

# Education and Economic Development in Indonesia Based on Human Capital Theoretical Perspective

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Illustration of Education and Economic Development, Photo by Artem Podrez (Belarus)

**Abstract :** The purpose of this study is to understand the role of education in Indonesia's economic development from a theoretical perspective of human capital. This research uses descriptive quantitative method with a moving average auto regression model to see the relationship between education and health, technological development, poverty and economic growth in Indonesia. We found that education plays a role in stimulating economic, health, technological development and suppresses or is negatively related to poverty.

**Keywords:** Education, Poverty, Economic Growth

**JEL Classification :** A11, C23, J24

## 1 INTRODUCTION

Indonesia is a very large country with millions of people living in it. Of course, the very large Indonesian population needs to be managed properly and the quality of life and environment of all Indonesian people needs to be improved (Maxton-Lee, 2020).

Development is a continuous process that covers all aspects of community life, including social, economic, political, and cultural aspects, with the main objective of improving the overall welfare of the nation's citizens. In the development process, the role of education is very strategic. Education plays a key role in shaping the ability of a developing country to absorb modern technology and to develop the capacity to create sustainable growth and development. Education is an effort that is deliberately aimed at students to become virtuous, knowledgeable, and highly moral human beings. The purpose of the human image of education is the realization of a human image that can be a human resource for development that is humane, with integrity, and highly committed. Apart from that education also plays a role in socializing the nation's ideology and socio-cultural values, preparing the workforce to fight poverty, ignorance, and promote social change, and equalizing opportunities and income. The first role is a political function of education and the other two roles are an economic function. Education is fundamental to shaping broader human capabilities which are at the core meaning of development. Education plays a key role in shaping the ability of a developing country to absorb modern technology and to develop the capacity for sustainable growth and development. Education which contributes significantly to economic development has become an axiomatic truth. Various academic studies and empirical research have proven their validity. Education is not only incubating quality human resources, possessing knowledge and skills, and mastering technology, but also can foster a business climate that is healthy and conducive to economic growth. Therefore, investment in education is not only beneficial for individuals, but also for the business community and the general public. The attainment of education at all levels and circles will undoubtedly increase the income and productivity of society. Education is the way to progress and achieve social and economic welfare. Meanwhile, failure to develop education will give birth to various crucial problems: unemployment, crime, drug abuse, and welfare dependencies which are a socio-political burden on the government. From the human capital perspective, education goes hand in hand with health. As has been proven by several economists that the level of education and health is much better in high-income countries. It turns out that there is a two-way causal relationship between high income and education and health. With high incomes, people and the government are able to spend more money on education. and health, with better education and health, productivity will increase so that high income is easier to achieve. Because of this relationship, development policies should be focused on efforts to increase income, education, and education. n health together. So it can

be concluded that an increase in income alone is not enough to achieve good development. As a normal good, humans will buy more human capital if their income rises. However, the available evidence shows that although we are able to increase income without having to significantly improve health and education, we cannot be sure that the increase in income will be invested in the education and health of children sufficiently. The market will not solve these problems automatically and in many cases, home consumption options have been discovered. The ladder itself does not show a strong relationship between income and expenditure for improving nutrition. Education is a deliberate effort aimed at students to become virtuous, knowledgeable, and highly moral people. The goal of the human image of education is the creation of a human image that can become a human resource for development that is humane, of integrity, and highly committed. The purpose of education is to produce good humans, namely humans who can influence and advance the environment in which they are located. Education plays an important role in economic development (Nnadozie & Jerome, 2019). Education is a mechanism for developing human resources through increasing knowledge and human behavior that is more productive and is an effort to increase human capital.

