

## РОЗВИТОК РЕГІОНІВ, ГАЛУЗЕЙ ТА ВИДІВ ЕКОНОМІЧНОЇ ДІЯЛЬНОСТІ

### DEVELOPMENT OF REGIONS, INDUSTRIES AND TYPES OF ECONOMIC ACTIVITY

UDC 331.5:378.4

DOI: <https://doi.org/10.31651/2076-5843-2022-1-2-67-77>

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#### **THE IMPACT OF EDUCATION ON THE LEVEL OF HUMAN CAPITAL: A THEORETICAL APPROACH**

*The study substantiates that without significant investment in human capital, no country has achieved consistent economic development. Various forms of human capital accumulation have been found to yield high returns, including basic education, higher education, apprenticeships, research and capacity building. It is clarified that education was not considered the main factor of production in earlier neoclassical models and, therefore, was not taken into account in growth models. The new growth models include the impact of human capital on national growth through two main channels: in the first channel by explicitly modeling individual choices of investment in education, the second channel relates technological change and growth to the stock of human capital. It has been proven that there is a positive feedback from improved education to greater income equality, which contributes to higher growth rates. It has been proven that in order to understand human capital, it is necessary to return to the family, because it is families who care about their children and strive to promote the education and values of their children by any means possible. As difficult as it is to quantify the social benefits, the implicit value of the non-monetary benefits of education is even more difficult to measure. However, the non-monetary contribution that the most educated make to society, combined with the reduction in social costs they incur over their lifetimes, implies a significant return on their social investment.*

*The work explored several models of the relationship between the quality of education, measured by education expenditures as a percentage of GDP, and economic growth. A model of linear dependence between education and economic growth, innovative technological changes, a vector correction model for the study of the causal relationship between education, especially higher education, and economic growth. Original research and findings on the impact of education on economic growth in sub-Saharan Africa. Due to the lower quality of schools, the impact of education on economic growth in these countries is also lower. As a result, the impact of public spending on economic growth is largely mediated through its impact on improving the quality of education.*

**Introduction.** Education is one of the most important economic growth factors. The “Agenda 2030”, with its emphasis on education, may provide additional opportunities for higher education institutions to transform into a “sustainable system”. It includes the goal “Quality Education” and a sub-goal related to education for sustainable development, while emphasizing education for sustainable development's critical contribution to other sustainable development goals. In this regard, it is important to note that the higher education system is one of the sources of an economy's competitive position.

Quality higher education and training are prerequisites for ensuring the economy's efficiency, so improving education at the tertiary level would facilitate the economy's transition to a higher level of development. It takes little analysis to see that education levels in developing and developed countries differ dramatically. Building on several decades of thought about human capital – and centuries of general attention to education in the more advanced countries – it is natural to believe that increasing population schooling levels would be a productive development strategy.

However, there are some lingering concerns about this strategy. First, developed and developing countries differ in a variety of ways other than educational attainment. Second, a number of countries have expanded educational opportunities – both on their own and with the help of others – without making a significant economic catch-up with developed countries. Third, countries that do not function well in general may be less capable of implementing effective education programs than they are of pursuing other societal goals. Fourth, even when school policy is made a priority, many of the approaches taken do not appear to be very effective and do not result in the desired student outcomes.

**Literature review.** Higher education and economic growth have long been a focus of economic research. Indeed, the emergence of endogenous growth theory provided by Lucas [1], Romer [2], who first used human capital in the production function, has increased the importance of human capital accumulation.

There is a strong theoretical foundation for economic growth and its relationship to education. The majority of previous research has generally confirmed the existence of a positive relationship between human capital and economic growth. Human capital and knowledge economics are now recognized as significant contributors to economic growth. In this context, Benhabib and Spiegel [3] demonstrated that human capital is a determinant of production using a Cob Douglas function type.

