Human Development Index (HDI) in Lampung Province Period 2013-2018

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Human Development Index (HDI) in Lampung Province Period 2013-2018

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Abstract: Human development index (HDI) is one of the benchmarks used to see the quality of human life as measured by looking at the level of human life quality of education, health and economy. This study aims to determine the effect of government spending from the education, health expenditure, capital expenditure sectors and lastly income per capita on the human development index. The data used is a secondary data in 7 districts in Lampung Province period of 2013-2018 which uses the secondary data in the form of panel data, which is a combination of *time series* and data obtained *cross section*. The analysis shows that government spending in the health sector, education, capital expenditure and gross regional product growth has a positive and significant effect on the human development index. Together the independent variables can increase the human development index close to seventy percent.

Keywords: Government Expenditure, Human Development Index

Introduction

Human Development Index (HDI) is the most essential factor in improving Indonesian economic indicators, especially economic growth because since the human capital is in a highest quality leads to improve Indonesian government management, and it is expected that human capital quality which could be indicated by human development index pushes Indonesian economic growth. Based on the data from Central Statistics Agency (2019), Indonesian human development indext increases slightly since 2010 until 2018. It is recorded that Indonesia HDI only 66.22 in 2010 and it increases to 71.39 in 2018. The HDI position in Indonesia is ranked in 116 from 169 countries. It is categorized in the developing country not yet a developed country. This is similar condition in Lampugn Province. The HDI is slightly increasing but it has low movement. This condition is similar to an issue happening in Lampung Regency's HDI development.

In Lampung regency/city, the Human Development Index should have been developed well if there is a balance of good education and good health. In fact, the position of HDI in

Lampung regency increased only 0.82 in 2018. The expectation is high where the HDI should be developed significantly. In fact, it was not as what expected. It is valued that the government spending on education and health should elevate people;s adequency to get a decent living and higher education. On those ideas, this writing will examine how the education, health, and economy is determined.

The Human Development Index is a composite index that covers three areas of human development that are considered very basic in terms of the physical and non-physical quality of the population. The three indicators are: 1) Health Indicator, 2) Education level, 3) capital spending and 4) Economic indicators. Humans in their role are the subject and object of development, which means that humans as agents of development becomes development targets. According to RudiBadrudin(2012), various facilities and infrastructure are needed to encourage the role of humans in development Human Development Index (HDI) in several regencies/cities in Lampung Province, is increasing every year, where Pesawaran districts in 2018 was the highest among the seven other districts at 69.4% where HDI Pringsewu was higher compared to HDI Lampung province in 2018 that is 69.02%.

The government as the executor of development certainly requires quality human capital as the basic capital of development. To produce a quality of human beings, efforts are also needed to improve the quality of their human resources. The government aimed the expenditures or investment for human development. Government expenditure is a reflection of the policies taken by the government. In this case the government expenditure is used to finance the public sector which is more important and becomes a priority in improving the quality of human resources which is reflected in the Human Development Index (HDI). The level of education and health of the individual population is a dominant factor that needs to get top priority in improving the quality of human resources. With a high level of education and health the population determines the ability to absorb and manage sources of economic development both in relation to technology to institutions that are important in efforts to improve the level of welfare of the population itself which all leads to advanced economic activity. Not only in government spending from the education and health sector can affect human development but also with government policy, namely by allocating funds in the form of capital expenditure in the budget is expected to improve public welfare. According to Halim (2002: 72) capital expenditure is a regional government expenditure that will add assets or wealth to the region. Capital expenditure is one way to realize the goal of regional autonomy, namely to improve welfare and improve services to the community, namely by providing facilities that directly intersect public services .

The previous study also explained that education and health funds had a positive and significant effect on the formation of HDI in various locations and research periods. Nevertheless, there are also studies with findings where the education budget turns out to have a negative influence to the formation of HDI.

Winarti (2014) suggests that the negative influence of the education budget on HDI is caused by the allocation of the education budget that is not all allocated to improve the quality of education, but also is allocated to others such as employee salaries and other education costs. With ineffective education spending, the pressure on the state budget and regional budget is getting heavier. Public spending both state and regional budgets already have a lot of shopping that has binding expenditure characteristics. This

binding expenditure is mandatory spending, which must be allocated by the government such as personnel expenditure, operational expenditure, debt and interest payments and transfer funds to the regions.

Hajibabaei and Ahmadi (2104) stated that when the share of government expenditure of GDP is still smaller than the applicable regulation, the HDI will continue to increase along with the increase in government spending. In a different side, if the share of government expenditure from GDP is greater than the rule, the HDI will decrease. Based on the formulation of the problem, the purpose of this study is to analyze how the influence of government spending in education, health and capital spending on HDI in seven districts / cities in Lampung Province and to analyze how the effect of income on HDI in seven districts/cities in Lampung Province .

