DOI 10.2478/sbe-2020-0023

SBE no. 15(2) 2020

CHALLENGES REGARDING THE USE OF HUMAN CAPITAL IN THE CONTEMPORARY ECONOMY

BĂTUȘARU Cristina

"Nicolae Bălcescu" Land Forces Academy, Sibiu, Romania

SBÂRCEA Ioana

Lucian Blaga University, Sibiu, Romania

Abstract:

The paper addresses a topical and important issue for national economic activity, highlighting the important role that human capital has in ensuring economic development and growth. Given the increasingly dynamic and turbulent economic and social context, as a result of the expansion of the phenomena circumscribed by globalization, continuous training through education and the level of health of the population remain the main pillars in ensuring the competitiveness of human capital. Considering this reality, the paper presents a detailed analysis of Romania's position regarding the investment in education and health in a European context and the main elements that characterize the national human capital. By identifying the vulnerabilities associated with the qualitative and quantitative structure of the national human resource, a set of proposals and recommendations are formulated meant to constitute possible solutions for the reported problems. The main conclusions deriving from the study strengthen the hypothesis according to which the return of different forms of professional training is ensured by investing in education and health and represents the conditions of a competitive economic environment in which human capital is properly capitalized.

Key words: *human capital, economic growth, investment, education*

1. Conceptual approaches on human capital

Over time, there have been numerous theories that have highlighted the importance of human capital and sought to analyze this broad concept from different perspectives.

The visions of the classics highlight the concept of human capital as the totality of knowledge and skills acquired throughout life, the amount of skills and competencies born and/or developed over time, the combinations between practical experiences, social behavior and energy that a person presents.

American economists Theodore Schultz and Gary S. Becker develop this theory by adding that: ways in which knowledge, education, and skills can be enhanced or

improved are investments when, in the long run, an individual's personal income increases. R.F. Elliott (1991) contributes to the development of the theory of human capital, defining it in terms of quality, not quantity, of labor supply. The decision to acquire or develop skills is an investment decision, which requires giving up current resources to make future gains and emphasizes that much of the human stock in the economy takes the form of human capital (Olimpia Neagu, 2010).

The contribution of the individual to economic growth, through his quality as an entrepreneur who takes part in the evolution of capitalism was highlighted by the economist Joseph Schumpeter. Classical conceptions stated that the main sources of economic growth were represented by accumulated economies and capitalist enrichment. J. Schumper makes the correspondence between the relations of growth of the labor force, expansion of an industry and economic growth. Therefore, it can be said that entrepreneurial activity causes changes in the economy.

The new theory of economic growth has the merit of introducing variables and models of development of new concepts such as: stock of knowledge, human capital in the equation of economic development, respectively elements such as the stock of knowledge and training of the workforce. It is introduced in human theories, investment in labor training. In endogenous growth models, investment in human capital joins technological progress and investment in physical capital, in the category of sources of economic growth (Olimpia Neagu, 2010).

Alfred Marshall, in his work "Principles of Political Economy" presents investments in education and vocational training as the most valuable and sustainable investment. (Ștefania-Cristina Curea, 2017)

According to Gary Becker, human capital receives monetary and non-monetary values that influence the future monetary income of the individual by the fact that the investment in human capital is influenced by a series of motivations: the main determinant is the profit/return expected from the invested amounts. in human capital, and the secondary remuneration, which depends on the amounts invested in human capital, and these are determined, in turn, by the comparison between costs and benefits (Olimpia Neagu, 2010).

At the base of the generation of human capital is education, as a result, through education the following three aspects are reached: training, education and training. The premises of the theory of human capital are summarized as follows: any action of an instructive nature provides the one who carries it out knowledge and skills likely to be exploited in the activity generating money income.

Education represents cognitive achievement, the formation of moral conduct, disciplinary attitude, capitalization of specific talents and learning how to learn. Seen as a source of generating human capital, it consists of: forming rules of moral conduct, highlighting talents that can be capitalized, building cognitive abilities and orienting individuals to learn how to learn on their own, how to seek information and how to make connections between the information found. This pillar with a role in the formation of human capital consists of some basic elements as described in Figure no.1.

Figure no. 1 - Elements of human capital formation

A source of development of already formed human capital is lifelong learning (one of the main objectives of the Lisbon strategy). It consists in the daily accumulation of knowledge, in order to maintain an alert rhythm of the cognitive processes. It is based on skills, methods and possibilities to materialize the theory in the baggage of knowledge. It includes a social pillar, which refers to the orientation towards an environment of indulgence, in which there are no phenomena such as discrimination and where each individual wants to evolve.

