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## A Development of Human Capital in the Context of an Aging Population

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### Abstract

The purpose of the article is to analyze the characteristics of human capital development in the context of population aging. By using the scientific literature analysis, structuring and evaluation methods the first part of the paper deeps into the concept of human capital. Analysis shows that comparing human capital definition presented by different authors, it vary, however the key human capital elements remain. Authors of the article also analyze the individual, organizational and national benefits of investment in human capital and taking into account implications of ageing discuss human capital development opportunities. Results of the scientific literature analysis show that talking about human capital development one of the most important factor remains education and training, which allows to use human capital longer.

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### Introduction

The world is constantly changing, and thus emphasizes the new challenges – one of them is population ageing. Cutler, Poterba, Sheiner, & Summers in 1990 wrote that an American woman in 1960 expected to have 3.6 children whereas in 1990 only 1.9. A similar situation is observed in Europe. Based on the statistical data analysis a total fertility rate, counting live births per woman in a period from 1960 to 2012 in Ireland has dropped from 3.78 to 2.01 and in Portugal this rate changed from 3.16 to 1.28 (Eurostat, 2014).

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In the context of population ageing, increased life expectancy, and declining birth rates leads a reduction of the active labor force. A decreasing number of working age people has to support the increasing number of older persons. It is also noted that in today's environmental conditions families tend to have fewer children. Today's women more actively participate in the labor market and accumulate more human capital. All of this has an impact on their decision to have children. People tend to have fewer children, but more invest in their education (Day & Dowrick, 2004). Therefore, the population ageing in a various ways impacts human capital and its development.

According to Olaniyani & Okemakinde (2008) a national economy functioning depends on two kinds of resources: physical and human capital. However based on Gižienė & Simanavičienė (2012) in the context of various social life changes, it is understood that the human capital, rather than financial resources is one of the main factors of economic development. Mincer (1996) highlights that in the 20th century the growth of human capital was truly astounding: from a low literacy level, it was shifted to a large number of high school graduates. This transition was associated with social changes that took place in this century. According to Mincer (1996) it was influenced not only by increased population's real incomes, urbanization, growth of education rates but was also affected by demographic indicators such as: fertility, mortality, life expectancy and health changes. A growth of human capital by Mincer (1996) is identified as a factor and as a result of the demographic transition.

Recently, the impact of the aging population and the challenges of this phenomenon are more often discussed in the public and scientific discourses. This area is analyzed by different kinds of professionals. On the one hand the population aging is interested in sociologists - they analyze an old person's role in society. It is also observed that human ageing is not less interest by health sector professionals. Along with a changing human life expectancy and the rapid growth of the elderly researchers are increasingly analyzing the relationship between aging and health care costs or the demand for health care services. This demographic transition also affects the education sector. Lifelong learning is a part of the modern everyday life, so a regular employee's learning and development is aimed at people of all ages. In summary, human capital aging issues are an interdisciplinary challenge and require a complex solution. Given the advantages and limitations of existing studies, the purpose of this paper is to analyze the features of human capital development in the context of population's aging.

## **1. The concept of human capital**

The concept of human capital reaches deep origins. According to Cadil, Petkovova, & Blatna (2014) the concept of human capital is developed from a growth theory and the relationships between this concepts' and the economic growth are analyzed for several decades. Studies completed by such researchers as Becker (2002), Schutz (1972), Mincer (1996) are considered as one of the most important in the context of human capital conceptualization process. Schultz (1972) relates man economic value with the concept of human capital and highlights the importance of investments in this area. Becker (2002) also identifies human capital as the most important capital form and highlights, that physical capital alone without skilled workers are not able to generate growth. Becker (2002) also stresses that companies' human capital management is one of success factors. This position is also supported by other investigators. The authors of the scientific literature, such as Mincer (1996) emphasizes that human capital plays an important role in economics, especially in the labor economics. At the macro-economic level, human capital is linked with economic growth, while at the micro-economic level individual wage differences are interpreted on the basis of human capital stocks. It is also noted that too little human capital assessment encourages processes such as emigration: employees feel underestimated, and it stimulates them migrate to other countries. As a consequence countries lose the accumulated human capital. In turn, organizations lack of skilled labor force and country faces a crack of accumulated human capital (Tamašauskienė, Šileika, & Masėnienė, 2008).

