

# HUMAN CAPITAL IN THE KNOWLEDGE-BASED SOCIETY - COMPARATIVE ANALYSIS: ROMANIA-PORTUGAL

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## Abstract:

*The current economic crisis has rushed even more the economists' concerns to identify new directions for the sustainable development of the society. In this context, the human capital is crystallised as the key variable of the creative economy and of the knowledge-based society. As such, we have directed the research underlying this paper to identifying the most eloquent indicators of human capital to meet the demands of the knowledge-based society and sustainable development as well as towards achieving a comprehensive analysis of the human capital in the EU countries, respectively of a comparative analysis: Romania - Portugal. To carry out this paper, the methodology used is based on the interdisciplinary triangulation involving approaches from the perspective of human resource management, economy and economic statistics. The research techniques used consist of the content analysis and investigation of secondary data of international organisations accredited in the field of this research, such as: the United Nation Development Programme - Human Development Reports, World Bank - World Development Reports, International Labour Organisation, Eurostat, European Commission's Eurobarometer surveys and reports on human capital. The research results emphasise both similarities and differences between the two countries under the comparative analysis and the main directions in which one has to invest for the development of human capital.*

**Keywords:** *human capital, human resources, knowledge-based society, comparative analysis: Romania – Portugal*

**JEL classification:** M16, O11, O32

## 1. Introduction

Human capital represents everything connected to people (knowledge, education and individual skills capable to achieve goals and objectives nationwide). Education is the foundation on which human capital is built (Bontis, 2000). Human capital is the stock of competences, knowledge, social and personality attributes, including creativity, resulting in the ability to carry out work to produce economic value. This is an economic aggregate perspective of the human being's action within the economy, which attempts to explain the economic transactions through the interaction of the social, biological, cultural and psychological aspects of the human being. Many theories correlate human capital investment with education, economic development, increase of productivity and innovation (Simkovic, 2012). The focus on the human capital began to grow in 1950, when it resulted that the tertiary sector, which required creativity, began to produce more than the secondary sector in the world's most developed countries.

This concept has been criticised over the years and it has been given nuanced conceptual alternatives. Among these, the most notorious is the signalling theory (Spence, 1973). Bourdieu (1986, pp. 241-258) broadened the research area of this concept by directing the research towards the cultural, social, economic and symbolic capital, as alternatives to the human capital. More recently, some authors include the study of human capital in the intangible assets (Sveby 1998, Kaplan and Norton, 1996). Sveiby (1998) proposed a model structured on the following components: *capital corresponding to the internal structure of the company, capital corresponding to the employees' individual skills and capital corresponding to the company's external structure*, and for each of those components he identified growth, renewal, efficiency and stability or risk as indicators.

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*The capital corresponding to the internal structure integrates patents, trademarks, designs, administrative and information systems, research - development and management, legal structure, organisational culture and formal and informal relationships between the employees.* Sveiby perceives the organisation as being the sum of the internal structure and the human resources of the company. *The capital corresponding to the employees' individual competences* expresses the people's ability to act in different situations and it materialises in *education, experience, talent, skills, cultural and social values*, etc. The model is widely used in Sweden, the Swedish companies report the intangible assets based on this model. This theory developed by Sveiby (2003) is based on the assumption that people are the ones who generate profit in an organisation, and the profit is basically a proof of success, their actions being converted into knowledge structures directed outwards as external structures or within the organisation, materialising in internal structures.

