EDUCATION AND HEALTH – THEORETICAL ASPECTS REGARDING HUMAN CAPITAL

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Abstract:

The purpose of this paper is to describe and analyze human capital in terms of education and health and its role in economic growth. Economists and specialists in other fields of science were concerned in their research of the determinants of economic growth process. Some of those who showed that only physical capital cannot, by itself, to influence growth and whose research efforts have led to a highly voluminous literature are: Smith (1776), Schultz (1961), Becker (1975), Nelson and Phelps (1966), Romer (1986), Mankiw, Romer and Weil (1992), Benhabib and Spiegel (1994), Temple (2001), Kruger and Lindahl (2001), Pritchett (2001), Psacharopoulos and Patrinos (1993, 2004); Hanushek and Woessmann (2009) etc. Leading indicators used in this analysis are education levels and life expectancy.

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

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Introduction

The concept of *human capital* is found both in the academic element, as well as in the professional one, being highly discussed in terms of its fundamental part in the economic growth and progress of any community.

The human capital represents the ensemble of knowledge, skills, experiences and characteristics fitting to each individual, ensemble that facilitates the creation of various formats of wellbeing and that has a fundamental part in the individual and community progress, in the development of the society.

Ever since 1956, Moses Abramovitz is quoted in literature as being the one that has described this incapacity of accumulating traditional factors (labor, land, capital) for explaining economic growth, naming this unexplained part as a "measure of our ignorance" (Abramovitz, 1956, page 11). Even if the notion of human capital is not imputed to only one author, T.W. Schultz (1961) being among the first that have phrased it, remarking the acknowledgment of the importance that reverts to individuals in creating wealth.

In the Economic Dictionary of the Academy of Economic Studies (2008), *human capital* is defined as "the supply of professional knowledge, skills, competencies, that can lead a person to the enhancement of his creative capabilities and, implicitly, of the income expected to be gained in the future, as well as the ability of individuals to efficiently produce material goods and services". The Organization for Economic Co-Operation and Development (2010) expresses the content of the human capital as "the supply of professional knowledge, skills, competencies and health, that can lead a person to the enhancement of his creative capabilities and, implicitly, of the income expected to be gained in the future; the capability of individuals to efficiently produce material goods and services" (OECD, 2010, page 63).

Over time, in their studies, some of the authors have highlighted the positive part human capital has had in the relationship with the growth process, and this especially in the early 90's, but there were also skeptics who have shown that the part of human capital in economic growth is not a decisive factor.

In the production process, conventional economists have identified and defined three production factors: land, physical capital and labor power (work force). Starting from these three factors, Adam Smith, in 2007, determined that "the talents and aptitudes acquired by residents or society members" were useful in the economic activity.

„*The industrial development remains the engine of the market economy, and this fact was proved by the evolutions of the recovering process in all the European countries, Romania included: without the industrial activities and exports, our country could not change growth index so fast, from (+)7% to (-)7% (2008,2009) and back to (+)1.5% as estimated in 2011*" (Sîrbovan, 2011).

The ideology of human capital was initiated by representatives of the school of Chicago, in the 2nd half of the 20th century. Among the promoters of this theory are Th. W. Schultz (1961) and G. Becker (1975). Schultz (1961) became renown through his studies linked to agriculture and to the developing countries in a series of studies such as: *"Investment in Man: an Economist's View"* (1959), *"Education and Economic Growth"* (1961) and *"Investment in Human Capital"*(1971), thus triggering the series of research concerning human capital.

Schultz (1961) specified the connection between the quality of human capital (the *education and health* level of the active population) and economic growth, mentioning that the active population is not the only growth factor.

This places the human capital on an important position, especially in reference to the agricultural sector, and appreciates that formation and education represent an essential way for productivity improvement and agricultural income growth.

