

ANALYSIS OF THE HUMAN DEVELOPMENT INDEX AND FACTORS AFFECTING IT IN EASTERN INDONESIA

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ABSTRACT

This study aims to measure and analyze the effect of government spending on education, government spending on health, government spending on social protection, investment, and an educated workforce on the human development index in eastern Indonesia, both directly and indirectly through economic growth. This study uses panel data with 17 cross sections over a 5 year time series, from 2015 to 2019. The analytical method used is the structural equation method. The results of the study show that government spending on education does not have a direct effect on the human development index, while government spending on health, investment and an educated workforce has a positive effect. Meanwhile, government spending on social protection has a negative effect. Meanwhile, the indirect effect of all exogenous variables through economic growth is stated to have no effect. This is due to the absence of the influence of economic growth on the human development index. The most dominant influence on the human development index is from an educated workforce, so the government needs to focus more on educating the entire community to create superior and competitive human resources. Superior human resources are directly proportional to income which will increase so that a decent standard of living can be met, because the most important thing in the entire development process is the people themselves.

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1. INTRODUCTION

Since the discovery of a new development paradigm that links growth with improving the quality of life, government spending and investment in several sectors of the economy have become increasingly important. In eastern Indonesia, the government has made efforts to improve human development in such a way that a positive correlation is expected between progress in spending in sectors with high urgency. However, this optimism can be suspected because despite growth in government spending on education, health, social protection, as well as growing investment flows, human development in eastern Indonesia is still around 69 percent with the lowest index in Papua at 61 percent in 2019. Meanwhile, in the western region of Indonesia, there are no areas with a human development index below 70 percent.

In securing the progress of human development, it is very important to place citizens at the center of all aspects of development planning strategies and demand a high level of resilience on the part of the government (Ranjan and Panda, 2022). In this regard, the welfare of citizens must continue to be improved to face new challenges and expand their choices which are unlimited and change from time to time. The three most critical and socially valuable choices of these choices are the choice to live a long and healthy life, the choice to acquire knowledge and be educated and to have access to the resources necessary for a decent level of life as a nation develops.

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Thus, development must increase the availability and expand the distribution of basic life-supporting needs such as a decent living, longer life, self-protection; improving living standards and environmental sustainability which ultimately increases welfare through the provision of more jobs, better education and other human values.

But as Todaro and Smith (2005) note, many developing countries did experience a decline in real per capita income among a larger percentage of the population and the situation generally worsened during the 1980s. In this context, the process of development is essentially creating an environment in which all people in society can expand the capabilities needed to take advantage of the greater opportunities available in society. It is clear from the explanation above that once the concept of development is expanded, growth in per capita income becomes imperfect for measuring or describing human development.

It can be said from the above that an increase in per capita income is a necessary but not sufficient measure for human development. Improving quality of life is even more important as manifested in higher educational attainment, easier access to work and a healthier life, resilience food and access to potable water, affordable housing, a sustainable environment and greater life expectancy. But in achieving all of this, government spending on education, health, and social protection, as well as investment flows have a big role to play. Salim et al.'s study (2020) in Indonesia concluded that the strategy of prioritizing government expenditure levels to achieve targets is a major concern so that the economic cycle can be optimal and ready to face possible future economic recessions which will greatly impact society. Economic growth must continue to be increased by the government, but it is difficult to determine whether more government intervention by increasing government spending and investment as well as growth in the number of educated workers will have a positive impact on economic performance which in turn can improve people's living standards so that human development becomes better

2. METHOD

This study uses a structural equation model to explain the relationship between latent variables. Structural equation modeling is used to analyze a relationship formed through one or more dependent variables explained by one or more independent variables, and at the same time one or more of these dependent variables act as independent variables for other dependent variables. Latent variables which are independent variables in the structural model are called exogenous latent variables, while latent variables that are measured from exogenous latent variables are called endogenous latent variables. The endogenous variables in this study are economic growth and human development, while the exogenous variables are government spending on education, government spending on health, and government spending on social protection, investment, and an educated workforce. *Amos software* is used to perform structural equation analysis. The estimation model in this study is as follows.