Economic growth in Indonesia is also influenced by education. Therefore, the importance of the meaning of education for economic growth in Indonesia by increasing learning productivity so that the nation's successors who are still learning can better understand economics and can improve Indonesia's economy which is currently in decline. With economic needs increasing day by day, it is the education factor that will help economic growth, because with that education will produce more professional qualities of Human Resources (HR) for both the industrial sector and the agricultural sector, and from there it will have an impact and influence on the future economic growth of the Indonesian nation. In connection with the role of education in economic development, two paradigms emerge as references for policymakers in the development of education policies: the Functional Paradigm and the Socialization paradigm. The functional paradigm sees underdevelopment and poverty due to people not having enough people who have modern knowledge, abilities, and attitudes. According to the experience of people in the West, the formal education institution of the school system is the main institution to develop knowledge, train skills, and expertise, and instill the modern attitude of individuals who are needed in the process. The evidence shows that there is a close relationship between one's formal education and participation in development. A further development emerges, the term Human Investments, which states that investment in humans is more profitable, has a higher economic rate of return than returns from other investments. The Indonesian government must take strategic steps in an effort to build national education. Investments in education have actually succeeded in driving economic progress and creating social welfare. For this reason, investment in education must be supported by adequate funding. The real problem of education cannot be separated

from economic problems. Both directly and indirectly, the contribution of education to the economy and development must be recognized. Thus, education is not always considered as consumption or financing. It is time, education must be seen as an investment, the contribution of which can be felt in the long term. The concept of education as an investment (education as an investment) has developed rapidly and it is increasingly believed by every country that the development of the education sector is a key prerequisite for the growth of other development sectors. The concept of investing in human resources (human capital investment) that can support economic growth. The process of acquiring knowledge and skills through education is not a mere form of consumption, but also an investment. Then he noticed that the development of the education sector with people as its core focus has contributed directly to the economic growth of a country, through increasing the skills and production capacity of the workforce. These findings and perspectives have prompted the interest of a number of experts to research the economic value of education. In developed countries, apart from being a consumptive aspect, education is also believed to be a human capital investment and becomes a "leading sector" or one of the main sectors. Because the government's concern for the development of this sector is serious, for example, the commitment to the budget in the education sector is not inferior to other sectors, so that the success of investment in the format of economic intervention (budget support) referred to in education is correlated with progress in macro development including economic development itself. How education becomes a leading sector in economic development and modernization of a nation. Therefore a definite and systematic step is needed to achieve educational goals. The development of a country's human resources is an essential element for prosperity and growth and for the effective use of its physical capital resources. Investment in the form of human capital is an integral component of all development efforts. Education must cover a broad spectrum in people's life itself. Education increases labor productivity, alleviates poverty, develops technology, increases income. Education provides a foundation for economic development and social welfare (Psacharopoulos, 2014).

Education is a human effort to build himself with all the problems and spectrum regardless of the dimensions of space and time. This means that the essence of education is lifelong learning, while the forms of formal education, non-formal education (outside school), and so on are only the modus operandi of the educational process. Education here is intended to increase human dignity so that they have skills and abilities so that their productivity increases. Therefore, the results of education will be a very useful human resource in the development of a country. Investment in education is an investment by allocating costs for the provision of education and utilizing the human resources generated through that education. In this context, education is seen as a human learning industry, meaning that education produces people who have the abilities and skills that are indispensable for the economy of a country to increase individual income and national income. Thus, investment in education has a long

