

## HOW DETERMINANTS OF THE HUMAN DEVELOPMENT INDEX IMPACT INDONESIA



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### Abstract

The purpose of this research is to achieve success in the development process carried out by local and central governments, of course, as the right regulators in economic activities. Success in building HDI is largely determined by the full commitment of the government as a provider of facilities and infrastructure and fully understands that to achieve a modern economy, the quality of life of human resources must be improved. This research was carried out on the problems that occurred in several regions in Indonesia, the existence of inequality in both economic growth and human quality development in the western and eastern regions of Indonesia, a more visible phenomenon is that in several regions of Indonesia there has been looped economic growth and looped human development. This type of research is quantitative research, the subjects in this study are all provinces in Indonesia. The type of data used is secondary data using panel data from 34 provinces during 2015–2019. Data collection techniques were used observation and documentation. The data analysis technique is simultaneous analysis. The results of this research show that variables of education, government spending on education, economic growth, and poverty together have a significant influence on human development.

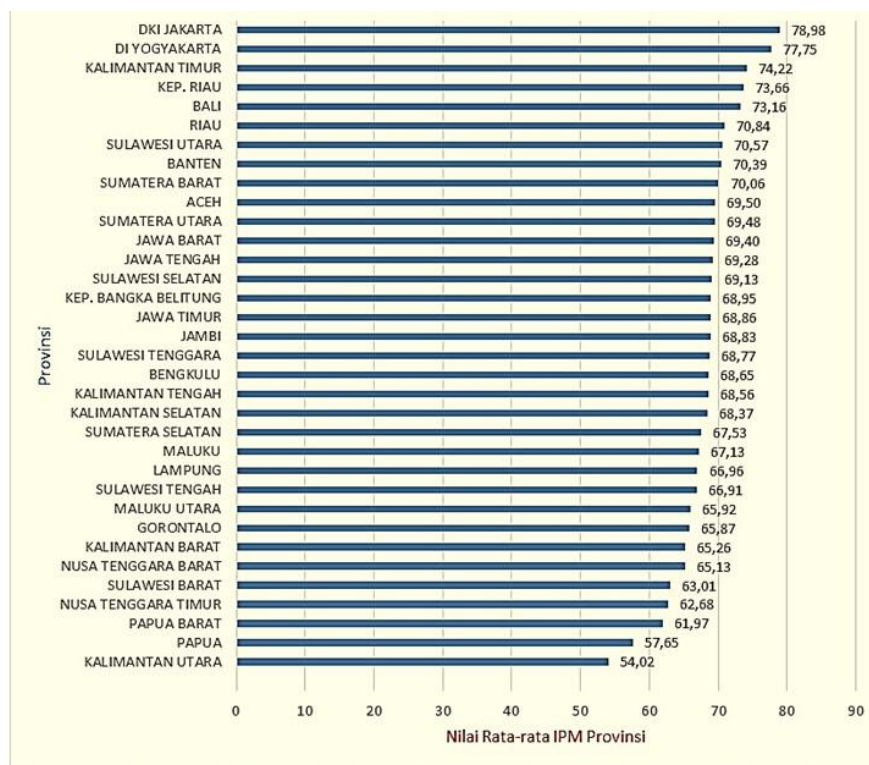
**Keywords:** Determinants, Development Index, Indonesia, HDI

## INTRODUCTION

In the long term, the ultimate goal of development is how every resident in the country achieves prosperity of ideal proportions. To achieve this goal, they are willing to generate large funds to build supporting economic facilities. The interpretation of development may raise interesting things to debate and study (Suleman et al., 2020). Human development is one of the goals in increasing economic growth, assuming that quality resources can increase efficiency in economic activities and can affect economic growth aggregately (Hidayat & Lumbantoruan, 2013).