The process of learning and continuing education are the key for people to overcome resistance to change system and deal with uncertainties (Udaya Mohan Devadas, Abu Daud Silong, Steven Eric Krauss, 2011).

Approaching the concept of human capital in the context of economic growth can be the premise of a sustainable and innovative development that can contribute to increasing productivity only in circumstances where a person has professional quality and high intellectual capacity to fully implement them in their work (Elena G. Popkova, Oxana S. Chechina, Sergei A. Abramov, 2015).

Over the past several decades, the concept of human capital has been the subject of numerous debates given the developments towards which national economies tend to converge towards a global and highly technological economy. Approaching human capital in the context of economic growth can be the premise to be able to develop savings and be able to increase productivity in circumstances in the care of people.

Contemporary society has become a learning society, adapting to the new, and in this context educational systems must aim at the formation of people able to contribute to the development of their own competencies, to integrate fully in the socio-cultural context in which they live (Shahrazad Hadad, 2017). When approaching human capital in the present economic context it is important to address the main challenges it has to overcome in the contemporary economy.

Figure no. 2 – Contemporary challenges of human capital

The contribution of human capital is crucial in stimulating science and technology, as well as sustainable economic development, especially since the interconnection of national economies makes competition in the market to better motivate private enterprises to implement in technology (Simplice A. Asongu, Vanessa S. Tchamyou, 2011).

Therefore, the participation of human capital in economic activity must take into account the requirements and needs of the market system undergoing an intense process of globalization.

2. The situation of human capital in Romania in the European context

Starting from the theoretical approaches stated above, the analysis of the issue of human capital in Romania starts from the elements that underlie the formation and quality assurance, namely education and health expenditures.

In order to highlight the situation of human capital in Romania in the current context and for a better relevance of the study, the analysis of the dynamics of spending on education and health was performed in comparison with some member countries of the European Union. The countries selected for benchmarking were grouped into two categories:

- The first category included the countries of the European Union ranked in the Top 9 in terms of gross domestic product;
- The second category includes countries that have been selected due to their regional proximity to Romania and the economic and social and historical context: Poland, the Czech Republic, Slovakia, Slovenia, Hungary, Bulgaria.

The hypothesis from which the elaborated study starts is based on the theory according to which the quality of the human resource that participates in the economic

activity is guaranteed by an economic-social system in which the expenditures on education and health represent a priority.

Analyzing this hypothesis in the European context, we notice according to graph number 1 that the level of education expenditures places our country on the last place compared to the countries ranked in the top 9 (first category analyzed), they being below 3% of GDP, in the analyzed period (2013-2018), compared to over 8% of these investments, as a percentage of GDP, in Denmark, the first ranked in the top 9.

Chart 1 - Comparative analysis of education expenditures in Romania and developed countries in the European Union (% of GDP)

Source: made by the authors based on data taken from Eurostat - www.ec.europa.eu

Chart 1 shows the variation of these expenditures in Romania, for the period 2013-2018, the minimum value being 2.8% in 2013, and the maximum 3.30% in 2016. In the analyzed period it can be seen that among all countries the evolution of the expenditures on education was oscillating, the general tendency being of decrease from one year to another.

The situation of education expenditures among the countries that make up the second group of countries under analysis is presented in Chart 2.

Chart 2. Comparative analysis of education expenditures in Romania and in Central and Eastern European countries, members of the EU (% of GDP)

Source: made by the authors based on data taken from Eurostat - www.ec.europa.eu

According to the data presented in Chart 2, the average expenditure on education in Romania for the analyzed period, 2013-2018, is lower than that of the next ranked country, Bulgaria (3.7%), by approximately 0.7% and 2.7% compared to the average expenditure on education in Slovenia, the country in first place in this selection of 7 Member States of the European Union. While in Romania the spending trend has increased in the period 2013-2016 by about 0.5%, and then decreases of up to 1.3% (the difference between the values recorded for 2016 and respectively 2018), the other former socialist countries have managed to cross the threshold of economic crisis and not only continued to invest in education but also to gradually increase the volume of resources allocated to education spending.

The second indicator analyzed to reflect the situation of human capital is the level of health spending as a percentage of GDP. The data in Chart 3 represent the situation of health expenditures in Romania compared to the countries ranked in the top 9 in Europe, these being well below the levels recorded by the countries subject to analysis.

