

THE HUMAN CAPITAL AND ECONOMIC DEVELOPMENT: LITERATURE REVIEW

Hanane Abdelli,

University of Skikda, Algeria

Sawssan Saadaoui

University of Sfax, Tunisia

Abstract

The human capital constitutes an important factor for the development of the nation's economy. Recently, Barro, Mankiw and Sala-I-Martin (1995) place the human capital as the vital variable which explains the economic evolution. Hence, the effects of human capital on the economic development became a significant topic in the empirical literature. In this way, the idea of this study is to give a perspective of the theory and the basic approaches of human capital. Then, this paper sets out to review the literature about the relationship between human capital and economic development.

Key words: Human capital, economic development, relationship.

Introduction

Development is a phenomenon that arose with the emergence of mankind, but it did not take much importance in terms of research, except after the Second World War. Its problem was focused on a simple human question: why do people become rich and others are still poor? Hence, the concept of development has become an important subject that has received the attention of researchers in various economic, social, political, cultural and environmental issues. Therefore, economic development constitutes the primary objective for the majority of nations. It represents the process which helps simple, low-income national economies to develop and become modern industrial economies. Generally, economic development is sometimes used as a synonym for economic growth and describes the change in a country's economy involving qualitative as well as quantitative improvements.

Human capital is regarded as a vital element on the development of new technology. It has a substantial importance in an efficient adoption of these technologies. It can be seen as a technology embedded in individuals. Its accumulation is the result of investments that Becker (1964) characterizes in a very general way as the set of activities that influence the future monetary and physical incomes of agents by increasing their intrinsic resources. Generally, human capital is placed as an essential factor which explains the economic development. Thus, the present paper was conducted to set out to review the literature about human capital and economic development and to assess the relationships between human capital and economic development. Thus, it is organized as follows: Section 1 and 2 introduce the literature about the concept of economic development and the human capital. Then, section 3 introduces the theoretical alternative in which human capital is related to the development and the economic growth.

The concept of economic development

At first, it is important to define development, in general. Indeed, development is generally defined as the process by which it is allowed or increased in production and services, and an increase in average real incomes accompanied by improved living conditions of the poor.

By economic development, we mean long-term investments in the generation, dissemination, absorption of new ideas and infrastructure. It is based on collective action and large-scale investments with long time horizons.

Besides, economic development, defined by conditions established by government and public investments, represents cooperation between the public sector and private enterprise. Therefore, it is possible to have growth without development in the short- or even medium-term because economic development creates the conditions that enable long-run economic growth.¹

Furthermore, in literature, it is clear that economic growth and economic development have some similarities and differences.

According to Alina, H (2012)², similarities refer to a certain number of facts. At first, growth and development are continuous processes, with stimulating effects in economy. They involve the allocation and utilization of resources and the increase of efficiency. Their finality is related to the improvement of the standard and quality of life. Finally, both growth and development are defined as a cause and result for the general trend, influencing its rhythm and ensuring passages from one level to the other.

For the differences that exist between economic growth and economic development, the economic growth can be said to focus on the change in the quantity of goods and services on average, regardless of the structure of real income distribution among individuals or the quality of the provided goods and services. In contrast, economic development focuses on the structural change in the distribution of income and production, and it is concerned with the quality of goods and services provided to individuals.

According to Schumpeter (1962), economic development entails a fundamental transformation of economy. This transformation is about the industrial structure, the educational and occupational characteristics of the population and the entire social and institutional fabric. Hence, the objective of economic development differs from the objective of economic growth. It means that "*growth is measured by putting more people to work within an existing economic framework; economic development is aimed at changing that framework so that people work more productively, and the economy shifts toward higher-value activities*", according to Maryann, F. *et al.* (2016).³

To be a developed country, it is important to respect some procedures. Essentially, Alina, H. (2012) indicates that country is able to develop fast when:⁴

- Industries and people have the possibility to plan their activity on the long run, which requires political, legislative and monetary stability;
- The results of economic activity depend on free initiative, on the efficient utilization of resources, on efficient labor, etc.
- Investments are not sacrificed in favor of immediate consumption.