In addition, there have also been many country-specific studies as well as regional analyses related to human capital and growth have increased. Regional human resource empowerment, similar to the national model, is seen as one of the causes of regional economic growth, but it is necessary to be aware of human resources themselves do not seem to be a guarantee of economic stability and rapid recovery from the crisis (Čadil, Petkovová, & Blatná, 2014). It is also often used as a possible determinant of differences in regional wages, productivity, and income, especially in migration flows.

**Figure 1**  
**Average HDI Value of each Province in Indonesia (BPS, 2020)**



Human quality development is driven by main aspects, including life expectancy, level of education, and a decent quality of life (Andaiyani, 2012). It is known that in the long-term, economic growth is not enough just to increase the number of capital reserves, and labor, but also to improve the quality of human capital and utilization of technological advances. Based on this background, a formulation of the problem was compiled, namely: how do the determinants of the Human Development Index affect the country of Indonesia?

This research aims to contribute to the thoughts and problem solving and to an evaluation of the national development policy system. This research is in line with the PRN RI 2020-2024 which tries to focus on access and improving the quality of education in areas that have been unaffordable from policy output, improving human quality as a development asset, and solving the problem of inequality and poverty between regions. The authors hope that this research will be one of the considerations in restoring the nation's right to receive a proportional education and life.

## REVIEW OF LITERATURE

There are a lot of studies that find that in addition to natural resources, education and skills factors are also needed. Human capital is a device that gives impacts the economy in a country to grow and develop. Education and skills can encourage an increase in capital stock so that it can encourage the productivity of existing capital to be greater (Manish, 2014). In a broader sense, human development is the improvement of the basic abilities of each individual which in the end, is in the process of development expanding and opportunities to be able to contribute. The basic capacity in this context is also the three main values of the success of economic development sustenance, identity (self-esteem), and freedom (Desrindra, Murialti, & Anriva, 2015).

Economic growth is defined as the process of increasing GDP without regard to the impact of the increase in income greater than or less than the rate of human growth in a region, or looking whether the growth of the economic structure occurs or not (Ariza, 2016). Referring to the theory that Romer developed about economic growth, it is explained that economic growth has the following formula:

$$Y_i = AK_i^\alpha L_i^{1-\alpha} K^\beta$$

Where  $Y_i$  is the production output of a company  $I$ ,  $K_i$  is the capital reserve,  $L_i$  is the labor, dan  $A$  is the overall knowledge/technology reserve (technical knowledge) which is assumed to have a positive impact on the production of each company (Imamah, 2018).

Education contributes greatly to the development of economic social life through increasing knowledge, skills, attitudes and productivity, therefore if per capita income increases, then relatively government spending will also increase, this happens because the government is obliged to maintain relationships that arise in society, the laws of education, and so on (de Nichilo, 2021).

This is seen from the data of BPS (*Badan Pusat Statistik*) that shows that the spending of Indonesia central government was Rp2.595.481,10 billions in 2020, 2.697.237,00 billions in 2021, and 2.714.155,72 billions in 2022; this is in line with the income that Indonesia has which was Rp1.647,8 billion in 2020, Rp1.735,7 billion in 2021, and 1.840,7 billion in 2022.

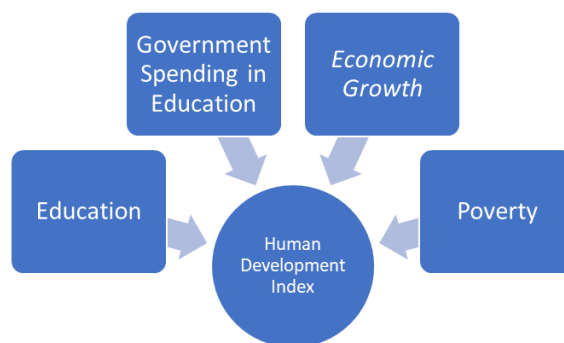
Education also has an influence on the poverty rate because education is one of the main components in the vicious cycle of poverty (Todaro & Smith, 2013). Therefore, the way to overcome it is through improving the quality of education. The most basic public education service is basic education. In determining the education budget, the mandate of the amendment to the 1945 Constitution requires the allocation of the education budget to be at least 20 percent of the total budget (Ilhami, 2014).

