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EDUCATION AS ONE OF THE CORE INDICATORS OF SUSTAINABLE DEVELOPMENT – A COMPARATIVE ANALYSIS OF THE WESTERN BALKANS

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ABSTRACT

Sustainable development implies growth that needs to be inclusive and environmentally in order to reduce poverty and create current prosperity, having in mind at the same time the needs of future generations. The multidimensional nature of sustainable development includes economic growth, environmental stewardship and social inclusion. In order to formulate effective policies and strategies, the creators of development policies need adequate information related to all vital determinants of sustainability. Therefore, the United Nations Department of Economic and Social Affairs has developed the CSD Indicators of Sustainable Development. The CSD indicators contain a core set of 50 indicators related to 14 main themes. Education, as one of the core indicators of sustainable development is a measure of human capital and therefore a major element of economic growth and development. Based on the Human development report that provides information related to education, the paper explores changes in the level of education of the Western Balkans (Serbia, Macedonia, Montenegro, Bosnia and Herzegovina, Croatia, Albania) for the period from 2005 to 2012. The aim of the analysis is to identify the position of Western Balkan countries with regards to education, and to explore critical determinants that require urgent and considerable development. The methods used in this paper are analysis, synthesis, comparison, descriptive statistics and correlation analysis. The research results show that Western Balkan countries have the potential to improve all determinants of education as one of the core CSD indicators and contribute to their sustainable development.

JEL CLASSIFICATION & KEYWORDS

■ I210 ■ I250 ■ O150 ■ SUSTAINABLE DEVELOPMENT ■ EDUCATION ■ CSD INDICATORS ■ WESTERN BALKANS

INTRODUCTION

Achieving a certain level of sustainable development and the adequate level of welfare of present and future generations sets new challenges for government policymakers. The concept of sustainable development has evolved rapidly in a very short period of time, from the second half of the 20th century onwards. It was created as a result of the perceived shortcomings of the earlier policies of economic growth and development that primarily focused on short-term goals, without taking into consideration the long-term effects. Therefore, economic development cannot be continued without a strong reference to its environmental and social implications.

Sustainable development consists of three dimensions: economic, environmental and social, among which there is a strong synergy, but also the tradeoff. Social dimension focuses on the proper functioning of the labor market and high employment rate, demographic changes, equality issues, participation in decision-making and so on. The environmental dimension involves the preservation of biological and physical systems, and a healthy environment. The economic dimension puts emphasis on the rapid and effective economic development. However, all three dimensions of sustainable development are of equal importance and it is necessary to achieve balance among them (OECD, 2000).

Sustainable development is a dynamic process of change in which the exploitation of resources, investment directions, the technological development, institutional changes, and so forth, must be consistent not only with the needs of the present generation, but also of the future ones (Rogers, Jalal & Boyd, 2008). Sustainable development can be defined as “development that improves the quality of human life while living within the carrying capacity of supporting ecosystems” (IUCN, 1991) or "development that can meet the needs of the present generation without compromising the ability of future generations to meet their own needs" (World Commission on Environment and Development, 1987). These definitions focus on the need for a coordinated decision-making process that will establish a balance between people, economic and social needs with a self-regenerative capacity of the natural environment. The development, in this sense, refers to the quality of life and it should not be compromised by purely economic objectives (FAO, 1999).

Debates on sustainable development were influenced by different interpretations of the relationships among people, economic system and the natural environment. As a result, there are different opinions regarding the way sustainable development can be measured and what needs to be done in order to move towards its goals (Lown, 2006). In order to successfully meet a challenge, and respond to policies and decisions related to sustainable development, it is necessary to have the appropriate indicators of sustainable development. Not only do indicators measure progress, but also contribute to raising awareness about the importance of all three dimensions of sustainable development, as well as the implications of current decisions and behavior of economic subjects and social actors. Indicators represent the primary means of identifying the problem of sustainable development and promoting institutional dialogue to policymakers and civil society (OECD, 2000). They are used to measure sustainable development taking into account its multidimensional and integrated nature.

At the United Nations Conference on Environment and Development, held in 1992 in Rio de Janeiro, the importance of indicators in a decision making process related to sustainable development was highlighted. The Commission on Sustainable Development (CSD) developed two sets of indicators that over the years have been repeatedly revised to respond to the latest challenges (United Nations, 2007).

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The last revised CSD indicators include a core set of 50 indicators belonging to one of the 14 indicators CSD themes: poverty, governance, health, education, demographics, natural hazards, atmosphere, land, ocean and sea coasts, freshwater, biodiversity, economic development, global economic partnership, consumption and production patterns.

Education, as one of the core indicators, measures how many children of school age have access to schools and how many of them finish primary school. Education is a process in which people and society use their potential to progress together. Primary education is considered to be important at the international level for sustainable development (United Nations, 2007).