Chart 3 - Comparative analysis of health expenditures in Romania and in the top countries in the European Union (% of GDP)

Source: made by the authors based on data taken from Eurostat - www.ec.europa.eu

The average value recorded by this indicator (with a minimum of 4% in 2014 and a maximum of 4.65% in 2018) for the analyzed period places Romania below the EU average for the same period by approximately 3 percentage points (with a minimum of 7.06% in 2017 and a maximum of 7.13% in 2013). Denmark stands out among the countries analyzed by allocating a percentage of GDP to health expenditures, ranging between 8.44% and 8.53% in the period analyzed. The concern of developed European countries for health is also confirmed by the relatively noticeable or increasing evolution of the expenditures allocated in this direction, their level being in the case of most countries above the European Union average. An exception to this trend is the case of Ireland, which in the reference period saw a decrease in health expenditure in GDP by about 44% in 2017 compared to 2013.

A similar situation is found in the countries neighboring Romania. This time, the average health expenditure for the period analyzed in Romania is only 1.6 percentage points below the region average (with minimum values in Romania, Bulgaria and Poland of 4%, 4.53% and respectively 4.63% of GDP, and maximum values in the Czech Republic and Slovakia of 7.65% and respectively 7.48% of GDP, as shown in Chart 4).

Chart 4 - Comparative analysis of health expenditures in Romania and in Central and Eastern European countries, members of the European Union (% of GDP)

Source: made by the authors based on data taken from Eurostat - www.ec.europa.eu

Taking into account the fact that both education and health expenditures shown in the graphs above are calculated as a GDP process, in order to perform a relevant analysis, we proceeded to present the level of Gross Domestic Product per capita, at parity of the standard purchasing power, of the selected compared countries.

Graph 5 shows the GDP / inhabitant, which in Romania represents only 65.6% of the average in the European Union in 2018, placing it on the penultimate place in the analyzed states.

Chart 5 - Gross domestic product per capita in 2018

Source: made by the authors based on data taken from Eurostat - www.ec.europa.eu

Given Romania's modest GDP per capita (just over half the European Union average) and spending on education and health, it can be said that, in terms of human capital and investment in it, budget spending is far from to be sufficient, placing Romania on the last place within the analyzed countries.

Moreover, investments in human capital present the possibility of analysis in correlation with indicators in the field of education and health, indicators that form part of the Human Development Index (HDI) published annually by the United Nations Development Program (UNDP).

3. Particularities of the structure and dynamics of human capital in Romania

The way in which a state chooses to invest in the human resources it has is a very important issue among the economic and social policy strategies it adopts. The need to develop a sustainable policy regarding the investment in education and health of the population is the premise of ensuring increased labor productivity and successful adaptation to the international competitive economic environment. Beyond the external challenges to which the national human capital is subjected, there are numerous internal particularities that make the human resource available to a state to be used properly and to be adapted to the demands of the labor market. In Romania, human capital remains a factor of production that is not exploited to its true potential as proof of the lack of a consistent and coherent economic and social policy that aims to achieve clear objectives in the medium and long term. Beyond this aspect, there are a number of vulnerabilities that take into account the structure and dynamics of human capital.

In order to support this statement, we considered important the analysis of the human resource structure in Romania, starting from a division of it into large age groups and later extrapolating the analysis to smaller age groups in order to capture in more detail the link between age and openness to various forms of human capital education and training.

The presentation of the demographic structure of the population was made in two groups. The first group analyzed, represented by chart 6, comprises the main three age categories according to the structure used by the International Labor Office. The age category 0-14 years represents that part included in the human capital that is still in formation and that has all the openness towards higher levels of education. The next age group, 15-64, is the component of human capital with the greatest impact on economic growth and development, having an important role in supporting other age groups and is also under the scope of "lifelong learning". The last age category, 65+ years old, is the component that has recovered the resources invested due to the income obtained during the years spent working by capitalizing on the skills, competencies and educational levels obtained.

Chart 6 - Distribution of the population by main age groups

Source: made by the authors based on data taken from INSSE – www.insse.ro

Chart 7 - Distribution of the population by age groups every five years

Source: made by the authors based on data taken from INSSE – www.insse.ro

In chart 7, the segmentation of the population into age categories every five years shows that the very young population (represented by the ages 0-19 years) comprises a much smaller percentage compared to the population aged 45-64 years. The difference is due to the low birth rate in the last 10 years. This will lead to lower participation of human capital in economic activity, as fewer employees have to support more retirees.