However, because it is a multidimensional concept that appears in difficult areas, innovation in education is a difficult concept to define. As a result, the concept of innovation was debated, defined, and developed from the perspectives of various disciplines, and by many scientists. For example, Popescu & Crenicean [4]. Several studies, particularly in the past, used research and development (R&D) as a measure of innovative activities to identify the innovation variable. Counts of patents have recently been used as a proxy for innovation. Other indicators, in addition to the previous one, have focused on information and communication technologies (ICT) to describe innovation.

The progress and prosperity of a country depends upon the educational choices available to the masses. Education not only trains people to understand and cope with the complexities of economic growth, but also serves as a lever for its enhancement. Higher education as a key approach to obtaining greater economic rewards and social mobility in most countries' analyses Abu-Saad [5]. The experience in transforming the higher education system in some countries that are attempting to shift their traditional economy to a more knowledge-intensive footing studies Azman et al. [6]. What is more, higher education, and especially universities, acts as the essential forces for technological innovation and economic growth in the long run in society.

According to human capital theory, the direct contribution of higher education to economic growth is probably far lower than the indirect effect in the long term.

To summarize, the unresolved question is whether education is the driving force or just one of several factors associated with great success.

**The purpose of the article** is aimed at the formation of theoretical approaches that determine the role of education in the formation of human capital.

**Results and discussion.** Prior to the nineteenth century, no country considered systematic investment in human capital to be particularly important. Schooling, on-the-job training, and other similar forms of investment were relatively small. This began to change dramatically during the twentieth century, with the application of science to the development of new goods and more efficient methods of production, first in the United Kingdom and then gradually spread to other countries. Education, skills, and knowledge acquisition have become critical determinants of a person's and a nation's productivity during the twentieth century. One could even call the twentieth century the "Age of Human Capital", in the sense that how well a country succeeds in developing and utilizing human capital is the primary determinant of its standard of living.

Access to basic education has grown dramatically in the world over the last few decades. Many countries are now on the verge of expanding access to secondary and higher education, as well as making dramatic improvements in the quality of education provided at all levels. As more students complete their primary and secondary education, there is a greater demand for higher education. Whether or not women work outside the home, educating girls and women is likely the single most effective investment a developing country can make. Its benefits families in a variety of ways, including improved family

health and nutrition, more spaced births, lower infant and child mortality, and higher educational attainment for children. Their ability to compete in these markets, as well as in globalizing service markets, will be determined by the quality of human capital they bring to the table. To ensure that all citizens are educated and numerate, that many have advanced problem-solving skills, and that some have world-class professional skills, new curricula, improved teacher programs, and academic methods that encourage higher order cognitive skills will be required.

Without significant investment in human capital, no country has achieved consistent economic development. Previous research has found that various forms of human capital accumulation yield high returns, including basic education, research, training, learning-by-doing, and aptitude development. The distribution of education is important. In most countries, unequal education has a negative impact on per capita income. Furthermore, controlling for human capital distribution and using appropriate functional form specifications consistent with the asset allocation model make a difference in the effects of average education on per capita income, whereas failing to do so results in insignificant, if not negative, effects of average education.

Human capital investment will have little impact on growth unless people can use education in competitive and open markets. The greater the size and competitiveness of these markets, the greater the opportunities for employing education and skills. Education was not considered a major input for production in earlier neoclassical models, and thus was not included in growth models.

Barro and Sala-i-Martin [7] investigated the relationship between education quality as measured by education spending as a percentage of GDP and economic growth. Their research demonstrates that the series have a positive relationship. Some studies discovered a linear relationship between education and growth, such as Uzawa [8], Lucas [1], and Rebelo [9], who emphasized the importance of human capital investment as a critical factor influencing the spectacular growth recorded in modern economics. Others, however, argue that innovative technological changes are a determinant of economic development.