The positive impact of the human capital, as component element of the intellectual capital related to the companies' market value was the researchers' focus. Thus, the literature shows numerous works that emphasise the idea that the difference between the market value and the value of the companies' assets may be explained in terms of the intellectual capital (Brennan and Connel, 2000, pp. 206-240; Han and Han, 2004, pp. 519 -527; Kitts, Edvinsson and Beding, 2001, pp. 35-50, Drucker, 1995). So, human capital is an important component of the organisations' intellectual capital. As component of intellectual capital, human capital has been analysed through the following dimensions and variables:

- **human capital**-*people's competence, improvement of these competences, the staff's stability, improvement of the people's and groups' capacity* (Montequin et al., 2006, pp. 525-538 ) or

- **human capital** has the following three dimensions: *knowledge* - formal education, specific training, staff development and experience, *skills* - individual learning, collaboration in teamwork, exchange of individual knowledge through communication, know-how and leadership and *behaviours* - models, paradigms, sense of belonging, self-motivation, job satisfaction, flexibility and creativity (Martin-de-Castro et al., 2011, pp. 649-662);

- at company level, Han and Han (2004, pp. 519-527) consider that the most important assessment indicators of human capital are: *the index of the employee's motivation, leadership, quality of professional training programs, literacy.*

So attracting and retaining talent, leadership, corporate reputation, branding image and organisational goodwill, all of these are a reflection of the human capital quality.

The Organisation for Economic Cooperation and Development stresses the need for micro-level indicators to determine the impact of training and developing the human capital on the firms' performance by analysing the expenditure for training according to the types of training: general, technical and managerial, but also on categories of employees and types of firms (OECD, 1996). As such, *human capital* is central due to the ability to connect and develop the attributes of the knowledge-based society. In this regard, highlighting the potential of the human resources, the only one that has creativity and which can transform the society in a knowledge-based society, OECD (2010) encouraged the developed economies' governments to promote policies to increase innovation and knowledge in manufacturing and services, as a way to continue prosperity.

## **2. Epistemological aspects of the human capital**

With a major impact on the subsequent theories, Adam Smith was the first to show the effects of labour specialisation on the economic efficiency of production. In the assumptions on human capital, Smith (1776) referred to the acquired and useful abilities of all the inhabitants or members of the society. The acquisition of such talents, by maintaining the one who acquires them during his/her training, study or apprenticeship,

always has a real value, which represents a fixed and acknowledged capital. Those skills are part of his/her wealth and also of the society to which he/she belongs. A worker's improved dexterity may be considered as a machine or a trade instrument which facilitates labour and which, although representing a certain expense, repays the expense with a profit. A follower of Adam Smith's ideas, David Ricardo (1817) argued in his time, the organisations' need to have the comparative advantage. Later on, Alfred Marshall (1891) developed Ricardo's theory on the organisation's comparative advantage in various market conditions and gives a boost to Karl Marx's theories (1894), which explain how the organisations' structure and work design were used as a first mechanism of exploiting the workers. A major impact on the economic theory specific to organisations had the German sociologist Max Weber (1948), who studied in detail the problem of labour bureaucracy and whose reflections were sources for the subsequent organisational theories. Although later on criticised for minimising the importance of the employees' psychological variables and social needs, assumptions on the organisational behaviour are to be found in the founders of scientific management, Frederick Taylor (1911) and Henry Fayol (1916). Their ideas, which led to the development of the management science, are currently valid only partially to the principles and directions of organisational behaviour. However, some of their principles, such as the full cooperation with the workers, the preparation of the contractors, fairness, initiative and team spirit (Puiu, 2001, pp. 27-29) have issues with implications on human capital. The most erudite experience with implications on organisational behaviour is considered the one of the founder of this concept - Fritz Roethlisberger (1939, p 552-562), who, in his research, along with Elton Mayo (1949, p. 62), have shown the influence of individual and group behaviour on labour productivity. Their study, which remained famous in the literature, is the mainstream of the Human Relations School. Developed over five years (1927 - 1932) within Western Electric Company's Hawthorne, it highlighted the importance of social relationships which proved to be more important even than the salary system (Dindire, 2013, pp. 868-926).

