

EDUCATION AS AN INDICATOR OF DEVELOPMENT ON THE ROAD TO THE KNOWLEDGE ECONOMY

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Abstract

One of the basic indicators of the development of national economies is the degree of education and knowledge of its society. Therefore, education, especially higher education, is considered to be a national priority which contributes to economic development as well as the development of society in general.

Highly-educated workforce is of special importance for the creation of a knowledge-based economy. Most developed countries implement their development strategies by investing in knowledge and human capital. Europe 2020 strategy lists as its main goals the improvement of conditions and quality of education. The United Nations and the World Bank consider education as one of the foundations for the creation of a knowledge-based economy.

The knowledge economy can be defined as economy based on human knowledge, competence and capability. The key factor in the development process is knowledge embodied in people.

This paper shows basic indicators of the development of knowledge economy with a special focus on education, and it also explores where Bosnia and Herzegovina is on the road to the knowledge economy.

Keywords: education, development, knowledge economy, Bosnia and Herzegovina

JEL Classification: D83, I21, I24, O15

1. INTRODUCTION

According to the World Bank Institute, one of the basic pillars of knowledge economy is education. Education as a process and highly educated workforce, which is constantly learning are the basic indicators of development of a specific country. All efforts towards a higher quality of education are justified by the fact that today it is impossible to achieve economic growth, in terms of greater manufacture, more employed work force and economic growth, in terms of increase in production per worker, productivity, without educated workforce which is in a constant process of learning. New technologies and modern methods of production demand a quality workforce which can be quickly and successfully adapted to the turbulent market. Highly educated workforce does not only encompass persons who have acquired academic or professional qualifications from higher education institutions and that have therefore successfully completed their educational path.

Economy grounded in knowledge does not acknowledge knowledge as a final end product. Knowledge is treated as grounds for the emergence of new knowledge, as an input for the future, more quality product or technology. That is why the workforce is encouraged to learn throughout their entire life span, first in higher education institutions and later in work place.

It is evident even without this research paper that Bosnia and Herzegovina is falling behind the most developed economies of the world. Even though, the aim of this work is to see how big these backlogs are and what is the future perspective of Bosnia and Herzegovina in terms of future development on the road towards the economy of knowledge. In order to achieve a better insight into the state of Bosnia and Herzegovina a comparison between the development of knowledge economy in Bosnia and Herzegovina and selected groups of countries, regions, is shown. For the comparison of the development of knowledge economy indexes and indicators of development of United Nations and the World Bank are used.

2. EDUCATION AND ECONOMIC DEVELOPMENT

In more developed countries the main development recourse is the human capital and its quality is also mostly determined by education (Cascio, 2002.). Therefore, the most developed economies in the world consider education as a

national priority. Thus, the Document Europe 2020 (European Commission), where the countries of the eurozone have determined five basic goals, lists improvement of conditions and quality of education as basic ones, at least 40% of people between the age of 30 and 34 should have finished their higher education. The remaining four goals are tightly connected to education and they refer to the increase of employment where the educated workforce is the bearer of the future development. Strategy of development by investing in knowledge and human capital is applied by economically most developed countries. In their research of human capital (Human Development Reports), United Nations use human development indicator (HDI) which has the following components:

1. education (schooling)
2. life span
3. gross national income

According to this index, Bosnia and Herzegovina is in 86th place out of 187 observed countries in the world. The table 1. shows a comparison between Bosnia and Herzegovina, top 10 countries and selected countries and regions. Data about countries with the highest human development indicator, data about surrounding countries including Turkey, an EU candidate, and data about average value of countries with high human development indicator and countries in Europe and Central Asia are compared.

Table 1 Human Development Index, 2013.

Rank	Country	Human Development Index	Rank	Country	Human Development Index
1.	Norway	0,944	10.	Denmark	0,900
2.	Australia	0,933	47.	Croatia	0,812
3.	Switzerland	0,917	69.	Turkey	0,759
4.	Netherlands	0,915	77.	Serbia	0,745
5.	United States	0,914	84.	Macedonia	0,732
6.	Germany	0,911	86.	Bosnia and Herzegovina	0,731
7.	New Zeland	0,910	95.	Albania	0,716
8.	Canada	0,902	-	High human development	0,735
9.	Singapore	0,901	-	Europe and Central Asia	0,738

The source: <http://hdr.undp.org/en/content/table-1-human-development-index-and-its-components> (14.03.2015.)

