academics. Thus, even Adam Smith focused on the analysis of the state policy and the functioning of the market mechanism (WEF, 2011-2012, p. 4). On the other hand, Neoclassical economists emphasized the importance of investment in physical capital and infrastructure. Lately, attention has been paid to the education and training, technological progress, innovation, macroeconomic stability, good country government, business sophistication, market efficiency and so on (Cho, 2013, p. 3).

Competitiveness can be analysed at the level of a national economy and at a company level (Bojnec, Ferto, 2009, p. 418).

At the micro or company level, competitiveness is seen as a company's ability to compete and on the basis of this, to increase its market share, profit and growth. It is the process of moving from one state of imbalance to another, because the competitiveness is the state of "creative destruction" and discontinuous changes (Shafaeddin, Reinert, 2012, p. 8).

At the macro or national level, competitiveness is viewed as the ability of the country to increase the standard of living. Competitiveness can be defined as "the set of institutions, policies, and factors that determine the level of productivity of a country" (World Economic Forum, 2015). On the other hand, the level of productivity affects the degree of the national economy development that a country can reach (Savić, Džunić, 2008, p. 4). Productivity of a national economy is most often determined by the level of resources that every country has at its disposal, such as land, capital, labour (Alvarado Molina, Bol, 2008, p. 375), but also by the efficiency of their use. Therefore, the role of the state is extremely important because through economic policies, it creates an environment and develops production resources and other resources that will help improve competitiveness (Latruffe, 2010, p. 51). Bearing in mind that national economy competitiveness depends on productivity, the creation of an environment and conditions for a rapid and long-term productivity growth is one of the main goals of economic development of every country (Batić, 2011, p. 129). In addition, the improved productivity that the economy of a country can reach leads to prosperity and a higher rate of returns on investment in the production inputs, and all this together represents the key determinants of the country development. In other words, the more competitive the country, the faster is its economic development.

National competitiveness largely depends on its ability to innovate, thus ensuring progress, because innovations create and maintain competitiveness (Cvetanović, Despotović, Nedić, 2012, p. 91). In order for a state (national economy) to be competitive, it should be able to employ all national resources in modern conditions, primarily the human resources (Krstić, Stanojević, 2013, p. 209).

The concept of a state's competitiveness or the concept of international competitiveness is used in the analysis of economic performance of national economies. It compares countries by basic characteristics that determine the position in the international trade. These may be factors that are difficult to quantify, such as the capacity for technological innovation, degree of specialization of the product, the value of after-sales services and so on.

Generally, indicators of competitiveness should meet three basic criteria. First, all sectors that are exposed to competition should be covered. Second, all the markets that are open for competition should be dealt with as well. And third, indicators of competition should include data that are comparable at the international level. However, in practice, there are almost no indicators that meet all three criteria (Durand, Giorno, 1987, p. 149).

Today's most widely used indicator is the Global Competitiveness Index (GCI). The GCI includes the weighted average of a number of determinants, which, each for itself, reflects some aspect of competitiveness as a vital performance of a national economy. These components are grouped

into three subindexes ("Basic Requirements", "Efficiency Enhancers", and "Innovation and sophistication factors"), and within them, there are 12 different pillars.

Innovation and sophistication factors as a subindex of the GCI consist of two pillars – "Business sophistication" and "Innovation" (WEF, 2013-2014, pp. 8-9):

- *Business sophistication* involves two elements: the quality of the overall business network of the country and the quality of the strategy and operations of the company.
- *Innovations* indicate the ability of a national economy to produce goods and provide services using new knowledge and skills (Despotović, Cvetanović, Nedić, 2014, p. 28).

Research Questions, Methodogy and Information Basis

The research presented in this paper is a comprehensive study and analysis of the competitiveness of a national economy, with a special focus on "Innovation and sophistication factors" as key determinants of competitiveness of Serbia.

In order to realize the set goal of the research, the paper is based on the following research questions:

a) Has Serbia moved from the stage of the Efficiency driven economy to a higher stage of development?

b) Was there interdependence between the GCI score and GDP for the group of Western Balkan countries, in the period from 2009 to 2014?

c) Did Serbia, in the period from 2009 to 2014, improve the level of innovations and business sophistication measured by the GCI score, in comparison to other Western Balkan countries and the EU 27?

