The Effect of Government Expenditure Education, Health and Minimum Wages on Human Development Index of Five Sumatera in South Part Provinces

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Abstract: This study aims to determine the effect of government spending on education, health, and minimum wages on the Five Human Development Index in Southern Sumatra Province. The analytical tool used is panel data with the study period of 2007 to 2016 in five southern Sumatra Provinces namely Jambi, South Sumatra, Bengkulu, Lampung and Bangka Belitung. The results show that minimum wages are the most dominant variable and have a significant effect on the HDI. Whereas the other two variables, namely government spending in education and health do not significantly affect the HDI. Overall the HDI average is not much different and there is no discrepancy between provinces in Southern Sumatra from the range of 68 percent to 70 percent. However, of the five provinces in Southern Sumatra, there are two provinces with higher HDI figures than the others, namely Jambi Province and Bangka Belitung Province.

Keywords: Panel Data, Government Expenditure in Education, Health Sector Spending, Minimum Wages, Human Development Index.

JEL Classification: A13, C23, B55

INTRODUCTION

Human development actually has a very broad meaning. The basic idea of human development is to create positive growth in the economic, social, political, cultural and environmental fields, as well as changes in human welfare. Therefore, humans must be positioned as the real wealth of the nation. The main objective of human development must be able to create an environment that allows the people to enjoy longevity, health, and carry out a productive life [1].

The human development index (HDI) comes from the actualization of the concept of human development which was first introduced by the United Nations Development Program (UNDP) in 1990. Indonesia began calculating the HDI in 1996. Since then, the HDI is calculated periodically every three years. However, since 2004 the HDI is calculated every year to meet the needs of the Ministry of Finance in calculating the General Allocation Fund (DAU). The indicators used in the calculation of HDI in Indonesia to date include life expectancy at birth that represents the dimensions of longevity and healthy life, school length expectations and school length averages that represent the dimensions of knowledge, as well as expenditure per capita that represents a decent standard of living standard [1].

Efforts to improve the HDI in Indonesia are carried out through fiscal policy instruments, where basic service provision is carried out through a budget mechanism. The budget allocation for education and health is included in the social expenditure category. But what happens in the field, local governments have different policies in improving their human resources. This can be seen in the format of budgeting in the education and health sectors, so that the results obtained by each region vary. Such conditions become a polemic which raises the debate about the role of the government that has not been maximized in the welfare of society through the application of HDI policies [2].

The United Nations Development Program Agency (UNDP) noted that the human development index (HDI), measured on the basis of per capita income, health, and education in Indonesia increased rapidly over the past 25 years. With a rating of 113 out of 188 countries, Indonesia is one of the countries with the best HDI increase in the Asia Pacific

region. The advancement of Indonesia's HDI of 0.712 and 0.66 for women was driven by several factors, namely an increase in per capita income by 135.4%, an increase in life expectancy to 5-8 years between 1990-2015, and an increase in the average length of schooling up to 4 ,6 years. Although the HDI 2016 progressed rapidly, UNDP stated that these achievements did not describe the actual situation that occurred in society, which was usually far more complex. In Indonesia there are 140 million people living at a cost of less than Rp 20 thousand per day and 19.4 million people suffer from malnutrition. While in the health sector, two million children under the age of one year have not received complete immunizations and the maternal mortality rate is 305 deaths per 100 thousand live births [3].

Based on previous research, it appears that government spending in education and health has an influence on the human development index. From research on government spending on the human development index using variables outside the dependent and independent variables, research conducted by Mahulaw, Budi and Mahardika used per capita GRDP as an intervening variable and the research conducted by Aviyati and Susilo used population growth as a control variable.

As has been explained that the HDI has three indicators, the first is long life and healthy life. This indicator will be seen through government spending on health. Both indicators of knowledge will be seen through government spending in education. Finally, indicators of decent living standards are seen based on per capita income or purchasing power. However, the current study of decent living standards will be seen through the provincial minimum wage, because the purchasing power of the people will be known based on the wages the community itself receives. This study uses panel data analysis techniques in contrast to previous studies using multiple linear regression analysis techniques. This research will be carried out in Five Provinces of Southern Sumatra covering South Sumatra, Lampung, Jambi, Bengkulu, and Bangka Belitung due to seeing the same HDI trend.