The analysis of the scientific literature provides many different interpretations of the concept of human capital. Kwon (2009) argue that human capital can be understood as a compound of two components: human and capital. In this context, and as usual in economic theory, capital is perceived as a factor of production. Meanwhile, the human is identified as an entity that takes care of all the economic activities such as production, transactions, and others. Therefore human capital by Kwon (2009) is related with added - value generation. A similar position is expressed by Son (2010). By analyzing the concept of human capital Son (2010), distinguishes macro and micro levels. From macro level's perspective, human capital is understood as a production factor and is associated with higher productivity, more sustainable growth, technological innovation or even poverty reduction. Mincer (1996) focuses

on the relationship between human capital and economic growth and argues that the growth of human capital can be one of the decisive factors in achieving sustainable economic growth. Meanwhile, the evaluation of human capital from the micro-economic perspective, is associated with an individual's work performance, productivity, his earnings and is identified as an educational component (Son, 2010).

The concept of human capital is distinctively interpreted by Stevens (2010). According to this author, the concept of human capital could be understood as a strategic and collective value of the workforce. Stevens (2010) also highlight that human capital is not the employee, who works in the organization, but it's something the employee brings to the organization and what helps an organization to achieve success.

Olaniyani & Okemakinde (2008) highlight the importance of human capital development in relation to production activities and say that human capital is associated with an investment in ourselves, which is accompanied by an increase in economic productivity. A similar position is expressed by Kwon 2009. This author argues that human capital accumulation is associated with an increase in wages, productivity, and national economic growth, so it is reasonably argued that the accumulation of this type of capital affects many sectors.

Submitting analysis of the concepts of human capital Potelienė & Tamašauskienė (2014) claims that, on the one hand, human capital is defined as the set of knowledge and skills used by individuals or as workers' abilities and skills. On the other hand, human capital is perceived as a combination of four elements: abilities, behavior, effort, and time. In that regard, abilities are described as individual knowledge and skills, behavior is attributed to the goal-oriented activities, and efforts are associated with physical and mental resource usage, while the time for the investment in accumulation of human capital is attributed to the time component.

By assessing, an existing scientific literature is noted that the concept of human capital is interpreted in different ways, but there are noticeable some repetitive elements. Kwon (2009), Becker (2002), Bildirici, Sunal, Aykac Alp, & Orcan (2005), Potelienė & Tamašauskienė (2014), Han, Lin, & Chen, (2008) identify key human capital elements, that are commonly found in the scientific literature: knowledge, competency, executive experience, creative ideas, attitudes towards work and life, individual's health, personal and problem solving skills, education, abilities, innovation, innate features, reputation, creativity, loyalty.

The assessment of human capital definitions and specified elements indicate that the majority of these determinants of human capital are acquiring during the lifecycle. In the context of population aging, a rising life expectancy together prolongs human capital accumulation period. However, it also highlights the importance of people learning and training. The cumulative benefits of this form of capital are significant, not only for individuals but also for all country. It can be said that continuous key human capital element's improvement become one of the most important tasks for each. So deliberately planned and in human capital accumulation-oriented activities could bring positive results in the context of aging.

## **2. Human capital formation and development in the context of ageing**

Taking into account the modern life actualities, Amosov & Degtyar (2010) reasonably highlight the need of good professionals for organizations that could implement innovative activities by developing innovative products, implementing projects or programs. In this regard, it highlights the importance of human capital accumulation. According to Potelienė & Tamašauskienė (2014) human capital formation is based on the acquisition of knowledge. It is emphasized that due to the specificity of the different abilities of individuals, each has specific peculiarities of human capital formation. It is observed that human capital formation process is affected by demographic, socio-demographic, economic, organizational - economic and ecological factors. Such indicators as the natural growth of the population and life expectancy, changes in people income or health status, the level of economic development, the demand for labor and other features influence the human capital formation.

On human capital development process, a particular attention is given to investments. Researchers from various fields (Mincer, 1996; Zhang & Zhuang, 2011; Čadil et al., 2014) argue that based on modern growth theory investment in human capital affects economic growth. Results from previous studies have shown that investment in human capital is considered to be more cost effective than investment in physical capital (Kwon, 2009). Tiruneh & Radvansky (2011) accomplished empirical study analyzing the contribution between human capital and economic growth. A study shows a positive correlation between GDP per capita growth, investment in education and human

capital accumulation. Based on Čadil et al. (2014) human capital is defined as a key factor of individuals income so according to Kwon (2009) investment in human capital influences such important aspects as: individual' wages, business productivity, competences and competitive advantages or even a national economy.