According to the comparison from the Tabel 1. it can be concluded that Bosnia and Herzegovina is placed somewhere in the middle, 86th place out of 187 countries. However, if the accomplished values of the surrounding countries are taken into consideration then the gathered data is worrying. Albania, EU candidate from 2014, is the only country that in a worse position. It is evident that there is a long and difficult journey ahead of Bosnia and Herzegovina so that it could catch up with the more developed countries. A transition to the knowledge economy is the final goal, and the current efforts are unfortunately insufficient.

The Table 2. shows values of individual components of human development indicator. The values of Bosnia and Herzegovina, average value of countries with high human capital index (where Bosnia and Herzegovina belongs) and average value of European and Central Asia countries are compared.

Table 2. Human Development Index and its components

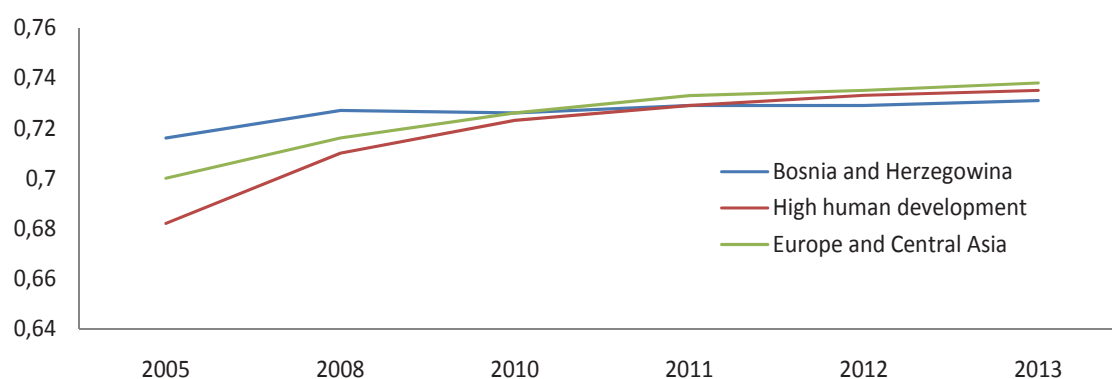
Country/Region	HDI 2013	Life expectancy at birth	Mean years of schooling	Expected years of schooling	Gross national income per capita
Bosnia and Herzegovina	0,731	76,4	8,3	13,6	9.431
High human development	0,735	74,5	8,1	13,4	13.231
Europe and Central Asia	0,738	71,3	9,6	13,6	12.415

The source: <http://hdr.undp.org/en/content/table-1-human-development-index-and-its-components> (14.03.2015.)

From the Tabel 2. backlogs of Bosnia and Herzegovina for the indicator of “expected years of schooling” are evident, and even greater backlog for indicator of “gross national income per capita”. By strengthening the human capital through larger efforts in higher education clear assumptions can be made for a sustainable growth and development. By opening new work places through direct domestic and foreign investments the growth of national income would be noticeable.

In the next part of this paper a trend of human capital index for the period between 2005 and 2013, as visible in the Graph 1, is shown. A comparison has been made between the data of Bosnia and Herzegovina, average value of countries with high human capital index (where Bosnia and Herzegovina belongs) and average value of European and Central Asian countries.

Graph 1 Human Development Index (HDI) trends, 2005 -2013



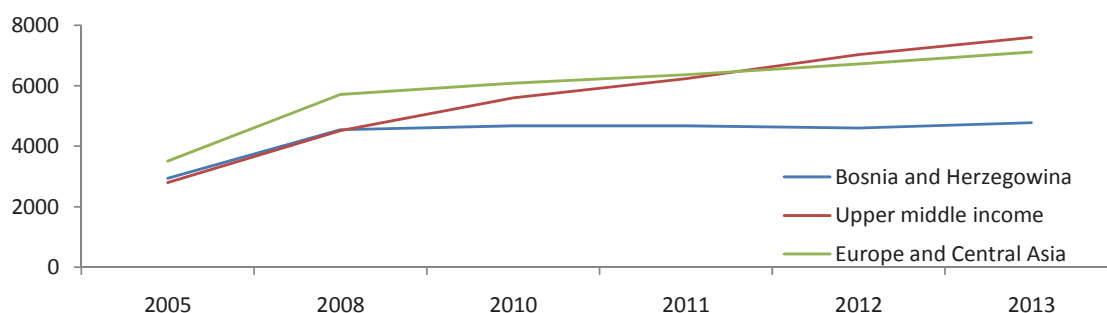
Source: <http://hdr.undp.org/en/content/table-2-human-development-index-trends-1980-2013> (14.03.2015.)