There are two types of government expenditures in the field of education, namely: individual education costs and indirect education costs (Sanggalorang, Rumat, & Siwu, 2015). The education budget if used and is expected to be able to push the number of literate people and the length of schooling that can be taken, so that in turn it will support human development if it is allocated appropriately. Based on Astri's research, local government spending in the education and health sectors affects HDI simultaneously (Astri, Nikensari, & Kuncara, 2013).

Another factor that is considered to be falling influencing the human development index is poverty. Poverty is defined as a condition when a person or group of people cannot fulfill their basic rights to maintain and develop a dignified life (Pudjianto, 2015). A dignified life is a state in which a person has the ability to meet his basic needs, as well as having a sense of security from the treatment or threat of violent acts and the right to

participate in socio-political life (Pudjianto & Syawie, 2015). Meanwhile, according to (Nugroho & Dahuri, 2016), poverty can be explained as an absolute or relative condition in which a person or group of people in a region for natural, cultural, or structural reasons, because he does not have the ability to meet basic needs according to certain different values or norms in society. Poverty is basically indicates the existence of a gap between weak purchasing power (positive) and the desire to fulfill basic needs (normative). Poverty can be divided into two: relative poverty and absolute poverty. Based on previous research and theoretical studies described above, the following framework of thought is compiled:

**Figure 2**  
**Frame of Mind**



Based on some theoretical studies above, the following hypothesis are made:

H0 = average length of schooling, government spending on education, economic growth, and poverty has no effect on the human development index.

H1 = average length of schooling, government spending on education, economic growth, and poverty affects the human development index

## **RESEARCH METHOD**

### **Research Design**

This research is considered as quantitative research. Quantitative research is a research strategy that focuses on quantifying the collection and analysis of data. It is formed from a deductive approach where emphasis is placed on the testing of theory, shaped by empiricist and positivist philosophies.

### **Data Types and Source**

This study used cross-section data, which is a series of one or more variables collected in a certain period of time (Gujarati, Hutaauruk, & Zain, 2004). In this study, researchers only observed phenomena at one specific point in time where this study was exploratory, descriptive, and explanatory. Research that uses cross-section data is easier to see the relationship of one variable to another in the population that is researched. Sources of data obtained are secondary data, and the data used in this study are HDI and, education, government spending in the field of education, economic growth, and poverty per province in Indonesia. The data was obtained from a report published by the Central Statistics Agency, the Ministry of Education, and data taken in 2019.

### **Scope of Research**

This study analyzes education, government spending in the field of education, economic growth and property in the human development index (HDI) in Indonesia. The duration of this study is in 2021, with the scope of this research being conducted in 34 provinces in Indonesia.

### **Analysis Method**

To analyze the determinants that affect the human development index in Indonesia, the study used quantitative analysis with multiple regression using the Eviews 10 analysis tool, with the tool this is obtained the value of the coefficient of the parameters of each variable, the value of R-square, the significance test is good for the test of each variable (t test) as well as for simultaneous test of variables (F test). To see the influence of education, government spending in the field of education, economic growth, the multiple regression analysis method is used on the human development index in Indonesia. The form of multiple liner regression equations is as follows:

$$HDI = \beta_0 + \beta_1 EDU + \beta_2 PSPEND + \beta_3 GE + \beta_4 POV + e$$

where HDI is the human development index, EDU is education, PSPEND, is government spending in the field of education, GE is economic growth and POV is poverty.

## RESULTS AND DISCUSSION

### Test of Classical Assumptions

The normality test is used to find out the processed data whether it has been normally distributed or not. The normality test can be done using the Histogram-Normality Test using the Eviews 10 analysis tool. The data is concluded normally distributed if the Jarque-Bera value  $<$  the Chi-Square Distribution Table ( $df;\alpha$ ), on the contrary it says the data is not normally distributed if the Jarque-Bera value is  $>$  the Chi-Square Distribution Table ( $df;\alpha$ ). Based on the results of data processing, the Jarque-Bera value of 26,494  $<$  the chi-square distribution table value ( $df; \alpha = 29;0.05$ ) of 42,557 which means that the data is normally distributed.