$$Y_1 = (X_1, X_2, X_3, X_4, X_5) \dots\dots\dots 1$$

$$Y_2 = (Y_1, X_1, X_2, X_4, X_5) \dots\dots\dots 2$$

where:

- Y_1 = economic growth
- Y_2 = human development
- X_1 = government spending on education
- X_2 = government spending on health
- X_3 = Government spending on social protection
- X_4 = investment
- X_5 = educated workforce

Based on equations (1) and (2), linearly it can be stated as follows:

$$\ln Y_{1it} = \ln \alpha_0 + \alpha_1 \ln X_{1it} + \alpha_2 \ln X_{2it} + \alpha_3 \ln X_{3it} + \alpha_4 \ln X_{4it} + \alpha_5 \ln X_{5it} + \alpha_6 \ln X_{6it} + \varepsilon_{it} \tag{5}$$

$$Y_{2it} = \ln \beta_0 + \beta_1 \ln X_{1it} + \beta_2 \ln X_{2it} + \beta_3 \ln X_{3it} + \beta_4 \ln X_{4it} + \beta_5 \ln X_{5it} + \beta_6 \ln Y_{1it} + \mu_{it} \tag{6}$$

where:

- i = 17 provinces in Eastern Indonesia
- t = time period (2015 – 2019)
- $\varepsilon_{it} \mu_{it}$ = term error

Furthermore, equation 5 is substituted into equation 6 so that the *reduced form is obtained* as follows so that the coefficients of direct and indirect effects of both exogenous and endogenous variables on inclusive growth can be identified .

*

where:

$$\begin{aligned} \gamma_0 &= \ln \beta_0 + \ln \alpha_0 \beta_6 \\ \gamma_1 &= \beta_1 + \alpha_1 \beta_6 \\ \gamma_2 &= \beta_2 + \alpha_2 \beta_6 \\ \gamma_3 &= \beta_3 + \alpha_3 \beta_6 \\ \gamma_4 &= \beta_4 + \alpha_4 \beta_6 \\ \gamma_5 &= \beta_5 + \alpha_5 \beta_6 \\ \omega &= \beta_6 \varepsilon_{it} + \mu_{it} \end{aligned}$$

3. RELUST AND DISCUSSIO

The following is the result of estimating the effect of government spending on education, government spending on health, government spending on social protection, investment, and an educated workforce on the human development index through economic growth.

Table 1. Estimating Results of the Economic Growth Function and Human Development Index

Influence Between Variables	Coefficient	Standad Error	t-statistic	probability	Information
X 1 → Y 1	-0.971	0.111	-8,734	0.000	Significant
X 2 → Y 1	0.368	0.202	1,822	0.068	Significant
X 3 → Y 1	0.016	0.224	0.070	0.944	Not significant
X 4 → Y 1	0.022	0.105	0.205	0.837	Not significant
X 5 → Y 1	-0.027	0.012	-2,274	0.023	Significant
Y 1 → Y 2	0.413	0.331	1,247	0.213	Not significant
X 1 → Y 2	0.401	0.467	0.858	0.391	Not significant
X 2 → Y 2	1,190	0.625	1,905	0.057	Significant
X 3 → Y 2	-2,190	0.680	-3,219	0.001	Significant
X 4 → Y 2	0.816	0.320	2,549	0.011	Significant
X 5 → Y 2	0.326	0.037	8,783	0.000	Significant

*) Significant at $\alpha = 10\%$

$R^2 Y_1 = 0.599$; $R^2 Y_2 = 0.582$; N = 52

Note: Results of data processing using Amos

Based on simultaneous regression analysis using Equation 5, the calculation results are obtained in Table 1. The *R-Square* Y_1 value is 0.599, meaning that 59.9 percent of variations in changes in economic growth can be explained simultaneously by variations in changes in exogenous variables, namely government spending in education, government spending on health, government spending on social protection, investment, and an educated workforce. The remaining 40.1 percent is determined by other variables outside the model.