¹Feldman, M., Hadjimichael, T., Lanahan, L., and Kemeny, T., "The logic of economic development: a definition and model for investment", *Environment and Planning C: Government and Policy*, volume 34, 2016, p: 07.

²Haller, A., "Concepts of Economic Growth and Development. Challenges of Crisis and of Knowledge", *Economy Transdisciplinarity Cognition*, Vol. 15, Issue 1/2012, p: 68.

³Feldman, M., Hadjimichael, T., Lanahan, L., and Kemeny, T "economic development: a definition and model for investment", *Environment and Planning C: Government and Policy*, volume 34, 2016. p: 06.

⁴ Haller, A., *op cit.*

- The decisions regarding investments and production are correct, and the wealth accumulated in time is adequately used to achieve assets as efficient as possible from an economic standpoint;
- The degree of education and civilization rises and records a leap forward at the level of consciousness;
- Any decision takes into consideration the protection and conservation of eco-system (durable development);
- Economic, social, spiritual values are respected.

Consequently, it is clear from these views of literature that economic growth and development are crucial to develop human personality, increase people's material and spiritual wealth.

Finally, the ultimate goal of economic development is to create economic prosperity and high life quality. Intermediate goals—for example, to increase innovation or to reduce barriers to entrepreneurship and private sector investment—are the means to the ultimate end of creating this prosperity. Hence, to achieve this goal, human capital plays a vital role. Actually, it is time to identify this concept before developing the relation between human capital and economic development, which is the aims of the third section.

Human capital: origin and definition

Origin of the concept

The concept of “human capital” has been widely used in economy for at least 30 years. It has really emerged in economic theories thanks to Schultz (1961) and Becker (1964), two American economists who were nobly elected a few decades later for their work, which in turns was inspired by the work of Adam Smith in the 18th century. The concept strongly emphasizes the importance of the human factor in knowledge- and skills-based economies. It is useful to distinguish between the different forms of “*capital*” used in economic activities – especially physical and human.

This theory explains that when an individual decides to take training instead of taking a job, he/she thinks like an investor. Education would thus have characteristics common to physical capital. It would be a present expense for future performance.

Furthermore, Lucas (1988) is one of the pioneers in the analysis of endogenous mechanisms of growth, and the first to focus on the relationship between the productive sector and the educational sector. The place of the human factor in production is at the heart of the contributions of endogenous growth models to the macro-economy.

According to economic theory, two approaches to human capital have been distinguished. The first, referring to the population or more precisely to the available labor force, is to use “human as a labor force” in the classical economic perspective, Whereas economic value added is generated by labor input as one of the production factors such as financial capital, land, machinery and hours of work.

The second approach consists of all the elements peculiar to individuals which characterize their productive power. In other words, it's human capital per capita. The level of education and the health of individuals thus appear to be the main factors in the qualification of the workforce. This approach is based rather on the assumption that investment in human capital can be as effective as that in physical capital (Little, 2003). It suggests that human capital has a broad understanding of the meaning of “*man as creator*” that frames knowledge, skills, skills and experiences. Indeed, the second approach is more important than the first (Beach, 2009).

Numerous empirical studies show that human capital can affect different social components. In the 1950s, some economists discovered that investment in human capital is

the main element to increase the wages of individuals, compared with the quantitative inputs of other components such as land, financial capital and the labour force (Salamon, 1991). Similarly, Woodhall (2001) suggests that investment in human capital is more effective than investment in physical capital. For Romer, knowledge and skills acquired by an individual can easily transfer certain goods and services (Romer, 1990). Learning is still the basis for increasing human capital.

Definition

In general, human capital consists of two concepts: capital and human. From an economic point of view, the term “capital” refers to the factors of production used to create goods and services (Boldizzoni, 2008).

Human capital is then seen as a factor of production. Even more recently, in a context of perfect mobility of financial capital, Barro, Mankiw and Sala-I-Martin (1995) place human capital as the central variable explaining macroeconomic developments. In this context, OCDE⁵ countries view human capital as a panacea that can reduce unemployment and income disparities, or improve productivity and economic growth.

It can be seen as a technology embedded in individuals. Its accumulation is the result of investments that Becker (1964) characterizes in a very general way as the set of activities that influence the future monetary and physical incomes of agents by increasing their intrinsic resources.