The methods used in this paper are the following: descriptive statistics, correlation analysis and benchmarking. Descriptive statistics are applied with the aim of ascertaining the minimum, the maximum, the average values and the standard deviations of the GCI for Innovation and sophistication factors, for Western Balkan countries. The correlation analysis is used in order to investigate the interdependence between the score for Innovation and sophistication factors and GDP per capita for the group of Western Balkan countries.

The Global Competitiveness Report *2009-2010*, *2010-2011*, *2011-2012*, *2012-2013*, *2013-2014*, *2014-2015* make the information basis for this research. In this paper, special attention will be devoted to "Innovation and sophistication factors" subindex considering that innovations require urgent measures for improvement in order to improve the overall competitiveness of Serbia in the world rankings, but also in comparison to other Western Balkan countries.

RESEARCH RESULTS AND DISCUSSION

Comparative analysis of the level of development and degree of competitiveness of Serbia and Western Balkan countries in the period 2008-2014

a. At the highest stage of the development, when the economy is innovation-driven, the only way to achieve competitiveness is a new and unique product that encourages companies to use innovative and sophisticated manufacturing techniques. Education, competence and R&D thus become the main factors of development and prosperity of modern economies. The competence of a national economy depends on the research and innovation system and sufficient investment in these sectors. However, in addition to the human and other less tangible forms of capital, financial capital is still very important in these economies (Francis, 2014, p. 1-2).

Gross domestic product (GDP) has been the most commonly used indicator of a country's economic progress and its population welfare in the last fifty years (Mankiw, 2002, p. 53). The GDP represents the market value of all final goods and services produced within one country in a given period of time (Mankiw, 2001, p. 208). It is calculated by summing up the value of private consumption expenses (household consumption of goods and services), government expenditure (public expenditure for the provision of goods and services for the future) and net exports (the difference between export and import value) (Constanza, Hart, Posner, Talberth, 2009, p. 3).

Table 1 presents data on the GDP per capita of six Western Balkan countries in the period 2008-2013. Also, the countries are ranked based on the same data.

Table 1. GDP per capita of the WB countries in the period 2008-2013 (in US$)

Country	GDP per capita - 2008	Rank within the Western Balkan countries for 2008	GDP per capita - 2009	Rank within the Western Balkan countries for 2009	GDP per capita - 2010	Rank within the Western Balkan countries for 2010	GDP per capita - 2011	Rank within the Western Balkan countries for 2011	GDP per capita - 2012	Rank within the Western Balkan countries for 2012	GDP per capita - 2013	Rank within the Western Balkan countries for 2013
Croatia	15628	1	14243	1	13720	1	14457	1	12972	1	13562	1
Serbia	6782	2	5809	3	5233	3	6081	3	4943	3	5907	3
Montenegro	6509	3	7300	2	6589	2	7317	2	6882	2	7026	2
Macedonia	4657	4	4482	4	4431	4	5016	4	4683	4	4944	4
B&H	4625	5	4279	5	4319	5	4618	5	4461	5	/	/
Albania	4074	6	3825	6	3677	6	3992	6	3913	6	4610	5
Average value	*7045*	-	*6656*	-	*6328*	-	*6913*	-	*6309*	-	*7209*	-

Source: WEF – The Global Competitiveness Report 2009-2015

Note: The table does not consist the data for GDP per capita in 2014 considering that The Global Competitiveness Report 2014-2015 does not provide the data for this indicator for 2014. Also, in 2013 are not given data for B&H.

Table 1 shows that the GDP per capita for a group of Western Balkan countries decreased by 15% in 2012 compared to 2008, but in 2013 again returned to the average level. Observed within the analysed group of the Western Balkan countries, all six countries in the period 2008-2013 occupied approximately the same place in the established rankings. Therefore, Croatia is the first among the Western Balkan countries, according to the GDP per capita in the analysed period. It was immediately followed by Montenegro (except in 2008 when Montenegro occupied the third and Serbia the second place), Serbia, Macedonia, B&H, and Albania in the last 6th position.

Serbia was in the 2nd place only in 2008, while it was in the 3rd position in all other years among Western Balkan countries. The GDP per capita in Serbia was slightly changed in this period. Thus, in 2013, an increase in the GDP of around 20% was recorded, compared to 2012. In 2013, Serbia was lagging behind Croatia, a country with the highest GDP per capita in the group of the analysed countries, by overall US$ 7655 US$. In other words, Serbia had 2.3 lower GDP per capita than Croatia.