Literature Review

Human development is one indicator of a country's progress. A country can be said to be developed not only calculated from the Gross Domestic Product (GDP), but includes several aspects, namely the health and education aspects of its citizens. The development paradigm continues to experience evolutionary change, until now the development paradigm has made humanity as a development goal. Awareness that human resources are the basic capital of the nation's wealth, while physical capital and natural resources are merely passive factors of production. In essence, it is humans who will play an active role in the activities of collecting capital, exploiting natural resources and carrying out national development. According to Todaro and Smith (2015), human resources are the most determining factor in the character and speed in the development process of a country, human resources are the basic capital of the wealth of a nation. Physical capital and natural resources are merely passive factors of production, human beings are active agents who will gather capital, exploit natural resources and carry out national development.

The UNDP (United Nations Development Program) Human Development Index defines human development as a process to expand choices for the population. In this concept the population is placed as the final goal in improving. To ensure the achievement of human development goals, the four key points to note are productivity, equity, and sustainability.

According to BPS (2015), the human development index measures the achievements of human development based on a number of basic components of quality of life. As a measure of quality of life, HDI is built through a basic three-dimensional approach. These dimensions include long and healthy life, knowledge, and a decent life. These three dimensions have a very broad understanding because they are related to many factors. To measure the dimensions of health, life expectancy at birth is used. Furthermore, to measure the dimension of knowledge, a combination of indicators of long school expectations and average length of school is used. As for measuring dimensions, it is life appropriate to use purchasing power parity indicators. The ability of people's purchasing power to a number of basic needs as seen from the average amount of expenditure per capita as an income approach that represents development achievements for a decent life.
Government expenditure is often also called public expenditure, because it is an expenditure to finance government programs in carrying out public services. Republic of Indonesia Government Regulation number 96 of 2012 concerning provides the

definition of public service as an activity or series of activities in the framework of meeting service needs in accordance with the laws and regulations for every citizen and resident of goods, services, and administrative services provided by public service providers. The government regulation also states that the Government of Indonesia provides three types of public services to the public, namely public goods, public services, and administrative services.

Government Spending on the Health Sector The law in Indonesia governing the health budget is Law No. 36 of 2009 which states that the central government health budget is allocated a minimum of 5 percent of the APBN excluding salaries, while the provincial and district / city government health budget is large allocated a minimum of 10 percent of the APBD excluding salary. Maria Johanna (2001), in a study on the analysis of the influence of government spending in the education and health sector on poverty alleviation through increased human development in Central Java Province. It was concluded that government spending in the education and health sector would be able to influence poverty if these expenditures were made in order to improve the quality of human development.

Methods

The type of data used is *a pooled data panel* that is a combination of data *cross section and time series*. Data *Cross section* is the result of the division which is used as the research location, namely East Lampung, West Lampung, Tanggamus, Tulang Bawang, Way Kanan, Prengsewu, Pesawaran. While the data *time series* are used in 2013-2018. The data used are data relating to the development of the Human Development Index, government spending on health, government spending on education, capital expenditure, and Growth of Gross Domestic Product**.** Secondary data sources were obtained from the Directorate General of Fiscal Balance (DJPK Ministry of Finance), Statistics Indonesia (BPS) and other relevant agencies.

This research uses panel data analysis model, so to choose a good model, the significance test of the model consists of Chow test, *Lagrange Multiplier* (LM), and *testHausman test*: Chow test is a significance test of model *fixed effects* which is used to determine whether the regression technique *Fixed Effect* is better than the regression model *common effects*. The Hypothesis *null* (H_0) used is a better model *common effects*, meaning that there are differences between individuals. The statistical F tests are as follows:

$$F(\alpha;(n-1);(nT-n-k)) = \frac{(RSS_1 - RSS_2)/(n-1)}{(RSS_2)/(nT-n-k)}$$

Where n = number of individuals; T = the observation period; k = the number of parameters in the model *of fixed effects*;RSS_1 is the *residual sum of square common effects models*;RSS2 is a *residual sum of square fixed effects model*

Hausman test was performed to determine a better model among models *Fixed effect* or *Random Effect.the* results of the method *Hausman test* is that covariance difference dar i efficient estimator with inefficient estimator is zero, then following Wald criteria, this Hausman test will follow the distribution *chi-squares*. Hausman test statistics follow the statistical distribution *Chi Square* with a *degree of freedom* of k where k is the number of

independent variables. If the statistical value is greater than the critical value, then a good model is the *Fixed Effect* model, otherwise the good model is the model *Random Effect*.