According to Simanaviciene et al. [10], investment in higher education is important because it allows for quality training by preparing a worker who is better educated and trained and able to produce and realize profit. Furthermore, Dragoescu [11] used a vector correction model to investigate the causality relationship between education, particularly higher education, and economic growth in Romania from 1980 to 2013. Given the significance of education to economic growth, Cooray [12] investigated the impact of both quantity and quality of education. Glewwe et al. [13] investigated the impact of education on economic growth in this regard. Their findings revealed that, due to lower school quality, the effect of education on economic growth in Sub-Saharan Africa is lower than in other countries. As a result, the effect of government spending on economic growth is largely indirect due to its impact on improved educational quality.

New growth models provide theoretical frameworks for human capital to influence national growth through two major channels [13]. Human capital is explicitly modelled as a factor of production in the first channel by explicitly modelling individual educational investment choices [1], as well as allowing human capital to have external effects – thus departing from the constant returns to scale assumption. This framework predicts that output growth is a function of human capital accumulation over time (rather than its level), which is observationally equivalent to the augmented neoclassical model.

The second channel connects technological change and growth to the human capital stock. Human capital is an essential input into a research sector that generates new ideas and technologies, according to endogenous growth theory [2, 14]. A certain level of education can generate a continuous stream of innovation, influencing long-term growth rates. Another point of view focuses on the roles of human capital in the diffusion and adoption of new technologies. Education, in particular, facilitates the transmission of knowledge required for the implementation of new technologies.

Again, an increase in the level of human capital, in this view, can raise the economic growth rate in perpetuity – even after the human capital stock has adjusted to its new long-run level.

Krueger and Lindahl [15] continue to use years of education as a measure of human capital, but they reject the implicit assumption in many analyses that it has a linear relationship with growth. They

discover non-linearity in the form of an inverted U-shaped relationship between years of education and growth. The authors interpret the peak at 7.5 years of education as implying that “the average OECD country is on the downward sloping segment of the education growth profile,” given that the mean of OECD countries in 1990 was 8.4 years. According to this analysis, education is only positively and significantly related to growth in countries with the lowest levels of education.

In order to solve this puzzle, a number of studies distinguish between primary, secondary, and tertiary levels of education, revealing that the effects of increases in these differ depending on a country's level of development [13]. While primary and secondary skills appear to be related to growth in the poorest and intermediate developing countries, tertiary skills appear to be important for growth in OECD countries (see, for example, Gemmell [16]).

Aghion et al. [14] discover a pattern consistent with this even among a sample of 19 OECD countries, where tertiary education appears to be more important in more technologically advanced countries. The authors show that the contribution of human capital to growth can be divided into two parts: a level effect and a composition effect. If the composition of human capital remains constant, an increase in its aggregate level is always beneficial to growth. Keeping its level constant, however, the growth-promoting properties of human capital are determined by both its composition and the distance to the “technological frontier”.

Pre-school education is rarely discussed in the macro literature, but there are several experimental or quasi-experimental studies in the micro literature that assess the effects of pre-school programs – particularly those aimed at children from disadvantaged backgrounds – on individual labour market and social outcomes. Cunha and Heckman [17] highlight in a key paper in this literature how skill development and investments from family, pre-schools, schools, and other agents are interactive, and how skills developed in early stages boost the development of skills in later stages and increase the productivity benefits of these.

The macro literature has generally focused on human capital investments made in the education system rather than in the workplace. Though there are several firm-level studies that investigate these issues, there has been less emphasis on the role of training in economic growth.

Another important distinction is that between general human capital and that of entrepreneurs or managers. There is now much greater understanding about firm-level relationships between management practices and productivity [18], as well as relationships between worker and manager skills and management practices thanks to the development of new data that systematically measure management practices – in particular, the World Management Survey [19].

Using data from subnational regions, Gennaioli et al. investigate the relationship between human capital and development. The authors create the model to describe the channels through which human capital influences growth because it incorporates both the allocation of talent between entrepreneurship and work and human capital externalities [1]. In this model, workforce human capital is a standard input in the neoclassical production function, but manager human capital influences productivity independently. The model also incorporates labour mobility across regions within a country, so it includes spatial elements. The authors discover that educational variables are important in a development accounting framework with country fixed effects and geographic, cultural, and institutional variables at the region level.