According to the level of the GDP per capita recorded in 2013 (see Table 1), Western Balkan countries can be differentiated into three groups or three stages of development. According to the G*lobal Competitiveness Report 2014-2015*, five out of six analysed Western Balkan countries are in the second stage of development – the efficiency-driven economy (Albania, B&H, Macedonia, Montenegro and Serbia). Croatia is the only analysed country in the transition from stage 1 to stage 2 with the GDP per capita from 9000 to 17000 US$. However, none of the analysed countries are in the third stage of development - the innovation-driven economy.

During the period from 2008 to 2013, all Western Balkan countries were at the same stage of development, with only small fluctuations in the GDP per capita. None of the analysed countries could manage to move to a higher stage of development in this period.

Considering the current level of Serbia's GDP per capita amounting to US$ 5907 in 2013, which is just over a half of the value that represents the lower limit (which is used to qualify the country to move from an efficiency-driven economy to the higher stage of development that is innovation-driven economy with US$ 9000), it can be concluded that Serbia is still in the 2nd stage of development - the efficiency-driven economy.

b. Table 2 presents the GCI ranks and scores for Western Balkan countries for the period from 2009 to 2014.

Table 2. The Rank and Score of GCI for Western Balkans (WB) in the period 2009-2014

Country	2009			2010			2011			2012			2013			2014		
	Rank (out of 133)	Score (1-7)	Rank within WB	Rank (out of 139)	Score (1-7)	Rank within WB	Rank (out of 142)	Score (1-7)	Rank within WB	Rank (out of 144)	Score (1-7)	Rank within WB	Rank (out of 148)	Score (1-7)	Rank within WB	Rank (out of 143)	Score (1-7)	Rank within WB
Montenegro	62	4.16	1	49	4.36	1	60	4.27	1	72	4.14	1	67	4.20	1	67	4.23	2
Croatia	72	4.03	2	77	4.04	2	76	4.08	2	81	4.04	2	75	4.13	3	77	4.13	3
Macedonia	84	3.95	3	79	4.02	3	79	4.05	3	80	4.04	2	73	4.14	2	63	4.26	1
Serbia	93	3.77	4	96	3.84	5	95	3.88	5	95	3.87	5	101	3.77	6	94	3.90	4
Albania	96	3.72	5	88	3.94	4	78	4.06	4	89	3.91	4	95	3.85	5	97	3.84	5
B&H	109	3.53	6	102	3.70	6	100	3.83	6	88	3.93	3	87	4.02	4	/	/	/
Average score	-	3.86	-	-	3.98	-	-	4.02	-	-	3.98	-	-	4.01	-	-	4.07	-

Source: WEF–The Global Competitiveness Report 2009-2015

In 2014, Serbia was in the last place among its neighbours with the GCI of 3.90 and in the 94th place out of 143 countries in the world (see Table 2). Thereby, Serbia improved its position considering that in 2013, it was in the last place among the Western Balkan countries, and in the 101st in the world rank list with lower GCI than in 2014 (3.77). Serbia is located, if not in the last place, then among the last countries in the group of the analysed Western Balkan countries. Observing the average GCI score for the analysed group of the Western Balkan countries, there was a slight increase of 0,21, i.e. 5.4% for the period of six years (2014 in relation to 2009).

Table 3 shows the correlation analysis between the GDP per capita and GCI score for the group of Western Balkan countries in the period 2008-2013.

Table 3. The correlation coefficient between the GCI score and GDP per capita in the Western Balkan countries (2008-2013)

Correlation	Pearson Correlation	Coefficient of determination	Sig. (2-tailed)
GCI - GDP 2008	0.805	65%	0.053
GCI - GDP 2009	0.924	85%	0.008
GCI - GDP 2010	0.838	70%	0.037
GCI - GDP 2011	0.859	74%	0.028
GCI - GDP 2012	0.621	39%	0.189
GCI - GDP 2013	0.594	35%	0.406

Source: Prepared by the authors (SPSS Statistics)

Based on the results in Table 3, it can be concluded that there was a positive linear correlation between the GDP per capita and GCI score for the Western Balkan countries in the period 2008-2013. Also, if the coefficient of determination is taken into consideration, it can be concluded that there was 65% of the common variance between the GDP per capita and GCI score for the Western Balkan countries in 2008, and this percentage was significantly changing during the analysed period (from 35% to 85%).