LITERATURE REVIEW
Putra and I Gusti [4] conducted a study that examined several previous studies. Based on research studies conducted by Ardiansyah, Setyowati and Lugastoro it can be concluded that PAD is consistently able to improve the HDI. The DAU was unable to improve the HDI in accordance with the results obtained by Ardiansyah and Setyowati [4] and Lugastoro [5]. DAK is able to improve the HDI in accordance with the results of research conducted by Setyowati and Suparwati [6] and Lugastoro [5]. With an increase in PAD and DAK in an area, the HDI will increase.

Pramissella [7] in his research shows that "Provincial Minimum Wages (UMP) and service goods expenditures have a positive and significant influence on the Lampung Province Human Development Index (HDI)". Similar to the results of research conducted by Zainuddin [8], based on the description of the results of research and previous discussion, it can be concluded that either partially or individually the variables of inflation, gross regional domestic product, and the development of regional minimum wages affect the human development index in Aceh Province. The ability of the independent variable to explain the dependent variable is 92, 94% indicates that there is a large independent influence on the dependent.

Based on research conducted by Forcael *et al*., [9] states that the Human Development Index (HDI) is classified based on three dimensions, namely income, education and health. In this study it was found that the HDI in the construction industry varied and was positively geographically related to the dimensions of income but, not so with the dimensions of education and health.

Edeme, Nkalu, and Ifelunini [10] the results of their research revealed that spending on education, health, agriculture, rural development and water resources had a positive impact on human development. While energy expenditure, housing and environmental protection have a negative influence on human development.

MS and Sudirman [11] stated that the increase and decrease in the index of human development and government spawning is very influential because if government spending is large then the possibility of our human development also becomes better. Moreover, the government spending in education and health can also help people in human development in our country, especially in Indonesia, Jambi Province to be better.

Bahtera, Muhammad, and Jamal [12] obtained the results of research that shows that the urban education budget significantly influences poverty levels, while the health budget of the pemekaran district / city does not affect poverty reduction.

RESEARCH METHODOLOGY
In this study, the data used includes data on government spending in health and education, minimum wages, and the human development index. The analytical tool used is panel data with a period of time from 2007 to 2016 in the five

southern Sumatran provinces, namely Jambi, South Sumatra, Bengkulu, Lampung and Bangka Belitung. Model equations that can be written for panel data are as follows:

$$Y_{it} = \beta_0 + \beta_1 X1_{it} + \beta_2 X2_{it} + \beta_3 X3_{it} + e_{it}$$

Where Y is the Human Development Index (Percent), β0 is the Constant, X1 is the Government Expenditure in Education (Rupiah), X2 is the Public Expenditure in Health Sector (Rupiah), X3 is the Minimum Wage (Rupiah), β1,2,3 is the Regression Coefficient Each Variable, i is Cross Section (Data Panel: 1 = Jambi Province, 2 = South Sumatra Province, 3 = Bengkulu Province, 4 = Lampung Provinnsi, 5 = Bangka Belitung Province), t is Time Series (2007- 2016), Eit is Error Term (Error cross section term and error term time series).

ANALYSIS RESULTS AND DISCUSSION
Panel Data Regression Analysis
In choosing which model is the best among the three models, the Chow test, the Hausman test, and the Lagrange Multiplier Test are performed.

Table-1: Model Testing Results

Pengujian Model	Nilai Statistik	Probabilitas
Uji Chow	6,856459	0,1437
Uji Hausman	5,831537	0,1201

Source: Data Processed, 2018

Based on Table-1 the results of testing the model can be seen the probability value in the Chow Test of 0.1437 is greater than the value of α = 0.05. From these results it can be concluded that the right model for panel data regression is the Common Effects Model. After that, testing the model with Hausman Test obtained the probability value of 0.1201 is greater than the value of α = 0.05, which means that the good model used is Random Effect Model.

Based on the selection of the models from the Chow Test and the Hausman Test, there is no consistency between the two tests so it needs to be continued on the LM test (Lagrange Multiplier). In LM Test obtained probability value of 0.0000 is smaller than α = 0.05, which means that the best model that can be used in this research is Random Effect Model.

