

Efforts to Emphasize the Poor Population and the Affecting Factors

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ABSTRACT

This study aims to determine the effect of economic growth, human development index and unemployment rate to suppress the number of poor people in North Sumatra Province for the period of 2013-2017. The data used in this study is secondary data from the publication of statistical data by Badan Pusat Statistik (Central Statistics Agency) of North Sumatra Province. These data are tabulated into a panel data structure, which is a combination of data in the form of time series and cross-section. This study uses data from 33 Regencies / Cities in North Sumatra Province to be analyzed by using the Data Panel Regression Analysis technique with the Fixed Effect approach. Empirical results prove that economic growth variables on poverty have a positive and significant effect, while the human development index and unemployment variables have insignificant effects. These data were tabulated into a panel data structure, which is a combination of data in the form of time series and cross-section. This study uses data from 33 Regencies / Cities in North Sumatra Province to be analyzed by using the Data Panel Regression Analysis technique with the Fixed Effect approach. Empirical results prove that economic growth variables on poverty have a positive and significant effect, while the human development index and unemployment variables have insignificant effects.

Keyword: Economic growth, human development index, unemployment, poverty

INTRODUCTION

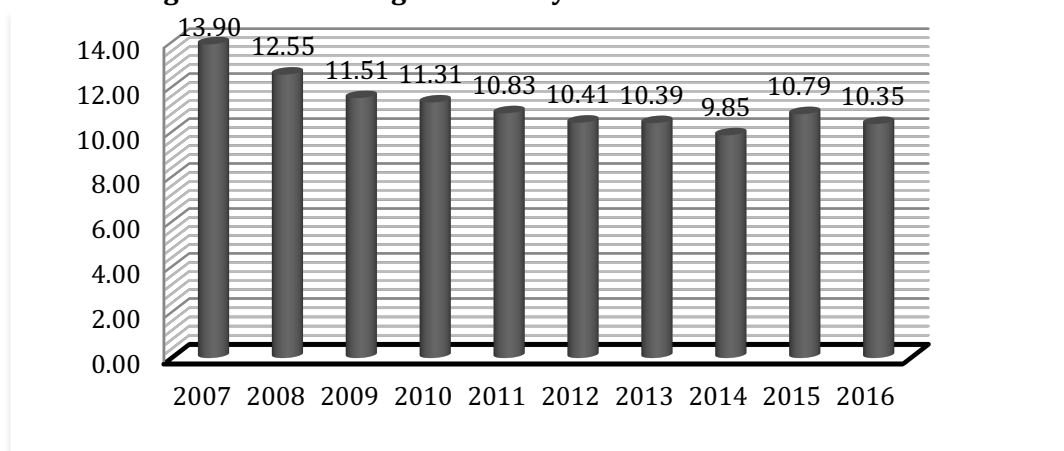
Poverty arises because of the inability of some people to organize their lives to a level that is considered human. Poverty can also result in a high level of inequality in the distribution of income and wealth in both urban and rural areas (Kempe, Hope, & Hope, 2007). This condition causes a decrease in the quality of human resources so that the productivity and income earned is low. This poverty problem is one of the main factors in economic development, and poverty is considered an inevitable element (Ravallion, 2018). Economic development essentially aims to improve the welfare of the community, increase income and economic growth in all sectors of development, equalize optimal development, expand employment and improve the standard of living of the people. In achieving overall development goals, there is a need for increased economic growth and equitable distribution of income. In line with these objectives, various development activities have been directed towards regional development,

especially in regions that have relatively high poverty rates which continue to increase from year to year.

The high percentage of poor people will be a burden of development in the region, so the role of the government as a policymaker is enormous to overcome poverty through various programs. However, the programs launched by the government have not achieved maximum results and have not been as expected. The percentage of poor people shows a gradual decline and sometimes fluctuates. According to (Nurkse, 1953) explains the two poverty trap circles regarding supply and demand. The supply side explains that the low level of income of the community due to the low level of productivity causes the ability of the community to save low. While regarding demand explained that in countries that are poor, the stimulus to invest is very low due to the limited market size for various types of goods. This condition is due to the meager income of the community because of the low level of productivity, as a result of the limited level of capital formation in the past.