During the report period, the GCI of Serbia was around 3.80 with minor fluctuations. Also, Serbia's place in the world ranking of countries according to the WEF report was not changed significantly. Thus, Serbia was in the 93rd place out of 133 countries in the WEF report and analysis for 2009, and in the 94th place in 2014 out of 143 countries.

Analysed by three subindexes within the GCI in the period 2009-2014 for Serbia, slight differences (Table 4) can be seen in the value of each subindex separately. The lowest score and lowest place in the world ranking of countries (analysed in the WEF report) is the third subindex related to *Innovation and Business Sophistication*. This is understandable bearing in mind that Serbia is still in the second stage of development that is efficiency-driven. However, in this subindex Serbia recorded the lowest growth compared to the other subindexes in 2014 (only 1.33%). On the other hand, in subindexes *Basic requirements* and *Efficiency enhancers*, Serbia recorded the growth of value in 2014 compared to 2013 of around 3%.

Table 4. Score of the GCI and Subindexes within it for Serbia (2009-2014)

Country: Serbia	2009	2010	2011	2012	2013	2014
GCI (overall index)						
Rank	93	96	95	95	101	94
Score	3.77	3.84	3.88	3.87	3.77	3.90
% Change of Score	-	1.85%	1.04%	-0.26%	-2.58%	3.44%
Basic requirements subinex						
Rank	97	93	88	95	106	101
Score	3.90	4.15	4.28	4.15	3.96	4.10
% Change of Score	-	6.41%	3.13%	-3.03%	-4.58%	3.54%
Efficiency enhancers subinex						
Rank	86	93	90	88	92	80
Score	3.77	3.75	3.73	3.83	3.78	3.90
% Change of Score	-	-0.53%	-0.53%	2.68%	-1.31%	3.17%
Innovation and sophistication factors subinex						
Rank	94	107	118	124	125	121
Score	3.21	3.04	2.99	2.96	3.01	3.05
% Change of Score	-	-5.29%	-1.64%	-1.00%	*1.69%*	*1.33%*

Source: WEF – The Global Competitiveness Report 2009-2015

Based on the analysis in Table 4, and the values of the GCI scores in pillars of competitiveness in 2014, it can be concluded that at the top of the priority list of the creators of economic development policy in Serbia would be the third subindex - Innovations *and sophistication factors*. Also, the GCI value in the third subindex in 2014 (3.05) was lower than in 2009 (3.21). Therefore, it cannot be said that Serbia improved its position in terms of innovations and business sophistication in the analysed period.

The third subindex, representing the highest level of development and competitiveness of a national economy, includes two pillars: innovation and business sophistication. The results of this subindex for Serbia in the period from 2009 to 2014 are given in Table 5.

Table 5. Score of Innovation and sophistication factors subindex and indicators within it for Serbia (2009-2014)

Country: Serbia	2009	2010	2011	2012	2013	2014
Innovation and sophistication factors subindex						
Rank	94	107	118	124	125	121
Score	3.21	3.04	2.99	2.96	3.01	3.05
% Change	-	-5.29%	-1.64%	-1.00%	1.69%	1.33%
Business sophistication pillar						
Rank	102	125	130	132	137	132
Score	3.45	3.15	3.08	3.11	3.18	3.21
% Change	-	-8.69%	2.22%	0.97%	2.25%	0.94%
Innovation pillar						
Rank	80	88	97	111	112	108
Score	2.98	2.93	2.90	2.81	2.85	2.89
% Change	-	-1.68%	-1.02%	-3.10%	1.42%	1.40%

Source: WEF – The Global Competitiveness Report 2009-2015

Bearing in mind that Serbia is still not at the highest level of development – the innovation-driven economy, the scores for Innovation pillar and Business sophistication pillar are lower compared to other pillars of competitiveness. Therefore, with regards to business sophistication, Serbia is among the last 10 world countries in last two years, and position and score are not better considering innovation. However, within the *Innovation and sophistication factors subindex*, Innovations record lower score in comparison with Business sophistication and thus presents a determinant of competitiveness to which more attention should be given in the future with the aim of its improvement, but also in order to improve the competitiveness of Serbia's national economy.

Benchmarking analysis of Serbia with the Western Balkans and EU 27 with regards to Innovations and Sophistication factors

Table 6 shows the data for the GCI for Innovations and sophistication factors subindex and two pillars inside this subindex for six Western Balkan countries in the period from 2009 to 2014.