Even if it confers education the basic role in the human capital formation, it makes mention of the fact that there are five sources of improving and producing human capital:

Health services (including infrastructure) with direct outcomes on quality and life expectancy growth:

- ✓ Professional on-the-job training,
- ✓ Formal education,
- ✓ Study and external adult formation programs,
- ✓ Work force and family members' migration.

Another promoter of this theory is Gary Becker (1975), who, for the first time, underlines the fact that the individual is not a simple final consumer, but also a genuine producer that, through education and professional formation, practices an investment in human capital.

In his paper, "*Human Capital, a Theoretical and Empirical Analysis with Special Reference to Education",* he takes into account different types of capital and namely: education, schooling, medical care etc., as being capital investments that produce human capital (Becker, 1975).

The role of human capital in the process of economic development has been studied along time and viewed from two perspectives:

i) Material capital – an important input that can be accumulated in time, for increasing the productive potential of the economy (Barro, 1991 and 1996; Mankiw, Romer and Weil, 1992);

ii) The accumulation of human capital is linked to other development phenomena, such as the distribution of incomes and demographic transition (Galor and Moav, 1999).

Theoretical contributions regarding human capital

Around the concept of human capital a *theory of human capital* or education and health being seen as economic investments has been created, one which implies

that the investment in human capital increases employee productivity and company lucrativeness.

According to the ideology of human capital, the individual maximizes his future incomes through a knowledge accumulation process, making a choice between formation and work. The health state plays an important role in individual development, it being closely linked to education. The relevant studies in this field render a correlation between the health and education level, through the fact that the better educated individuals opt for quality medical services, for maintaining health to an optimum level (Feinstein, and others, 2006, Cutler and Lleras-Muney, 2006; Fonseca and Zheng, 2011).

In a microeconomic approach, Schultz (2002) estimates that a good health state is a necessary condition for attending school, because a child must be healthy for tolerating the rigors regarding the learning process. Also, healthy students, unlike their less healthy colleagues, have a better cognitive function and thus, can receive a better education for a certain schooling level, which, in turn, guarantees greater earnings for a longer period of time. Health improves worker productivity through collateral effects, and certain physical and mental skills.

The association between education and health state is a positive one, this connection being able to be partially explained through the fact that incomes have increased in the educated individuals (Grossman and Kaestner, 1997). Thus, individuals with a higher education level are more efficient health producers, thereupon, with the same resources, they can obtain better health.

Unlike the physical and financial capital, the human one is incorporated in individuals. It is attained by an individual that has an intellectual capital, memorizing, selection and judgment capacities, alongside other innate qualities. Thus, the capital of each worker is formed from personal abilities, the ones he has since birth, as well as from the knowledge and competencies gained through his education and training. His immaterial capital supply can accumulate or wear down.

The health capital (health supply) is a component of the human capital supply, meaning that each individual is born with a certain health capital (Muschkin 1962, Becker 1964 and Fuchs, 1966), which can be increased or diminished throughout life, depending on their choices (Grossman, 1972). This can be acquired through the ***health production function*** developed by Grossman (1972), which argues that health is broadly defined as including longevity and the disease-free days within a year, both being requested, as well as produced by consumers.

According to Ryff and Singer (1998), the definition of WHO (World Health Organization) (1946), refers to the important steps that are made towards interpreting health as a wellbeing state rather than a disease one, and, as such, wellbeing includes the mind, body and connections between them. Ryff and Singer (1998) also claim that evaluating health should include both physical problems (mobility, pain, fatigue, sleep disorders, symptoms), mental (stress, depression, fury, anxiety), as well as social issues (conjugal, sexual dysfunctions).

Pocas and Soukiazis (2010) have solely focused on the determiners of the health state that lead to longevity growing.

Health, education and well-being have been described by them as being the most important determining factors.