The test *Lagrange Multiplier* (LM) is based on the residual value of the model *common effects*Thehypothesis *null* (H_0) uses the variance value of individual specific effects $_{t=}$ 0, ^{2} $_{=}$ 0 with in other words there is no effect was not observed in the component *error* models of *random effects.that* is the model *common effects* better than the *model of random effects*. Testing the data using software assistance in the form of Eviews 9. The regression equation model used to estimate in this study is formulated as follows:

$$HDI_{it} = {}_{0} + {}_{1}HGS_{it} + {}_{2}EGS_{it} + {}_{3}CE_{it} + 3GGDP_{it} + {}_{it}$$

Where:
HDI_{it} = Human Development Index (%)
HGS_{it} = Health Sector Government Spending (%)
EGS_{it} = Education Sector Government Spending (%)
CE_{it} = Capital Expenditures (%)
$GGDP_{it}$ = Growth Of Gross Domestic Product (%)
= Standard Error, i = Regency, t = time

In this study also performed Classical Assumption Testing which includes; Normality Test, Multicollinearity Test, Heteroscedasticity Test, and Autocorrelation Test. All tests are carried out to ensure that the test equipment used is good and useful.

Findings

The analysis in this study uses panel data so that the testing phase is carried out beginning with the selection of estimation models. The first is a chow test to determine a good model between the *Common Effect Model* (CEM) and the *Fixed Effect Model* (FEM). Based on the results of the chow test shows that the value of Prob. *Cross-section* F of 0.0000 is smaller than the significance level ( ) 5 percent (0.0000 <0.05) then H0 is rejected and receive Ha so that it can be concluded that the method *Fixed Effect Model* (FEM) is better than in the method *Common Effect Model* (CEM). Next a hausman test is performed to determine a good model between the method *Fixed Effect Model* (FEM) or the *Random Effect Model* (REM). Hausman test results indicate that the *p-value* of 0.4864 is greater than the significance level of of 5% (0.05), it can be concluded that the *Random Effect Model* (REM) method is better used than the method *Fixed Effect Model* (FEM).

The two tests are different, so the LM-Test is performed to determine a better model between the method *Common Effect Model* (CEM)and the *random effect model* (REM). LM test results indicate that the *p-value* of 0,000 is smaller than the significance level of of 5% (0.05), it can be concluded that the *Random Effect Model* (REM) method is better used than the method *Common Effect Model* (CEM). From the three tests, it can be concluded that the best method used by the study is using the *Random Effect Model* (REM). A summary of panel data regression results is presented in the following table:

Table 1. **Summary of Regression Results**
Independent Variable: Human Development Index (HDI)

Variabel	Model

	OLS	REM
C	71.61234 (0,0000)*	62.23760 (0,0000)*
HGS	0.319249 (0,0000)*	0.375463 (0,0000)*
EGS	0.072846 (0,0000)*	0.193847 (0,0000)*
CE	0.004844 (0,0000)*	0.235976 (0,0239)*
GGDP	1.266173 (0,0000)*	0.364547 (0,0126)*
R-*squared*	0.380326	0.698770
Adjusted R-*squared*	0.313334	0.666205
S.E. of regression	1.678821	0.697335
F-*Statistic*	5.677200	21.45746
Prob (F-*Statistic*)	0.001148	0.000000
Durbin-Watson Stat	0.388525	1.585582

Source: Regression results are processed.
Information: Numbers in parentheses = t statistics
* significance at = 5%; t (n-k;) = t (37; 5) = 1.68595.

Based on the significance test, the good model is a *random effect model* (REM) with the regression results showing that all independent variables have a significant effect on the Human Development Index. Statistically the summary of the above regression results can be explained as follows: that the constant coefficient is 62.23760, this shows that if all the independent variables used are equal to 0 (zero), then the Human Development Index is 62.76 percent. The coefficient on health spending is 0.375463, health spending has a positive and significant effect on = 5% (0.05). These results show that if there is an increase in health spending by one percent *ceteris paribus*, the Human Development Index will increase by 0.375463 percent. The coefficient on education spending is 0.193847, education spending has a negative and significant effect on = 5% (0.05). These results show that if there is an increase in education spending by one percent *ceteris paribus*, the Human Development Index will increase by 0.193847 percent. The coefficient on capital expenditure is 0.235976, capital expenditure has a negative and significant effect on = 5% (0.05). These results show that if there is an increase in capital expenditure of one percent *ceteris paribus*, the Human Development Index will increase by 0.235976 percent. The coefficient of GRDP growth is 0.364547, GRDP growth has a positive and significant effect on = 5% (0.05). These results show that if an increase in GDP growth of one percent *ceteris paribus*, the Human Development Index will increase by 0.364547 percent.