The multicollinearity test aims to find out whether the regression model has a correlation between its independent variables. To find out whether a free variable has a correlation is determined by criteria, among other things, the R2 value of the dependent variable  $>$  independent R2 then the conclusion is not found multicollinearity, on the contrary if the R2 value of the dependent variable  $<$  R2 independent then the conclusion is found multicollinearity. Based on the results of the regression carried out obtained:

**Table 1**  
**R-Square Value of Each Independent Variable**

|        |           |               |
|--------|-----------|---------------|
| HDI    | R-squared | <b>0.7473</b> |
| EDU    | R-squared | 0.2749        |
| GE     | R-squared | 0.2921        |
| POV    | R-squared | 0.2152        |
| PSPEND | R-squared | 0.0358        |

Source: processed data, 2021.

The conclusion from the results of the acquisition is known to be the value of the variable R-Square Y (0.7473)  $>$  the value of the R-Square independent variable.

The heteroscedasticity test is a classical assumption test that aims to find out whether there are deviations in assumptions in the regression results, where these deviations result from the inequality of variants from the overall residual observations of the model. The model must be spared from the perversion of heteroscedasticity. The heteroscedasticity test uses Breusch-Pagan-Godfrey, with the criteria of if probability of F-statistics  $>$  alpha (0.05) means that no heteroscedasticity is found, while if the F-statistical

probability is  $< \alpha$  (0.05) it means that Heteroscedasticity is found. Based on the test results obtained values F-statistical probability of independent variables (0.3363)  $> \alpha$  (0.05) means that heteroscedasticity is found.

**Table 2**  
**Heteroskedasticity Test: Breusch-Pagan-Godfrey**

|                     |          |                     |        |
|---------------------|----------|---------------------|--------|
| F-statistic         | 1.188928 | Prob. F(4,29)       | 0.3365 |
| Obs*R-squared       | 4.790128 | Prob. Chi-Square(4) | 0.3095 |
| Scaled explained SS | 10.01179 | Prob. Chi-Square(4) | 0.0402 |

Source: processed data, 2021

The autocorrelation test is a test of classical assumptions that aims to find out whether there is a correlation caused by residual in one observation with another observation in the regression model. The condition that must be met is the absence of autocorrelation. The test method can be done with the Durbin-Watson test (DW test) and can be done with the Breusch-Godfrey Serial Correlation LM Test..

**Table 3**  
**Breusch-Godfrey Serial Correlation LM Test**

|               |          |                     |        |
|---------------|----------|---------------------|--------|
| F-statistic   | 0.889125 | Prob. F(2,27)       | 0.4227 |
| Obs*R-squared | 2.100909 | Prob. Chi-Square(2) | 0.3498 |

Source: processed data, 2021

The test criterion is if the results of the Breusch-Godfrey Serial Correlation LM Test obtained statistical F probability  $> \alpha$  (0.05) meaning that no autocorrelation is found, on the contrary if the value of the statistical F probability  $< \alpha$  (0.05) means that it was found there was an autocorrelation. Based on the Breusch-Godfrey Serial Correlation LM Test, a statistical probability as F of  $> \alpha$  (0.05) was obtained, meaning that no autocorrelation was found in the model.

