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# GLOBAL INNOVATION INDEX 2015: BOSNIA AND HERZEGOVINA&MONTENEGRO

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## ABSTRACT
*There is quite active tendency for fostering competitiveness and innovation in Europe. In this paper, we have presented values of Global Innovation Index for Bosnia and Herzegovina and then descriptive comparison with Montenegro among Global Innovation Index Sub indexesin 2015 as follows: Institutions, Human Capital and Research, Infrastructure, Market Sophistication, Business sophistication, Knowledge and Technology Outputs, Creative Outputs. We have emphasis risks and possibilities for improving innovation activities in Bosnia and Herzegovina. Also, results showed that fostering innovation as well as flow of people, goods, services and investments are crucial for nowadays market position and competitiveness of national economies.*
**Keywords:** Global Innovation Index, Innovation,Bosnia and Herzegovina, Montenegro

## 1. INTRODUCTION
Companies which operate in today's globalized and highly competitive environment don't have dilemma of having or not an innovation activities, but trying to balance costs and resources required for such activities and achieving better business results. In the heart of modern organizations are business challenges that requires pragmatic solutions, efficient solutions and innovation in business processes.Through innovative models of organizational structure, which are wholly composed of innovative and operational part, it is aimed to accelerate the transformation of research and development activities in new activities linked to the product or market. An important difference between traditional and modern innovative organizations is precisely the way in which the tasks are set and solved. The traditional organization focusing all the attention on looking for a solution of already existing situation (problem), while modern innovative organizations are looking for the cause of the occurrence of specific situations, including in the entire process of all its employees. Observing the relationship between competitive advantage and the width of competitive areas, Porter (1998) has identified three generic strategies of competitiveness, which may be used by organizations. These are:

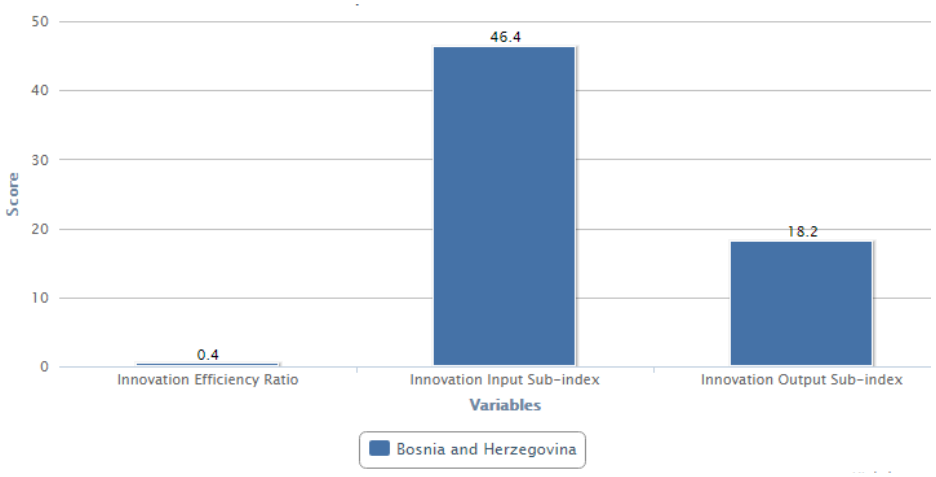
the strategy of leadership in costs, differentiation strategy and focus strategy. When choosing a competitive strategy the most important questions that are put related to the (non) existence of long-term profitability branches and its factors, and what is the competitive position of the organization observed within these branches.(3)

## 2. GLOBAL INNOVATION INDEX: DEFINITION AND IMPORTANCE

The GII is composed of two sub-indices: innovation inputs (GIIInput) and innovation outputs (GIIOutput). The first sub-index (GIInput) includes five elements (columns) of the national economy, which create space for innovation activities, namely: institutions (political environment, legal environment, business environment), human capital and research (education, tertiary education, researches and development) , infrastructure (information and communication technology, energy, general infrastructure), market sophistication (credit, investment, trade and competition) and business sophistication (knowledge/skills of workers, innovation "linkages", the absorption of knowledge). Another sub-index (GIIOutput) presents the results of innovation activities and make it: scientific outputs (creation of knowledge, the impact of knowledge, diffusion of knowledge) and creative outputs (creative goods and services). Each sub-index is composed of further sub-index and those of its individual indicators (79 total).“ Over the last eight years, the GII has established itself as a leading reference on innovation. Understanding in more detail the human aspects behind innovation is essential for the design of policies that help promote economic development and richer innovation-prone environments locally. Recognizing the key role of innovation as a driver of economic growth and prosperity, and the need for a broad horizontal vision of innovation applicable to developed and emerging economies, the GII includes indicators that go beyond the traditional measures of innovation such as the level of research and development.“ (1)

