



The Impact of Economic Growth and Capital Expenditures in Supporting Quality Human Development



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Abstract

The purpose of the study was to analyze the structure of economic growth and capital expenditures that have an effect on the process of improving the quality of human development, and to analyze the effect of economic growth and capital expenditure with the human development index. The analysis model used was the Economic Growth Model and inferential analysis. The results show that the development of the human development index in Indonesia, in this case Papua, especially in the areas of Bintang Mountains Regency and Puncak Development District has fluctuated in the last five years. In addition, the conditions for the growth of capital expenditures in each district were 15.86% for capital expenditures in Bintang Mountains Regency and 16.99% for Puncak regency. This capital expenditure in the regional budget is used by local governments to improve public services and facilities, such as for education and health. Meanwhile, the economic growth has increased in a period of 5 years. In addition, economic growth and capital expenditure factors have a positive effect on the increase in the Human Development Index in both districts.

1. Introduction

Kuznets defines economic growth as a long-term increase in the ability of a country to provide the number of economic goods to its population (Jhingan, 2010). This capacity grows according to technological advances, institutional adjustments, and the ideology it requires. Sukirno (2002) states

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that economic growth is the development of activities in the economy that causes goods and services produced in society to increase so that it will increase the welfare of the community.

According to Katz, development is a "dynamic change of a whole society, from one state of national being to another, with the connotation that the state is preferable" (Ashari et al., 2015). In addition, regional economic development is a process between local governments and communities in managing existing resources and forming partnerships between local governments, the private sector and the community to stimulate the development of economic growth in the region (Nordiawan, 2007).

Based on data from Central Bureau of Statistics in Indonesia, it is seen that the highest Human Development Index (HDI) in 2016, in Indonesia, is in Jakarta, which is 79.60, while the lowest is in Papua with an HDI of 58.05, while the HDI in the Bintang Mountains and Puncak Regencies is 41.90 and 39 respectively. 96 in 2016. According to (Mankiw, 2007) the Human Development Index is also influenced by other factors, such as the availability of job opportunities, which are ultimately determined by many factors, especially economic growth, infrastructure and government policies.

Inequality between regions in Papua Island, especially in the five customary territories, can be caused by differences in resources owned, differences in human resources and differences in access to capital (Mudrajad, 2004). The emergence of the Papua Province Special Autonomy Law Number 21 of 2001 is a response to unequal development in the regions, especially in Papua Province.

Development in Papua Province continues to be encouraged to overcome the problem of inequality and improve the welfare of the Papuan people. Various strategies for the implementation of accelerated development, especially efforts to increase the level of welfare in Papua Province, continue to be implemented with a development approach based on customary areas as stipulated in Presidential Instruction (Inpres) No. 9 of 2017. Therefore the authors are interested in conducting a study on the impact of regional development by measuring the rate of economic growth and capital spending to support the quality of human development. Based on the statement above, the research problems are (a) to analyze the influence of the structure of economic growth and capital expenditure on the process of improving the quality of human development in the Bintang Mountains and Puncak regencies; and (b) to analyze the effect of economic growth and capital expenditure with the human development index in the Bintang Mountains Regency and the Puncak Regency.

2. Materials and Methods

Human quality in the Bintang Mountains and Puncak districts can be measured by the Human Development Index (HDI), which is a comparative measurement of life expectancy, literacy, education and living standards for all districts in the La Pago customary area (Mankiw, 2007).

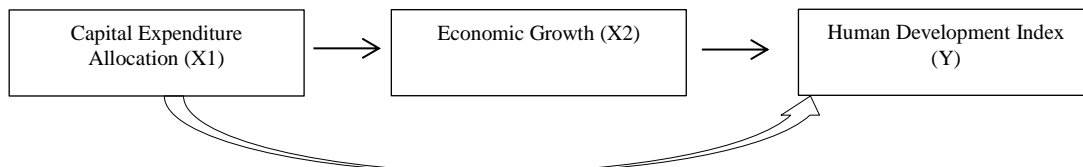


Figure 1. Research Model

Research Method

This research was conducted in all regions of Papua-Indonesia Regency. The data used are secondary data and primary data collected from 2014 - 2018, which include GRDP data, population growth rate data, capital expenditure data, data on the rate of increase in the number of people who are productive and unproductive in units of percent, and data on the number of the male population.