They then use firm-level production function estimation in conjunction with calibration to demonstrate that worker education, manager education, and externalities all contribute to productivity. They conclude that focusing solely on workers may understate the benefits of education.

There is also a positive feedback loop from improved education to greater income equality, which favours higher rates of growth.

Low-income people are better able to seek out economic opportunities as education becomes more broadly based. For example, in the 1980s, a study of the relationship between schooling, income inequality, and poverty in 18 Latin American countries discovered that variations in schooling attainment accounted for one-quarter of the variation in workers' incomes; it concludes that “clearly education is the variable with the strongest impact on income equality”.

Another study found that a 1% increase in the labour force with at least a secondary education increased the income share of the bottom 40% and 60% by 6 to 15%, respectively. Secondary enrolment rates were found to be significant in a study of the determinants of income distribution in 36 countries.

Education can influence per capita income growth by influencing the denominator, i.e. population growth. For example, in the mid-1980s, a study of fourteen African countries found a negative correlation between female schooling and fertility in almost all countries, with primary education having a negative impact in roughly half of the countries and no significant effects in the other half, while secondary education invariably reduced fertility. Kenya, Botswana, and Zimbabwe had the highest levels of female schooling as well as the lowest child mortality rates among the three success countries in terms of reduced fertility.

To understand human capital, you must return to the family, because it is families who are concerned about their children and strive to promote their children's education and values with whatever resources they have. Families are the primary promoters of values in any free society, including less free societies. Families make numerous decisions. One is whether to have a large number of children or fewer children. Some people also try to do more for each child. The trend shifts strongly toward the latter as countries develop.

Every nation that has evolved has done so, some in astonishingly short periods of time. Taiwan, for example, has a lower birth rate than the US. Hong Kong, Mexico, and Poland all have declining birth rates. The average number of children in a family in the developed part of Turkey is lower than in the less developed part of Turkey. This is related to the educational level of the families. In Turkey's eastern region, educated families, particularly educated women, have 1.4 children on average, while uneducated families have 5.1 children. Thus, in order to reduce the birth rate and inequalities between these regions of Turkey, education must be prioritized. Greater parental education, particularly among mothers, tends to improve the treatment of children, particularly daughters.

When parents are more educated, the educational gap between sons and daughter's narrows. More educated men and women tend to invest more in their own and their children's health. Indeed, education may be the single most important personal health determinant. Only a few examples of the substantial evidence for the relationship between education and health. The educated in the United States and other wealthy countries are the least likely to smoke. In the United States, smoking is now prevalent only among those with no college education, and it is especially prevalent among high school dropouts. Most educated people in Turkey work the majority of the time. Uneducated people who are not working usually sit in cafes and waste their time. Many of them are smokers.

Education for the poor improves their food intake not only by increasing their income and food spending, but also by encouraging them to make better, healthier choices. All of the studies show that educated people eat a healthier diet even when the total amount spent on food is held constant. Of course, the relationship between education and better health and life expectancy involves causation in both directions, because better health and lower mortality induce greater investments in education and other human capital because the rates of return on these investments are higher when the expected amount of working time is higher.

In microeconomic terms, human capital theory is based on the implicit understanding that education provides individuals with competences and skills that are transferable and negotiable on the labour market, as well as having transactional value and a direct bearing on individuals' average income throughout their lives.

Individuals' average earnings are closely related to their educational attainment. Those with a bachelor's degree, in particular, earn significantly more than those with some college education. A postgraduate degree provides nearly the same increase in earnings as a bachelor's degree. The higher salaries that educated entrants can command on the job market represent both the interest on the capital they have invested in and the interest on the capital they have invested in.

