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Human Development Index (HDI) in Papua Province

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Abstract: This study aims to determine the effect of the health index, education index and the index of the economic growth of Papua Province simultaneously and partially. The analytical method used was a panel data regression analysis with Pooled Least Square method. The results showed that the index of health, education index and the index of purchasing power simultaneously and significant affect on economic growth in Papua province, while the partial test results showed that the index of education and purchasing power index affect economic growth positively and significantly, while the health index has no significant effect on the economic growth of Papua Province.

Keywords: *Human Development, Economic Growth, Papua*

1. Introduction

To see the extent of development and human well-being success, UNDP has published an indicator that is the Human Development Index (HDI) to measure the success of the development and prosperity of a country. HDI is a figure benchmark of a region or state welfare seen based on three dimensions: life expectancy at birth, the literacy rate and the average length of school (mean years of schooling), and the purchasing power parity (UNDP, 2004). Investment in human capital is expected to affect economic performance positively, one of which can be observed from the aspect of education, health and poverty levels. According to Mankiw (2004), human resource development can be done with improved quality of human capital. Papua Province HDI related to human development, showed an increase from the year of 2005 - 2013 as shown in the table below:

Table 1: Papua province's HDI by Regency/City year of 2005 – 2013

Regency/ City	2005	2006	2007	2008	2009	2010	2011	2012	2013
Wamena	60,30	60,41	60,66	61,47	62,26	62,49	62,69	63,19	63,68
Biak	61,53	62,31	62,39	63,16	63,67	64,16	64,59	65,44	65,59
Nabire	61,20	61,60	62,66	63,64	64,12	64,49	65,02	65,35	65,69
Mimika	60,30	60,80	61,10	61,66	62,00	62,43	66,6 3	63,43	64,49
Serui	68,10	68,60	68,90	69,01	69,66	60,19	60,54	61,02	61,66
Sarmi	60,90	60,60	60,94	60,48	60,62	60,21	60,6 1	61,42	61,80
Merauke	61,40	63,30	64,29	65,11	65,46	66,06	66,42	66 ,06	66 ,83
Jayapura Reg	66,30	68,10	68,41	69,15	69,66	60,26	60,69	61,12	61,93
Jayapura City	66,80	66,90	67,01	67,12	67,18	67,86	67,95	68,31	68,90

Source: Central Bureau of Statistics of Papua Province, 2014

The result of the above table shows that the HDI of Papua Province by regency / city has increased. Jayapura City was in the highest while Sarmi was in the lowest rank in the quality of human capital performance. It shows that Jayapura city was able to improve the Human Development Index (HDI). There is particularly an increase in indicators of health, education and public income. Central Bureau of Statistics (CBS, 2014) stated that the economic growth of Papua in 2013 reached above 7 percent where the figure shows that Papua could exceed the national economic growth rate figure by 6.10 percent. As shown in table of Papua province economic growth below:

Table 2: Economic Growth Rate of Papua Province by Regency / City in 2005 - 2013

Regency / City	2005	2006	2007	2008	2009	2010	2011	2012	2013
Wamena	7,86	7,00	8,52	7,11	6,02	7,82	7,56	7,61	7,90
Biak	7,63	7,96	7,25	7,66	7,6 3	7,44	7,68	7,82	8,91
Nabire	7,68	7,61	7,03	8,85	7,12	7,39	7,48	7,69	8,30
Mimika	7,95	7,46	7,20	8,89	9,00	7,93	7,04	7,66	9,69
Serui	7,66	7,41	7,03	7,54	7,66	7,92	7,43	7,81	7,03
Sarmi	7,03	7,46	7,25	7,48	7,62	7,61	7,96	7,84	7,99
Merauke	7,49	7,13	7,80	7,20	7,46	7,01	7,09	7,19	7,63
Jayapura Reg	7,98	7,60	7,35	7,82	7,66	7,10	7,85	7,11	7,52
Jayapura City	8,62	8,05	8,88	9,60	8,18	7,53	7,56	8,66	9,18

Source: Central Bureau of Statistics of Papua Province, 2014

In 2013, the city of Jayapura was ranked first in the economic growth of 9.18 percent and the lowest in Serui regency of 7.03 percent of the total economic growth of Papua. The increase in GDP in Jayapura City was caused by an increase in the financial and service sectors. Besides, Mimika regency also has a high economic growth rate. Increased economic growth is due to the mining sector that is quite dominant in Mimika regency. Dependence on mining and service sectors lead to economic growth Papua that is susceptible to fluctuations. For that reason, in order to spur economic growth, it needs to conduct human development, including in the context of the regional economy. Alesina and Rodric studies (see Meier and Rauch, 2005) found that the uneven distribution of income resyltted in negayive impact on economic growth, which in turn will have a negative impact also on the human development of a region. The result of this study supports Smith's theory (1729-1790) in Subri (2002) that man is one of the production factors that determine the wealth of nations. Nature (soil) is meaningless if there is no human resource that is good at managing it so that it will be beneficial to life. Effective human resources are the starter of economic growth and HDI.