The issue of the organisation's human capital importance as an development engine of the nations was the focus of world-class specialists, Nobel Prize winners and practitioners in the field such as: Schultz (Nobel Prize in 1979), Friedman (Nobel Prize in 1976), Mincer, Becker (Nobel Prize in 1992), Drucker, Kotler or Stiglitz (Nobel Prize in 2001), Krugman (Nobel Prize in 2008) (Nobelprize.org, 2012). The origin of the term human capital is somewhat controversial in that they are opinions according to which it was first used by Mincer (1958). However, it seems that Schultz in 1953, in his work *Land in Economic Growth* refers for the first time to a new set of resources that contributes to the increase of the other resources' quality (labour, nature and capital), referring to the human capital (Schultz, 1993, p. 142). Received initially with scepticism, Becker (1964) himself confessed that he hesitated long enough, in 1964, prior to entitling his book *Human Capital*, because of the opposition shown by the economists of the time, the development of the concept occurred gradually, being fuelled by the food, oil (1970) or raw material crises. Basically, these crises have contributed to the acknowledgement of the need of using natural resources intensively, by the human resources, the only ones equipped with skills, intelligence, knowledge, creativity (Dindire, 2012, pp. 28-39).

### **3. Research methodology, operationalisation of variables and data collection**

The purpose of this paper is to identify the most eloquent indicators of the human capital to meet the demands of the knowledge-based society and of sustainable development, as well as in achieving a comprehensive analysis of human capital in the EU countries, namely of a comparative analysis Romania-Portugal for the period 2007 - 2011, for which there are the most recent data available for the international organisations.

Thus, to achieve the aim of the research, we further summarise the most recognised methodologies and human capital measurement indicators worldwide. The World Bank analyses the state of human development within the World Development Reports, through the following indicators: *participation in education* (primary, secondary and tertiary) - gross enrolment ratio of relevant age group, *health* – life expectancy at birth years, child mortality rate per 1,000, maternal mortality ratio per 100, 000 live births and *employment by economic activity and political participation* (*agriculture, industry, service and women in parliaments*). According to the World Bank methodology, while the intangible capital is calculated as a residual value, starting from the value of the total national wealth, a country's human capital consists of all the knowledge, skills and know-how held by the human resources (World Bank, 2012). In the UNDP (United Nation Development Programme) human development reports the Human Development Index is analysed through three dimensions and four indicators, namely: *health – life expectancy at birth, education – mean year at schooling, expected year at schooling and living standards – GDP/capita* (*living standards – gross national income per capita*) (UNDP, 2012).

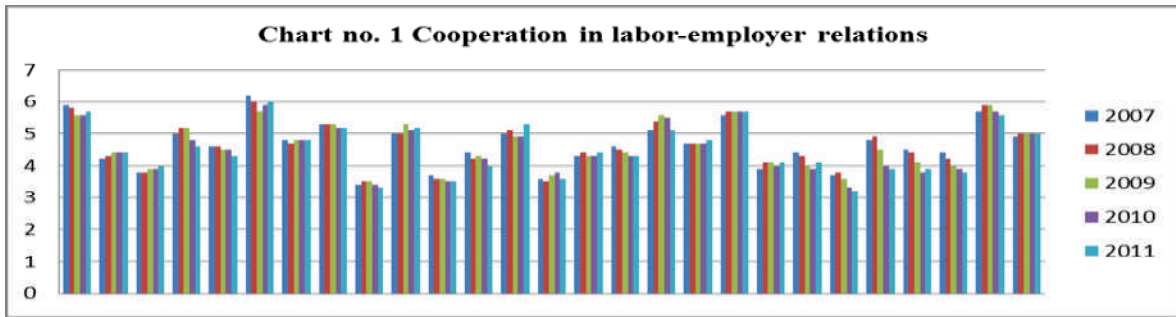
In our work, we used for analysis data and assessment indicators offered by the major international bodies and organisations: Eurostat, World Bank and UNCTAD, for the quantitative indicators and World Economic Forum for the qualitative ones, the latter being obtained based on opinion surveys. The dynamic analysis that we perform in this paper aims at the 27 EU countries and considers the time span from 2007 to 2011, for which there are the necessary data in the worldwide agencies and organisations. Although for the quantitative data the European and international organisations provide data for a much longer period of time than the one envisaged in this paper, for the qualitative ones that we considered relevant and used, there are data available in the reports on global competitiveness in the reports on World Economic Forum starting with 2007.