Human capital advantages

When we speak of the advantages investing in human capital has, these can be regarded from two perspectives:

Table No.1. The advantages of human capital

Economic advantages		*The non-economic advantages (social)*
At an individua	**At a cumulati**	
• Income growth • Increasing the capacity because investments ma education	• Investing in capital represents an e factor for economic which is based on the technical progress.	• Improving the health state along with the inc the schooling level increase. • It contributes to the increase of children ec level, in that the educated parents are the first exa their children. • A better integration in the civic and social li more active participation in volunteering ac charity, in various other activities meant to contr the reduction of delinquency, criminality, drug us • Improving the happiness level and p wellbeing.

Source: Personal projection based on literature

Human capital is an intangible capital that is measured through the investment made in human capital, its main component being education, followed by health. Next, an image of the human capital of the EU countries in 1990, respectively 2012, is presented.

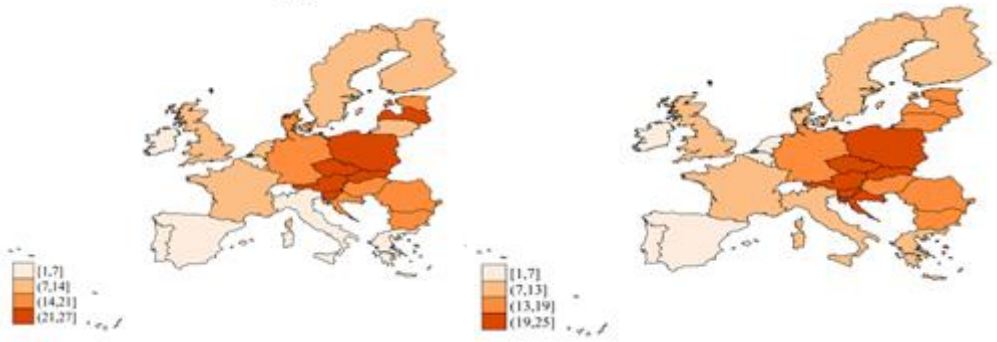
Image No. 1 stresses the level of education (secondary and tertiary) of the EU member-countries in 1990 and 2012, through a cartographic image. The population with a secondary education level remains mostly, in 2012, at the same level of the one from 1990. In 1990, on the first places regarding secondary education were: The Czech Republic (70,8%), Slovakia (70,1%), Poland (64,6%), Austria (60,9%), Latvia (60,8%).

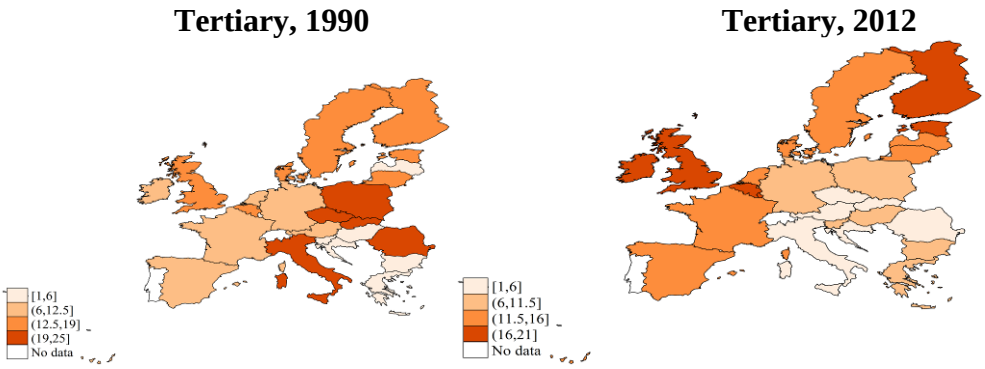
In Romania, in 1990, the share of the population (15-64 years old) with secondary education was of 56,9%, increasing in 2012 to 57,8%. The countries with the lowest level of secondary education in 1990 are Portugal (13,6%), Malta (15,6%), Spain (20%).

In 2012, the same positions are kept, the only alteration appearing between Poland (61,8%) and Austria (63%), the latter going up a position. Regarding the last positions of the same year, the situation is presented in the following manner: Portugal (21,9%), Spain (23,7%), Malta (27,8%).