Based on Table 6 it can be seen that in the analysed group of Western Balkan countries, Montenegro records the highest values for the *Innovations and Sophistication factors subindex*. On the other hand, with the lowest value of this indicator B&H is ranked in the last position among the Western Balkan countries. Regarding the value of *Innovations and Sophistication factors subindex*, in the whole analysed period Serbia is placed in one of the last three positions, together with Albania and B&H.

Based on the provided data and analysis it can be seen that Serbia in the period 2009-2014 could not manage to improve its competitive position regarding the innovations and business sophistication in the group of Western Balkan countries. In the period from 2010 to 2014, Serbia's score for the *Innovations and Sophistication factors subindex* is lower compared to other Western Balkan countries separately, but also compared to their average. B&H has achieved the most significant improvement with regards to innovations and business sophistication, since from 2009 to 2013 this country has recorded a growth of value in this indicator (The Global Competitiveness Report for 2014-2015 does not provide data for B&H).

Table 6. Innovations and Sophistication factors subindex for the Western Balkans in the period 2009-2014

Western Balkan countries	2009			2010			2011			2012			2013			2014		
	Innovation and sophistication factors	Business sophistication	Innovation	Innovation and sophistication factors	Business sophistication	Innovation	Innovation and sophistication factors	Business sophistication	Innovation	Innovation and sophistication factors	Business sophistication	Innovation	Innovation and sophistication factors	Business sophistication	Innovation	Innovation and sophistication factors	Business sophistication	Innovation
Croatia	3.49	3.76	3.22	3.32	3.56	3.08	3.37	3.66	3.09	3.39	3.66	3.12	3.46	3.81	3.12	3.47	3.83	3.10
Montenegro	3.56	3.82	3.29	3.67	3.86	3.48	3.62	3.85	3.39	3.57	3.83	3.31	3.61	3.79	3.42	3.53	3.69	3.37
Macedonia	3.23	3.56	2.89	3.20	3.52	2.88	3.14	3.47	2.81	3.13	3.44	2.83	3.37	3.65	3.09	3.53	3.78	3.28
Serbia	3.21	3.45	2.98	3.04	3.15	2.93	2.99	3.08	2.90	2.96	3.11	2.81	3.01	3.18	2.85	3.05	3.21	2.89
Albania	2.90	3.37	2.43	3.09	3.61	2.57	3.18	3.78	2.58	3.11	3.59	2.63	3.12	3.44	2.80	3.17	3.61	2.73
B&H	2.80	3.29	2.32	2.93	3.27	2.59	3.13	3.42	2.84	3.28	3.48	3.09	3.40	3.53	3.28	/	/	/
Average	***3.20***	***3.54***	***2.86***	***3.21***	***3.50***	***2.92***	***3.24***	***3.54***	***2.94***	***3.24***	***3.52***	***2.97***	***3.33***	***3.57***	***3.09***	***3.35***	***3.62***	***3.07***

Source: WEF–The Global Competitiveness Report 2009-2015

Table 7 shows the data for thr *Innovations and sophistication factors subindex* and two pillars within this subindex for the EU 27 countries in the period from 2009 to 2014.[1]

Table 7 shows that in the analyst group of the EU 27 countries, Sweden records the highest value for *Innovations and Sophistication factors subindex*, with the average score in this indicator of 5.56 (out of 7). On the other hand, the lowest values of this indicator are recorded in Romania (on average of 3.40).

[1] The data for Croatia are not included in the analysis for EU countries bearining in mind that Croatia joined the EU on July 1st, 2013.

Table 7. Innovations and Sophistication factors subindex for the EU 27 in the period 2009-2014