Analysis Model

a. The Human Development Equation Model

The Human Development Index (HDI) is the right proxy to describe the condition of human development. Improvements in health conditions and good nutrition have provided evidence to have a direct effect on worker productivity (Ranis et al., 2000). (Ramirez & F; 1998) include physical investment variables, government spending, and the human development index as inputs to the economic growth equation. Based on this explanation, and the economic growth equation model is conducted as follows:

$$Y_{it} = \beta_0 + \beta_1 GE_{it} + \beta_2 GR_{it} + \beta_3 DENS_{it} + \beta_4 HDI_{it} + uit \dots$$

Note:

- β_i = Provincial constant / intercept i
- Y_{it} = GRDP per capita province i year t;
- $\log GE_{it}$ = total government expenditure per total population of province i year t;
- $\log GR_{it}$ = Gini index of province i year t;
- $DENS_{it}$ = population density of province in year t
- $\log HDI_{it}$ = provincial human development index i year t,
- uit = Error term

b. Human Development Index Measurement

- Health level is measured life expectancy at birth (infant mortality rate).
- Education level is measured by literacy rate (weighing two-thirds) and the average length of schooling (weighting one-third).
- Standard of living is measured by the level of expenditure per capita per year.

The general formula used to calculate the Human Development Index is as follows:

$$IPM = 1/3 (\text{Indeks } X_1 + \text{Indeks } X_2 + \text{Indeks } X_3)$$

Note:

- X_1 = life expectancy index
- X_2 = education index
- X_3 = Decent standard of living index

The analysis model that will be used in this research is the inferential analysis model, namely multiple regression analysis to determine the effect of Economic Growth and Government Capital Expenditures on the Improvement of the Human Development Index obtained in Papua, especially in

Bintang Mountain and Puncak Districts. 2014-2018 period which is stated in the form of a function as follows:

$$Y = f(X_1, X_2) \dots \dots \dots (1)$$

It is explicitly stated in the research model as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \mu \dots \dots \dots (2)$$

Y = Human Development Index (HDI)

X1 = Government Capital Expenditure

X2 = Economic Growth

To estimate the regression coefficient, make a transformation to a linear form using several techniques offered, namely: (1) *Ordinary Least Square (OLS)*; (2) *Fixed Effect*; (3) *Random Effect*.

c. Statistical Criteria Testing

Testing of statistical criteria involves a measure of the suitability of the model used (goodness of fit) and significance tests, both partial testing (t-test) and simultaneous testing (F-test), as well as the Coefficient of Determination (R-test).

3. Results and Discussions

The Performance of Human Development Index for Papua, especially in Bintang Mountains District and Puncak Regency. The HDI of the Bintang Mountains and the Puncak Districts is formed by three basic dimensions, namely long and healthy life, knowledge, and a decent standard of living. Longevity and healthy life are described by life expectancy at birth (UHH), which is the number of years that newborn babies are expected to live with, assuming that the pattern of mortality by age at birth is the same throughout the age of the baby (Ariza, 2016).

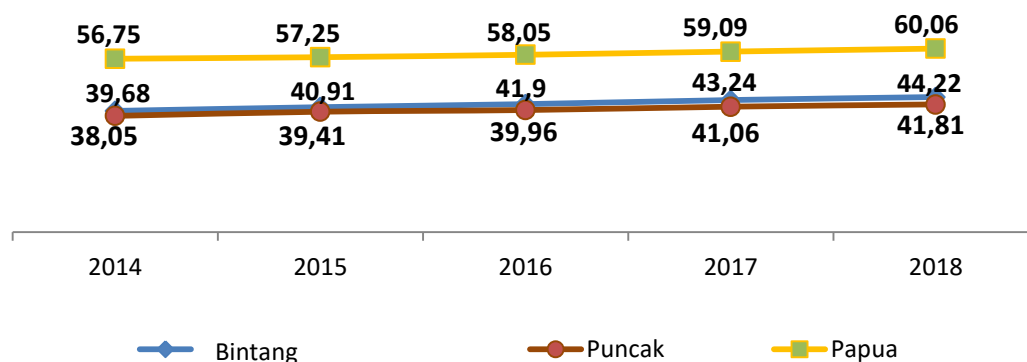


Figure 2.

Develop the HDI for the Bintang Mountains and Puncak Regencies in 2014 - 2018

In the figure above, knowledge is measured through the indicators of the Average Length of Schooling and Expectations for School Years. The average length of schooling (RLS) is the average length of time (years) for people aged 25 years and over to undergo formal education. **The** expectation of Old School (HLS) is defined as the length (years) of formal schooling that children are

expected to experience at a certain age in the future. A decent standard of living is described by adjusted per capita expenditure, which is determined by the value of per capita expenditures and purchasing power parity. Following is the development of HDI in the Bintang Mountains Regency and the Puncak Regency.

