

INNOVATIVE ENTERPRISES IN SERBIA AND ROMANIA

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Abstract: *The well-being of the population depends on the ability of innovative enterprises to adapt to the needs of people in perpetual change. Workers capable of innovation are becoming more and more sought after on the labor markets, being the pillars of the innovative ensemble in national enterprises. In this article we have made a comparative analysis of existing innovative enterprises in Serbia and Romania, during the years 2010-2016. The research is based on the observation and analysis of data provided by the statistical offices of both countries. The importance of this analysis is given by the establishment of the existing discrepancies and similarities between the innovative enterprises from Serbia and Romania, as well as the identification of the existing deficiencies within the development of these activities. The companies on the Romanian territory were in a continuous decreasing trend, highlighting the low investments made in the field of innovation, as well as a poor opening to foreign markets. At the opposite pole, Serbia, which despite not integrating into the European Union, shows an increasing trend of innovative enterprises. However, there are still areas for improvement, with the aim of synchronizing innovative enterprises in the two countries with enterprises in countries around the world, recognized for their innovative activities. The innovative centers in the two countries are located in the Beogradski region of Serbia and the Bucharest-Ifov region of Romania.*

Keywords: *innovation; enterprises; Serbia; Romania.*

JEL Classification: *O14; O31; O32.*

1. Introduction

Although there have been numerous attempts to define the term innovation and the factors that influence it, research continues for a better understanding of this concept. According to Oxford Business English Dictionary (2005), innovation is the ability to develop things/processes that have a certain degree of novelty. Another definition attributed to innovation is "the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organisational method in business practices, workplace organisation or external relations" (OECD, 2005). Robert Stackowiak (2019) defines four types of entrepreneurial culture that influence the way enterprises operate: the culture that focuses on the production process, the collaborative culture, the culture oriented towards finding solutions and the culture that seeks to produce innovation. John Hopkins (2013), brings into question the major difference between innovation and creativity. The first allows repeatability in terms of novelty, making it accessible

following the path of the author of the innovation. While, creativity does not offer the same permissibility to repeat, not even to the author of the original work. According to the same author, a creative process offers the possibility of innovation, but the chances of innovation influencing creativity are lower. However, in the absence of the progress provided by innovative activities, society would stagnate, preventing economic growth and development. Innovative enterprises are an important source for innovation. The changes that characterize contemporary society focus on the perishability of environmental resources, the ability to develop new renewable energy sources that support daily life, low living standards and lack of funds to support innovations at full capacity. That is why the importance of people capable of innovation has become stringent. They acquired the power they once had, those who had physical capital.

2. Comparative analysis of innovative enterprises

According to National Institute of Statistics of Romania (2018), innovative enterprises are those entities that have focused on developing products characterized by novelty and improvement. The element of innovation also appears in the production, organizational and advertising process."The term covers all types of innovators, product, process, organizational or marketing methods innovators, as well as enterprises with unfinished innovations or abandoned and refers to active enterprises" (National Institute of Statistics, Romania, 2018). Numerous studies conducted in transition countries show that process and product innovation, combined with other factors such as: exports, investment in human capital of workers through various training programs support the development of small and medium enterprises (Chit, 2018) (Veugelers R., Schweiger H., 2016) (Boermans M.A., Roelfsema H., 2015), but also how political power in autocratic regimes can undermine the implementation of innovative activities (Wegner, 2019). In Serbia, the criteria for hiring innovative companies are similar to those in Romania. The undertaken research was carried out by observing and analyzing the data provided by the National Statistics Offices of both countries. Innovation reports are drawn up every two years, as can be seen in the tables.

According to statistics from 2010-2018, the total number of innovative enterprises in Serbia has been growing, highlighting the importance given to the innovative sector in the economy as a whole. In the period 2010-2012, the gap between small and large enterprises was 3347 enterprises, in favor of small ones. Although the number of large enterprises was considerably lower than that of small enterprises, the share of innovative activities was 66.2% in those large enterprises, compared to 40.8% in small enterprises. Also, manufacturing and service enterprises recorded relatively large shares of innovative activities, of 48.7% and 42.4%, respectively (Statistical Office of the Republic of Serbia, 2013).

A survey conducted during the years 2012-2014, in 3587 companies of different sizes in Serbia, reveals that the biggest obstacles perceived by companies in carrying out innovative activities are: lack of own financial resources, difficulties in obtaining rewards from the state for innovation, in the form of grants or donations,

difficulties in accessing loans from banks or attracting private capital (Statistical Office of the Republic of Serbia, 2010-2019).