**Regression Results**

Based on the estimation of the HDI equation, it is carried out using the OLS model. Partially through the t test, the results of the EDU, PSPEND, and POV variables were obtained, which had a significant influence on HDI, while GE did not have a significant influence on HDI. Likewise, thoroughly through the F test, the results were obtained that the VARIABEL EDU, PSPEND, GE, and POV together had a significant influence on HDI Value Adjusted-R2 of 0.7125 indicates that the HDI variables can be explained together by

EDU, PSPEND, GE, and POV variables of 71.25% and the rest are explained by other variables outside the model under study. Meanwhile, the correlation between EDU, PSPEND, GE, POV and HDI is 0.7473, which means there is a strong relationship (moderately high correlation). The resulting equation is:

$$HDI = 3,5090 + 0,2897EDU + 0.0138PSPEND + 0.0062GE - 0.0046Pov + e$$

**Table 4**  
**Multiple Estimation Results**

| Dependent Variable: HDI   |             |                       |             |         |
|---------------------------|-------------|-----------------------|-------------|---------|
| Method: Least Squares     |             |                       |             |         |
| Sample: 1 34              |             |                       |             |         |
| Included observations: 34 |             |                       |             |         |
|                           |             |                       |             |         |
| Variable                  | Coefficient | Std. Error            | t-Statistic | Prob.   |
| C                         | 3.5090      | 0.1595                | 22.0019     | 0.0000  |
| EDU                       | 0.2897      | 0.0629                | 4.6060      | 0.0001  |
| PSPEND                    | 0.0138      | 0.0059                | 2.3239      | 0.0273  |
| GE                        | 0.0062      | 0.0112                | 0.5537      | 0.5840  |
| POV                       | -0.0046     | 0.0011                | -4.3757     | 0.0001  |
|                           |             |                       |             |         |
| R-squared                 | 0.7473      | Mean dependent var    |             | 4.2618  |
| Adjusted R-squared        | 0.7125      | S.D. dependent var    |             | 0.0552  |
| S.E. of regression        | 0.0296      | Akaike info criterion |             | -4.0671 |
| Sum squared resid         | 0.0254      | Schwarz criterion     |             | -3.8426 |
| Log likelihood            | 74.1409     | Hannan-Quinn criter.  |             | -3.9906 |
| F-statistic               | 21.4447     | Durbin-Watson stat    |             | 1.5519  |
| Prob(F-statistic)         | 0.0000      |                       |             |         |

Source: processed data, 2021

The value of the regression equation coefficient marked positively indicates that the independent variable has a positive influence on its dependent variable, and vice versa if it is marked negative, it means that the independent variable has a negative influence on the dependent variable. The constant value of 3.5090 with an EDU variable coefficient of 0.2897 means that every 1-year increase in the average length of schooling there is an increase in the regional human development index by 0.2897% assuming that another variable remains (*Ceteris Paribus*). It is in line with research conducted by (Citrawan, 2018) that education has a positive and significant influence on the human development index (Education with variabel MYS has an influence towards HDI, within intercept (constants) about 19.99000 with t-statistic is 4.090348 and probability is 0.0264 <0.05 (significant).

Furthermore, the coefficient of the PSPEND variable of 0.0138 means that every 1% increase in government spending in the field of education, there is an increase of 0.0138% in the human development index assuming that another variable remains (*Ceteris Paribus*), where this result is also in line with research conducted by (Edeme, Nkalu, & Ifelunini, 2017) i.e. government spending on education and health, has a positive marginal impact on human development. However, there are still provincial governments that have a low ratio of regional financial independence and high level of dependence on central funds.

The economic growth variable having a coefficient value of 0.0062 means that every increase of 1% GRDP per capita, there is an increase of 0.0062% in the development index, assuming that other variables remain (*Ceteris Paribus*). However, these results did not have a significant effect on the human development index. This is in line with what was done by (Nainggolan, Sembiring, & Nainggolan, 2021) it was obtained that economic growth did not have a significant effect on the Human Development Index in North Sumatra Province, meaning that it was not only driven from economic growth because new economic growth is a necessary condition. In order for economic growth to be in line with human development, economic growth must be accompanied by equitable development. With equitable development there is a guarantee that all residents can enjoy the results of development. Furthermore, the poverty variable has a coefficient value of 0.005255 meaning that every 1% increase in the percentage of the poor population, there is a decrease of 0.005255 % in the development index assuming that other variables remain (*Ceteris Paribus*) (Regina, Sinring, & Arifin, 2020).