Table-2: Random Effect Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Dependent Variable: IPM?				
Method: Pooled EGLS (Two-way random effects)				
Sample: 2007 2016				
Included observations: 10				
Cross-sections included: 5				
Total pool (balanced) observations: 50				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	69.73507	1.123484	62.07039	0.0000
PENDIDIKAN?	0.000182	0.000168	1.080399	0.2856
KESEHATAN?	-0.000329	0.000482	-0.683635	0.4976
UPAH_MINIMUM?	0.001176	0.000406	2.895875	0.0058
Random Effects (Cross)				
_JAMBI—C	0.513456			
_SUMSEL—C	-0.190536			
_BENGKULU—C	0.256509			
_LAMPUNG—C	-1.458575			
_BABEL—C	0.879146			

Source : Data Processed, 2018

Random effect model regression equation as follows:

HDI = 69.74 + 0.000182 PDK - 0.000329 KES + 0.001176 UM

A constant of 69.74 means that if there is no government expenditure in education, government spending in health and minimum wages, the amount of the HDI is 69.74 percent.

The regression coefficient of government expenditure in education is 0,000182, meaning that every increase in government expenditure in education is 100 percent, it will increase the HDI by 0.02 percent, with the assumption that government spending in the health sector and the minimum wage value remain.

The government expenditure expenditure regression coefficient of health is -0,000329, meaning that every decrease in government spending in health is 100 percent, it will increase the HDI by 0.03 percent, with the assumption that government expenditure in education and minimum wage value remain.

The minimum wage regression coefficient of 0.001176 means that every increase in the minimum wage is 100 percent, it will increase the HDI by 0.12 percent, with the assumption that the government expenditure in education and government spending in the health sector is fixed.

Individual Analysis

Table-3: Interspective Value of Each Province

Provinsi	Coefficient	C	Nilai Intersep
Jambi	0.513456	69.7351	70.248526
Sumatera Selatan	-0.190536	69.7351	69.544534
Bengkulu	0.256509	69.7351	69.991579
Lampung	-1.458575	69.7351	68.276495
Bangka Belitung	0.879146	69.7351	70.614216

Source: Processed data, 2018

Based on table-3 the results of the constants are known that the largest intercept value is in Bangka Belitung Province at 70.61 percent, meaning that the effect of the minimum wage on HDI in Bangka Belitung is greater than in other provinces. This indicates that human development in Bangka Belitung is developing better than other provinces, as seen from the highest HDI figures in Bangka Belitung Province. In line with this, Bangka Belitung Province is also the province with the highest minimum wage level in Southern Sumatra. The second province with the largest intercept value is Jambi Province at 70.25 percent, according to the second highest HDI level after Bangka Belitung Province. However, the Minimum Wage level in Jambi Province is still below the Province of South Sumatra because the Jambi Provincial government takes into account the company's financial capabilities, economic conditions and the ability of workers. It is feared that if the minimum wage is set higher the company cannot pay the wages to its employees, and this will harm both parties.

Provinces with the smallest intercept value were Bengkulu Province at 69.99 percent, South Sumatra Province at 69.54 and Lampung Province at 68.28 percent. This is because the level of HDI in the three provinces is the lowest among other provinces in Southern Sumatra. Lampung Province and Bengkulu Province also have the lowest minimum wage rates in Southern Sumatra.

Statistic Test

Statistical tests in this study were carried out with Test F, Test t and Adjusted R2. This statistical test is done using eviews and obtained data processing results as follows:

Simultaneous Significance Test (Test Statistics F)

Table-4: Results of Weighted Statistics Model Random Effect

R-squared	0.180094	Mean dependent var	2.515781
Adjusted R-squared	0.126622	S.D. dependent var	0.281725
S.E. of regression	0.263285	Sum squared resid	3.188670
F-statistic	3.368007	Durbin-Watson stat	0.805014
Prob(F-statistic)	0.026375		

Source: Processed data, 2018

F table values can be seen in table F statistics on df 1 = number of variables-1 (4-1 = 3) and df 2 = n-k-1 (50-3-1 = 46) (k is the number of independent variables). With a significance of 0.05, the results of Ftable = 2.81 were obtained.

Based on table-4 Variables of education, health, and minimum wages together influence the HDI (Human Development Index). This can be seen in the table that Fcount is smaller than F table (3.368 ≥ 2.81) so that H0 is rejected which means there is an influence

between the independent variables on the dependent variable.

Test the Significance of Individual Parameters (Test Statistics t)

The t test in multiple regression is used to determine whether the independent variable regression model has a significant effect on the dependent variable.

Table-5: Individual Significance Test Results (Test Statistics t)

Variabel	t-statistik	Probabilitas	Keterangan
Pendidikan	1,080360	0,2856	Tidak Signifikan
Kesehatan	0,683585	0,4977	Tidak Signifikan
Upah Mininum	2,895887	0,0058	Signifikan

Source: Processed data, 2018

Table values can be seen in table t statistics at df = n-k-1 (50-3-1 = 46) with a significance of 0.05 and 2-sided test obtained by the results of t table = 1.681.