In Table 1, we can see that the number of innovative enterprises in Serbia reached 9546 in the period 2016-2018. Again, despite the small number of large entities, the participation of these innovative enterprises was 69,10%, compared to 47.65% of small enterprises. The share of innovative activities carried out by enterprises in the manufacturing and industrial sectors was 56.64% and 47.90%, respectively. Throughout the analysis period, the Beogradski region has established itself with a majority of innovative products/services, as well as in process innovations. The turnover structure, obtained by innovative enterprises in 2016-2018, was 86.3% of products without changes or moderately changed, 3.6% of products/services on the market for the first time and 10.1% from products/services that have a novelty character in the enterprise. This pattern can be observed throughout the analysis period (Statistical Office of the Republic of Serbia, 2010-2019).

Table 1: Enterprises by innovations, activities and size classes, 2010-2018, Serbia

	Innovators			
	2010-2012	2012-2014	2014-2016	2016-2018
Total	5280	6739	6994	9546
Small enterprises	3691	5182	5417	7566
Medium enterprises	1245	1187	1228	1573
Large enterprises	344	370	349	407
Manufacturing enterprises	2007	1977	2232	2854
Service enterprises	3273	4762	4762	6692

Source: Statistical Office of the Republic of Serbia (2010-2019)

We believe that openness to overseas markets should be encouraged, with the aim of attracting funds by selling larger quantities of innovative products, as well as large investments in the advertising of national culture and products.

Table 2: Enterprises by innovations, activities and size classes, 2010-2016, Romania

	Innovators		
	2010-2012	2012-2014	2014-2016
Total	5968	3645	2925
Small enterprises	4089	2527	2059
Medium enterprises	1400	786	643
Large enterprises	479	332	223
Industry	3415	1843	1493
Service enterprises	2553	1802	1432

Source: National Institute of Statistics, Romania (2018)

Tables 1 and 2 illustrate that during the years 2010-2012, 5280 innovative enterprises were registered in Serbia, and 5968 carried out innovation activities in Romania. The following years, 2012-2014, in Serbia the trend continues to increase, but in Romania there is a drastic reduction in the number of innovative enterprises, from 5968, as they were registered in the previous period, to 3645 entities (Statistical Office of the Republic of Serbia, 2015; Statistical Office of the Republic of Serbia, 2010-2019).

Unlike Serbia, where the manufacturing sector has the majority taking into account the criterion of the number of innovative enterprises, in Romania, the industrial sector has the majority. However, in Romania, during the years 2014-2016, the trend of innovative enterprises is decreasing reaching 2925 entities (National Institute of Statistics, Romania, 2018; Statistical Office of the Republic of Serbia, 2010-2019).

We consider that the differences observed between the two countries are determined by the national specificity, but also by the financial resources they benefit from. In Romania, the industrial sector has been encouraged since the communist period, continuing to be developed in the next period. This sector has undergone a number of changes, caused by the privatization process of publicly owned enterprises. In terms of financial resources, in Serbia, the period 2010-2016, the gross domestic product per capita was between 420659 RSD (EUR 4082) registered in 2010 and 640558 RSD (EUR 5203) at the end of the period considered, in 2016. We observe a significant increase in gross domestic product per capita in the Republic of Serbia (Statistical Office of the Republic of Serbia, 2010-2019). In Romania, the gross domestic product per capita was 26368.7 lei (6154 EUR), in 2010 and 38690.7 lei (8520 EUR). In parentheses, the gross domestic products expressed in euro are determined at the exchange rate of the periods mentioned (National Institute of Statistics, Romania, 2015-2017).

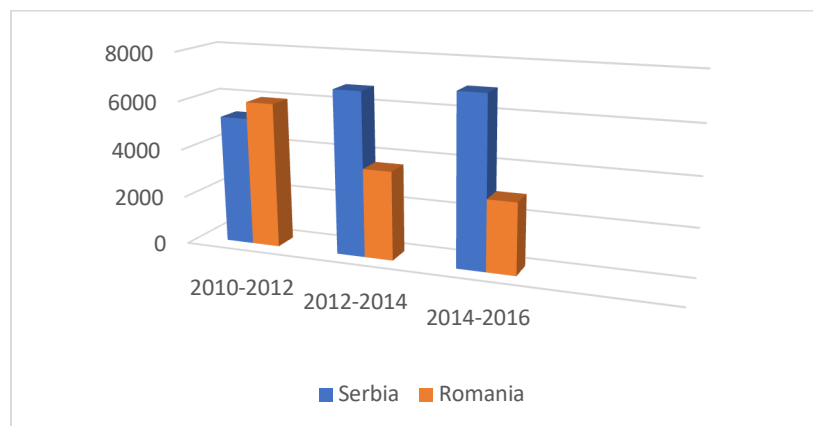


Figure 1: Comparative analysis of innovative enterprises, Serbia and Romania, 2010-2016

Source: Statistical Office of the Republic of Serbia (2010-2019), National Institute of Statistics, Romania (2018)

As we can see in figure 1, on the Romanian territory, the number of small enterprises was 4089, during the years 2010-2012, registering a decrease in the period 2012-2014, the gap being 1562. The following years, 2014-2016, there is another decrease, up to the value of 2059 innovative enterprises. The same trend is followed by medium-sized and large enterprises (Statistical Office of the Republic of Serbia, 2015).