period of time to be able to know the results and the results are not in the form of direct benefits, but benefits for individuals who receive education and for the country. As an investment function, education provides a meaningful contribution to improving the standard of living, human quality, and national income. The teaching and learning process guarantees an open society (that is, a society that is always willing to consider new ideas and hopes and accept new attitudes and processes without sacrificing itself). The education system prepares the right foundation for the development and results of research (the inherent guarantee for sustainable growth of modern society). Investments in education can maintain integrity and constantly increase the supply of knowledge and ongoing discovery of new methods and techniques. If in every economic sector we get all the factors that society needs except for a skilled workforce, then investment in the education sector will increase income per capita in that sector, unless the social structure that lives in that society is not profitable. The education system creates and maintains skills supply. people in a flexible labor market. Besides that, it is also able to accommodate and adapt in relation to the changing needs of the workforce and the changing modern technological society. Investment in education focuses on humans as a resource that will become human capital as the capital with regard to activities that affect future real income through the placement of human resources. Human capital here refers to labor as a production factor that connects non-economic aspects of education to other economic aspects. The quality of labor as a productive input can not be divided and used separately. Human capital is reflected in skills, knowledge, and work productivity. He further stated that there is an investment model in the form of human resources that directly or indirectly makes a relationship between education indicators on the one hand and economic indicators on the other. The model intended is a cost-benefit analysis model. This model is a very important methodology in conducting analysis for education investment and can help decision-makers to decide and choose between alternative allocations of limited educational resources in order to be able to provide the highest capacity. Human resource development through education directly supports economic growth, and therefore spending on education should be viewed as a productive investment and not merely seen as consumptive without a clear return (rate of return). Various other studies relatively always show that the value of return on human capital is greater than physical capital. There is no country in the world that has experienced rapid progress with the support of low-educated human resources. So if we expect development progress, then human capital (the education sector) must be the main prerequisite. The problems mentioned above are problems faced by many developing countries, including Indonesia. The role of education, when studied economically, will contribute to the role of the government and society on the impact that will be experienced by the Indonesian state in the long run with education development policies as the basis for state development. Education increases economic efficiency and social consistency. By increasing the value and efficiency of human labor. Helping alleviate poverty, increase the

productivity of society as a whole and educate the community (Averett, et al., 2018).

Education greatly contributes significantly to economic development, this has become an absolute and axiomatic justification. Various academic and empirical studies have proven the validity of this thesis. Education is a way to progress and achieve social and economic welfare. Meanwhile, the failure to build education will give birth to various crucial problems, such as unemployment, crime, drug abuse, and welfare defense which ultimately leads not only to the social aspect but also to the economic burden that will be borne by various parties, especially the Government. representative carrying capacity of economic growth. Education can increase one's work productivity, which in turn will increase one's income. This increase in income also affects the national income of the country concerned, which in turn will increase the income and standard of living of low-income people. Education is a tool to prepare an educated and trained workforce that is needed in the economic growth of a country. Education has the ability to prepare students to become a potential workforce. This becomes more ready to train in their work which will spur the level of labor productivity, which will directly increase national income. According to him, the correlation between education and income appears to be more significant in developing countries. Education is the main source of skilled and trained talents. Education plays an important role in providing labor. This must be the basis for educational planning because economic institutions require educated and trained personnel. The problem it faces is that there is rarely a strong equivalence between work and education required which results in the emergence of educated and trained unemployment. Education needs to anticipate needs. In addition, it must be able to predict and anticipate the qualifications of knowledge and skills of the workforce. The prediction of employment as the basis for educational planning must follow the economic growth associated with the government's socio-economic policies. Educational intervention for the economy is an effort to prepare economic actors in carrying out the functions of production, distribution, and consumption. Intervention in the production function is in the form of providing manpower for various levels, namely top, middle, and low management, or in extreme blue-collar and white-collar workers. In addition to labor, education also intervenes in production to provide tough entrepreneurs who are able to take risks in production technology innovation. Another form of intervention is creating new technology and getting the people to use is ready. Production expansion programs through intensification and rationalization are one tangible manifestation of the role of educational institutions in this production function. Intervention in the distribution function is through the development of research and product development in accordance with the needs and desires of the community or consumers. Intervention in the consumption function is carried out by increasing work productivity which will encourage increased income. This increase in income will lead to an increase in the consumption function, which is indicated by an increase in the amount of savings that comes from set