Educational variables partially have no effect on the HDI (Human Development Index). This is because the t value is smaller than t table where the value is 1.080 < 1.681 or the probability is more than 0.05 where the educational probability value is 0.2856 more than 0.05 so H0 is accepted.

Health variables partially do not reflect the HDI (Human Development Index). This is because the value is smaller than t table where the value is 0.684 < 1.681 or the probability is more than 0.05 where the probability value of 0.4976 is more than 0.05 H0 is accepted.

Minimum wage variables partially affect the HDI (Human Development Index). This is because the value of t count is greater than t table where the value is 2.896 > 1.681 or the probability is less than 0.05 where the value of health probability of 0.0058 is more than 0.05 so that H0 is rejected, if the minimum wage increases then the human development index will increase, on the contrary if the minimum wage decreases, the development index will decrease.

Coefficient of Determination of Adjusted R-Square

Determination analysis is a measure that shows how much education, health, and minimum wages variables contribute to the human development index. Determination analysis is used to determine the percentage of contribution to the influence of independent variables serenta to the dependent variable.

Based on Table-4, it can be seen that the value of adjusted R2 is 0.126622, which means that the independent variables are education, health, and minimum wages that can explain the dependent variable, namely the human development index of 12.66 percent while the remaining 87.34 percent can be explained by other factors not included in this research model.

Effect of Government Expenditure on Education and Health and Minimum Wages on the Human Development Index

Based on the data and also the analysis that has been carried out, shows that government spending in education does not have a significant influence on the human development index. This is because the growth of government spending in education in the Southern Sumatra Province has experienced a fluctuating situation. Where when education spending decreases while the human development index continues to experience growth.

The government expenditure in the education sector is still not optimal in improving the quality of education and skills for teachers and students, but is more focused on infrastructure development, such as increasing schools and improving school buildings and providing facilities. So this does not have a direct influence on the improvement of the human development index.

The results of this study were also reinforced by previous research conducted by Muliza and Seftarita in 2017. Strengthened also by the statement of the Minister of Finance Sri Mulyani quoted from finance seconds on July 10, 2018. Sri Mulyani criticized recipients of the education budget which was considered not optimal using Rp. 444 trillion from the 2018 state budget, which should be allocated to improve access, distribution and quality of education. Sri Mulyani said that the education community had not maximally used the budget to improve the quality of human resources.

Based on the regression results that have been carried out, shows that government spending in the health sector also has no significant effect on the human development index. This is because the growth of government spending on health in Southern Sumatra is experiencing a fluctuating situation. Where when health spending decreased but the human development index continued to experience growth.

The majority of government spending in the health sector is still used for healing activities, and is

not yet optimal in its use for prevention activities, such as giving free vaccines. Therefore government spending in the health sector has not been able to improve the HDI in Southern Sumatra.

Based on data on minimum wage growth in Jambi Province, South Sumatra Province, Bengkulu Province, Lampung Province and Bangka Belitung Province experience growth in each year, in line with the Human Development Index which also experiences growth in each year.

This is evidenced by the results of research which states that there is a significant positive effect of the minimum wage on the human development index in southern Sumatra. That is, if the minimum wage in Southern Sumatra increases then it will increase the human development index in Southern Sumatra.

The increase in minimum wages will increase the need for decent living so that the standard of living is also increasing. As a result of the increase in the minimum wage received, the purchasing power of the people has increased so that it has a positive impact on the human development index in southern Sumatra.

The results of this study are in accordance with the natural wage theory which states that increasing minimum wages can affect the purchasing power of the people. If the wages given are low, then workers will live poor and inadequate, which will have an impact on the human development index in the region. This research was also supported by previous research by Chalid and Yusuf in 2014.

CONCLUSION

From the results of panel data regression in this study it can be concluded that the minimum wage is the most dominant variable and has a significant influence on the HDI. Whereas the other two variables, namely government spending in education and health do not significantly affect the HDI.

Overall the HDI average is not much different and there is no discrepancy between provinces in Southern Sumatra from the range of 68 percent to 70 percent. However, of the five provinces in Southern Sumatra, there are two provinces with higher HDI figures than the others, namely Jambi Province and Bangka Belitung Province.

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