According to Lucas (1988), human capital is regarded as knowledge incorporated into individuals in the form of qualification, health and hygiene, contrary to technology or ideas that are not incorporated. The author thus distinguishes between formal human capital or “*Schooling*” which corresponds to an accumulation of knowledge and skills of informal human capital or “*Learning by doing*” which is linked to the experience acquired by the assets in the field. While Judson (1998) defines the stock of human capital as the value of education incorporated into the labor force.

Barro and Sala-i-Martin (1995) define human capital as both a rival asset and an exclusionary asset since individuals own their skills. Contrary to pure ideas and knowledge which may be non-rivals and non-exclusive. Another characteristic of human capital, defended by both authors, is that it is the generator of externalities. Knowledge of an individual improves that of others.

In 1961 Schultz reduced the field of human capital investigation to five categories. The first category consists of all health services and infrastructure, as well as all expenditure which affects an individual’s life expectancy. The second category relates to one-the-job training (one-the-job training) including all other types of learning introduced by companies. The third category concerns formal education organised around elementary, primary, secondary and higher education. The fourth category concerns adult training programs not organised by firms, including those in the agricultural sector. While the fifth category, relates to migration. « *I shall concentrate on five major categories : (1) health facilities and services, broadly conceived to include all expenditures that affect life expectancy, strength and stamina and the vigor and vitality of people; (2) one-the-job training, including old-style apprenticeship organized by firms; (3) formally organised education at the elementary, secondary, and higher levels; (4) study programs for adults that are not organised by firms, including extension programs notably in agriculture; (5) migration of individuals and families to adjust to changing job opportunities* ». (Schultz, 1961 cité par K. S. Chalam, 2007 p.123)

⁵ OCDE (2001), « Du bien-être des nations » : le rôle du capital humain et social, Paris.

For the OCDE, the concept of human capital refers to knowledge, skills and abilities that contribute to productivity, innovation and employability in different work situations. It broadly defines an individual's skills not only by the level of education he has attained, but also by the extent to which he can use them productively (OCDE, 1998)⁶.

Human capital can also be defined as a set of skills, knowledge and qualifications possessed by each individual. These are, in part, innate, inherited at birth.

Finally, human capital can be defined as *“is a broad, multi-faceted concept that encompasses different types of investments in human resources. Health and nutrition are certainly an important aspect of this investment, especially in developing countries, and the (...), the key aspect of human capital relates to the knowledge and skills possessed by individuals and accumulated during education, training and experience and which are useful for the production of goods, of new knowledge and services”*⁷. Human capital is therefore an intangible good that can advance or support productivity, innovation and employability. It can grow, shrink or become useless. It is influenced by different influences and comes from different origins, including, but not limited to, learning in the form of education and training. The four elements (knowledge, skills, skills and other personal qualities) can be combined in different ways depending on the individual and the context in which they are used. In this way, the object of the following section will focus on identifying the investment that we can do it in human capital to support the development of economic.

Relation between human capital and economic development

The idea that human capital investment can promote growth dates back to Smith (1779). Early classical economists have highlighted the importance of investment in human skills.

Early classical economists have highlighted the importance of investment in human skills. In the early models of economic growth, the place given to education was marginal or non-existent.

Indeed, in the Solow (1956) and Swan (1956) models, considered as a reference in the neoclassical analysis of growth, the role of economic policy in the pursuit of growth is almost non-existent. This depends only on the availability of primary inputs and other exogenous variables. Moreover, this model does not recognize any influence of education on growth.

But it was in the 1960s that there was a renewed interest in the question of education, a basic component for sustained economic growth and a means of combating poverty on the one hand, and a not inconsiderable end in itself. This growing interest, described by Bowman (1966), as a revolution that some economists attempted to measure the contribution of education to economic growth (Schultz, 1961 – 1963; Denison, 1962 – 1967; Krueger, 1968) and many authors began to analyze the concept of human capital investment (Becker, 1964 – 1975).

The attempt by Denison (1962)⁸ to explain the economic growth of the United States between 1910 and 1960 in terms of increased labor and human capital immediately showed that there was a *“residue”* It is important that it cannot be explained solely by human capital. This has been a challenge for researchers who have directed their efforts towards discovering the extent to which *“residue”* is related to the effect of education on the strength of work and other factors.