#### 4. Research results

We believe that in order to meet the challenges of the knowledge-based society and of sustainable development, the most relevant indicators, which we have selected and we analyse in this paper are: *Cooperation in labour – employer relations; Brain – drain; Extent of staff training*, indicators made available by the World Economic Forum, as well as the indicators present in the EU reports on sustainable development: *People at risk of poverty or social exclusion; Tertiary educational attainment and Total public expenditure on education as % of GDP*.

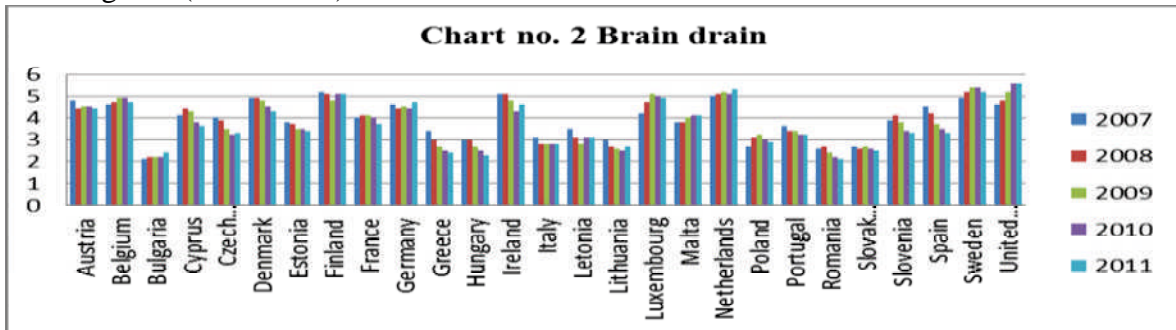
The processing of the data led us to the following results. Based on the graphs further presented by us, numerous interpretations and analyses can be done. We do not aim at an exhaustive treatment of them, but only of the significant aspects and also a comparative analysis Romania – Portugal.

- Regarding the *Cooperation in labour – employer relations* indicator we notice, in the period under review, namely 2007-2011, a deterioration trend in this relationship, perhaps due to the economic crisis. In some countries, usually those that also record the highest values of this indicator, there is a slight improvement in 2011. The countries that fall into this category are: Austria, Denmark, Ireland. The lowest scores for this indicator, which means a weak cooperation in the employer - employee relationship is recorded in Romania, France, Greece and Italy. A comparative analysis of Romania and Portugal reveals a similarity in that both countries have low levels of this variable. However, while in Portugal there is an increase in 2011; Romania records a continuous decline throughout the period under review (Chart no. 1).



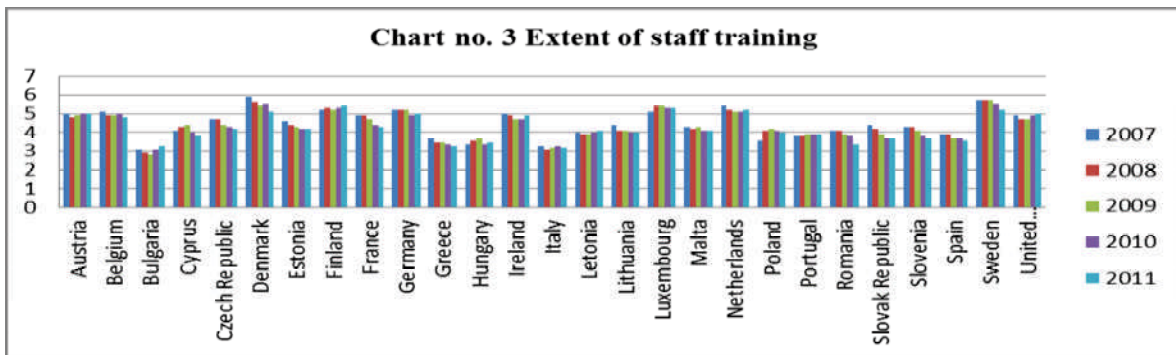
Source: processed according to World Economic Forum, *The Global Competitiveness Reports*, 2008-2009, 2009-2010, 2010-2011, 2011-2012, 2012-2013.