1. Development of Capital Expenditures, Growth and HDI

a. Capital Expenditure Development

The development of the human development index in 29 districts/cities in Papua Province shows a number that continues to fluctuate. In the Lapago region, especially for the Bintang Mountains Regency and the Puncak Regency, the development of the human development index was analyzed using descriptive analysis, while the relationship patterns that contributed to the development of HDI, especially in the Lapago region, an analysis of factors affecting HDI in Papua Province was carried out by utilizing data sources. With panel data analysis. Panel data analysis was carried out with two districts as a cross-section component and the 2014-2018 period as a time series component. Following is the development of capital expenditures in the Bintang Mountains Regency and Puncak Regency, Papua Province.

Table 1.
Capital Expenditure of Bintang Mountains Regency and Puncak Regency and Papua Province (IDR)

Capital Expenditures	2014	2015	2016	2017	2018
Bintang Mountains	351.648.791.080	394.628.998.315	405.852.736.783	334.235.138.085	304.186.038.893
Puncak Regency	311.821.744.176	677.895.106.172	448.486.535.433	271.850.100.051	208.746.860.923
Papua Province	1.689.302.792.613	2.865.461.762.743	2.490.333.441.810	2.328.012.674.526	1.918.505.428.472

Source: Processed Data (2019)

In the era of fiscal decentralization in the Papua region, especially in mountainous areas, it is hoped that there will be an increase in services in various sectors, especially the public sector in this region. It is hoped that this improvement in public services can improve the development of the quality of human resources in this area. This hope, of course, can be realized if there is a serious (government) effort by providing various supporting facilities in the form of facilities and infrastructure. Consequently, the government needs to allocate a larger expenditure allocation for this purpose. On the one hand, fiscal decentralization provides greater authority in regional management, but on the other hand, raises new problems, due to different levels of regional fiscal readiness.

Table 2.
Contribution of Capital Expenditure in Bintang Mountains and Puncak Regencies and Papua Province (Percent)

Year	Bintang Mountain	Puncak
2014	20,82	18,46
2015	13,77	23,66
2016	16,30	18,01

2017	14,36	11,68
2018	15,86	10,88
Average Contribution	15,86	16,99

Source: Processed Data (2019)

The growth trend in the table above shows that each district allocates 15.86% for capital expenditure in Bintang Mountains Regency and 16.99% for Puncak regency. This capital expenditure in the regional budget is used by local governments to improve public services and facilities, such as for education and health.

The scholarship program in Gunung Bintang and Puncak Districts applies to poor students in all schools from elementary to high school levels, school empowerment programs, grants for all schools in the district. In addition, there is a primary and secondary education development program consisting of projects to improve basic education services, development and revitalization of elementary schools, supporting the development and revitalization of elementary schools, improving the quality of basic education, revitalizing kindergartens. Regional expenditure on the health aspect is allocated with policies to increase the availability of facilities and infrastructure for the standby village, increase the operation of the standby village, Posyandu and other UKBM, increase the reach of health services for mothers, babies and toddlers, increase the availability of quality and standardized health service facilities.

Regional Economic Growth

The economic development of Gunung Bintang Regency and Puncak Regency can be seen through the Gross Regional Domestic Product (PDRB) data. GRDP is a component to see the added value of goods and services generated from all economic activities in the region. The economic growth of Gunung Bintang Regency and Puncak Regency by including the mining sector (DP) was in a very fluctuating condition throughout 2014 - 2018.

Table 3
PDRB per capita of Bintang Mountains and Puncak Districts in 2014 - 2018 (Billion IDR)

Regency	2014	2015	2016	2017	2018
Pegunungan Bintang	1181,29	1310,49	1470,76	1619,97	1764,79
Puncak	766,33	901,98	1029,63	1148,25	1150,19 9
Papua	132 344,20	148 019,20	174 311,70	193 724,21	159.728, 93

Source: Processed Data (2019)

The table above shows that the per capita GRDP of Gunung Bintang Regency and Puncak Regency from 2014 to 2018 has increased, except for Papua Province which has fluctuated from 2014 to 2018.

1. Analysis of factors affecting HDI

The results of the study use a regression model that uses panel data to analyze the factors that affect HDI, which means it also affects human development. This model uses secondary data from BPS and the Ministry of Finance. From the results of the Hausman test analysis, the Hausman-count value is 17.66. Compared with the X2 table value, H_0 is accepted or rejected H_1 . That is, the appropriate model used to analyze the data in this study is FEM. So that FEM is a better model than the Pooled Ordinary Least Square (Pooled OLS) or REM methods.

Model Test Results

In this study, a specific model was tested in order to answer whether there was autocorrelation in the selected model (FEM) which was carried out using the Wooldridge Test for Serial Correlation in Panel Data Models model (Febriana; & Praptoyo, 2015). The equation shows the same opportunity value, which is 0.0000, which means rejecting the hypothesis (there is no autocorrelation in the first order). The FEM model selected as the best model in the equation violates the assumption that it is free from autocorrelation. Likewise, the heteroscedasticity test in the selected model using the Modified Wald Statistic.