The analysis of the structure of the population by age categories is particularly important in the context of their correlation with employment rates by sex and with the

educational levels reached. For a more detailed analysis, we started from the ISCED 2011 classification (International Standard Classification of Education Development), according to which there are 3 large groups of education levels: Levels 0-2 represent less than primary education, primary education and secondary education; Levels 3 and 4 represent secondary-higher education, non-tertiary post-secondary education; Levels 5-8 represent tertiary education.

Chart 8 shows that the employment rate of men is higher than the employment rate of women. This difference is based on the fact that, in terms of primary and secondary education levels (0-4), the employment rate among men is about 20% higher than that among women (Charts 9 and 10).

**Chart 8 - Employment rate of the population aged 15 to 64 by sex
(as a percentage of the total population of the same age).**

Source: made by the authors based on data taken from Eurostat - www.ec.europa.eu

**Chart 9 - Employment rate of the population aged 15 to 64 with education levels 0-2
(as a percentage of the total population of the same age).**

Source: made by the authors based on data taken from Eurostat - www.ec.europa.eu

Chart 10 - Employment rate of the population aged 15 to 64 with education levels 3-4 (as a percentage of the total population of the same age).

Source: made by the authors based on data taken from Eurostat - www.ec.europa.eu

The relationship between higher education and higher employment/employment rate is highlighted in graphs 10 and 11. Therefore, it is observed that a higher level of education corresponds to an employment rate of 91.3% among men for 2019, respectively one of 87.3% among women. These values increase by 24.0%, respectively 28.8% compared to the employment rate related to the secondary level of education.

Chart 11 - Employment rate of the population aged 15 to 64 years education levels 5-8 (as a percentage of the total population of the same age)

Source: made by the authors based on data taken from Eurostat - www.ec.europa.eu

Chart 12 - Employment rate of the population aged 15 to 64 depending on the level of education attained (as a percentage of the total population of the same age)

Source: made by the authors based on data taken from Eurostat - www.ec.europa.eu

According to these statistics, a higher level of education can be attributed to a higher employment rate. As a result, the employment rate for 2019 for education levels 0-2 is 43.8%. As education levels rise to 3-4 and 5-8, employment rates will increase to 68.4% and respectively 89.1%.

An even more suggestive analysis of the distribution of human capital is represented by the employment rates on the three representative economic branches, the employment rates related to the levels of education and depending on the occupation.

Chart 13 shows that in the last three years analyzed, the employment rate in the agricultural sector has decreased slightly in favor of the growth of the other two economic sectors. Romania's heavier transition to a knowledge-based economy is due in part to the large number of people living in rural areas.

Starting from this idea, two aspects follow. The first aspect highlights the fact that a part of the rural population practices subsistence agriculture, thus detaching itself from the participation in economic growth and being in an isolated economic "bubble" towards the economic world that surrounds them. The second aspect is the low level of education (this being between levels 0-4, the least common being levels 3-4) that people trained in the economic branch of agriculture have gone through. Thus, not opting for one's own improvement of professional knowledge and skills results in a lower level of human capital to participate in economic activity and thus in its growth.

The positive changes in terms of the increased involvement of human capital in services highlighted in Chart 13 are linked to Chart 11. A higher employment rate for people with a higher level of education will determine the involvement of human capital in a sector that it provides them with better working conditions and higher annual incomes (in order to recover the resources invested in education over the years spent in school).

The impact that human capital has on economic growth is highlighted in the following analysis by the link between the levels of higher education that individuals reach and the positions they occupy after reaching those levels.

The importance of human capital on economic growth is highlighted in Chart 13 by the changes that take place among the employment rates specific to the level of education achieved and the position occupied. Going through higher education levels causes individuals to reorient themselves towards occupations specific to the economic branches of industry and services.

Chart 13 - Employment rate by the three economic branches (% of the total employment rate)

Source: made by the authors based on data taken from UNDP (United Nations Development Program)

The relationship between reaching a higher educational level and low unemployment rates is highlighted in Chart 14, where the transition from educational levels 0-2 to 3 and 4 determines the reduction of the unemployment rate by about 40% (from 6.2% to 3.8 % in 2019). The same rate will decrease by about 50% (from 3.8% to 1.6% in 2019) in the case of completing educational levels 5-8 by a person who has so far reached the upper secondary level.