From the previous graph it is visible that in the period from 2005 up till almost 2010 the value of human capital index for Bosnia and Herzegovina was in front of the average value of countries with high human capital index and the average value of European and Central Asian countries. From 2011 the value for Bosnia and Herzegovina begins to stagnate while for the observed countries (regions) growth is noted. The consequence is that in 2013 Bosnia and Herzegovina is falling behind the countries with high human capital index and European and Central Asian countries. Thus, the average annual growth rate of human capital index for Bosnia and Herzegovina in the period between 2005 and 2013 is 0.4%. For the same period the countries with high human capital index have an annual growth rate of 1.5% and European and Central Asian Countries have on average 1.06% annual growth rate of human capital index. Therefore, the development of human capital has not been taken as a national priority in Bosnia and Herzegovina unlike in the developed countries. The lack of existence of clear-cut guideline and strategies and the postponement and slow progress in the making of necessary reforms are the causes of the current state. The human capital in Bosnia and Herzegovina is stagnating; the growth of 0.4% is only widening the gap in relation to the developed countries.

If the gross national income is observed in the same period per capita for the same countries, regions, the same conclusions will be drawn. In the following part of the paper the growth rate for gross national income per capita in the period between 2005 and 2013 is shown which is visible from the Graph 2. The comparison between the data for Bosnia and Herzegovina, average value of

countries with higher middle income (where Bosnia and Herzegovina belongs) and average value of European and Central Asian countries.

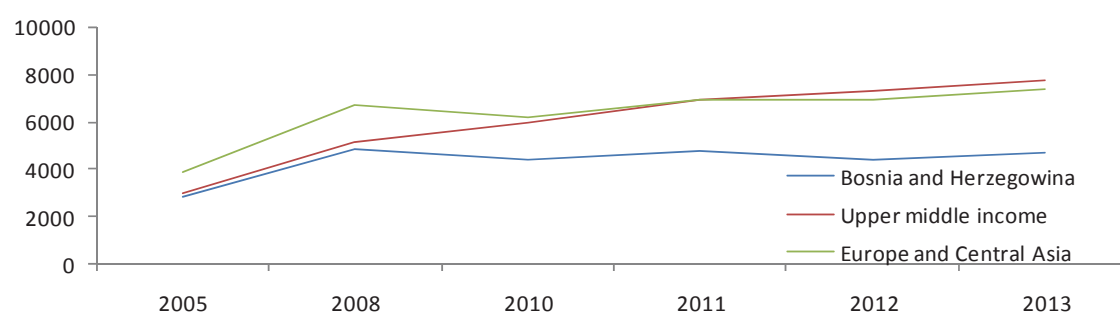
Graph 2 Gross National Income (GNI) per capita in US\$, trends, 2005 – 2013



Source: <http://data.worldbank.org/indicator/NY.GNP.PCAP.CD/countries/BA-7E-XT?display=graph> (14.03.2015.)

Countries with higher levels of human capital, in the form of education is better competitiveness of the workforce harder and faster to develop and advance (Mervar, 2003). It is evident that economic development is in tight correlation with knowledge and education of a worker. In the next part of this paper a trend of gross domestic product per capita is shown in a period from 2005 until 2013 as is seen in Graph 3. A comparison of data for Bosnia and Herzegovina, average value of countries with high human capital index and average value for countries from Europe and Central Asia has been made.

Graph 3 Gross Domestic Product (GDP) per capita in US\$, trends, 2005 – 2013



Source: <http://data.worldbank.org/indicator/NY.GDP.PCAP.CD/countries/BA-7E-XT?display=graph> (14.03.2015.)

This indicator also shows that economy of Bosnia and Herzegovina is stagnating from 2008. Gross domestic product was higher in 2008 than it was in 2013.

The World Bank Institute has developed a methodology for benchmarking the progress according to the knowledge economy. From a total of 146 observed countries Bosnia and Herzegovina is on 70th place. Also, according to this indicator, the economic knowledge indicator, Bosnia and Herzegovina is falling behind the other surrounding countries, except Albania.