Materials and Methods

The Human Development Report 2014 created within the United Nations Development Program is the information base of research (United Nations, 2014). One of the components of the HDI is Education. Within the Education components (which is generally represented by Mean years of schooling), experts of the United Nations considered more indicators: 1) Adult literacy rate (% ages 15 and older), 2) Youth literacy rate (% aged 15-24), 3) Population with at least some secondary education (% aged 25 and above), 4) Gross enrolment ratio: pre-primary (% of children of pre-school age), 5) Gross enrolment ratio: primary (% of children of primary school age), 6) Gross enrolment ratio: secondary (% of children of secondary school age), 7) Gross enrolment ratio: tertiary (% of population of tertiary school age), 8) Primary school dropout rates (% of primary school cohort), 9) Expenditure on education (% of GDP). Data of all the above mentioned indicators, as well as GDP per capita are given as average values for the period from 2005 to 2012.

The relative position of the Western Balkan countries according to these indicators is perceived in the paper by the method of comparative analysis. Also, we compare the value of the indicators to the world average, and (where it is possible) to the EU average. A correlation analysis is used in order to examine the relationship between GDP per capita and Education (measured by the mean years of schooling), as well as between GDP per capita and indicators within Education component in the Western Balkan countries.

Results and Discussions

Research results are grouped into two segments:

a. comparative analysis of indicators of education in the Western Balkan countries (compared to the world's and the EU average);

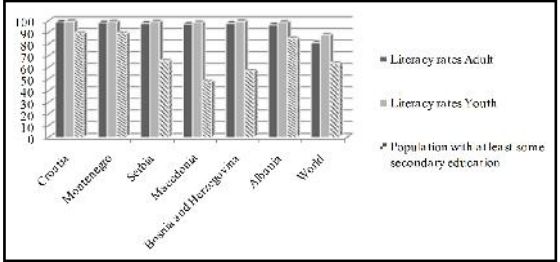
b. examining the relationship between the level of education and GDP per capita in the Western Balkan countries.

   a. Comparative analysis of indicators of education in the Western Balkan countries (compared to the world's and the EU average)

In order to evaluate the relative positions of the Western Balkan countries according to the above mentioned indicators of achieved educational level, the following figures show the values of the indicators in the Western Balkans and the world and the EU average.

Figure 1 shows three out of the nine analyzed indicators, given in the Human Development Report 2014 (Adult literacy rate, Youth literacy rate, Population with at least some secondary education). It can be seen that the Western Balkan countries are fairly equable in terms of Adult literacy rate and Youth literacy rate. Also, the rate of literacy of adult and young population is higher in the Western Balkan countries in relation to the world average. There are differences between the Western Balkan countries in terms of Population with at least some secondary education indicator. Croatia, Montenegro and Albania are the countries with the highest percentage of Population with at least some secondary education. The higher value of this indicator compared to the world average is recorded in these countries. A slightly higher value Population with at least some secondary education indicator compared to the world average is recorded in Serbia. Macedonia and Bosnia and Herzegovina have the lowest values of Population with at least some secondary education and it is lower than the world average.

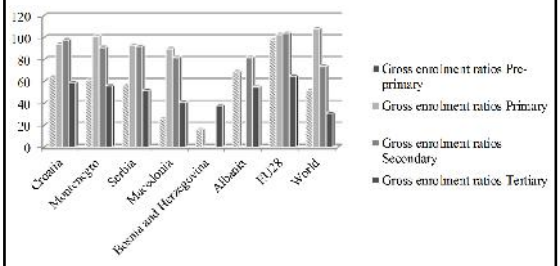
Figure 1: Indicators within Education component (Adult literacy rate, Youth literacy rate, Population with at least some secondary education)



Source: http://hdr.undp.org/en/data

Figure 2 shows the values of the following indicators: Gross enrollment ratio: pre-primary, Gross enrollment ratio: primary, Gross enrollment ratio: secondary and Gross enrollment ratio: tertiary. The maximum value of the Gross enrollment ratio: pre-primary indicator is recorded in Albania, followed by Croatia, Montenegro and Serbia. The value of the Gross enrollment ratio: pre-primary in these countries is higher than the world average. The lower value of this indicator compared to the world average is recorded in Macedonia and Bosnia and Herzegovina. Croatia, Montenegro, Serbia and Macedonia recorded approximately equal values of the Gross enrollment ratio: primary indicator, which is in these countries lower than the world average. There are no data on this indicator for Bosnia and Hezegovina and Albania. When it comes to the Gross enrollment ratio: secondary, all the Western Balkan countries have higher values than the world average (there are no data for Bosnia and Herzegovina), while the highest value is recorded in Croatia and Serbia. The situation is similar when it comes to the Gross enrollment ratio: tertiary indicator. Croatia and Albania are the leading countries according to this indicator, in the group of analyzed Western Balkan countries. The value of all monitored indicators is lower in the Western Balkans in relation to the EU average.