However, rapid changes in employment conditions, the future macroeconomic environment, technological innovation, and skill obsolescence are among the variables that call the full validity of the human capital model applied to the individual into question. The "internal rate of return" can be used to compare the return on investment provided by a university education to that of other investments. This

is the discount rate at which the present value of benefits and costs is equalized. Internal rate of return is equivalent to what financial economists refer to as a financial asset's "yield to maturity".

Returns calculated in this manner can be compared across all types of loans or bond purchases, regardless of interest and principal payment timing. In most studies, the expected net return from an individual's tuition and fees and foregone income while obtaining a bachelor's degree is estimated to be between 10 and 13 percent based on a cost-benefit analysis over a person's working life. According to these estimates, financial returns on higher education compare favourably with real returns on most financial assets, and this type of investment is as good as or better than most investments a family can make for its children. A reversal of this understanding could be that when employers are willing to hire less qualified people, rates of participation in formal education fall as the possibility of earning an immediate salary raises the opportunity cost of staying longer in formal education.

Individuals with a higher education benefit from nonmonetary benefits in addition to increased earning potential. University education makes people more entrepreneurial and adaptable in the face of change and difficulty, so it not only increases income but also provides good protection against unemployment. International statistics presented in work show a clear relationship between education level and employment prospects. Persons with tertiary education have the highest employment rate, followed by those with secondary education. People with a basic education or less have the highest unemployment rate.

In a comprehensive study of the impact of universities on surrounding cities, Wang discovers that proximity to institutions of higher learning even induces higher rates of job growth. Students benefit from education in a variety of ways, including improved social skills, a greater awareness of human achievement, and an appreciation for cultural diversity. Better working conditions, lower disability rates, longer job tenure, more on-the-job training opportunities, and more promotion opportunities are associated with increased education. The value of these non-monetary benefits contributes to education's economic returns.

Proponents of human capital theory point to two types of societal benefits from investments in higher education: monetary and non-monetary. The increased worker productivity associated with higher educational attainment can be traced back to the societal monetary benefits of a workforce with higher educational attainment and skills. These increases in productivity translate into increased output and income for the economy. Despite widespread discussion, few authors have attempted to quantify the social and monetary benefits of higher education investments.

One approach is to look at whether regional economies with higher proportions of college-educated workers show signs of prosperity that can be attributed to higher levels of education attainment. Moretti's recent work [20] is a notable exception. Moretti investigates the relationship between higher labour-force participation rates among college graduates and wages earned by all workers, as well as the productivity of manufacturing firms. The difficulty in quantifying the social benefits of higher education is establishing statistical evidence of a causal relationship between additional education and observed outcomes.

Otherwise, the relationship could simply be a correlation of higher-paying jobs and a higher number of college graduates, or a relationship of both to unobservable factors. From a technical standpoint, consider the following: If changes in the share of college graduates are positively related to unobservable factors that influence labour supply, then simple ordinary least squares (OLS) estimates of the impact of college graduates on wages (e.g. simple correlations) would be biased downward, understating the extent to which college graduates actually contribute to wage determination.

Positive labour supply shocks essentially dampen wages and obscure the positive impact that graduates have on the labour market. If changes in the share of college graduates are positively related to unobservable factors that influence labour demand, then simple OLS estimates of college graduates' impact on wages would be biased upward, overstating the extent to which college graduates actually contribute to wage determination. Positive demand shocks essentially raise wages, so the observed wage effect is a combination of the demand shock and the effect of more graduates in the area. Moretti accounts for a variety of factors that explain wage and productivity differentials across cities and over time, employs instrumental variable techniques to account for potential reverse causation, and compares

results to a separate longitudinal data set. These approaches are intended to establish evidence of a causal relationship, or the lack thereof. Moretti discovers, after controlling for other factors, that a 1% increase in the labour force share of college graduates in a city raises wages for all workers:

- 1.9 percent for those without a high school diploma,
- 1.6 percent for those with a high school diploma, and
- 0.4 percent for college graduates.