2. Literature Review

Household activities contribute greatly to the improvement of human development indicators through household expenditure for food, clean water, health care and schools (UNDP, 2004; Ramires, Ranis & Stewart, 1998; CBS, 2014). The tendency of household activities to spend a number of factors directly related to human development indicators above is influenced by the level and distribution of income, education level and the extent of women's role in controlling household expenditure. Ramires, Ranis and Stewart (1998), stated that the economic growth gives direct benefit to the improvement of human development through increased revenue. According to Sen (1981), the economic growth directly contributed to the increase of population capabilities. Many studies suggest that the increase in revenue boost health and education. Studies in Brazil, Chile and Nicaragua indicated that the increase in income affect the increase in several indicators of health, such as the ratio of height and age with life expectancy at birth (UNDP, 2004). Other studies have also mentioned the increase in income affects the level of education. Lee and Roemer, study (1998) in Korea also produce a significant effect of income levels and some other variables to the population's average years of schooling. Richardson (1997) has also suggested the existence of a consensus in the economic theory that human capital is an essential factor in economic growth. Education as a means of improving human capital has a role in increasing the mobility of productive labor (Bayhaqi, 2000). In preparing the human development index as described previously, it is necessary to apply the minimum and maximum values of each component, as shown in Table 3.

Table 3: Minimum and Maximum Values of HDI Components

Component	Unit	Ideal Goal	Minimum Value	Achievement Target
(l)	(2)	(3)	(4)	(3) – (4)
Life Expectancy Figure	Year	85	25	60
Literacy Figure	Percent	100	0	100
Mean Years of Schooling	Year	15	0	15
Adjusted real consumption per capita	Rupiah	6 32.6 20	300.000	432.6 20

Source: Catalog of CBS HDI Jayapura Regency. 2014.

According to Kuznets in Todaro (2003) economic growth is the increase in long-term capacity of countries to provide a wide range of economic goods to its citizens. The increase in capacity is determined by the progress or adjustment of technology, institutional, and ideological to the demands of the existing situation. Todaro (2003) presented three factors or major component in the economic growth of any country. According to John Stuart Mill, economic development depends on two types of repair, namely improving the level of the program, the community and the improvement in the form of efforts to remove the inhibitor-development, such as customs, beliefs and traditional thinking. Harrod Domar argued that an increase in production and income is not determined by the public producing capacity but by an increase in public spending. Thus, while the capacity in producing increases, the national income will increase and economic growth will be created if the public expenditure increased compared to the past (Sukirno, 1985). Robert Solow argued that economic growth is a series of activities that originates in humans (Mahal, Srivastava & Sanan, 2000). Kuncoro (2000) stated that the economic barometer of success can be seen from the economic growth. Traditionally, economic development is aimed at continuous improvement of Gross Domestic Product / GDP or Gross Domestic Product / GDP (Saragih, 2003; Kuncoro, 2000). Lin and Liu (2000) suggested that economic growth can occur through two (2) ways: first by increasing capital investment and the second is efficiency of the available resources.

Human development covers a relatively broad concept. One of the pioneers of the human development approach in Development Economics is Amartya (1999) through the concept of human capabilities approach. Ul Haq (1998) has also been asserted; human must be the core of the idea of development. socio-economic indicators that describe the quality of life in some quantitative measures, such as the ability of the economy, knowledge and skill abilities and the ability to live longer and healthier (Ramires, Ranis & Stewart, 1998). According to Welzel in Suwandi & Warokka (2013), human development includes three-dimensional development, ie, the dimensions of socio-economic development, dimension of the political institution development, and cultural development dimension. In general, UNDP (United Nations Development Program) defines human development as an expansion option for everyone to live a longer, healthier and to have more meaningful life (UNDP, 2004). Based on the main problems that have been described, the purpose of research and relevant theories, the proposed hypothesis of this study are as follows: That the human development index components are experienced simultaneously on the economic growth of Papua province. That Human Development Index component partially affects the economic growth of Papua province.

3. Methodology

The data used in this research is secondary data obtained from the Central Bureau of Statistics. The research was conducted in Papua using time series data for nine (9) years and the cross section as much as 9 (nine) districts / cities in Papua resulting in 81 (eighty-one) observation. The analysis technique used in this study is a quantitative analysis technique that is objective analysis based on the data in the form of numbers. The analytical tool used is multiple linear analyses using panel data. The regression equation is formed as follows.