27countries	2009			2010			2011			2012			2013			2014		
	Innovation and sophistication factors	Business sophistication	Innovation	Innovation and sophistication factors	Business sophistication	Innovation	Innovation and sophistication factors	Business sophistication	Innovation	Innovation and sophistication factors	Business sophistication	Innovation	Innovation and sophistication factors	Business sophistication	Innovation	Innovation and sophistication factors	Business sophistication	Innovation
United Kingdom	4.92	5.24	4.60	4.98	5.32	4.65	5.17	5.41	4.94	5.32	5.48	5.17	5.15	5.40	4.90	5.21	5.45	4.96
Sweden	5.53	5.66	5.39	5.67	5.88	5.45	5.79	5.83	5.76	5.56	5.56	5.56	5.46	5.48	5.43	5.38	5.38	5.37
Netherlands	5.17	5.54	4.79	5.16	5.55	4.77	5.30	5.58	5.03	5.47	5.63	5.31	5.36	5.56	5.16	5.41	5.57	5.25
Finland	5.47	5.40	5.53	5.43	5.29	5.56	5.56	5.40	5.72	5.62	5.49	5.75	5.65	5.51	5.79	5.57	5.36	5.78
Denmark	5.28	5.51	5.04	5.15	5.41	4.89	5.31	5.53	5.10	5.24	5.41	5.08	5.14	5.29	4.99	5.19	5.33	5.06
Luxembourg	4.58	4.85	4.31	4.76	4.98	4.53	4.75	4.98	4.52	4.89	4.96	4.82	4.84	4.98	4.70	4.93	5.00	4.85
Ireland	4.63	4.97	4.29	4.55	4.85	4.25	4.65	4.93	4.37	4.87	5.09	4.66	4.81	5.04	4.58	4.85	5.02	4.68
Germany	5.47	5.82	5.11	5.51	5.82	5.19	5.53	5.66	5.39	5.57	5.71	5.42	5.59	5.68	5.50	5.56	5.65	5.47
Austria	5.00	5.54	4.46	4.97	5.46	4.48	5.12	5.46	4.79	5.30	5.52	5.07	5.14	5.46	4.82	5.11	5.41	4.82
France	4.90	5.30	4.50	4.83	5.18	4.48	4.93	5.14	4.72	4.96	5.00	4.91	4.84	5.00	4.68	4.86	4.98	4.74
Belgium	4.95	5.28	4.62	4.91	5.24	4.59	5.06	5.30	4.83	5.21	5.32	5.09	5.07	5.27	4.87	5.11	5.34	4.89
Estonia	3.98	4.31	3.64	3.90	4.13	3.68	3.98	4.16	3.81	4.06	4.20	3.93	4.08	4.26	3.89	4.14	4.32	3.95
Malta	3.83	4.33	3.33	3.88	4.34	3.43	3.83	4.28	3.38	3.85	4.27	3.43	4.03	4.44	3.61	4.03	4.45	3.60
Czech Republic	4.40	4.80	4.01	4.19	4.47	3.92	4.09	4.42	3.77	4.13	4.45	3.81	4.07	4.43	3.70	4.07	4.46	3.67
Spain	4.14	4.74	3.55	3.96	4.46	3.47	4.03	4.51	3.55	4.14	4.51	3.77	4.14	4.52	3.75	4.06	4.42	3.69
Slovenia	4.23	4.64	3.83	4.08	4.42	3.73	3.87	4.19	3.55	4.02	4.18	3.85	3.88	4.14	3.63	3.88	4.11	3.64
Cyprus	4.18	4.67	3.68	4.07	4.47	3.66	3.83	4.19	3.48	3.77	4.18	3.36	3.87	4.34	3.41	4.06	4.41	3.71
Italy	4.15	4.92	3.38	4.11	4.81	3.40	4.18	4.85	3.51	4.24	4.75	3.73	4.22	4.74	3.69	4.26	4.79	3.73
Portugal	3.98	4.28	3.69	3.98	4.19	3.77	3.98	4.19	3.77	4.01	4.17	3.86	4.06	4.18	3.93	4.19	4.29	4.08
Latvia	3.36	3.79	2.94	3.37	3.73	3.02	3.53	3.84	3.21	3.57	3.89	3.25	3.61	4.01	3.21	3.68	4.09	3.27
Hungary	3.67	3.89	3.45	3.71	3.87	3.55	3.75	3.88	3.62	3.68	3.74	3.61	3.60	3.69	3.51	3.62	3.75	3.50
Slovakia	3.71	4.29	3.12	3.79	4.21	3.38	3.46	4.00	2.91	3.50	4.02	2.98	3.49	3.95	3.02	3.59	4.00	3.18
Lithuania	3.75	4.22	3.28	3.79	4.21	3.38	3.78	4.13	3.43	3.83	4.16	3.51	3.93	4.29	3.58	3.97	4.31	3.62
Bulgaria	3.29	3.68	2.90	3.22	3.52	2.91	3.24	3.55	2.94	3.30	3.62	2.98	3.28	3.59	2.97	3.27	3.61	2.94
Poland	3.84	4.35	3.33	3.76	4.20	3.31	3.64	4.06	3.23	3.66	4.06	3.25	3.65	4.06	3.24	3.66	4.06	3.26
Greece	3.59	4.04	3.14	3.41	3.83	3.00	3.39	3.79	2.98	3.37	3.74	3.00	3.46	3.84	3.08	3.55	3.91	3.18
Romania	3.44	3.79	3.10	3.24	3.55	3.94	3.20	3.48	2.91	3.20	3.47	2.92	3.32	3.62	3.01	3.53	3.77	3.28
Average	***4.35***	***4.74***	***3.96***	***4.31***	***4.64***	***4.01***	***4.33***	***4.62***	***4.05***	***4.38***	***4.61***	***4.15***	***4.36***	***4.62***	***4.10***	***4.40***	***4.64***	***4.15***