One explanation for higher wages in areas with higher educational attainment is the increased productivity that comes with a more educated and skilled workforce. Moretti contends that the observed wage benefits are a combination of spill overs, complementarities, and substitution effects caused by changes in labour force composition that occur as a natural result of labour market adjustments caused by the change in the labour force composition.

The majority of this significant wage effect is due to spill overs, which are benefits extended to third parties other than students and higher education institutions. The greater labour productivity that educated workers bring to the labour force is the source of these spill overs. When social interaction is a catalyst for learning and overall knowledge creation, spill overs may be technological. The greater the contact between educated people, the greater the stock of knowledge. Learning and networking are critical drivers of knowledge creation. Productivity spill overs, according to Lucas [1], are large enough to explain the disparities between rich and poor countries. The spill overs serve as a foundation for public investment in efforts to increase the number of college graduates in the labour force.

Because other labour market effects exist, not all of the wage effects in Moretti's work can be attributed to spill overs generated by additional graduates, but estimates of the net wage effect on college graduate wages alone help establish a lower bound for the spill over effect. The wage increase is the net effect of social spill overs and the wage-dampening supply shock caused by an increase in the number of college graduates. If the increased supply of graduates has a greater impact on wages than the social spill over, the net impact of college graduates on wages would be negative. Moretti's estimates, on the other hand, indicate a net positive.

Assuming that the supply shock has no effect (unlikely but mathematically conceivable), 0.4 percent is obtained as a lower bound for the social spill over effect for college graduates, though the actual spill over effect is likely to be larger. The concept of complementarities is based on the assumption that physical and human capital can complement one another. Increased education, knowledge, and skills improve the quality of the existing physical capital stock, increasing capital productivity and resulting in higher labour productivity for all workers. More educated workers, for example, use more sophisticated equipment, which increases productivity. Moretti provides empirical evidence for this increase in productivity. Substitution effects are explained by Romer [2].

As the importance of the knowledge economy grows, human capital may outnumber physical capital and labour in determining aggregate growth rates across countries. According to this argument, acquiring knowledge capital generates “endogenous” growth – growth that feeds on itself – and accelerates economic returns. This argument is widely debated among economists as one of the most important ways in which a larger accumulation of highly educated labour and higher education institutions impacts a region's economy through innovation-driven endogenous growth.

University supporters frequently draw connections between scientific breakthroughs from university research and subsequent product development by high-tech firms. According to Jorgensen et al., a significant portion of the late 1990s growth was directly attributable to the roles of research innovation at institutions of higher education and the greater absorptive capacity of a labour force with higher proportions of college graduates.

However, some economists believe that such advantages are fleeting because products are typically developed elsewhere. Despite the fact that research investments at multiple institutions may increase the inventive activity of R&D laboratories located within the same metropolitan region, any resulting new products or processes are frequently developed in other locations where labour is less expensive. Glaeser et al. [21] investigated city wages, identifying effects that accrue to cities with higher education and skill levels. The findings point to agglomeration spill overs, which manifest as faster growth and higher wages as educated people interact.

Another source of monetary social benefits that must be mentioned is that because university graduates earn and spend more than those without a degree, the government collects more tax revenue from them, which represents a social good. The taxes paid by university graduates more than cover the public cost of their education. Dependence on welfare and public assistance is inversely related to education. Investing in education reduces the need for other government income transfer programs. Twenty-four percent of people without a high school diploma have used a public assistance program at some point in their lives, compared to 4.6 percent of those with a bachelor's degree [22]. More educated people engage in less criminal behaviour and have lower incarceration rates. Charitable giving rises in correlation with educational attainment. Social cohesion is stronger among the more educated, as evidenced by higher voting rates.