Classical Assumptions Testing Based on the results of the test, obtained a probability result of 0.375013 greater than = 5% (0.05), it can be concluded that the data are normally distributed. From the multicollinearity test that has been done on the results that there are no variables that have a value of more than 0.85, this means that it can be concluded that the variables used are not multicollinearity or in other words there is no linear relationship between the independent variables used in this research. Heteroscedasticity Test**,** the results show that the calculated Chi Square (Obs * R-Square = 8.14926)> Chi Square Table (7.814730) on df of independent variables = 4 and a significance level of 5%. This means accepting H_0 then there is no heteroskedasticity problem in the equation. Autocorrelation

Test, the results show that the calculated Chi Square (Obs * R-Square = 23,10028)> Chi Square Table (5.99148) on df is the slowness variable = 2 and the significance level is 5%. This means accepting $H_{0\ then\ there\ is}$ no autocorrelation problem in the equation.

Partial t-test

The test aims to examine the influence of each independent variable individually to the dependent variable. In this study the t-test was carried out at a 95 percent confidence level (= 0.05) with a level of freedom nk-1 (n = number of observations, k = number of independent variables).

Table 2. **T-Test Results**

Variable	t-Statistic	t-Tabel	Prob.	Information
HGS	7,625353	1,68595	0,0000	H0 is rejected
EGS	8,245364	1, 68595	0,0000	H0 is rejected
CE	3,034756	1, 68595	0,0239	H0 is rejected
GGDP	3,496866	1, 68595	0,0126	H0 is rejected

Source: processed data

In this partial test the results are obtained which explain that there is an influence on health spending on the Human Development Index. Based on the t-test shows the variable t-value of 7.625353 while the t-table value of 1.68595 and is reassured in the presence of prob 0,000. This shows that the t-statistic value is greater than the t-table value. Thus H_0 is rejected and Ha accepted, meaning that health spending has a positive and significant impact on the Human Development Index. These findings are different from Rumate and Siwu (2015) which states that government health spending has a negative effect because the existing budget allocation is still greater used for the procurement of health facilities and infrastructure such as the construction of hospitals and puskesmas. Zulham and Seftarita (2015) also suggested that the allocation of health spending was not yet on target to be able to have a positive effect on HDI. This is because most of the budget still relies on curative spending (healing) rather than preventive (prevention). There are 3 priority programs of local governments in Indonesia, which are implemented, namely: increasing the number and quality of health service facilities and infrastructure, freeing health service costs and improving maternal and child health. The health budget from the regional government budget is used, among others, for the assistance of poor community health contributions, new development, improvement and maintenance of health infrastructure facilities (such as hospitals, puskesmas), regional health insurance.

The effect of education sector spending on the Human Development Index, based on the results of the t-test shows the variable t-statistic value is 8.24536 while the t-table value is 1.68595. This shows that the t-statistic value is greater than the t-table value. Thus H_0 is rejected and Ha accepted, meaning that education spending has a positive and significant impact on the Human Development Index. When education spending increases, there will be an increase in the form of educational infrastructure such as construction of new schools, construction of new classes and an increase in education services that are equitable for the whole community. This will result in the community being able to complete their education as high as possible so that the community will gain the skills, knowledge and mastery of technology. This will enable the community to innovate and create new

products that can improve their matching, when there is an increase in people's welfare income.

The effect of capital expenditure on the Human Development Index based on the t-test shows the variable t-statistic value is 3.034756 while the t-table value is 1.68595, meaning that the t-statistic value is greater than the t-table value. Thus $H_{0 \text{ is rejected}}$ and H_a accepted, meaning that capital spending has a positive and significant impact on the Human Development Index. An interesting finding is that when capital expenditure increases, there will be an increase in the quality of infrastructure. The improvement in the condition of infrastructure, especially production infrastructure, has an impact on improving the economy in Lampung Province. If the economy improves it will lead to an increase in people's income. The increase in community income is one indicator that an increase in welfare will ultimately increase the human development index.

The effect of GRDP growth on the Human Development Index shows that the variable t-statistic value is 3.49686 while the t-table value is 1.68595. This shows that the t-statistic value is greater than the t-table value. Thus H_0 is rejected and Ha accepted, meaning that GDP growth is partially positive impact and significant on the Human Development Index. This can be understood if there is economic growth it will increase income. One of the determinants of HDI is community income.

Conclusion

Together the variables of government spending on health, government spending on education, capital expenditure, and Gross Domestic Product Growth have a positive effect on the formation of the Human Development Index in Lampung Province. Spark plugs of the four free variants reached almost seventy percent, while the rest were influenced by other factors outside the model. Based on the partial test, it was found that each of the variables both health expenditure, education, capital expenditure, and GRDP growth partially had a positive and significant effect on the Human Development Index. An interesting finding is that capital expenditure is also a key variable to improve the quality of HDI in Lampung province.

Efforts to improve the human development index can be done by improving the quality of government spending on capital expenditure. Capital expenditure is focused on financing the construction of production infrastructure. While the quality of the budget for health and education sector expenditure is still maintained and improved so that it gives an influence on the quality of society, which is reflected by the Human Development Index (HDI).

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