Source: WEF–The Global Competitiveness Report 2009-2015

Figure 1, 2, and 3 present the benchmarking analysis of Serbia with the Western Balkan countries, the EU 27 and Sweden as an EU country with the highest value for the *Innovations and Sophistication factors subindex*.

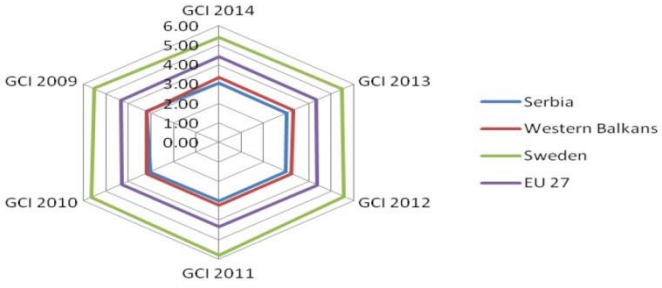

Figure 1. Benchmarking analysis for the Innovation and sophistication factors subindex for the period 2009-2014 (Serbia, Western Balkans, EU 27, Sweden)

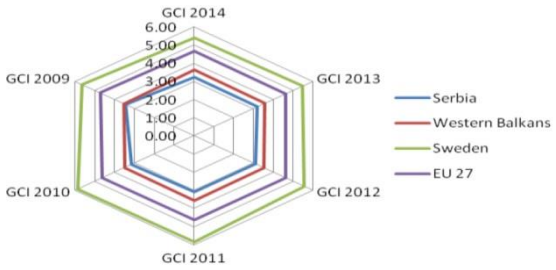

Figure 2. Benchmarking analysis for the Business sophistication pillar for the period 2009-2014
(Serbia, Western Balkans, EU 27, Sweden)

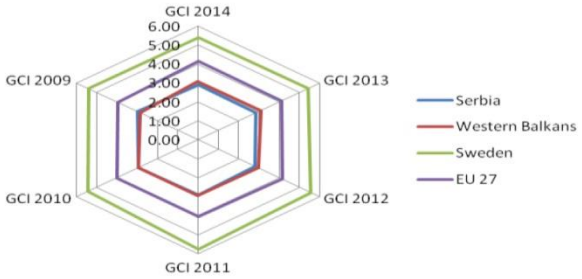

Figure 3. Benchmarking analysis for the Innovation pillar for the period 2009-2014
(Serbia, Western Balkans, EU 27, Sweden)

Based on Figure 1, 2, and 3 itcan be seen that Serbia is significantly lagging behind the total values for the *Inovations and Sophistication factors subindex*, but also bearing in mind its pillars (a. Innovation and b. Business sophistication) that EU 27 records, and especially Sweden as an EU country with the highest score of this indicator. Compared to other Western Balkan countries, Serbia lags behind the average value for the *Innovations and Sophistication factors subindex* in the whole analysed period (except in 2009 and 2010). Considering the two pillars within this subindex, greater lag in relation to the average values of the Western Balkans is recorded for the Business sophistication pillar. On the other hand, regarding the Innovation pillar, Serbia in the whole analysed period (2009-2014) records the score which is almost equal the average values of this indicator for the Western Balkans.

CONCLUSION

Initiating, maintaining, and enhancing the economic growth requires decisive action of the creators of the development policies in order to

improve the competitiveness of their countries and future economic prospects. Reforms and proper set of investments become crucial for economic transformation that leads to a sustained high economic growth over the long term. Therefore, it is imperative to increase competitiveness which should be at the top of the agenda of economic reforms in a country.