A democratic society is built on informed and involved voters, and education helps develop democratic skills. Milton Friedman, a conservative economist, believed that increasing knowledge could increase public support for the laissez-faire approach to economic market mechanisms: more educated people are less influenced by populist rhetoric and make more rational, informed voting decisions. Perhaps most importantly, investments in higher education have intergenerational effects. The educational attainment and cognitive development of children are positively influenced by their parents' educational attainment (first-generation effects).

The quantitative significance of these effects is difficult to quantify precisely because the costs to society incurred today to create opportunities for individuals to obtain university degrees must be weighed against the benefits realized two, three, or four generations later. Individual, spouse, and child health are all positively related to educational attainment. Those with higher educational attainment are more likely to have the desired family size.

As difficult as it is to quantify social monetary benefits, the implicit value of non-monetary benefits is even more difficult to quantify. However, the non-monetary contributions that more educated people make to society, combined with the reduction in social costs that they incur over their lifetimes, suggests that the non-monetary benefits represent a significant return on social investments made to them. We can conclude from the foregoing that we all benefit from the monetary and nonmonetary public effects of higher education, and a lack of university educated individuals could represent a significant cost to our society.

**Conclusions.** There should be access to basic education in all economies to create education, skills and knowledge acquisition to enhance a person's productivity. A country needs a workforce with at least basic skills to be able to implement innovation. No country has experienced consistent economic development without significant investments in human capital. Unless people can use education in competitive and open markets, human capital investment will have little effect on growth.

From a microeconomic perspective, human capital theory is based on the implicit understanding that education provides people with competencies and skills that can be sold in the labour market, and that have transaction value and a direct impact on people's average lifetime earnings. The average earnings of people are closely related to their level of education. The higher wages that educated individuals can earn in the labour market reflect interest on the capital in which they have invested.

However, rapidly changing employment conditions, the future macroeconomic environment, technological innovation and aging skills are among the variables that challenge the full validity of the human capital model as applied to the individual. Higher Education promotes economic growth; nations or governments should invest heavily in Higher Education.

Human capital, knowledge, and innovation should be priorities for developing countries. Education is the only way to develop skills and competencies that increase competitiveness and long-term state development in the context of the knowledge economy. To improve performance in higher education, students' participation in research and development activities must be increased. Finally, innovation has emerged as a critical component of educational reform and an essential component of the school curriculum.

Most studies estimate the expected net gain from tuition and lost income for a person to earn a bachelor's degree to be between 10 and 13 percent based on a cost-benefit analysis over a person's working life. According to these estimates, the financial return on higher education is favourably



different from the real return on most financial assets, and this type of investment is no worse or even better than most investments a family can make for their children.

Individuals with higher education receive non-monetary benefits in addition to higher earning potential. A university education makes people more entrepreneurial and able to adapt to changes and difficulties, so it not only increases income, but also provides good protection against unemployment.

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## **ВПЛИВ ОСВІТИ НА РІВЕНЬ ЛЮДСЬКОГО КАПІТАЛУ: ТЕОРЕТИЧНИЙ ПІДХІД**

**Проблема.** Підсумковим документом Саміту ООН зі сталого розвитку (вересень 2015 року) – «Перетворення нашого світу: порядок денний у сфері сталого розвитку до 2030 року» було затверджено 17 Цілей Сталого Розвитку та 169 завдань. Цей «Порядок» включає мету «Якісна освіта», при цьому підкреслюючи вирішальний внесок освіти на користь сталого розвитку. Система вищої освіти є одним із джерел конкурентоспроможності економіки. Якісна вища освіта та професійна підготовка є передумовами забезпечення ефективності економіки. Грунтуючись на кількох десятиліттях аналізу питань, пов'язаних з функціонуванням людського капіталу та століттях загальної уваги до освіти, природно вважати, що підвищення рівня освіти населення буде продуктивною стратегією розвитку економіки.

**Мета.** Дослідження спрямоване на формування теоретичних підходів, що визначають роль освіти у формуванні людського капіталу.