⁶ OCDE (1998), « L'investissement dans le capital humain: une comparaison internationale », Paris, Editions de l'OCDE.

⁷ Zuinen, N., Varlez, S., (2004), «Développement durable: modes de production et capital humain», WORKING PAPER 22-04, Bureau fédéral du Plan, Bruxelles, p7.

⁸ Denison, E., (1962), «The Source of Economic Growth in the united States and the Alternatives before Us Supplementary», Paper No 13, Committee for Economic Development, New York.

It was in the 1960s that important efforts were made to answer a question about the relationship between economic growth and education, in the form of a theorization with the decisive contribution of Mincer (1958, 1974), Becker (1964, 1975) and Schultz (1961) came into being and gave birth to the theory of human capital. This theory viewed education spending as an investment that sought to specify demand and understand the impact on economic growth. These expenditures were an efficiency factor that increased productivity and determined the level and distribution of individual earnings.

In 1995, Glaeser and al. find that human capital level in 1960 influences growth of the cities between 1960 and 1990. Similarly, Simon and Nardinelli (2002) found that cities that have higher level of human capital grow faster in the long run low level of human capital may be a constraint to investment and expansion in sectors that require skilled workers. As markets in countries at different stages of development typically demand different skill sets, educational investments and policy are likely to vary with these needs. In particular, low-income countries with a high proportion of informal workers may need to consider developing a focused and narrow set of skills through vocational education and training programs.

To enhance the role of human capital on the development of economic, many researchers have used economic model to explain this relationship.

In this way, Robert E Lucas conducted a study “*on the mechanics of economic development*” and states that the factors behind the economic growth is the human capital accumulation rate, in which both the economic growth and human capital accumulation rate is proportional to each other since, human capital levies externalities on production. The economic growth rate is proportionally more than the increase in the accumulation rates of human capital, thus, constructing increasing return to scale. He further explains satisfactorily the rich countries growth but does not explain the poverty traps countries. Jess Benhaib and al. conducted a study on the topic “*the role of human capital in economic development evidence from aggregate cross-country data*” by the growth accounting regressions indirect by an aggregate Cobb-Douglas production function. There results depicted that human capital arrives insignificantly in clarifying per capita growth rates.⁹

Ojo and Oshikoya (1995) in their study found that literacy rate is positively related to per capital output growth, using other indices such as school enrolment, they found out that the sign of the coefficients were theoretically plausible also in the Zimbabwean economy. Arora (2001) in his study discovered that there is a co integrated relationship between health and income; innovations in health according to him lead to economic growth and not vice versa.

Garba (2002) carrying out a cross-country analysis using regressions showed that there is positive correlation between educational attainment and economic growth and development.

Loening (2002) investigated the impact of human capital on economic growth through the application of error correction mechanisms. He examined two different channels by which human capital is expected to influence growth. The result revealed that a better educated labour force appeared to have positive and significant impact on economic growth via factor accumulation as well as on evaluation of total factor productivity.

Adamu (2003) determined the impact of human capital formation on economic growth in Nigeria between 1970 and 2000 using co-integration and error correction mechanisms. The result indicated that investment in human capital in form of education and training can lead to economic growth because of its impact on labour productivity.

Gyimah-Brempong, Paddison and Mitiku (2006) investigated the effect of higher education human capital on economic growth in African countries using panel data over the 1960–2000 periods, a modified neoclassical growth equation, and a dynamic panel. They found that all levels of education human capital, including higher education human capital, have positive

⁹Rehman, Z. U., Tariq, M. & Khan, M. A. 2018. “The role of human capital in economic development in selected Central Asian Countries”. *The Dialogue*, XIII (3), 235–244.

and statistically significant effect on the growth rate of per capita income in African countries. Their result differs from those of earlier research that find no significant relationship between higher education human capital and income growth. They also claimed that the growth elasticity of higher education human capital is twice as large as the growth impact of physical capital investment. While this is likely to be an overestimate of the growth impact of higher education, it is robust to different specifications and points to the need for African countries to effectively use higher education human capital in growth policies.