aside income. These savings will be a capital investment which of course will further accelerate the rate of economic growth of a country. The occurrence of unemployment is not caused by the failure of the educational process, but education does not always have to produce graduates with certain types of work. While schools can generate a skilled workforce, schools are not the only place where those skills can be attained. There are various factors to measure how well economic growth is measured. The relationship between education and development in developed countries is very clear from the changes in individual characteristics related to the level of economic growth. In non-industrial countries, the economy is highly dependent on the agricultural sector so that a higher percentage of the workforce works in the non-industrial sector. It is clear how important the analysis of the contribution of education is to development. One reason for the much controversy over the link between development and education is that very few education policies have been properly monitored and their results evaluated. Analysis of education is usually ex-post facto, meaning that data is obtained from past events. Education increases the competitiveness of a country with a world market that is wide open with changes in technology and fast production methods. Education plays a role in nation-building and interpersonal tolerance so as to build stronger social capital (David-Hadar, 2018).The contribution of education is very influential on economic development. This contribution can be achieved through increasing skills and work productivity. The rapid economic growth in Asian countries and progressive changes in production towards high-tech industry and services have resulted in increased demands from the business world for the need for skilled and educated (quality) human resources. Quality human resources can only be produced by a quality education system. The role (contribution) that the world of education can play in economic development includes: Creating skills in carrying out tasks, improving organizational quality, supporting the growth of the industrial world (business).

## 2 LITERATUR REVIEW

There are three main things in the development of a nation, namely regarding human resources, technology, and funds. The three main factors are input (input) in the production of national income. The greater the number of human resources, the greater the national income and the higher the economic growth of a country. In developing and underdeveloped countries, population growth rates are higher than in developed countries. Economic growth in developed countries is actually higher than in developing countries. With economic needs increasing day by day, it is the education factor that will help economic growth, because with that education will produce more professional qualities of Human Resources (HR) for both the industrial and agricultural sectors, and from there it will have an impact and affect the economic growth of the Indonesian nation in the future. The concept of education as an investment which is described as an intervention of economic power (education as an investment) has developed

rapidly and it is increasingly believed by every country that the development of the education sector is a key prerequisite for the growth of other development sectors. The concept of human capital investment that can support economic growth must also be built and developed from a structure and economic system that supports the emergence of quality education. Education greatly contributes significantly to economic development, this has become an absolute and axiomatic justification. Various academic and empirical studies have proven the validity of this thesis. According to human capital theory, the contribution of education is very influential on economic development. This contribution can be achieved through increasing skills and work productivity. The rapid economic growth in Asian countries and progressive changes in production towards high-tech industry and services have resulted in increasing demand from the business world for the need for skilled and educated (quality) human resources. Quality human resources can only be produced by a quality education system. The human capital theory assumes that formal education is the most important instrument to produce an economic order that has high productivity. However, technology and physical capital factors cannot be separated from labor or human resource factors. A nation can manage technology and develop science and management, as well as physical capital such as buildings and machinery only if the country has the quality and reliable human capital. Attention to the human factor is the main focus because of the basic location of development on this factor. No matter how advanced the technology is and no matter how much physical and financial support a nation is, if the human factors are not paid attention to, it will have a negative impact on the life of society and the state, such as social and state arrogance, egocentrism, and the depravity of social morals. Human capital plays a significant role, even more, important than technological factors and physical factors in spurring economic growth. Advanced human resources must pay attention to the quality factor, not just the quantity that is constantly being pursued. In developed countries, the quality factor has become a top priority while in developing countries the quantity factor is still the direction of human development. The aspect of education is considered to have the most important role in determining human quality. Because through education, humans are considered to gain knowledge, and with this knowledge, humans are expected to be able to build a better life existence so that we are familiar with the competency-based curriculum and/or life skills. Rationally speaking, it can be said that the higher a person's education level, the better the quality of human life, because with his knowledge he can manage himself. In the macroeconomic sphere or with the economy in general (national), the higher the quality of life of a nation, the higher the level of growth and welfare of the nation. In the development of the relationship between education and economic growth, three main perspectives have developed, namely the theory of human capital, the theory of allocation, and the theory of reproduction of social strata. The human capital theory explains the process by which education has a positive influence on economic growth. People who have a higher level of education, which is also measured by the length of school

time, will have a better job and wages than those whose education is lower. If wages reflect productivity, the more people who have higher education, the higher the productivity and income. Education is a major determinant of a country's standard of living by increasing the development and empowerment of people's skills and knowledge by providing the best educational services to all levels of society (Thomas, 2014).