Table 3: Share of types of innovations by territory, 2010-2012 (%)

Territory	Innovative enterprises				
	Product/service innovations	Process innovations	Abandoned innovations or ongoing innovations	Organizational innovations	Marketing innovations
REPUBLIC OF SERBIA	21,0	19,1	7,9	31,4	29,7
SRBIJA-SEVER	20,3	19,3	7,7	32,4	30,6
Beogradski region	21,5	20,9	7,95	35,3	32,6
Region Vojvodine	18,7	17,0	7,38	28,5	27,8
SRBIJA-JUG	22,2	18,7	8,14	29,6	28,1
Region Sumadije i Zapadne Srbije	23,4	18,7	7,93	30,6	27,9
Region Juzne i Istocne Srbije	20,3	18,7	8,49	28,1	28,4

Source: Statistical Office of the Republic of Serbia (2013)

In the period 2014-2016, the total share of enterprises carrying out innovation activities registered a decreasing trend by 2.6%. Most innovations are registered in the information services sector, 25.1% and in the pharmaceutical sector 24,2% (Statistical Office of the Republic of Serbia, 2017). Unlike Serbia, where the administrative and manufacturing sectors occupy the majority share of 32.2% and

29.3%, respectively, in the same period (Statistical Office of the Republic of Serbia, 2015). The situation of innovative enterprises in Romania, during the years 2016-2018, was not subject to analysis due to lack of data.

We believe that large innovative enterprises have seen a significant decline due to: low number of collaborations with other entities outside the country, low investment in various information technologies or state-of-the-art machines that can supply labor and increase productivity, as well as poor access to European funds.

Table 4: Share of types of innovations by territory, 2012-2014 (%)

Territory	Innovative enterprises				
	Product/service innovations	Process innovations	Abandoned innovations or ongoing innovations	Organizational innovations	Marketing innovations
REPUBLIC OF SERBIA	20,4	20,2	10,9	24,9	23,8
SRBIJA-SEVER	20,7	19,5	10,6	25,0	22,9
Beogradski region	21,2	20,5	10,9	26,5	24,4
Region Vojvodine	19,8	18,0	10,2	22,5	20,4
SRBIJA-JUG	19,9	21,6	11,5	24,7	25,8
Region Sumadije i Zapadne Srbije	20,3	22,4	11,4	24,2	25,1
Region Juzne i Istocne Srbije	19,2	20,3	11,8	25,4	26,9

Source: Statistical Office of the Republic of Serbia (2015)

Given the territorial criterion, table 3 illustrates that in the period 2010-2012, organizational and marketing innovations were the majority in all regions of the Republic of Serbia. Serbia is divided in regions of three layers. The level 1 statistical regions are Srbija-Sever and Srbija-Jug. The other regions mentioned in the table

are considered level 2 regions (European Commission, 2018). The largest share of organizational innovations, 35.3%, was registered in the level 2 region, Beogradski, recognized as the center of innovation in the country. A close share of organizational innovations, 32.4%, is registered in the level 1 region, Srbija-Sever (Statistical Office of the Republic of Serbia, 2013).

During the same period, 2010-2012, marketing innovations have the highest shares in the same two regions mentioned above, 32.6% region 2 Beogradski and 30.6% Srbija-Sever respectively. Manufacturing-type enterprises have achieved all types of innovations in a higher share than those specialized in services. Just under 50% of large enterprises have implemented all categories of innovations (Statistical Office of the Republic of Serbia, 2013).

The following years, 2012-2014, the trend is similar, as can be seen in Table 4. Again, organizational and marketing innovations occupy the majority share. Region 2 Beogradski again occupies the first position, with a share of 26.5% of organizational innovations. In terms of marketing innovations, the secondary level region, Juzne i Istocne Srbije, obtains the highest share of 26.9%, ahead of the Beogradski region (Statistical Office of the Republic of Serbia, 2015).

We assume that the importance given to organizational and marketing innovations is due to the pursuit of objectives regarding the development of skills that employees have, important for generating innovation and increasing profits for new investments, team coordination, bringing a new breath to organizational culture can motivate employees to continue learning throughout life. Marketing innovations are a must to facilitate customer interactions, the rapid distribution of information about new products, services they can benefit from, and openness to new cultures, eager to know the specifics of the activities of innovative enterprises in Serbia.