Nabil, Simon and Yu (2007) examined the dynamic effects of public investment in human capital in the Canadian context of population ageing using a computable overlapping-generations model (OLG). The decisions of time allocation between learning, working and leisure activity are endogenously determined in the model and react differently to tax policy changes. Learning time and public expenditures on education both improve human capital accumulation and effective labour supply. The simulation results indicated that a tax-financed increase in public spending on education may have significant crowding out effects in the short run. In the long run, however, higher education incentives may increase the rate of human capital accumulation which in turn could mitigate the negative effects of population ageing.

Finally, Adelakun (2011) conducted a study on human capital development and economic growth using OLS technique. It evaluates human capital using the GDP as proxy for economic growth; total government expenditure on education and health, and the enrolment pattern of tertiary, secondary and primary schools as proxy for human capital. He concluded that there is a positive relationship between government expenditure on education and health as well as pattern of enrolment in primary, secondary, and tertiary institutions in enhancing economic growth in the long run.¹⁰

Conclusion

Economic development has been and will be a permanent preoccupation of researches and an always present topic of economic debates. The object of this paper was to present a literature review about the concepts of development economic and human capital and the main relationship that we should consider as a major factor on the development of the economy. In this way, this paper has examined researches to define the concept of human capital, in the first way. Then, it tries to explain the economic development. Finally, the issue relating to the role of human capital in fostering development of an economy was the ultimate object of this study. To do it, several researches were used to identify the causality between human capital and economic development.

References

- Azam, M., Ather Maqsood, A., "Role of human capital and foreign direct investment in promoting economic growth: evidence from Commonwealth of Independent States," *International Journal of Social Economics* 42, no. 2, (2015).
- Barro, R.J., "Health and economic growth," *Annals of Economics and Finance* 14, no. 2, (2013).
- Boztosun, D., Aksoylu, S., and Şenturk Ulucak, Z., "The Role of Human Capital in Economic Growth," *Economics* 4, no. 3 (2016).

¹⁰ Mosunmola Osoba, A., Adewale Tella, S., "Human Capital Variables and Economic Growth in Nigeria: An Interactive Effect", *EuroEconomica*, Issue (36)/2017.

- Čadil, J., Petkovova, L., and Blatna, D., "Human capital, economic structure and growth," *Procedia Economics and Finance* 12, (2014).
- Cinnirella, F., and Streb, J., "The role of human capital and innovation in economic development: evidence from post-Malthusian Prussia," *Journal of economic growth* 22, no. 2, (2017).
- Denison, E., «The Source of Economic Growth in the united States and the Alternatives Before Us Supplementary», Paper No 13, Committee for Economic Development, New York, (1962).
- Feldman, M., Hadjimichael, T., Lanahan, L., and Kemeny, T "economic development: a definition and model for investment", *Environment and Planning C: Government and Policy*, volume 34, p.6-7, (2016).
- Haller, A., "Concepts of Economic Growth and Development. Challenges of Crisis and of Knowledge", *Economy Transdisciplinarity Cognition*, Vol. 15, Issue 1/2012, p.68 (2012).
- Mosunmola Osoba, A., Adewale Tella, S., "Human Capital Variables and Economic Growth in Nigeria: An Interactive Effect", *EuroEconomica*, Issue (36)/2017.
- OCDE, « L'investissement dans le capital humain: une comparaison internationale », Paris, Editions de l'OCDE, (1998).
- OCDE, « Du bien-être des nations » : le rôle du capital humain et social, Paris, (2001).
- Pelinescu, E., "The impact of human capital on economic growth," *Procedia Economics and Finance* 22, (2015).
- Ramos, R., Surinach, J., and Artis, M., "Regional economic growth and human capital: the role of over-education," *Regional Studies* 46, no. 10 (2012).
- Rehman, Z. U., Tariq, M. and Khan, M. A., "The role of human capital in economic development in selected Central Asian Countries". *The Dialogue*, XIII (3), 235–244, (2018).
- Zuinen, N., Varlez, S., «Développement durable: modes de production et capital humain», WORKING PAPER 22-04, Bureau fédéral du Plan, Bruxelles, p7, (2004).