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Economic challenges and problems related to natural resources management as a consequence of human capital accumulation

*Desafíos y problemas económicos relacionados con la gestión de los recursos naturales consecuencia de la
acumulación de capital humano*

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ABSTRACT

The current study considers the evolution of the concept of human capital over time. The theory of human capital was shaped from research results obtained by foreign economists. Thus, it covers many independent existing aspects that should also be studied independently. This article draws special attention to the impact of abundant natural resources on the accumulation of human capital. The article analyzes modern theories through the lens of an idea that economic growth is dependent upon the abundance of natural resources. The institutional factor also plays a role in this relationship, so classic economic theories were considered as well.

Keywords: Economic Growth, Foreign Economists, Humanization, Human Capital.

RESUMEN

El presente estudio considera la evolución del concepto de capital humano a lo largo del tiempo. La teoría del capital humano se formó a partir de los resultados de la investigación obtenidos por economistas extranjeros. Por lo tanto, cubre muchos aspectos independientes que deberían estudiarse también de forma independiente. Este artículo llama especialmente la atención sobre el impacto de los abundantes recursos naturales en la acumulación de capital humano. El artículo analiza las teorías modernas a través de la idea de que el crecimiento económico depende de la abundancia de recursos naturales. El factor institucional también juega un papel en esta relación, por lo que también se consideraron las teorías económicas clásicas.

Palabras clave: Economistas Extranjeros, Capital Humano, Crecimiento Económico, Humanización

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1. INTRODUCTION

Issues associated with human capital formation in the context of current economic development are currently on the heat. Such an interest came from the need to study the effect that human capital has on economic development. It was further driven by the research exploring the relationship between the human capital and the natural resources, and their effect on economic growth.

Many scientists considered this issue. In particular, economists of the classical school – W. Petty, A. Smith – became the first to illuminate the influence projected by the labour force on economic growth and population welfare. Thus, the *Economic Writings of Sir William Petty* defines human capital as “*efficiencies in being*” and considers this category in the context of national wealth. The man believes that human capital is not only the major driver of wealth growth but also one of its elements (Petty & Graunt: 1899). Adam Smith followed Sir W. Petty on this but paid attention to human capabilities manifested under the influence of production factors. Later on, Karl Marx put forward the ideas of a “human factor” influencing economic development. He offers to consider the labour power as a “set of physical and spiritual attributes” of employees.

Dornbusch, Fischer, and Shmalenzi regarded human capital not only within the framework of physical and labour development but also as a stock of spiritual (including cultural, psychological, and moral) attributes and world-view (Dornbusch et al.: 2002). They assigned a special role for human personality in the context of the social environment, for managerial decision-making ability, for the ability to undertake the responsibility, for self-organization skill, and for personal identity (Aleksieva & Gildingsh: 2018; Kvon et al.:2019). This concept is often used when settling issues associated with the formation of a successful modern manager within the organization.

In the 20th century, the specialists concluded that it is necessary to evaluate the efficiency of human capital in terms of quantity. In particular, they developed economical, mathematical, and statistical models to address issues, such as human value, and educational factors influencing economic development.

The previous studies introduced the economic concepts which were used in the modern theory of human capital (Fisher: 1959). The so-called ‘growth accounting’ literature emphasizes the importance of measuring changes in the quality of labor, as indicated by improved qualifications and higher skills, when trying to account for economic growth over the long term, whereas ‘new growth theories’ highlight the determinants of economic growth in the broadest sense, concentrating on human capital inputs. In endogenous growth models, economic growth can continue indefinitely because the returns on investment in (both physical and) human capital goods do not necessarily diminish over time. Spillovers of knowledge across producers and external benefits from improvements in human capital are part of this process because they offset tendencies to diminishing returns (Teixeira & Queirós: 2016).

Measurement of human capital is realised by the human capital index, which in a determination of the European Union is based on four groups of areas: investment in education, the use of human capital stock, the productivity of human capital, demographics, and employment.

The purpose of this article is to study the impact of human capital on economic development. The major objective is to analyse the connection between the accumulation of human capital, driving economic growth, and the resource curse using general methods of cognition.

2. RESULTS

The EU's 2020 Strategy is focused on smart, sustainable, and inclusive growth, which is impossible to achieve without the major contribution of skills, knowledge or human value, commonly known as the human capital.

The theory of human capital as an independent concept was developed in the latter half of the 20th century when certain social and economic conditions were created (Table 1).

| Condition | Description |
|--|--|
| Innovative production | Became possible due to scientific and technical progress |
| Increase in the share of intelligent people, labour inputs | Engine innovation |
| A methodological potential of the human capital concept | Concept's capability to be in the heat |
| Humanization of socio-economic relations in the most developed countries | Made the idea of human value more sustainable and reliable |

Table 1. Socio-economic settings of human capital theory development

The concept of human capital resulted in the work of Theodore Schultz and Gary Becker. They were first to identify human capital as a phenomenon related to economic development. In particular, Shultz defined this concept as follows:

Capital concept is based on the available some thingness, which possesses economical property to influence future services having some value. Understanding of the capital as something rendering future services allows starting dichotomy: by human and non-human capital (Schulz: 1961, pp. 1-17).