Heteroscedasticity and autocorrelation problems in the model affect the estimated parameter values that will not meet the BLUE (Best Linear Un] Estimate) properties. Therefore, in order for the parameter values of the selected model to meet BLUE properties, model modifications were made using the Panel-Corrected Standard Error (PCSE) approach. Based on the PCSE model, it means that a correction has been made to the problem of heteroscedasticity, contemporaneously correlated across panels, and first-order autocorrelation (ar1). The results of estimating models with PCSE from the equation can be seen in the following table.

Table 4
Factors Affecting HDI

Variable	Equation	
	Coefficient	P-Value
IPM	0,027	0,000
Eco Growth (EG)	0,0015	0,029
Capital Expenditure (CE)	0,025	0,013
t-test	159,00	0,002
R-Square	0,938	
Hausman Test	15,90	0,001

Source: Processed Results, 2019

Based on the results of panel data regression processing in the table above, indicators that affect HDI have a factor coefficient that affects the human development index in Puncak Regency and Bintang Mountains Regency. The increase in government spending in the form of capital expenditures as a whole has a significant effect on economic growth in both regions so that it is able to influence the condition of the Human Development Index.

2. Research Model Assumption Test

The best estimation result obtained R² value of 0.93, which means that 93 percent of the models that affect the HDI of Puncak Regency and Gunung Bintang Regency can be influenced by the variables of Economic Growth and government spending through capital expenditure. The flying model illustrates that the data presented in this study are normally distributed. It can be seen from the value of the probability of normality of 0.5430 which is greater than the value of the degree of error of 0.10 or $\alpha = 10\%$, which is significant, indicating that H₀ is rejected, so it is said that the data is normally distributed.

In addition, the multicollinearity test on the results of this study is used to measure the correlation between the independent variables. The presence or absence of multicollinearity can be seen from the correlation coefficient of each independent variable; if the correlation coefficient between each variable is independent of 0.8, then multicollinearity occurs. The results of the multicollinearity test analysis with the correlation matrix in this study show that the correlation coefficient is <0.8 , so it can be concluded that the model does not have multicollinearity problems.

Heteroscedasticity test was carried out by comparing the Sum Square Residue value in Weighted Statistics with the Sum Squared Residual Unweighted Statistics. If the Sum Square Residue in Weighted Statistics $<$ Sum Squared Residue in Unweighted Statistics, then homoscedasticity occurs. Heteroscedasticity test results in this study did not find heteroscedasticity. This can be seen in the Sum Square Residue in Weighted Statistics, which is 0.0029 $<$ Sum Square Residue on Unweighted Statistics which is 0.059.

To detect the presence of autocorrelation, the Durbin Watson (DW) test can be performed by comparing the Durbin Watson value from the model with the DW in the table. The estimated Durbin Watson value of 1.12 is at $du < 1.2848$, which means that there is a serial correlation. However, based on (Gujarati; & Dawn, 2012) that the autocorrelation problem in REM can be ignored.

Research Model

The results of the Model Test with data processing using the GLS fixed-effect model, it is known that the variables that significantly affect the quality of human development in Gunung Bintang Regency and Puncak Regency are at the real level 5 percent of government spending in the form of capital expenditures and the level of economic growth in both regions.

The results of the analysis based on the regression estimation of the research model show that government expenditure (capital expenditure) has a positive and significant effect at the 5 percent real level. The regression coefficient value of the government expenditure variable in the form of capital expenditure is 0.00357 with a probability (p-value) of 0.0421. This means that every one percent increase in government spending in the form of capital expenditure will increase the HDI value of the Bintang Mountains and Puncak Districts by 0.00357. The higher the government expenditure in the form of capital expenditure, the higher the HDI figures for the Bintang Mountains and Puncak regencies. This is in accordance with the previously made hypothesis that government spending in the form of capital expenditures has a positive and significant effect on the HDI of Gunung Bintang Regency and Puncak Regency (Ramirez & F, 1998).

Then the regression for economic growth through GRDP has a positive and significant effect at the 5 percent real level. The regression test results show that the regression coefficient value of the economic growth variable in the two research areas is 0.0251 with a probability (p-value) of 0.0000. This means that every one percent increase in the growing economy in Gunung Bintang Regency and Puncak Regency will increase the HDI value by 0.0251 percent, assuming *ceteris paribus* in the

two research areas. This shows the important role of economic growth in increasing HDI in these two districts (Ramirez, et al. 1998).

4. Conclusion

Based on the discussion and finding presented above, it is concluded that the structure of economic growth and capital expenditure has an impact on the process of improving the quality of human development in Indonesia, especially in Bintang Mountains and Puncak regencies- Papua. Next, Economic growth and capital expenditure have an effect on the human development index.

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