## 3. RESEARCH METHODOLOGY AND DESCRIPTIVE STATISTICS

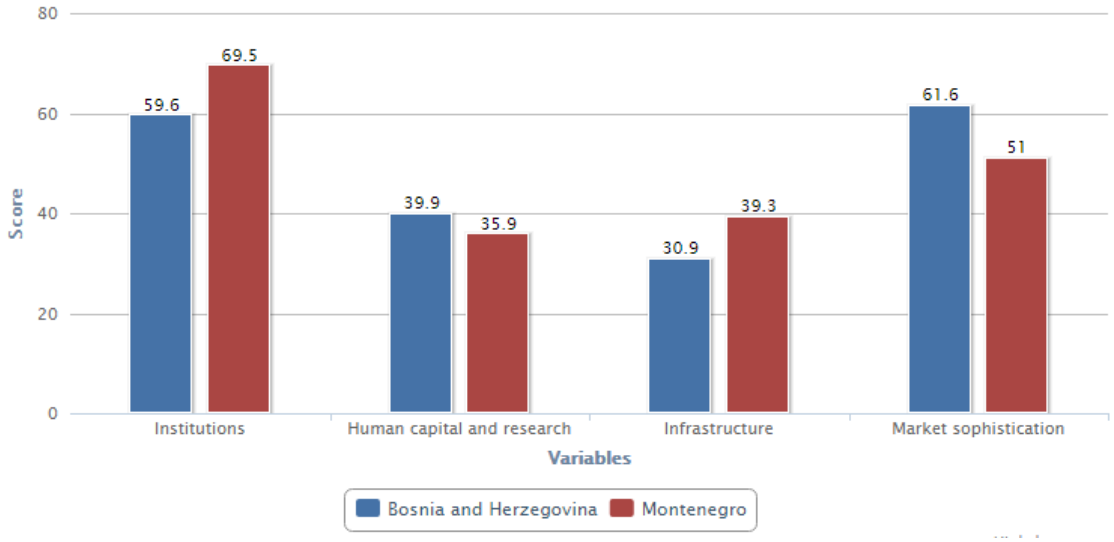
The full potential of innovation becomes visible only in the market environment. In fact, it is generally accepted that competitiveness strengthens innovation, and vice versa.In 2015, Bosnia and Herzegovina has had quite high value of Innovation Input Sub-index (46,4), but in the end Innovation Output Sub-index has been quite lower (18,2) (Picture 1). Reasons of this situation could be found in all sectors, public sector as well as private, and at all levels starting from enterprisis towards government.




Picture 1: Innovation Input Sub-index / Innovation Output Sub-index 2015: Bosnia and Herzegovina
Source: www.globalinnovationindex.org

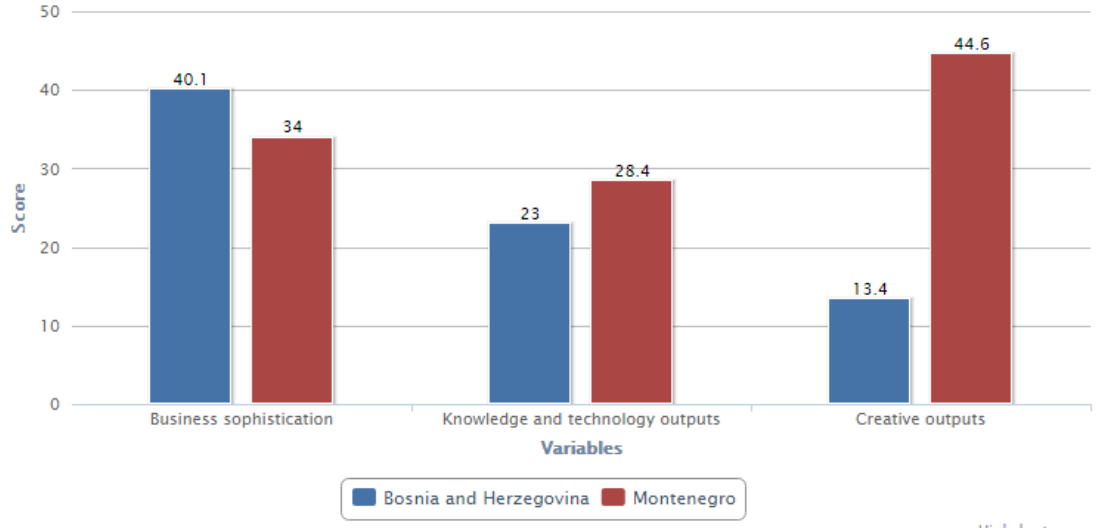
According to the latest data of the Agency for Statistics for 2014, the year in which the total expenditures for research and development (GERD) amounted to EUR 70.4 million or 0.26% of GDP of Bosnia and Herzegovina in 2014 amounted to 27.26 billion BAM. This is well below the European average of 2.1% of GDP, with the aim of achieving an average of 3% of GDP by 2020. Scientific research in country is characterized by: lack of trained and accredited institutions for counducting