The simultaneous regression analysis in Equation 7 can be seen in Table 1. The *R-Square* Y_2 value is 0.582, meaning 58.2 percent of the variation in changes in the development index Human beings can be explained simultaneously by variations in changes in exogenous variables, namely government spending on education, government spending on health, government spending on social protection, investment, and educated manpower. The remaining 41.8 percent is determined by other variables outside the model.

Economic growth (Y_1) has no effect on the human development index (Y_2) so that all exogenous variables are government spending on education (X_1), government spending on health (X_2), government spending on social protection (X_3), investment (X_4), and an educated workforce (X_5) is stated to have no effect on the human development index through economic growth.

Government spending on education has no direct effect on the human development index. Meanwhile, government spending on health has a positive effect on the human development index with a coefficient of 1.190, meaning that a 1 percent increase in government spending on health will increase the human development index by 1.190 points. Meanwhile, government spending on social protection has a negative effect on the human development index with a coefficient of -2.190. This means that if government spending on health is increased by 1 percent, it will reduce the human development index by 2.190 percent.

Investment has a positive effect on the human development index with a coefficient of 0.816. This means that a change in investment by increasing it by 1 percent will encourage an increase in the human development index by 0.816 percent. An educated workforce has an effect on the human development index with a regression coefficient of 0.326, meaning that an increase in the number of educated workers by 1 percent will increase the human development index by 0.326 percent.

Based on the estimation results, the findings of this study indicate that government spending on education, either directly or indirectly through economic growth, has no effect on the human development index. This means that changes in government spending on education will not affect the human development index. But separately, the increase in government spending on education has a negative effect on economic growth. This result is not in accordance with the initial hypothesis that an increase in government spending on education will encourage economic growth which then increases the human development index.

The insignificant results on the human development index and the negative effect on economic growth are due to the short period studied, namely only 5 years from 2015 to 2019, so that even though there was a zoning policy in 2017 which led to an increase in APBD allocations for equitable access to education, the increase in this allocation cannot be felt in the near future and may even hamper economic growth in eastern Indonesia. In accordance with the opinion of Barro (1990) who said that an increase in government expenditure could be a barrier to economic growth because this expenditure is unproductive spending in the short term.

Meanwhile, research by Ojha et al. (2022) in India concluded that government spending on education would lead to higher growth with lower inequality. In detail it is also emphasized that government spending on education, especially on secondary education is very important in encouraging economic growth with better income distribution. Supported by the research of Jouini et al. (2018) that primary and secondary education have a great impact on equity, while higher education is only relative, because the poor still have limited access to higher education.

So that compared to focusing on funding educational scholarships and research to assist

government development programs, it should be more focused on the development of primary and secondary education as the first step for the regional governments of Papua and West Papua. Data from the United Nations Children's Fund (Unicef) shows that 30 percent of Papuan students do not complete their primary and secondary schools. In rural areas, around 50 percent of primary school students and 73 percent of junior high school students choose to drop out of school. Geographical conditions are one of the factors that make it difficult for Papuans to get an education, especially in the interior. In addition, there are still many schools that lack quality teachers as well as facilities and infrastructure that are still lacking, especially for computer and English classes (Astuti, 2016).

Based on the estimation results, the findings of this study indicate that government spending on health directly has a positive effect on the human development index in eastern Indonesia. This means that the greater the government spending on health, it will encourage an increase in the human development index. As for indirectly, government spending on health does not affect the human development index through economic growth. This is due to the insignificant results of economic growth on the human development index. However, separate government spending on health affects economic growth positively.