Education is a very decisive investment in the life of individuals, communities, nations, and countries. The government and society must pay attention to human resource development. Education is a strategic effort to improve the capabilities of these human resources. On the other hand, the allocation of education funds in Indonesia is still very small which is one of the obstacles to education development. Efforts to distribute education can be carried out in various ways according to the region and the potential of each area. The aspect of human resource development is a major problem in facing economic globalization so that it needs to be a priority in national development. Education has a very important role in improving the quality of human resources. Education greatly affects the economic growth of a nation. This not only affects educational productivity but also affects people's fertility. Education makes human resources more biased to understand and ready to face change. Education is broadly defined as a learning process that can be done anywhere. Along with the progress of world development which is marked by the era of globalization and information that is developing so rapidly. The impact of these times cannot be avoided by every nation in the world. This will affect all aspects of people's lives, including the Indonesian nation. These changes also affect the delivery of education. So that in the management of education, the government must pay special attention to education financing. It is recognized that education is a form of investment in human resources that may be more important than capital investment. Found in various studies in a number of countries, education provides a very large contribution to economic growth. The impact of education on economic growth includes building opportunities for people to improve their health, knowledge, skills, expertise, and insights to be able to work productively. Globalization that has hit the world which is marked by globalization of information and technology can be understood as one of the contributions of the world of education by producing quality human resources. The impact of globalization has resulted in more intense demands for reform, thus bringing about a new paradigm shift in the system of life as a nation and state, besides that it also has an impact on changes in government structures that were previously focused on granting regional autonomy to districts and cities. The movement towards autonomy has strong reasons and has been developing for a long time, dating back twenty years. Human resource development should be a priority and innovations should be made to create an education system that can improve the quality of life of the nation. Increasing the quality of human resources is directly related to improving the quality of education. One of the ways to improve the quality of human resources is characterized by

high levels of public education. The teacher is a noble and honorable profession. The socioeconomic status of teachers should be the same as other professionals because the role of teachers is very important in nation-building. Although learning outcomes are not solely dependent on the teacher, the teacher plays an important role in the quality of the process and student learning outcomes. Various studies have shown that the significant effect of teacher quality on student learning outcomes. Teachers who are highly committed and understand the learning that is on the side of students need to be encouraged to become school leaders. School heads must understand student-oriented learning. He is also skilled and active in developing teachers in schools through coaching/monitoring. The selection of school leaders is one of the most important decisions in the education system. Various stakeholders in the community need to work together in improving the quality of teachers and school leaders. The government becomes the enabler of collaboration. Schools that have been able to implement instructional leadership need to move to become mentors for prospective school and other school leaders. These are the driving schools. In addition, educational communities/organizations that have implemented training models that have proven effective in improving the quality of student learning processes and outcomes need to be empowered to encourage the formation of driving schools. Professional education for prospective teachers must also produce a new generation of teachers student-oriented. Apart from having competence for professional knowledge and practice, the new generation of Indonesian teachers whom we aspire to have a noble character, critical reasoning, independence, creativity, mutual cooperation, and global diversity. They have a passion (passion) to be a teacher and look at their student with respect. The teacher is a noble and honorable profession. Education is one of the human capital investment mechanisms and plays a very important role in economic development (Min & Zhu, 2019). Unequal education tends to have a negative impact on welfare and social justice because it will create social distancing and income inequality or increase the gap in economic inequality.

The impact of economic inequality in society creates an increase in crime which has a negative impact on the economy as a whole in a country. Education makes a major contribution to technological development and industrial technical changes that have an impact on economic efficiency and increase production output so as to drive economic growth as a whole (Presenza & Sheehan, 2017).