R&D&I; small number of researchers; the low level of funding of science; low mobility of researchers and their large concentration in the centers; low competitiveness of scientific papers by the number and the quality; low level of transformation of scientific research in innovation; insuficient statistical data on scientific research results by the relevant international standards;"brain drain" (brain drain), etc. In the next level, when we observed subindexes in 2015, such as: Institutins, Human Capital and Research, Infrastructure and Market Sophistication and compared Bosnia and Herzegovina¨s values with nebour country Montenegro, we got results showed at Picture 2. Well, Bosnia and Herzegovina had greater values of Market Sophistitation (61,6), while values of Institutions (69,5) and Infrastructure (39,3) were higher in Montenegro. Value of Human Capital and Research Subindex was quite similar in Bosnia and Herzegovina and Montenegro, 39,9 and 35,9, retrospectivly.




Picture 2:Institutins, Human Capital and Research, Infrastructure, Market Sophistication 2015: Bosnia and Herzegovina vs Montenegro Source: www.globalinnovationindex.org

In next step, we have compared Knowledge nad technology outputs and Creative outputs (Picture 3). So, we have noticed that Montenegro had higher values of both outputs, namely Knowledge and technology outputs (28,4) and Creative outputs (44,6).




Picture 3: Business sophistication, Knowledge and Technology outputs, Creative outputs 2015: Bosnia and Herzegovina vs Montenegro Source: www.globalinnovationindex.org

So, analysing all above mentioned subindexes, it is evident lagging of Bosnia and Herzegovina behind Montenegro. In Bosnia and Herzegovina: the majority of funds for scientific research activities consist of assets of entities budgets and resources of local communities. There is no reliable data on the separation of commercial enterprises for this purpose, but they are certainly marginal.Well, it is clear that without greater participation incentive funds by the public sector is not possible to raise the level of scientific research capacity, human resources, innovation and infrastructure. Also, some of the reasons could be: weak regional and international cooperation, absance of strategic plan for scientific development, innovation and its priorities; absance of truly selective and motivation system of scientific evaluation and measurement of the impact of research and innovation to increase gross domestic income; ineffective, uninspired and outdated system of higher education, lack of concern for the reproduction of scientific and research personnel; low level of knowledge of the conditions of global competition; low level of scientific leadership and management. and a poor level of scientific entrepreneurship, absence of statistical indicators related Research, Innovationa and Development, inadequate register of scientific and research infrastructure, low usage of existing R&I&D infrastructure and insufficient investment in it, etc. (2)

## 4. CONCLUSION

Having in mind, low indicators of Global Innovation Index for Bosnia and Herzegovina in 2015, and comparing them to Montenergro, it is evident that there is a lot to be done in Bosnia and Herzegovina. The possibilities can be reflected through: better use of EU funds to improve the R&I&D sector, establishing the EU model of education and research, existence of low cost scientific research personnel in comparison to developed countries, opportunities provided by technology transfer, greater degree of engagement of our experts from abroad, globalization, acelerated needs of domestic companies to develop the R&I&D sector, unsaturated area of high technology (in which it is possible to step through the rapid transfer and application of innovation), greater impact of scientific research and innovation on the economy. But also high risks are reflected by: continuing marginalization R&I&D at all levels, reluctance to change and fear of failure, aversion of taking individual responsibility, lack of culture of lifelong learning, lack of understanding of the social consequences due to brain drain, avoiding international competition and competence and the closure of national borders, expectation of the state that it solve all problems, etc.

We can conclude that growth based on innovation is not only a privilege of developed countries. Developing countries are increasingly creating and directing their policies to increase innovation capacity. These policies have different forms, because different countries have different needs, different degrees of development and tendencies, but they all share is that all strive to continually improve as resources and as well as performance. Bearing in mind the interaction that exists between the world economy and local economies, developing countries are becoming more oriented towards the creation of a business environment that will promote long-term international competitiveness in order to thus achieve greater social stability and better living standards.

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