In September 2015, 54.81 percent of the heads of poor households was educated in elementary school and under (BPS, 2016a). This situation makes the poor have limitations to develop themselves. Such circumstances make it difficult for them to be able to change their destiny for the better without the help of other parties. When viewed from the side of the budget allocated for poverty alleviation, it rose sharply from eighteen trillion rupiahs in 2004 to fifty-four trillion rupiahs in 2007 and increased again to sixty-two trillion rupiahs in 2008. The number and percentage of poor people fell during 2007-2009, but many parties considered the decline was not significant, especially when compared to the amount of budget spent.

Figure. 1: Percentage of Poverty in North Sumatera Province



From Figure 1 it appears that from 2007 to 2016 the percentage of poor people in North Sumatera experienced fluctuations. The percentage of poor North Sumatera continues to decline from 2007 to 2014, but in 2015 it increased from 9.85 percent to 10.79 percent. However, in 2016 the percentage of poor people in North Sumatera declined again. Meanwhile, if viewed from the side of economic growth and the unemployment rate of North Sumatera from 2007 to 2016, it experienced fluctuations (BPS, 2016b). This condition causes the inability of the poor to consume these basic needs.

LITERATURE REVIEW

The emerging theories of development do not address the problem of poverty explicitly as a problem that requires a specific approach to its resolution. Development theory believes the problem of poverty will be overcome by itself through the mechanism of economic growth this condition causes the inability of the poor to consume these basic needs. Income inequality is a

requirement for high economic growth (Kaika & Zervas, 2013). Thus, at the beginning of economic growth, the level of economic inequality will be higher to a certain level. After that it will decrease. There are several definitions of poverty and poverty line criteria that are used today, resulting in differences in poverty reduction strategies implemented, depending on the definition used. Poverty is a condition where a person or group of people are unable to fulfill their fundamental rights in maintaining and developing a dignified life. These fundamental rights include (a) fulfillment of food needs, (b) health, education, employment, housing, clean water, land, natural resources and the environment (c) a sense of security from treatment or threats of violence (d) the right to participate in socio-political life.

Poverty includes the dimensions of politics, socio-culture and psychology, economics and access to assets. These dimensions are interrelated and interlocking / limiting. Poverty is hunger, does not have a place to live, if sick does not have funds for treatment. Poor people generally cannot read because they are not able to go to school, do not have jobs, are afraid to face the future, lose their children because of illness, poverty is helpless, marginalized and not feeling free (Ravillion, 2001). Poor population groups in rural and urban communities generally can be classified as farm laborers, smallholders, small traders, fishers, small artisans, laborers, street vendors, hawkers, scavengers, homeless people, beggars, and unemployed.

Poverty is the inability to meet minimum standards of basic needs which include food and non-eating needs (BPS, 2016a). However, according to UNDP (2017) poverty is the inability to expand life choices, including by including the assessment of the absence of participation in public policy making as one of the indicators of poverty. Measures of poverty in a simple and commonly used manner can be divided into two senses:

Relative Poverty

Relative poverty is a condition of poverty due to the influence of development policies that have not been able to reach all levels of society, causing inequality in income distribution. Minimum standards are prepared based on the living conditions of a country at a given time and attention is focused on the poorest population, for example 20 percent or 40 percent of the lowest population of the population sorted by income / expenditure. This group is a relatively poor population. Thus, the measure of poverty is very much dependent on the distribution of income / expenditure of the population so that using this definition means that the poor are always present with us.

Rich countries have a relatively higher poverty line than poor countries (Ravillion, 1998). This thought explains why the official figure in the early 1990s was close to 15 percent in the United States and also close to 15 percent in Indonesia (a far more complicated country). That is, many of those who are categorized as poor in the United States will be said to be prosperous according to Indonesian standards..

Absolute Poverty

In general, the absolute poverty line is a standard of living to compare poverty. The absolute poverty line is critical if one wants to assess the effects of anti-poverty policies over time, or estimate the impact of a project on poverty (for example, small-scale credit). The poverty rate will be compared between one country and another only if the same absolute poverty line is used in both countries.