### **Discussion**

Education and local government spending in the field of education have a positive and significant effect on HDI in Indonesia. It shows that local government spending in the field of education is very important in improving the quality of people. Good facilities and system need to be built by the government by guiding the allocation of expenditure as a good reference. It means that government spending is constructive and provides access to education for all residents. This is in accordance with previous research where the general allocation fund has a positive and significant effect on the human development index in Indonesia (Prasetyo, 2020).

Based on the analysis above, it is also explained that countries with relatively large levels of poverty tend to show low human development index values. A low value reduces the value in development. The very high inequality (as an indicator of development) clearly illustrates the condition of poverty. It is shown in the data of OECD (Organization for Economic Cooperation and Development) that stated, in all countries considered (such as Australia, Austria, Belgium, Canada, etc.) income inequality in metropolitan areas is higher than the national average, with the exception of Canada. Among the 153 metropolitan areas in the 11 countries considered, the Gini coefficients of disposable income vary between 0.26 in Linz (Austria) to 0.5 in Tuxtla Gutiérrez (Mexico). High and low levels of income inequality are observed in the metropolitan areas of Canada, United States, Mexico and Belgium: for example, while the Gini coefficient in Calgary (Canada) is 0.43, it is less than 0.3 in Québec. This can lead the condition of inequality in each country. It is also in line with research conducted by (Sumarsono & Novarinda, 2016) which explained that there is a long-term balance relationship between HDI and Poverty.

Some of the causes of poverty in Indonesia are still relatively high, namely inequality in urban and rural areas still high, where the poverty rate in rural areas is getting higher; a decrease in the suboptimal unemployment rate; the implementation of various assistances is carried out partially and less integrated; not on target to various educational programs causes assistance to be less effective in alleviating the burden on the poor and vulnerable; efforts to strengthen inequality by the government through village funds have not run optimally because the bureaucracy of disbursement of village funds is still slow.

This is resulted in an increase in the wages of laborers in urban areas when compared to in rural areas, and there was a slowdown in the increase in wages of farm workers in rural areas which was accompanied by an increase in the number of smallholder farmers, especially in Java. The results of this study are in line with previous research (Syofya, 2018) stating that poverty has a significant effect on the human development index.

## **CONCLUSION**

The results of the classical assumption test obtained the data used in this study avoided the error of classical assumptions. Partially through the t-test, the results of

education variables, government spending in education, and poverty have a significant effect on the human development index. Meanwhile, economic growth has no significant effect on the human development index. Likewise, thoroughly through the F test, the results were obtained that the variables of education, government spending on education, economic growth and poverty together have a significant influence on the human development. Adjusted-R<sup>2</sup> value of 0.7125 indicates that variations in the human development index can be explained together by variations in education, government spending on education, economic growth and poverty of 71.25% and the rest are explained by other variables beyond research.

Referring to the results of the analysis and some of the conclusions previously outlined, the implication to the government is that the central and regional governments should optimize the budget for education in order to improve the quality of human resources. A more in-depth study is needed in determining the rules regarding the allocation of education expenditures for the State Budget (APBN and APBD). Therefore, it can be a good reference, but the allocation should also be right on target in order to improve the quality of human resources.

The government is very needed to take seriously the condition of education in underdeveloped and isolated areas in every province in Indonesia that is left behind. The government should provide education guarantees, especially for poor families by improving educational facilities evenly throughout the region; providing scholarships, as well as distributing educators to remote areas, by providing decent accommodation and incentives.

The observation period only uses 2019 data with all provinces in Indonesia as a sample, therefore data with longer estimates are needed to see more comprehensive picture of each variable. The method in this study is still relatively simple to capture the symptoms of each variable independent of HDI, therefore it is necessary to carry out more variety data processing with methods such as input-output analysis, data envelope analysis, simultaneous analysis, stochastic frontier analysis, and so on in looking at symptoms in each province. For subsequent researchers, it is also better to add other independent variables to add studies on the Human Development Index.

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