**Результати.** У дослідженні обґрунтовано, що без значних інвестицій у людський капітал жодна країна не досягла послідовного економічного розвитку. Виявлено, що різні форми накопичення людського капіталу приносять високу віддачу, включаючи базову освіту, вищу освіту, навчання на практиці, дослідницьку роботу та розвиток здібностей. Уточняється, що освіта не вважалася основним чинником виробництва в більш ранніх неокласичних моделях і, отже, не враховувалося у моделях зростання. Нові моделі зростання включають вплив людського капіталу за двома основними каналами: у першому каналі шляхом моделювання індивідуальних варіантів інвестицій в освіту, другий канал пов'язує технологічні зміни та зростання із запасом людського капіталу. Було доведено, що існує позитивний зворотний зв'язок від покращення освіти до більшої рівності доходів, що сприяє вищим темпам зростання. Доведено, що для розуміння людського капіталу, потрібно повернутися до сім'ї, тому що саме сім'ї піклуються про своїх дітей і прагнуть просувати освіту та цінності своїх дітей будь-якими можливими засобами. Складно кількісно оцінити соціальні вигоди, однак неявну цінність негрошових вигод від освіти виміряти ще складніше. Негрошовий внесок, який найбільш освічені люди вносять у суспільство, у поєднанні зі скороченням соціальних витрат, які вони несуть протягом свого життя, передбачає значну віддачу від зроблених ними соціальних інвестицій.

**Наукова новизна.** В роботі досліджувалися декілька моделей взаємозв'язку між якістю освіти, що вимірюється витратами на освіту у відсотках від ВВП, та економічним зростанням. Модель лінійної залежності між освітою та економічним зростанням, інноваційних технологічних змін, модель векторної корекції для дослідження причинно-наслідкового зв'язку між освітою, особливо вищою, та економічним зростанням. Оригінальним є дослідження та висновки щодо впливу освіти на економічне зростання в країнах Африки на південь від Сахари. Через нижчу якість шкіл вплив освіти на економічне зростання в цих країнах теж нижчий. Внаслідок цього вплив державних витрат на економічне зростання носить значною мірою опосередкований характер через їх вплив на підвищення якості освіти.

**Висновки.** З точки зору мікроекономіки, теорія людського капіталу заснована на імпліцитному розумінні того, що освіта забезпечує людей компетенціями та навичками, які можуть бути продані на ринку праці, а також мають транзакційну цінність та прямий вплив на середній дохід людей протягом усього їхнього життя. Середній зарібок людей тісно пов'язаний із їх рівнем освіти. Вища зарібова плата, яку освічені особи можуть одержувати на ринку праці, відображає відсотки на капітал, в який вони інвестували. Однак швидкі зміни умов зайнятості, майбутнє макроекономічне середовище, технологічні інновації та старіння навичок входять до числа змінних, які ставлять під сумнів повну обґрунтованість моделі людського капіталу, що застосовується до індивідуума. У більшості досліджень очікуваний чистий прибуток від плати за навчання та втраченого доходу людини при отриманні ступеня бакалавра оцінюється в межах від 10 до 13 відсотків на основі аналізу витрат та вигод упродовж трудового життя людини. Згідно з цими оцінками, фінансова віддача від вищої освіти вигідно відрізняється від реальної віддачі від більшості фінансових активів, і цей тип інвестицій не гірший або навіть кращий за більшість інвестицій, які сім'я може зробити для своїх дітей. Особи з вищою освітою отримують і негрошову вигоду на додаток до вищого потенціалу зарібоку. Університетська освіта робить людей більш запозятливими та здатними адаптуватися до змін та труднощів, тому це не лише збільшує дохід, а й забезпечує хороший захист від безробіття.

**Ключові слова:** людський капітал, знання, освіта, економічний розвиток.

Одержано редакцією: 14.02.2022  
Прийнято до публікації: 03.05.2022