$Y: \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \mu i$ …….. (1) (Hair, Rolph, Romald & William 2002)

Note:

Y : Economic Growth (Percent)

X_1 : Health Index (Percent)

X_2 : Education Index (Percent)
X_3 : Purchasing Power Parity Index (Percent)
B_0 : Constant
B_1, β_2, β_3: Regression Coefficient
pi : *Error term*
i : *cross section*
t : *time series*

This analysis determine the influence of the health index, education index and the index of purchasing power for economic growth in all regencies / cities in Papua province where the method Pooled Least Square (PLS). The method used in this research is the method of Pooled Least Square (PLS). Prior to testing the hypothesis, then the first model is tested in order to meet the requirements of BLUE (Best Linear Unbiased Estimator) that is to test with the classical assumption namely normality test, autocorrelation test, multicollinearity test and heterocedasity.

4. Findings and Discussion

Regression Coefficient Significance Test: Model established has met BLUE stage, then the results of panel data regression was formed as follows:

Table 4: The Result of Panel Data Estimation Regression Analysis using Pooled Least Square (PLS)

Variable	Regression Coefficient	t count	Significance
Constant	-6.548765	-2.546753	0.0158
X_1	-0.054679	-1.897545	0.0768
X_2	0.098765	9.323145	0.0000
X_3	0.234512	9.765435	0.0000
R-Squared	= 0.605430		
F count	= 55.7803		
Significance (F count)	= 0,000		

In the F test it is obtained the value of F count = 55.78 (greater than F table) and the coefficient of determination of 60.54%. The result of this test explains that simultaneously it is acquired a significant influence of three independent variables on economic growth with a contribution of 60.54%. Partial effect of health index variable on economic growth is done by t-test. The test result for this coefficient is significant (p-value <0.05). Health index with a coefficient of -0.054679 is not significant on economic growth. This is proved from the value of t-test = -1.897545 that is smaller than t table = 2.008 or p-value = 0.076 that is greater than $\alpha = 0.05$, statistically coefficients of indices of health on economic growth is not significant. These results explain that the diversity of economic growth cannot be explained by the health index. Improved health index is not followed by a rise in economic growth. This is due to the development inequality related to income distribution so that health does not affect the economic growth. Health that is not matched with the education and training will be less able to be absorbed in the labor market. Partial effect of education index on economic growth indices is performed by using t-test. The test result for this coefficient is significant (pp-value <0.05). Education index with a coefficient of 0.098 has positive effect on and significant to conomic growth. This is proved from the value of t-test = 9.32 that is greater than t table = 2.006 or p-value = 0.000, which is smaller than $\alpha = 0.05$, statistically coefficient of the index of education to economic growth is significant. These results explain that the diversity of economic growth can be explained by the education index. Increased education index in Papua will be followed by an increase in economic growth. This is in line with the hypothesis that is formed based on the theory that education is the most important human capital to increase productivity as workers who are able to drive economic growth.

Partial effect of purchasing power index variable on economic growth is conducted by t-test. The test result for this coefficient is significant (p-value <0.05). Purchasing power index with a coefficient of 0.23 affects

positively and significantly positive on economic growth. This is proved from the value of t-test = 9.76 that is greater than t table = 2.006 or p-value = 0.000, which is smaller than α = 0.05, statistically coefficients of purchasing power index on economic growth are significant. These results explain that the diversity of economic growth can be explained by the purchasing power index. The increase in purchasing power index will be followed by a rise in economic growth. The purchasing power of the people will drive increased demand for goods and services, so it can also lead to economic growth associated to consumption as well as people purchasing power affect the people welfare related to need fulfillment. Limitation of HDI is still much debated. There are too many limitations that have been proposed by HDI experts. But in general, the HDI can be interpreted as the level of a person's ability to meet the primary needs (basic needs) in the form of clothing, food, shelter, education, and health. But the definition of HDI can also be accessibility level of a person in possession of the factors of production that can he utilized in the production process and he gained compensations from the use of factors of production. The higher a person is able to increase the use of factors of production which he mastered the higher levels of HDI he will achieve. Likewise, people become poor because they do not have extensive access to have factors of production although the factor of production is himself. Poverty and HDI are like two sides of a coin that cannot be parted no matter where it is placed. The results of this study support the theory of Smith (1729-1790) in Subri (2002) that man is one of the factors of production that determines the wealth of nations. Natural (soil) is meaningless if there is no human resource that is so good at managing it so that it can be beneficial to life. Effective human resources are the starter of economic growth and HDI. Testing the accuracy of the model established is conducted by the classical assumption in the form of normality test, multicollinearity, autocorrelation and heteroscedasticity test in which the obtained results showed that the model established is free from interference of classical assumption test. The model in this study meets the requirements of BLUE (Best Linear Unbiased Estimator).

5. Conclusion

Simultan health index, education index and index of purchasing power have a significant effect on economic growth in Papua province. The better the quality of human capital outcomes related development index of human capital in economic development, economic growth will be realized as well as increase. Partially, the health index does not affect the economic growth of Papua Province. Meanwhile, the education index and purchasing power index have significant positive effect on economic growth in Papua Province.

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