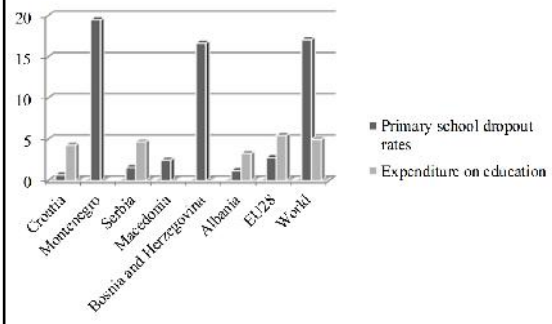
Figure 2: Indicators within Education component (Gross enrolment ratio: pre-primary, Gross enrolment ratio: primary, Gross enrolment ratio: secondary, Gross enrolment ratio: tertiary)



Source: http://hdr.undp.org/en/data

The fact that is not encouraging is that some of the Western Balkan countries have very high Primary school dropout rates (Montenegro and Bosnia and Herzegovina). The situation is more favorable in other countries of the Western Balkans (Figure 3).

Figure 3: Indicators within Education component (Primary school dropout rates, Expenditure on education)



Source: http://hdr.undp.org/en/data

Figure 3 also shows the value of the Expenditure on education indicator. We notice that the allocations for funding of education in the Western Balkan countries are lower, compared to the world average, and in relation to the EU average. There are no data about Expenditure on education in Macedonia and Bosnia and Herzegovina.

b. Examining the relationship between the level of education and GDP per capita in the Western Balkan countries

Information about Mean years of schooling[1] and GDP per capita (as average values for the period from 2005 to 2012) in the Western Balkan countries are given in Table 1.

Table 1: Mean years of schooling and average value of GDP per capita (2005-2012)

Western Balkans Countries	Education (Mean years of schooling)	GDP per capita
Albania	9.3	8,220
Bosnia and Herzegovina	8.3	8,813
Croatia	11	20,245
Macedonia	8.2	10,963
Montenegro	10.5	13,236
Serbia	9.5	11,230

Source: http://hdr.undp.org/en/data

The highest Mean years of schooling is recorded in Montenegro. Montenegro also has the highest GDP per capita. The lowest Mean years of schooling is recorded in Macedonia, while Albania is the country with the lowest GDP per capita.

The results of the correlation analysis are given in Table 2.

There is a high positive correlation between Education (measured by the Mean years of schooling) and GDP per capita in the Western Balkan countries. Also, high positive correlation is recorded between Adult Literacy rates and GDP per capita. Moderate correlation is recorded between GDP per capita and the following indicators: Youth Literacy rates, Population with at least some secondary education, Gross enrolment ratios: pre-primary and Gross enrolment ratios: tertiary. The negative value of the correlation coefficient is recorded between Primary school dropout rates and GDP per capita. The calculated value of the correlation coefficient are not statistically significant and these values are valid only for the analyzed group of Western Balkan countries.

Table 2: Correlation between GDP per capita and Education component (and its indicators)[2]

		GDP per capita
Education	Pearson Correlation	0.79
	Sig. (2-tailed)	0.061
Literacy rates Adult	Pearson Correlation	0.805
	Sig. (2-tailed)	0.053
Literacy rates Youth	Pearson Correlation	0.421
	Sig. (2-tailed)	0.406
Population with at least some secondary education	Pearson Correlation	0.49
	Sig. (2-tailed)	0.324
Gross enrolment ratios Pre-primary	Pearson Correlation	0.387
	Sig. (2-tailed)	0.448
Gross enrolment ratios Tertiary	Pearson Correlation	0.577
	Sig. (2-tailed)	0.23
Primary school dropout rates	Pearson Correlation	-0.194
	Sig. (2-tailed)	0.712

Source: Prepared by the authors (SPSS Statistics 19)

CONCLUSION

On the basis of comparative analysis based on the country-level data, we come to some important conclusions regarding the level of education in the Western Balkans. Croatia stands out as a leader according to the analyzed indicators. In addition to Croatia, Albania, Montenegro and Serbia have larger values of observed indicators compared to the world average. The worst results in terms of analyzed indicators of the development level of education are recorded in Macedonia and Bosnia and Herzegovina. All Western Balkan countries are lagging behind the EU average. Particularly worrying is the fact of the high level Primary school dropout rates in Montenegro and Bosnia and Herzegovina compared to the EU average. The value of Expenditure on education is lower in the all Western Balkan countries compared to the world average, and in relation to the EU average.

The results of correlation analysis indicate that the achieved level of education is related to the level of GDP per capita. Among the analyzed indicators, Adult literacy rates and Gross enrollment ratios: tertiary record the highest positive correlation with GDP, while negative correlation exists between the Primary school dropout rates and GDP per capita. We conclude that the achieved level of GDP per capita in the Western Balkans is a significant factor in the improvement and development of all levels of education.

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[1] "Average number of years of education received by people ages 25 and older, converted from education attainment levels using official durations of each level." (Human Development Report 2014)

[2] The six out of nine indicators are analyzed for the purpose of research considering that not for all of them and not for all countries are available data for the observed period.

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