The World Bank calculates the absolute poverty line by using consumption expenditures converted into Purchasing Power Parity. The aim is to compare poverty rates between countries. This situation is useful in determining where to channel existing financial resources

(funds), also in analyzing progress in fighting poverty. Wie (1981), argues that basic needs strategies do put a restraint on direct approaches such as through the effect of trickling down from high economic growth. The general difficulty in determining indicators of basic needs is subjective standards or criteria because they are influenced by customs, culture, regions and social groups. Besides that the difficulty of determining quantitatively from each component itself, for example, consumer tastes towards a type of food or another commodity.

According to (Lelkes, Medgyesi, & Tóth, n.d.), the causes of poverty are divided into two parts where the first part is about different ages and places of residence and has a different income per capita. The second part is the magnitude of the influencing factors, especially in the shallow level of education. Poverty among different age groups shows a life cycle that has a negative impact on the development of the country. The role of economic growth is expected to help reduce the number of poor people because economic growth is one of the most important indicators in conducting an analysis of economic development that occurs in a country, where this economic growth shows the extent to which economic activity will generate additional community income in a given period. Because basically, economic activity is a process of using production factors to produce output, this process, in turn, will result in a return of service to the factors of production owned by a community. With the economic growth, it is expected that people's income as the owner of production factors will also increase. Economic growth is a long-term increase in the ability of a country to provide more and more types of economic goods to its population (Kuznets, 2014). It must be remembered that changes in developed countries produced by the process of economic growth as a source of savings can increase the pressure of legal and political decisions towards a higher economy (Kuznets, 2012).

The growth model of Solow-Swan concerning poverty can be expanded so that it covers natural resources as one of its inputs. The rationale is that national output is not only influenced by K and L but is also influenced by agricultural land or other natural resources such as oil reserves. Another extension of the Solow model is to include human resources as capital.

This theory is categorized as an endogenous growth theory with its pioneers Lucas and Romer. Lucas stated that the accumulation of human capital, as well as the accumulation of physical capital, determines economic growth; whereas Romer argues that the level of human capital influences economic growth through technological growth

According to Mankiw (2014) the contribution of each input to the equation to national output is proportional. A country that gives more attention to education to its people *ceteris paribus* will produce better economic growth than those who do not. In other words, investment in human resources through the advancement of education will generate national income or higher economic growth. If the investment is carried out relatively equally, including those with low-income groups, then poverty will decrease.

In addition to economic growth, poverty is also influenced by the human development index. The new growth theory emphasizes the importance of the role of government, especially in increasing the development of human capital and encouraging research and development to increase human productivity. The reality can be seen by investing in education will be able to improve the quality of human resources as shown by the increase in one's knowledge and skills. The higher the level of education of a person, the knowledge and expertise will also increase so that it will encourage work productivity.

In the informal sector such as agriculture, increasing the skills and expertise of the workforce will be able to increase agricultural output, because skilled workers can work more efficiently.

In the end, someone who has high productivity will get better welfare, which is shown through increased income and consumption. The low productivity of the poor can be caused by their low access to education and high unemployment rates.

METHODOLOGY

This research was conducted in North Sumatra using secondary data, covering 33 regencies/cities in North Sumatra Province using data from 2013-2017. With endogenous variables Amount of Poor Population (JPM), Economic Growth (PE), Human Development Index (HDI) and Open Unemployment Rate (TPT) in North Sumatra. The method used by researchers is regression using panel data (pooled data) or called the panel data regression model. The panel data is a combination of time series and cross-section, this test is beneficial for increasing the degree of freedom, not much attention is given to testing the unit (Breitung and Meyer, 1994 ; Quah, 1994 ; Levin and Lin, 1993 ; Im, Pesaran and Shin, 1997 ; Kao and Chen, 1995a,b) the root and cointegration of panel data at the empirical or theoretical level. Before knowing panel data regression modeling, it is necessary to study linear regression models using cross-section and time series data.