Economic growth that does not affect the human development index is caused by high income inequality in eastern Indonesia so that most people in these areas are not the main contributors to economic growth. However, government spending on health in the short term can increase economic growth and the human development index thereby justifying the need for government intervention to build healthier and more productive societies in support of economic growth and human development in eastern Indonesia.

These findings are in line with the research by Halıcı-Tülüce et al. (2016) that public health spending positively affects economic growth. In addition, it can be concluded that the positive impact of health spending on economic growth can be increased by increasing spending of both groups in the health sector because a healthy workforce means higher productivity. The main policy recommendations that emerge from this study are the need for policy makers to pay more attention to the health sector and increase annual budget allocations. However, the key to good results does not lie in increasing allocations the health budget, but rather on implementing a public financial system that, as far as possible, links specific expenditure and revenue decisions and ensures the use of allocated funds as transparently as possible (Halıcı-Tülüce et al., 2016).

Based on the estimation results, the findings of this study indicate that government spending on social protection has a negative effect on the human development index in Eastern Indonesia. Meanwhile, separately, government spending on social protection will increase economic growth. This result is not in line with the research by Mailassa'adah et al. (2019) in Central Kalimantan who found that government spending on social protection had a positive effect on human development. It was explained that the social protection program is a supporting instrument to provide a decent life for people who are unable to meet their needs due to economic and political shocks. Improving the social protection budget can have implications for increasing people's purchasing power, so the government must increase and improve the quality of beneficiary data so that it is not misdirected.

The importance of government spending on social protection is explained in Szymańska's research (2022) in the European Union with an increase in spending on social protection in recent years. The results of this study indicate the potential importance of government spending on social protection in reducing the negative impact of short-term economic fluctuations which is then confirmed by the positive effect of unemployment thereby demonstrating the importance of automatic stabilizers. A negative result of government spending on education on the human development index indicates mistargeted social protection programs and corruption. Dela Valade 's (2006) study in developing countries explained that corruption distorts the structure of government spending by reducing the portion of social spending, one of which is social protection, and increasing the portion of spending on services and public order, fuel and energy, culture, and defense.

Based on the estimation results, the findings of this study indicate that investment has a direct positive effect on the human development index in Eastern Indonesia. However, incoming investment does not affect economic growth.

Research from Yuliadi (2020) explains that the reason for the absence of investment impact on economic growth is due to the relatively small value and amount of investment in regions, especially in Eastern Indonesia. As a result, investment is not able to support regional economic growth. The lack of investment in Eastern Indonesia is also exacerbated by the lack of supporting infrastructure for economic activities, such as electricity, roads, bridges, ports and airports. So even though recently the government has been more proactive in building infrastructure, the progress of development and infrastructure projects is still concentrated in the Java region. The low investment is also caused by a convoluted bureaucracy so that the investment climate is still not friendly to investors foreign. The 2020 World Bank report, namely Global Investment Competitiveness (GIC), states that Indonesia is one of the most restrictive countries in the context of foreign investment with an index of 0.31, very high compared to the global average of 0.094 (Kusek et al., 2020).

To increase investment, especially domestic investment, Budiono and Purba's research (2019) recommends the development of electricity infrastructure, based on the results of their research showing that the availability of electricity has a positive effect on domestic investment activities, so that the more electricity infrastructure is built, the higher the investment value. domestic. Electricity is not only for the needs of community use but can also increase business enthusiasm. Meanwhile, from the research of Saputra and Emo Wodo (2022) which discusses Indonesia's national economic law policies, it is stated that the government should focus on developing domestic investment rather than foreign investment because it will affect people's welfare. Restrictions on foreign investment in Indonesia are said to be very worrying because they allow foreign capital to control up to 99 percent of the national banking system. This opens up opportunities for dependence on foreign capital and can also erode the national economy which in the end benefits will accrue to foreigners, not Indonesians.