• The *Brain – drain* variable, expressed on a value scale from 1 to 7, the extent to which talented people are retained and attracted. The minimum level, 1, expresses the fact that the best and brightest normally leave to pursuit opportunities in other countries, and the maximum level, 7, indicates that there are many opportunities for talented people within the country. The data were collected from The Global Competitiveness Reports of the World Economic Forum (World Economic Forum, 2012). This phenomenon, so present nowadays (Voicu and Talmaciu 2011, pp. 2084), polarises at the two extremes, the countries abundantly exporting brains, such as Bulgaria, Romania, Slovakia, Greece, Lithuania, Hungary and, at opposite extreme, the countries absorbing this capital, namely Sweden, the United Kingdom, the Netherlands, Finland, Ireland, Denmark. Both in Romania and in Portugal, there is a negative situation, meaning that in the period under review, the extent to which talented people are attracted and retained decreased at an alarming rate (Chart no. 2).



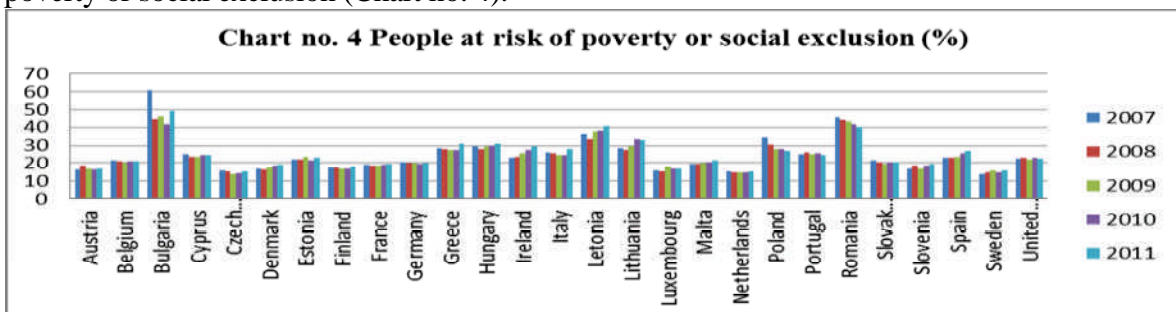
Source: processed according to World Economic Forum, *The Global Competitiveness Reports*, 2008-2009, 2009-2010, 2010-2011, 2011-2012, 2012-2013

• Another indicator that measures human capital is the *Extent of staff training*. Although in most European countries, in the period to which we refer, this indicator has steadily decreased, yet there are countries that stand out for having increased investment in training the staff whose level of training increased, such as Finland, Ireland, the United Kingdom, the Netherlands, Austria, countries that had high scores for this indicator anyway. Bulgaria, although recording the lowest values for the extent of staff training, however, during the period 2007-2013, recorded a decrease until 2009, followed by an increasing trend. In a comparative analysis of Portugal and Romania, there is a clear difference in the sense that, although both in 2007 and 2008 Romania had a better situation of this indicator than Portugal's, over time, the Portuguese understood the need to increase the extent of staff training, recording increases of this indicator, while in Romania, the decrease was significant, so that in 2011 Romania's situation was much worse than Portugal's (Chart no. 3).