Education has the potential to reduce economic inequality, help alleviate poverty and encourage community participation in the economy thereby increasing per capita income (Samuels, 2017).

Education for groups of people who are at the poverty line can encourage them to make better and healthier life decisions, in the end, push them out of poverty by increasing income and increasing economic productivity. There is a positive relationship between health and education where both are

important elements in human capital. Education has the potential to cut the cycle of poverty and improve the welfare of the poor and improve the quality of life of the community (Samani & Marinova, 2020).

Equitable education is an important thing that cannot be ignored because the equal distribution of education is one of the efforts in economic equality that ultimately improves social welfare (Yu, 2014).

Education is very important in economic development. Economic development is highly dependent on the quality of education. A good education system not only promotes economic development, but community productivity, and increases the per capita income of the community so that the quality of life of the community is economically and socially better and increases (Erçetin, et al., 2019).

### 3 RESEARCH OBJECTIVE AND METHODOLOGY

This study uses a descriptive quantitative method with a moving average auto regression model with an econometric model as follows:

$$Y_t = \beta_1 E_{t1} + \beta_2 T_{t2} + \beta_3 H_{t3} + \beta_4 P_{t4} + e$$

Where

Y = Economic Growth

E = Education

T = Technology

H = Health

P = Poverty

The research period starts from 2007 to 2019 in Indonesia

### 5 RESULTS AND DISCUSSION

The estimation result of the autoregressive moving average:  
 $GDP = 14.9395698386 * Technology - 36394.7112561 * Poverty + 1116090629.8 * Health + 8335238501.11 * Education + 2.07206279216e+12$

With the estimation table as follows

Table 1. Estimation Results

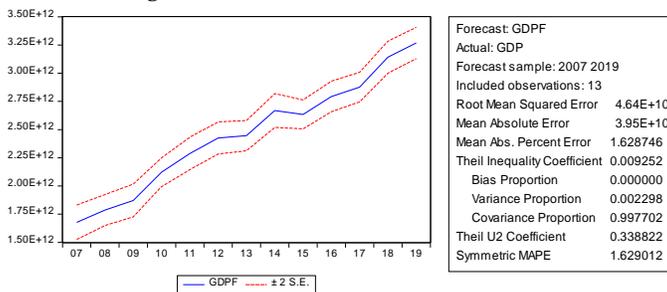
Variable	Coefficien t	Std. Error	t-Statistic	Prob.
Technology	14.93957	9.621891	1.552665	0.1591
Poverty	-36394.71	14108.67	-2.579599	0.0326
Health	1.12E+09	1.36E+09	0.818375	0.4368
Education	8.34E+09	3.23E+09	2.583746	0.0324
C	2.07E+12	6.00E+11	3.453438	0.0087
R-squared	0.990849	Mean dependent	2.46E+12	

		var	
Adjusted R-squared	0.986274	S.D. dependent var	5.05E+11
S.E. of regression	5.92E+10	Akaike info criterion	52.72912
Sum squared resid	2.80E+22	Schwarz criterion	52.94641
Log likelihood	-337.7393	Hannan-Quinn criter	52.68446
F-statistic	216.5659	Durbin-Watson stat	2.321188
Prob(F-statistic)	0		

Based on the estimation results, the direction of the relationship between technological innovation, Health and Education is positive and GDP, which means that these three elements are the driving elements of the economy. Where the direction of the Poverty relationship is negative, which means that economic growth can reduce the Poverty number.

Forecasting is presented to predict the impact and role of Education on economic growth

Figure 1: Forecasting the impact and role of Education on economic growth



Source : Author Computing

Increasing education in Indonesia is followed by economic growth that continues to grow and develop. This shows that education plays a very important role in the Indonesian economy.

## 6 CONCLUSION

Education plays a very important role in Indonesia's economic development. Where Education is an element in human capacity in developing knowledge and understanding of new information and productive and good behavior. So it can be said that education is the basis or foundation of human capital.

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