The situation of young people not included in educational programs is an unused and unprocessed source of human capital, whose capacity and potential will be lost due to poor investment in education and poor mobilization of labor and jobs. Over time, those people who were not enrolled in education at the age of 15-20 are less and less likely to be employed in the fields of industry or services, and the most real and possible options are: land work (subsistence agriculture, in the case of rural people); employment in an elementary occupation of caretaker / salesman or undeclared work influencing the underground economy.

Chart 14 - Unemployment rates as a percentage of the total active population by educational attainment (population aged 20-64)

Source: made by the authors based on data taken from UNDP (United Nations Development Program)

Chart 15 - Young people not employed or not included in educational programs (% of the total population aged 15-24)

Source: made by the authors based on data taken from Eurostat - www.ec.europa.eu

Also, in addition to the three situations above, there is the possibility for people in the analyzed category to emigrate, thus opting for work abroad and contributing to the development of those countries.

On the other hand, in the case of young people (who we assume have completed the first levels of tertiary education), unemployment is a period of time in which the knowledge and skills acquired through education will not produce income, will not help the individual to recover their invested resources in their own education. Moreover, the time spent outside work will to some extent stop the opportunities for enriching human

capital and there is also the possibility of deteriorating the knowledge and skills acquired due to their non-use. Another negative aspect is that the non-employment will place the individual behind the competition that has succeeded in this respect and will give him a harder start in view of employment opportunities in the near future.

Chart 16 - Persons able to work but not looking for a job
(population aged 15-74, as a percentage of the total active population)

Source: made by the authors based on data taken from Eurostat - www.ec.europa.eu

Human capital represented by this analyzed category does not contribute to economic activity, because individuals do not apply their knowledge and skills in order to generate income on the labor market. The opportunities of these people are represented by: subsistence agriculture (in the case of people from rural areas); undeclared work or emigration. Moreover, the possible unemployment benefits granted to those who are not looking for a job make economic growth more difficult, as more pressure is put on taxpayers.

The phenomenon of migration is one of the main phenomena that affects the economies of European states leading to imbalances on the labor market of the state that loses human resources. In the situation of emigration from Romania, most people who choose to work abroad have as their main motivation the impossibility of finding a job in the country that is as well paid as the one abroad. However, there are also cases in which the reason for emigration is the pursuit of higher education at a prestigious university and gaining experience through work, thus accumulating human capital that will later contribute to economic growth in the country of origin.

Chart 17 - Emigration situation in Romania (number of people)

Source: made by the authors based on data taken from Eurostat - www.ec.europa.eu

The situation presented in Chart 17 has a negative impact on human capital in Romania because it highlights the following aspects:

- "Brain drain" - is the potential for human capital that could contribute to economic growth in the country, but it is usually attracted by the better opportunities offered by more developed countries;
- By working abroad, people invest their time and energy in the development of those countries. This results in a smaller increase in taxpayers to support the number of pensions, unemployment benefits and social benefits.

4. Conclusions

Human resources have been and continue to remain one of the most important factors of production and along with technology is the main engine of economic activity development. Whether it is approached from a quantitative or qualitative perspective, or we relate to it in terms of productivity, human capital is a complex and topical concept. Starting from the theoretical and conceptual framework that defines human capital and referring to the practical and concrete aspects addressed in this paper we can say that the quality of human capital is ensured through the educational or qualification level of the active population.

As a result, in the case of a poorly developed country, primary education (levels 0-2) by a large share of the population will prove to have the greatest impact on economic growth. For developing countries, secondary education (levels 3-4) is the next threshold to be reached, and for developed countries, tertiary education (levels 5-8).

In a society with a high level of human capital quality, it has a stronger inclination towards innovation and research, and people are more adaptable to economic and technological change. This aspect, reflected by the vast baggage of knowledge and good training of individuals, has a role in streamlining work, by saving resources of a financial nature and time. Investing in education ensures the quality of human capital, and further economic growth. The most valuable aspect of education is the training of the individual by teaching him to learn, where and how to look for information, how to interpret it, to make connections between them and to be able to put it into practice.

In view of the analyzes carried out, it can be stated that, in addition to allocating a larger volume of resources from the gross domestic product, measures to combat undeclared work, emigration, unemployment and discouraging the participation of children or young people in schooling should be considered. The statistical data highlighted in the paper for the period 2013-2019 showed that from a qualitative and quantitative point of view the human resource was not capitalized to the maximum, so that either the work was performed outside Romania or an important part of the human capital was not contained in the educational process.