Source: processed according to World Economic Forum, *The Global Competitiveness Reports*, 2008-2009, 2009-2010, 2010-2011, 2011-2012, 2012-2013

• The *People at risk of poverty or social exclusion* indicator expresses the number of people out of a country's total population at risk of poverty or social exclusion. Given the negative impact of this indicator on a nation's human capital, we found it necessary to include it in our analysis. A very worrying situation is to be found in Bulgaria, Romania and Latvia. Nevertheless, although Bulgaria, in 2007 was extremely severely affected in relation to the percentage of people at risk of poverty (60.7 %), managed, with slight fluctuations, in 2011 to reduce this level to 49.1 %. Romania, also with a high percentage of 45.9%, in 2007, recorded constant decreases of this indicator, so that in 2011, there was a percentage of 40.3%. The risk of poverty in Romania affects more females than males because the employment rate is also lower in this category. (Ioneci, Mîndreci, 2011, p. 145). This favourable aspect was not present in Latvia as well, which faces a growing percentage of the people at risk of poverty or social exclusion. In Portugal, with slight fluctuations, therefore increases and decreases, in 2011, with a percentage of 24.4%, the situation was relatively at the same level as in 2007, namely 25%. So, compared to Romania, the situation in Portugal is much better in terms of people at risk of poverty or social exclusion (Chart no. 4).



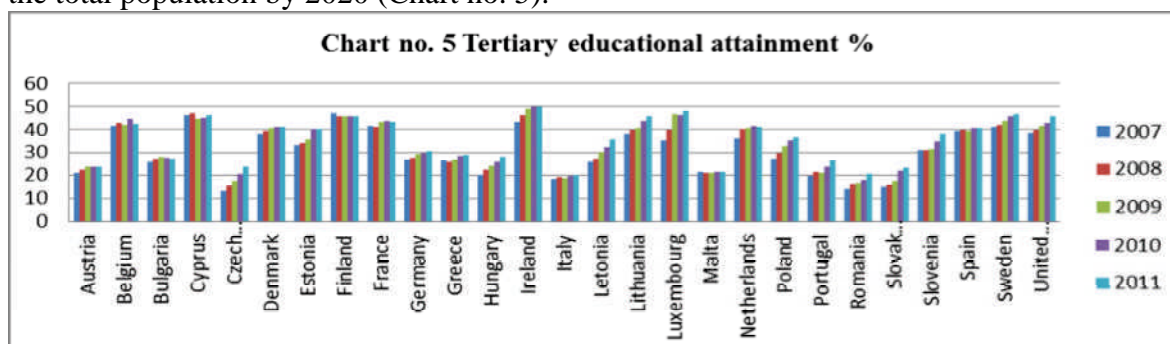
Source: European Commission, 2013. *Eurostat, Statistics, Sustainable Development Indicators, Social Inclusion*, online, available at:

<http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&language=en&pcode=tsdsc100&plugin=1>.

• A highly important indicator, with direct implications on human capital is also the *Tertiary educational attainment*. It expresses the percentage of a country's population, aged between 30 and 34 years old, that has successfully completed undergraduate studies. This indicator is also monitored in the Europe 2020 strategy, aiming at increasing the percentage of people who completed their tertiary studies, at least at 40% out of the total population by 2020. The poorest performances of this indicator are in: Italy, Romania, Malta, Slovakia, Austria and the Czech Republic. Nevertheless, even in these countries situated at the negative pole of the ranking, there is a favourable situation in the sense that in most of them, such as: Italy, Romania, Austria, the Czech Republic, Slovakia, the trend is upward, so for the period under review, a growing number of people have successfully completed their university studies. In a comparative analysis of Romania and Portugal,