Table 5 shows that in the period 2014-2016, innovative enterprises in Region 1 Srbija-Sever focused mainly on product/service innovations and organizational innovations, while innovative enterprises in Region 2, Srbija-Jug focused on product/service and process innovations. Thus, in the Sumadije i Zapadne Srbije secondary region, the highest share of product/service innovations was registered, and the majority share of organizational innovations was 25% in the Beogradski secondary region. Process innovations gained the majority share, of 25%, in the secondary region Sumadije i Zapadne Srbije. The lowest share of process innovations, 17.4%, was recorded in the secondary region of Vojvodina. In terms of product and service innovations, the lowest share of 25.1% was recorded in the same region mentioned above. This trend is maintained throughout the period under analysis. The Vojvodina region can be considered the least innovative region of Serbia, due to the fact that it has the lowest shares in all types of innovations (product / service, process, organizational and marketing innovations). It also gets the lowest shares in abandoned or ongoing innovations (Statistical Office of the Republic of Serbia, 2018).

The region on the Romanian territory, considered to be the most innovative, is the Bucharest-Ilfov Region. This aspect can be observed in table 6. In the period 2010-2012, in the Bucharest-Ilfov region there were 1186 innovative enterprises. The next period, 2012-2014, the trend is decreasing, reaching a value of 1129 units (Statistical

Office of the Republic of Serbia, 2015). During the entire analyzed period, the devastating effects of the economic crisis that appeared in 2008 in the world are observed, through the continuous decrease of the number of innovative enterprises.

Table 5: Share of types of innovations by territory, 2014-2016 (%)

Territory	Innovative enterprises				
	Product/service innovations	Process innovations	Abandoned innovations or ongoing innovations	Organizational innovations	Marketing innovations
REPUBLIC OF SERBIA	26,9	21,0	14,3	24,2	22,3
SRBIJA-SEVER	26,4	19,7	14,9	24,9	21,7
Beogradski region	27,2	21,0	16,1	25,0	22,0
Region Vojvodine	25,1	17,4	12,8	24,9	21,3
SRBIJA-JUG	28,0	24,2	13,1	22,6	23,4
Region Sumadije i Zapadne Srbije	28,4	25,0	13,6	22,7	25,0
Region Juzne i Istocne Srbije	27,4	22,8	12,3	22,3	20,9

Source: Statistical Office of the Republic of Serbia (2018)

In the period 2014-2016, a value of 714 innovative enterprises is reached, the gap being 415 innovative entities (Statistical Office of the Republic of Serbia, 2015). The Bucharest-Ilfov region is considered the most innovative, because the capital Bucharest offers various opportunities to find well-paid jobs. Most investors choose this region, precisely for the fast pace of development. Innovations are less common in the South-West Oltenia Region (Statistical Office of the Republic of Serbia, 2017).

Table 6: Innovative enterprises macro-regions 1 and 2, development regions, Romania, period 2010-2016

Macro-regions and development regions	2010-2012	2012-2014	2014-2016
Macro-region 1	1431	864	872
Northwest Region	593	401	592
Central Region	838	463	280
Macro-region 2	2082	1004	932
Northeast region	974	444	424
Southeast region	1108	560	508
Macro-region 3	1706	1482	846
South Muntenia region	520	353	132
Bucharest-Ilfov region	1186	1129	714
Macro-region 4	749	295	275
South-West Oltenia Region	365	120	57
West Region	384	175	218

Source: National Institute of Statistics, Romania (2018)

Innovative companies in Romania focused on selling products locally and regionally. 31.2% of them confirmed that they traded products in other foreign markets (National Institute of Statistics, Romania, 2018). A survey of innovative enterprises conducted in Serbia in 2012-2014 found that 43.2% of enterprises focused on product and process innovations, and 41.2% of enterprises with organizational and marketing innovations, respectively traded products in local and regional markets. "The share of innovators versus that of non-innovators on the market of EU and EFTA countries was by 50% higher and on the markets of other countries was even over 50%." However, the same study shows that 63.2% of the funds of innovative enterprises in Serbia at that time were received from the state. Due to the fact that Serbia is not yet a member of the European Union, there is a shortage of funds received from the European institutions. Only 11.4% of financial support came from the EU and 2.8% from the EU7 (Statistical Office of the Republic of Serbia, 2015).

Serbia's accession to the European Union can also reduce the costs of foreign trade by exempting certain taxes.

3. Conclusion

Innovative enterprises are an important pillar of economic development, implicitly of scientific and technological progress. Following the analysis of innovative enterprises in Serbia and Romania, several conclusions can be drawn. In both countries there is a need for greater openness to foreign trade in innovative goods and services, which can add to foreign markets and at the same time fund new investments. Serbia's accession to the European Union would improve the rate of attracting European funds. They can be used mainly for the implementation of innovations. Trade between the two countries can also be intensified, given the

advantage of territorial proximity. Innovative enterprises must seek, in addition to reducing costs, the exchange of experience and equipping workers with the necessary skills to enable them to undertake the innovative process.

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