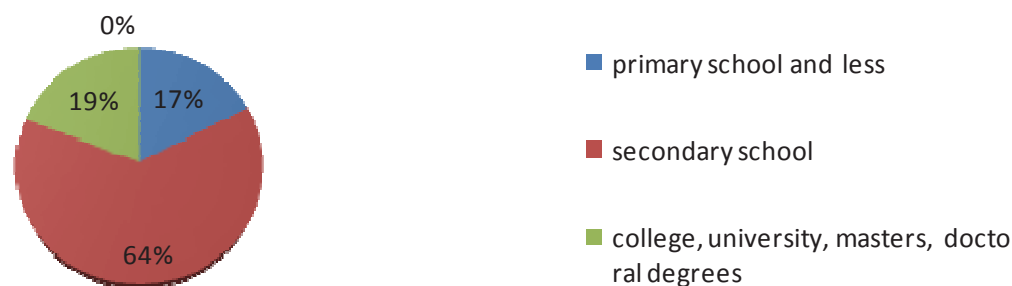
Table 3 Knowledge Economic Index 2012

Rank	Country	Knowledge Economic Index	Rank	Country	Knowledge Economic Index
1	Sweden	9,43	9.	Australia	8,88
2.	Finnland	9,33	10.	Switzerland	8,87
3.	Denmark	9,16	39.	Croatia	7,29
4.	Netherlands	9,11	49.	Serbia	6,02
5.	Norway	9,11	57.	Macedonia	5,65
6.	New Zeland	8,97	69.	Turkey	5,16
7.	Canada	8,92	70.	Bosnia and Herzegovina	5,12
8.	Germany	8,90	82.	Albania	4,53

The source: //sitorsources.worldbank.org/INTUNIKAM/Resources/2012pdf
(23.01.2015.)

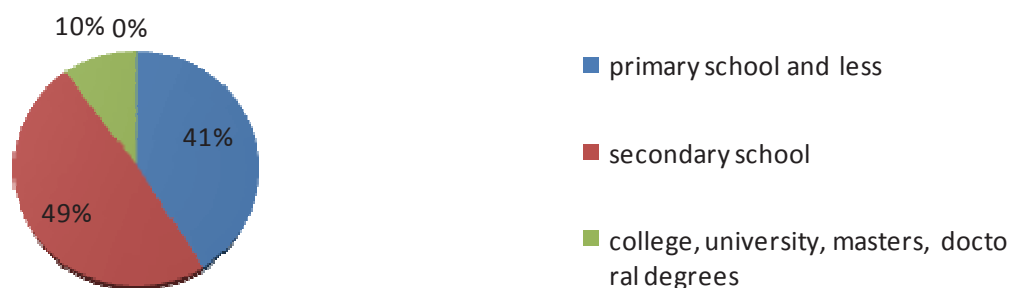
3. EDUCATION AND WORKFORCE

The quality of human capital essentially defines education (Sundać, Krmpotić, 2009). The education of Bosnian-Herzegovinian workers is mostly on a low level. Almost every sixth worker (or to be more precise 17.3% of them) has primary education or even less. The great majority of Bosnian-Herzegovinian workers, 63.7% of them, have finished secondary education. The rest 19% has acquired professional or academic title by attending a higher education facility, college, master or doctoral program as shown on the Graph 4.

Graph 4 Structure of employees by educational level in 2014

Source: developed by author according to data Agency for statistics of Bosnia and Herzegovina

If the data about education of the entire working population is observed the level of education of Bosnian-Herzegovinian man is even lower. Two out of five working population (or to be more precise 41.2% of them) have primary education or even less. Half of the working population has secondary education, and every tenth worker has higher education facility, college, master or doctoral program as shown on the Graph 5.

Graf 5 Structure of working age population by educational level in 2014

Source: developed by author according to data Agency for statistics of Bosnia and Herzegovina

According to the EUROSTAT data the percentage of the workforce with tertiary level of education in the EU countries (EU28) is 25.8%.

4. CONCLUSION

In developed economies the development of human capital is considered to be a national priority. Economic development is tightly related to knowledge and education of the workforce.

All the given indicators in this paper clearly show that Bosnia and Herzegovina is on a difficult path if it wants to make clear steps towards a knowledge economy.

The indicators of development of United Nations and World Bank show clear backwardness of Bosnia and Herzegovina when compared to the most developed countries. Moreover, Bosnia and Herzegovina is also lagging behind all countries from its surroundings, except Albania. According to the data from United Nations and human development indicator Bosnia and Herzegovina is in the 86th place out of 187 observed countries. According to the data of the World Bank and economic knowledge index Bosnia and Herzegovina is in the 70th place out of 146 observed countries. Gross national income per capita is stagnant since 2008. Gross domestic product was lower in 2013 than it was in 2008, while the unemployment rate has grown annually for that period by 2.88%.

If the education of Bosnian-Herzegovinian workers is observed, respectively the education of the workforce of Bosnia and Herzegovina, the backwardness is also evident. Therefore, the percentage of workforce with tertiary education in EU countries is 25.8% while in Bosnia and Herzegovina it is merely 10%.

The focus of this paper was especially on education as one of the basic determinant of the knowledge economy. Bosnia and Herzegovina needs to give priority in the strategy of development to investments in the education of workforce. Investments in human capital can lead to increase in competitiveness by increase in productivity. That will also mean increase in employment and economic advancement.

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