Image No. 1: **The level of education of the EU member-states**

Secondary, 1990 **Secondary, 2012**





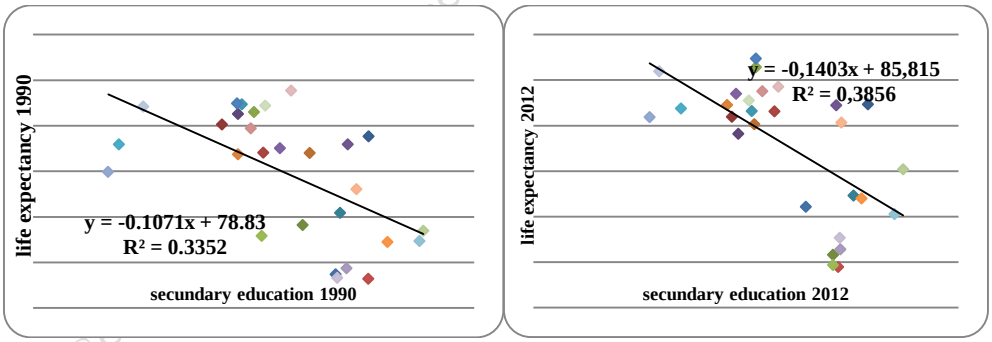
Source: own processing according to *Eurostat in Stata 12*

Under the aspect of tertiary education, in 1990, the first place was held by Lithuania (35,3%), preceded by Finland (27,1%), respectively Sweden (26,8%). The last places of the same year were occupied by Malta (4,9%), Romania (7,5%),Italy (8,1%).

In 2012, the first position regarding the level of tertiary education was held by Cyprus (25%), preceded by Ireland and Great Britain on the 2nd place with 34,7%, and the 3rd, Luxembourg (33,4%). The last positions of the same year were held by Romania (13,6%), Italy (13,8%) and Malta (14,8%).

Through the correlations of *Image No.2*, we have pursued the identification of a connection (association) between the secondary education level and life expectancy, as a measure of human health.

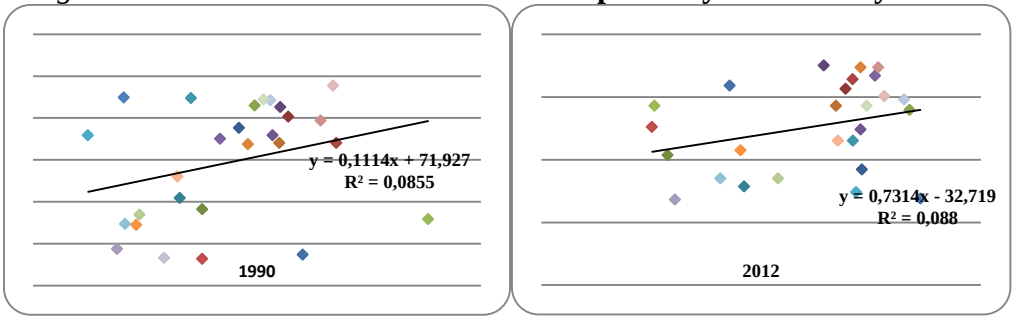
Image No. 2: **The correlation between life expectancy and secondary education**



Source: own processing according to *Eurostat*

As it can be seen, the association between life expectancy and tertiary education is practically non-existent, the value of the Pearson coefficient being extremely low. However, the result is not a causal one and we must take into consideration the different levels of the graduation extent of higher education among European states.

Image No.3: **The correlation between life expectancy and tertiary education**



Source: own processing according to *Eurostat*

As a **conclusion**, the health of the individuals fundamentally affects their life quality and decisively contributes to their economic results, and alongside education, as human capital components, has a significant role in economic growth, in society development on the whole. The importance of human capital impact from an economic, social, cultural point of view is unanimously renown, being desired and pursued, from an individual level to the level of the entire population, from a household level to a global one.

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