Benhabib & Spiegel (1994) a national human capital stock relates with countries ability to adopt new technologies from abroad. Meanwhile according to Becker (2002) human capital promote technological innovations. By comparing the richer and poorer countries is also observed that richer countries are more focused in the high knowledge products, therefore in order to improve the situation in poorer countries it is encouraged an investment in human capital. Based on Poteliienė & Tamašauskienė (2014) human capital formation and accumulation are very important at the country level because physical and human capital accumulation over the long term promote a faster investment in the following capital forms. It is also observed that developed countries that have more financial resources more invest in people's education. It together influences their economic growth. Thus, it can be seen that higher economic growth promotes human capital development, and the other hand a higher stock of human capital stimulates the economic growth.

In the context of human capital development, various researches highlight the importance of education. According to Benhabib & Spiegel (1994) it is believed that educated work force better adapt technological changes and are able to develop and implement them. Meanwhile, Gižienė & Simanavičienė (2012) education identifies as one of the three most important elements of human capital, which is also determinate as a key factor in the development of the knowledge economy.

The aspects of learning in the analysis of human capital development characteristics are very important, especially in the context of an aging population. Kwon (2009) argue that human capital is based on the knowledge and skills that are received during the learning process. The learning is separated as one of the most important factors in increasing human capital. Tamašauskienė, Šileika & Masėnienė (2008) stress that is learning new skills or their improvement allows to increase employee productivity, so based on Šileika & Tamašauskienė (2005) people are motivated to invest in their education by an expected future benefits - higher wage and labor productivity.

According Tamašauskienė et al. (2008) on the one hand, investment in human capital is long-term process and gives long-term results, the human capital has a tendency to grow over the time, but on the other hand, human capital is aging. Responding to today's environmental conditions, Becker (2002) emphasizes that investment in knowledge and skills development must be carried out major part our lives. Given the aging population and decreasing proportion of younger people, organizations will have a wider focus on older age workers. Žnidaršič & Dimovski (2009) emphasizes the importance of older workers participation in the labor market, especially in the context of population aging. Older and experienced staff loss is associated with a recession.

The scientific literature often analyzes the question of older person's ability and willingness to learn. Furthermore, it is often argued that old age employees reduce their productivity. However based on stereotypical assumptions organizations often do not include older age workers into training activities by thinking that the investment in the age group will not return. Aaltio, Salminen, & Koponen (2014) stresses that assumption that human abilities and skills decline with age has been rejected. While talking about investment in human capital Tamašauskienė et al. (2008) also emphasizes another important aspect - the relationship between investment and the human life expectancy, its working period. According to Mincer (1996) improved population's health and rising life expectancy are associated with a longer investment payback period, so it allows to ensure the greater return on investment in people. However, by the analysis of the scientific literature it is also noted that human capital development in the context of population ageing concentrates not only on the elder people, but also highlight the potential of young people. According to Day & Dowrick (2004) older less educated workers will be replaced by the younger and more educated people.

In summary, it could be said that population aging opens up new opportunities for human capital development. On the one hand, due to changing societal values, young people today are more focused on education and interested in quickly developing new technologies; on the other hand, the increasing number of older persons allows to use their accumulated knowledge and experience longer. So in the context of population ageing increases the importance of investment in human capital.

## Conclusions

The theoretical analysis of the scientific literature has shown that the human capital is highly valued because of its potential to create economic value. The accumulation of this form of capital is associated with a wide range of positive effects. Population aging rise new challenges, so a bigger accumulation of human capital can lead not only individual wage differences or organizations' competitive advantages, but together explain economic development differences between different countries or regions.

In relation to demographic and social changes, people's values and attitudes are also changing. Together with increase life expectancy people tend to remain at work longer, so it also makes new possibilities to organizations to take advantage of the elderly people experience and knowledge longer. However, it is also must be noted that human capital must constantly be developed.

Human capital includes a wide range of different components, such as knowledge, experience, competency, health, and others, so in order to accumulate more human capital, it is necessary to focus on all of these elements consolidation. It is necessary to emphasize, that by focusing on these elements development, older persons may feel longer able to do their job so it together could bring a positive effects, especially in the context of an aging workforce.

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