The government must establish policies to improve the quality of human resources and workforce skills. Because foreign investment is always accompanied by technology, there needs to be a skilled workforce to take advantage of new technology and create a positive technology dilution effect. At the same time, apart from prioritizing attracting foreign investment, the government must also pay attention to policies on *human capital*, *money supply*, total domestic investment, and total credit for the private sector in order to increase economic growth and absorb maximum benefits from foreign investment. Based on the estimation results, the findings of this study indicate that an educated workforce has a positive effect on the human development index in Eastern Indonesia. But separately, an educated workforce has a negative influence on economic growth.

Science, Technology, Engineering, and Math) -based workforce will increase GDP per capita. The calculation is that if the STEM workforce was added by 44,000 people (a 28 percent increase), it would lead to an increase of 1,944 dollars in GDP per employee, which is equivalent to about 1,102 dollars in GDP per capita. So it can be concluded that the number of qualified workers or in other words having specialization, is very useful for increasing GDP per capita so that a decent standard of living can increase as an indicator of the human development index.

Although this research has not been studied further, the results of the previous research can be applied in Indonesia according to suggestions from Ahmadov (2020) in Azerbaijan, namely by increasing STEM faculties and universities so that the number of STEM graduates increases, developing a consistent investment program for STEM graduates who qualified to get a job and enrich its productive abilities so that it will create economic value in the medium term. Then for the short term, STEM specialties must be promoted so that there is an increase in the number of STEM workforce. This can be focused on areas with good access to primary and secondary education, while regions with very poor primary and secondary education should focus first in order to create a solid foundation in the long term. Because each region must focus on things with high urgency in sustainable development.

4. CONCLUSION

The findings of this study indicate that government spending on education, either directly or indirectly through economic growth, has no effect on the human development index. This finding is not in accordance with the initial hypothesis that an increase in government spending on education will encourage economic growth which then increases the human development index. Government policies for more equitable education in Eastern Indonesia have yet to show any impact on the human development index.

The findings of this study indicate that government spending on health directly has a positive effect on the human development index in eastern Indonesia. As for indirectly, government spending on health does not affect the human development index through economic growth. This is due to the insignificant results of economic growth on the human development index. There is still high income inequality in eastern Indonesia so that most people in these areas are not the main contributors to economic growth. However, separate government spending on health affects economic growth positively. Government spending on health in the short term can increase economic growth and the human development index thus justifying the need for government intervention to build healthier and more productive societies in support of economic growth and human development in eastern Indonesia.

The findings of this study indicate that government spending on social protection has a negative effect on the human development index in Eastern Indonesia. Meanwhile, separately, government spending on social protection will increase economic growth. A negative result of government spending on education on the human development index indicates mistargeted social protection programs and corruption. This type of government expenditure is very prone to corruption and is often accepted by the middle and upper class society so that its impact cannot be felt by the poor who really need it.

The findings of this study indicate that investment has a direct positive effect on the human development index in Eastern Indonesia. However, incoming investment does not affect economic growth. This is because the value and amount of investment in Eastern Indonesia is still relatively small. As a result, investment is not able to support economic growth in the region. The lack of investment is also exacerbated by the lack of supporting infrastructure for economic activities, such as electricity, roads, bridges, harbors and airports. In addition, low investment is also caused by convoluted bureaucracy so that the investment climate is still not friendly to foreign investors.

The findings of this study indicate that an educated workforce has a positive effect on the human development index in Eastern Indonesia. The positive results for the human development index indicate the need to improve the quality of the workforce by opening higher education based on skills improvement. This can be focused on areas with good access to primary and secondary education, while regions with very poor primary and secondary education should focus first in order to create a solid foundation in the long term. Because each region must focus on things with high urgency in sustainable development. Provide a statement that what is expected, as stated in the "Introduction" chapter can ultimately result in "Results and Discussion" chapter, so there is compatibility. Moreover, it can also be added

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