Model with cross section data :

$$Y_i = a + \beta X_i + \varepsilon_i ; i = 1, 2, \dots, N \quad (1)$$

N = amount of cross section data

Model with time series data:

$$Y_t = a + \beta X_t + \varepsilon_t ; t = 1, 2, \dots, N \quad (2)$$

The root and cointegration of panel data at the empirical or theoretical level. Before knowing panel data regression modeling, it is necessary to study linear regression models using cross-section and time series data:

$$Y_{it} = a + \beta X_{it} + \varepsilon_{it} ; i = 1, 2, \dots, N ; t = 1, 2, \dots, T \quad (3)$$

The root and cointegration of panel data at the empirical or theoretical level. Before knowing panel data regression modeling, it is necessary to study linear regression models using cross-section and time series data.

Common Effect Model

The common effect model approach is the most straightforward approach. The common effect model approach assumes that individual behavior is the same in various time measures. The common effect model approach can be estimated using the pooled least square approach. The regression equation of the common effect model can be written as follows :

$$Y_{it} = a + \beta X_{it} + \varepsilon_{it} \quad (4)$$

Where. i = number of observations; t = amount of time.

Fixed Effect Model

The Fixed Effect Model approach assumes that there are different effects between individuals. This difference is accommodated through differences in the intercept while the slope remains the same between subjects. The regression equation with the Fixed Effect Model model can be written as follows:

$$Y_{it} = \beta_{1i} + \beta_2 X_{2it} + \beta_3 X_{3it} + \varepsilon_{it} \quad (5)$$

where β_1 is intercept, β_2 and β_3 are slopes, while μ is an error term. The i script contained in the intercept in the regression equation Fixed Effect shows that the intercept of each observation (cross section) can be different, but does not change over time called time invariant. (Gujarati, 2003).

Random Effect Model

In contrast to Fixed Effect Model, the specific effects of each α_i are needed as part of an error component that is random and does not correlate with X_{it} explanatory variables, a model like this is called Random Effect Model (REM). If in Fixed Effect Model (FEM) individual and time characteristics are represented by different intercepts, in the REM model the characteristics between individuals and time are accommodated in the error term component (Nachrowi and Usman, 2006). In the FEM model, each individual (cross-section unit) has an average value of all individual intercepts, and the error term component reflects the deviation of individual intercepts against the average value (Gujarati, 2003). Therefore, the REM model is also called the Error Components Model (ECM). In general, the Random Effect Model equation can be written as follows :

$$Y_{it} = a + \beta X_{it} + \varepsilon_{it}, \varepsilon_{it} = \mu_i + v_t + w_{it} \quad (6)$$

where u_i is a cross section error component, v_t is a time series error component, w_{it} is a composite error component. So related to panel data regression, the model of the variables examined by the author can be written as follows:

$$Y_{it} = a_{it} + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon_{it} \quad (7)$$

Dimana:

Y_{it} = Number of Poor Populations in North Sumatra

X_1 = Economic growth

X_2 = Human Development Index

X_3 = Open Unemployment Rate

$\beta_1, \beta_2, \beta_3$ = Regression coefficient

α_{it} = Intercept

ε_{it} = error

From the explanation above it is known that there are three approaches in the panel data method. In this section, we will explain how to choose one of the three approaches. This selection aims to make the chosen approach fit the research objectives and characteristics of the data so that the estimation process gives more precise results. Several statistical tests can be used to determine the most appropriate approach/method in estimating panel data, namely Fixed Effect significance test (Chow Test), random effect significance test (Lagrange Multiplier / LM Test), and Fixed Effect significance test or random effect (Hausman Test). Formal testing to determine a better model to use is based on statistical decisions. A series of statistical tests that can be carried out consist of several steps. If theoretically it cannot be determined which model will be chosen, then the basis for the next model selection can be based on the research sample. If data is taken from individual samples of a large population randomly, then random effects are selected. However, if the sample is the entire population selected, then Fixed Effect is the right method (Hsiao, 2005).