Serbia is a country that cannot boast with a high level of competitiveness in recent years. Also, with the average GDP per capita in the period 2008-2013 below US$ 6000, its economy is efficiency-driven and still is quite far away from the transition to an innovation-driven economy stage.

The low level of GDP per capita substantially determines the overall competitiveness of Serbian economy since there is a positive correlation between GDP per capita and GCI score. However, in recent years, an intensity of the correlation that exists between them has been reduced.

The low level of economic growth measured by the GDP per capita, as well as other economic and non-economic factors, have contributed to the almost unchanged GCI score of Serbian economy in the last six years (from 2009 to 2014). Thus, not only has the competitiveness of Serbian economy not improved, but, if the progress of other Western Balkan countries is taken into account, Serbia has eroded its competitive position among them.

Bearing in mind the low GCI scores of Serbia in the period 2009-2014 and poor ranking among the Western Balkan countries regarding the total GCI scores, but especially related to the pillars "Innovations and business sophistication", the creators of the development policies should focus on improving competitiveness in these critical areas. Since the lowest GCI scores in the observed period for Serbia were achieved in the last, 12th pillar of competitiveness (Innovations), improving these areas would enhance the overall competitiveness of the Serbian economy. Therefore, innovations can be distinguished as the key determinant of increasing the competitiveness of Serbia.

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ИНОВАЦИЈЕ КАО ДЕТЕРМИНАНТА КОНКУРЕНТНОСТИ СРБИЈЕ: КОМПАРАТИВНА АНАЛИЗА СА ЕУ И ЗЕМЉАМА ЗАПАДНОГ БАЛКАНА

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Резиме

Иновације као детерминанта конкурентности јесу једна од основних претпоставки економског просперитета сваке земље и повећања благостања становништва. Да би творци развојних политика формулисали ефективне политике и стратегије, потребне су адекватне информације које се односе на све виталне аспекте конкурентности, укључујући и иновације.

Циљ аутора овог рада био је да свеобухватно истраже и анализирају конкурентност, са посебним освртом на Факторе иновативности и софистицираности као детерминанте конкурентности Србије, у поређењу са земљама Западног Балкана и земљама ЕУ. Коришћена методологија подразумева анализу Извештаја глобалне конкурентности (The Global Competitiveness Report) 2009–2010, 2010–2011, 2011–2012, 2012–2013, 2013–2014, 2014–2015, који представља информациону основу овог истраживања.

Резултати истраживања указују на то да је Србија земља која се не може похвалити високим нивоом конкурентности последњих година. Такође, са БДП-ом по становнику који је у периоду од 2008. до 2013. године у просеку око 6000 УС$, њена привреда је вођена ефикасношћу и још увек је прилично далеко од транзиције ка привреди вођеној иновацијама. Низак ниво БДП-а по становнику битно опредељује и укупну конкурентност српске привреде с обзиром на то да постоји висока позитивна корелација између БДП-а по становнику и Глобалног индекса конкурентности (ГИК). Ипак, последњих година анализираног периода смањује се интензитет корелације који постоји између њих.

Недовољан ниво привредног раста мерен БДП-ом по становнику, али и неки други, како економски тако и неекономски фактори, допринели су томе да привреда Србије у последњем шестогодишњем периоду (2009–2014) бележи готово непромењен ГИК за субиндекс Фактори иновативности и софистицираности. Тиме не само да се конкурентност привреде Србије није унапредила већ је, ако се узме у обзир напредовање других земаља Западног Балкана и ЕУ, еродирала своју конкурентску позицију међу њима. Имајући у виду ниске вредности ГИК Србије у периоду од 2009. до 2014. године, као и лош ранг међу земљама ЕУ и Западног Балкана у укупном ГИК, а посебно у домену Иновација и Пословне софистицираности, творци развојне политике би требало да се фокусирају на унапређење конкурентности ових критичних детерминанти. С обзиром на то да се најлошији ГИК у посматраном периоду за Србију остварује у последњем, односно 12. стубу конкурентности (Иновације), унапређењем ове детерминанте путем креативне економске политике унапредила би се укупна конкурентност српске привреде. Тиме се иновације могу издвојити као кључна детерминанта повећања конкурентности Србије.