Analysis of the human capital situation in Romania regarding: unemployment rate depending on the level of education, number of young people not employed or not included in educational programs, number of people aged 15-64 able to work but not looking for a job, respectively the annual number of emigrants suggests that the state

should consider implementing policy measures designed to encourage individuals in the categories mentioned above to become a component of the labor market in Romania.

In this sense, several proposals have been formulated that could represent solutions for the identified vulnerabilities:

- ✓ implementing fiscal policies to encourage participation in higher education levels by lowering income taxation and creating fiscal facilities for employers designed to discourage work that serves the underground economy;
- ✓ increasing investments in education in order to reduce the gaps identified in this field between Romania and the analyzed European countries.

These measures would have positive effects that will be reflected in the following directions:

- it will determine young people to go through higher education levels;
- through the acquisition of physical capital, the theoretical and practical knowledge of pupils and students will be further improved, also giving them a better start in the future job;
- by providing financial assistance to disadvantaged people, the recovery rates of those investments will contribute to economic growth;
- the higher two levels of the country's population are ensured by the higher levels of education: the employment rate of the total active population will increase, and the economic branches will change in percentage in favor of those of industry and services as observed from the analysis performed.

Regarding the situation of Romania in the European context, at the level of education and health expenditures as % of GDP, significant gaps can be found. Thus, major investments in human capital will lead to the fulfillment of the strategy to increase the competitiveness of the national economy. Moreover, these investments will form the basis of the innovation economy, and will further determine economic development.

In order to create an economy of knowledge and innovation through investments in education and health, the following aspects must be taken into account:

- ✓ The level of education and health expenditures so that % of GDP reaches a level similar to those highlighted in the case of the top European countries analyzed;
- ✓ Focusing educational funding on those areas that have the highest rate of return on investment and concretization of work / results;
- ✓ Maximizing the effectiveness of secondary and tertiary education levels through reforms on the structure, quality and quantity of courses;
- ✓ Partnerships between educational institutions, research and the economic environment in order to form a labor resource in accordance with the requirements of the labor market;
- ✓ Reducing labor migration, especially highly skilled labor, by streamlining economic incentives and creating an attractive work climate.

In the conditions of the transition to a market economy and from the perspective of integration in the European structures, ensuring the exploitation of the competitive advantages generated by the investment in human capital becomes essential.

5. References:

- Asongu S.A., Tchamyou V.S., (2018), *Human Capital, Knowledge Creation, Knowledge Diffusion, Institutions and Economic Incentives: South Korea versus Africa*, A G D I Working Paper AGDI Working Paper, No. WP/18/008
- Asongu S.A., Tchamyou V.S., (2011), *Human Resource Development and the Contemporary Challenges of the World*, Journal of Management Policy and Practice vol. 12(5), pp. 128-141
- Chen, D.H., Dahlman, C.J. (2005). *The knowledge economy. The KAM methodology and World Bank operations*, World Bank Institute Working Paper No. 37256., 2015 Washington DC
- Curea Ș.C., (2017) *Impactul capitalului uman asupra creșterii economice*, București, Editura Economică
- Devadas U.M., Silong A.D., Krauss S.E., (2011), *Human Resource Development and the Contemporary Challenges of the World*, Journal of Management Policy and Practice vol. 12(5), pp. 128-141
- Hadad S., (2017), *Knowledge Economy: Characteristics and Dimensions, Management Dynamics in the Knowledge Economy* Vol.5 no.2, pp.203-225; DOI 10.25019/MDKE/5.2.03
- Huggins, R., Izushi, H., Prokop, D., and Thompson, P. (2014). *Regional competitiveness, economic growth and stages of development*. Zbornik Radova Ekonomskog Fakulteta u Rijeci, 32(2), 255-283
- Neagu O., (2010), *Capitalul uman și dezvoltarea economică*, Cluj-Napoca, Editura Risoprint, pg 11-12
- Popescu G.H., Sima V., Nica E. and Gheorghe I. G., (2017), *Measuring Sustainable Competitiveness in Contemporary Economies—Insights from European Economy*, Sustainability Journal , volume 9, <https://doi.org/10.3390/su9071230>
- Popkova E.G., Chechina O.S., Abramov S.A., (2015), *Problem of the Human Capital Quality Reducing in Conditions of Educational Unification*, Mediterranean Journal of Social Sciences MCSER Publishing, Rome-Italy Vol 6 No 3 S6 June, Doi:10.5901/mjss.2015.v6n3s6p95