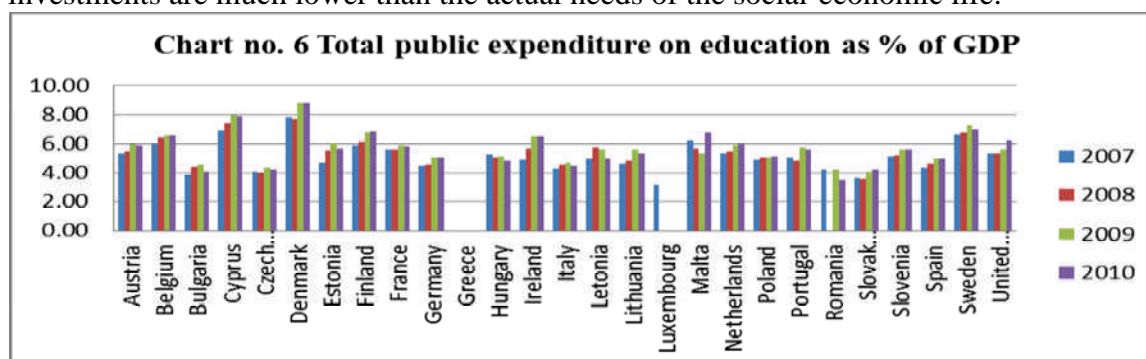
there is a similarity in that in both countries the development of the tertiary education level is favourable. Moreover, another similarity between the two countries (Romania and Portugal) results from the fact that the level of tertiary education is low as compared to other European countries, requiring considerable efforts to achieve the target of 40% out of the total population by 2020 (Chart no. 5).



Source: European Commission, 2013. *Eurostat, Statistics, Sustainable Development Indicators, Social Inclusion, Education*, online, available at :

<http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&language=en&pcode=tsdsc480&plugin=1>

• Given that the changes in the balance of power of nations are determined by technological innovation and new technologies (Boghean, Popescu, Lupan and Boghean, 2009, pp.151 -156), which are the exclusive attribute of human resources and which justify once more the need for investment in education and training, we focused in our analysis on the **Total public expenditure on education (as % of GDP)** indicator. The human resources are unique in terms of their growth and development potential (Panoiu, Belu and Marinescu, 2008, pp. 103-106). However, in the context of the current economic crisis, the training level has been reduced, this having a negative impact on human resources (Bălănescu, 2010, 527-532). For this indicator, the data were collected from Eurostat, being available up to 2010. In addition, for Greece, throughout the period under review, for Luxembourg, in 2008-2010 and Romania, in 2008, the data were unavailable. The results of the analysis show that the lowest level of investment in education is recorded in Romania, a particularly concerning situation, with a negative impact on human capital. Other countries with smaller percentages in this regard are: Bulgaria, Slovakia, and the Czech Republic. The situation is negative in these countries, especially given that the GDP is much lower than that of the European countries that are in the top of the ranking in terms of investment in education. So the absolute value allocated to investment in education is very low, practically insufficient (Chart no. 6). Compared to Romania, Portugal recorded a higher level of this indicator and an increase trend. But also in this case, in absolute value, investments are much lower than the actual needs of the social-economic life.



Source: European Commission, 2013. *Eurostat, Statistics, Investments in education and training*, online, available at: [http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=educ\\_figdp&lang=en](http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=educ_figdp&lang=en)

## 5. Conclusions and further research directions

In conclusion, the focus on human capital began to grow in 1950, when the tertiary sector, which required creativity, began to produce more than the secondary sector in the world's most developed countries.

Attracting and retaining talent people, leadership, corporate reputation, branding and organisational goodwill, all these are a reflection of the quality of the human capital.

The added value brought by this work is that it identifies the eloquent indicators for the human capital that meet the demands of the knowledge-base society and of sustainable development and present the results of the analysis of these indicators in the EU countries. Moreover, this paper presents a comparative analysis of Romania - Portugal, of the representative variables of human capital for the 2007-2011 period.

The research results highlight the similarities of the *Cooperation in employer – employee relationship* indicator in the sense that both countries have low levels of this variable. In addition, both in Romania and Portugal, there is a negative situation, in the sense that in the period under review, the degree to which talented people are attracted and retained decreased at an alarming rate. The differences between the two countries result from the *Extent of staff training*, which is better in Portugal as compared to Romania, as well as the number of people out of the country's total population that is at risk of poverty or social exclusion, the situation in Portugal being also far better than in Romania.

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