In his opinion:

- 1) Human capital is an additional source of income generated through human knowledge, skills, experience, and abilities;
- 2) Education represents one of the capital forms, which ensures economic growth and, alongside that, separates the source of growth from institutes and subjects of the institutional environment;
- 3) Educational capital is determined by human capital because it cannot be separated for the person;
- 4) Education as the capital generates future earnings and satisfactions;
- 5) To improve the labour force, it is necessary to make additional contributions (investing) in education;
- 6) Investment in education is one of the contributions in production, which generates the surplus product.

Becker noted that human investments enable the generation of human capital. By investments, he understood education, spending on health care, migration, and the search for information on prices and incomes (Becker: 1962.). Accordingly, from Becker's point of view, human capital is the stock of human knowledge and skills, which allows earning money (Becker: 1962).

The concept of human capital found its further development in works by Blaug (1977). The contemporary scientists see human capital as the main driver of economic growth. Higher education is a machine generating more knowledge and innovations. This facilitates technology borrowing and thus enhances scientific and technical progress. Besides, the level of human capital determines the quality of institutes. Thus, democratic

governments are likely to be formed within countries with a higher level of human capital (Acemoglu et al., 2014; Kritsky:1991).

Nowadays, the issue of human capital gained in relevance within the framework of the phenomenon, known as the curse of natural resources. The thing is that countries with rich natural resources have lower rates of economic growth than countries where such amounts of resources are not available (Papayakis:2007). Only one work considered the effect, which the amounts of natural resources have on the human capital (Suslova & Volchkova: 2007). Other factors causing the deficit of human capital and low accumulation are factors encouraging the enterprise to invest in education (Birdsall et al.: 2001). Consequently, in countries rich in natural resources, enterprises are poorly stimulated to invest in human capital due to low demand for skilled employees, due to Dutch-disease effects and rent-seeking behaviour. The increase in rental incomes encourages the extractive industries to grow against the shrinking processing industry and agricultural industry (Blanco & Grier: 2010).

The growth of extractive industries does not mean that the demand for skilled employees will grow immediately after the growing begins. Besides, human capital may involve foreign high-skilled human resources. With that, the shutdown of processing facilities will lead to job cuts. Thus, high-quality human resources will be not involved in economic development. The lack of demand for skilled human resources causes low salaries.

Another reason behind the low economic efficiency is associated with the habit of investing rental money in low-performing spheres. Industries that do such a thing are protected against the competition with foreign producers. The public sector (army, law enforcement bodies) is also familiar with the matter. Low competition, in this case, leads to the relaxation of requirements for human resources because the entrepreneurs know that the state will protect them from bankruptcy.

High inequalities, peculiar to countries dependent on resources lead to the negative accumulation of human capital (Gylfason: 2001; Gylfason: 2006). High Gini index makes the poor unable to invest in human capital even when the labour market offers a high education premium.

In this situation, the state is not interested in increasing education expenditures because the export of natural resources is more beneficial in terms of income than the education sector (Sachs & Warner:2001,). The renting trend weakens the motivation to implement an efficient economic policy that would encourage long-term economic growth. The public pressure problem is solved simply through the re-distribution of rental income among the population (Gaddy & Ickes). Because of these failures of the state policy, the focus was shifted from the human capital to the natural resources.

In our opinion, neither enterprises nor the state will be interested in making investments in human capital if there is a huge amount of natural resources in the country. Later on, researchers proved that resource abundance has a negative effect on human capital. Thus, according to Gilvason (2008) (referenced in this article), there is an indisputable negative correlation between national welfare and natural capital.

A 10% growth of natural capital reduces the rate of economic growth by 1%. At that, about half of this reduction is associated with lower levels of human capital (secondary school graduates). The obtained data allowed concluding that large amounts of natural resources negatively affect economic growth not only due to the Dutch disease and rent-seeking behaviour but also due to the lack of incentives for human capital acquisition. Nevertheless, the attempts to verify this hypothesis did not meet the expectations. The study conducted in 18 Latin America countries between 1975 and 2004 demonstrated that the amount of natural resources generally has a rather low adverse effect on human capital. A 1% growth of resource dependency (primary-export-to-GDP ratio or the share of primary export in the total export) encourages the reduction in human capital accumulation by 0.06% or 0.02%, accordingly (Bravo-Ortega & Gregorio: 2005).

In particular, one may do the indicators of industry growth in countries with large and relatively small amounts of natural resources. If the growing industry is in need for highly skilled personnel, then it can experience a ripple effect: firstly, the new jobs are created, then the demand for skilled labour increases and

various organizations gain profit from education investments. On the contrary, if such industries in need grow slower than the economy does, then the motivation to accumulate human capital will weaken.

The consequences of developing new fields depend on the existing level of human capital and the country's attitude towards its accumulation. Thus, if at the moment of discovery, the education in the country is at a relatively high level, then, with great probability, the incomes from field development will be used with the maximum efficiency. If so, the further incomes will be even higher, as the rates of economic growth. In the case of an opposite picture (poor education), the abundant resource incomes will most likely cause corruption and economic degradation.

This approach correlates with the hypothesis of the so-called conventional curse, according to which the effect of abundant natural resources is immediately associated with the quality of the national institutes.

CONCLUSION

Thus, the issue relating to the effect of natural resources on human capital accumulation remains open. Despite the fact that resource abundance has a negative effect on human capital accumulation, the evaluation approach, applied in this study to results, is not sensitive to changes occurring in wealth. However, this is most likely the exclusion rather than the norm.

To sum up, this article attempted to consider the impact that the accumulation of human capital has on economic development, dependent upon the availability of natural resources.

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