RESULT

Descriptive Statistics Analysis

Descriptive analysis is used to see a general picture of the data used using the panel data method. Table 1 shows descriptive statistics on the variables used in panel data modeling used in this study.

Table 1. Descriptive statistics

	The number of poor people	Economic Growth	HDI	Unemployment
Mean	43.01067	5.495483	109.1790	5.633697
Median	33.09000	3.393577	67.78000	5.950000
Maximum	209.6900	43.30396	6915.000	19.21000
Minimum	4.720000	1.002459	55.97000	0.150000
Std. Dev.	37.50819	6.763815	533.0864	3.455992
Skewness	2.658757	3.734511	12.72648	0.357673
Kurtosis	11.31302	18.94148	162.9777	3.210613
Jarque-Bera	669.5034	2130.681	180404.9	3.823030
Probability	0.000000	0.000000	0.000000	0.147856
Sum	7096.760	906.7547	18014.53	929.5600
Sum Sq. Dev.	230725.7	7502.867	46605694	1958.796
Observations	165	165	165	165
Cross sections	33	33	33	33

Descriptive statistics can be used to find out whether the residual has been normally distributed. With hypothesis H₀: the residual distribution has been normally distributed can be seen through the probability of Jarque Berra and a significant level of 95% ($\alpha = 5\%$), then table 4.7 can be explained that the PE, HDI and TPT variables are normally distributed (not reject H₀).

To determine the approach or method in panel data regression estimation, the procedure that must be done in panel data regression estimation is Chow test to choose between pooled least square (PLS) and fixed effect model (FEM) approaches and Hausman test to choose between fixed effect model approach and random effect model (REM). From the CHOW test results, it is obtained that the probability (p-value) cross-F and Chi-Square = 0.0000, the significance of error ($\alpha = 0.05$) so that H₀ is rejected and H₁ is accepted, so that between the pooled least square and fixed effect models then according to the results the chow test above the model used is the fixed effect model. These results can be seen in table 2 as follows:

Table 2. Results of Chow Test

Effects Test	Statistic	d.f.	Prob.
Cross-section F	395.133582	(32,129)	0.0000
Cross-section Chi-square	758.224160	32	0.0000

Data Panel Regression Test with Fixed Effect Model Method

The model estimation in this study uses the pooled least squares method to see economic growth, the development of the human development index, the development of the open unemployment rate influences the number of poor people in North Sumatra. The discussion of this analysis is based on published data that has been formed and has been stated in the theoretical review and specification of the analysis model, then an economic analysis will also be carried out explaining the meaning of the parameters obtained from the linear regression equation that has been done, then looking at whether the parameters it has conformity with economic theory. Based on the estimated output of panel data regression with the fixed effect model method, the estimation results can be seen in Table 3.

Table 3. Panel Data Test Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
PE?	0.482455	0.145116	3.324613	0.0012
IPM?	-0.000288	0.000410	-0.702422	0.4837
TPT?	0.091716	0.147664	0.621116	0.5356
C	39.87407	1.184115	33.67415	0.0000
Effects Specification				
R-squared	F-statistic	Prob(F-statistic)		
0.996558	1067.259	0.000000		

Interpretation on the selection of the final model used in this study is following the results of the data output and following the tests that have been carried out in this study, namely the model used is the fixed effect model. As is known in the fixed effect model, differences in individual characteristics and time are accommodated in the intercept, so that the index intercept of the Poor Population (JPM) in North Sumatra from each Regency / City in North Sumatra Province is different, as well as the constants owned, so if interpreted for each Regency / City then the results will also be different. The F-count value is 1067,259 (greater than the Prob (F-statistic) = 0.000000). It means that simultaneously the independent variables (Economic Growth, HDI and Open Unemployment) affect the dependent variable that is the number of poor people in North Sumatra Province. The estimation results have met the model conformity test for simultaneous testing so that the estimation results can be used for analysis. Then R2 is located between 0 and 1. R2 is equal to 1, meaning that the independent variables explain 100 percent of the variation of the dependent variable. Conversely, R2 is equal to 0, meaning that the independent variables in the model do not explain the slightest variation in the dependent variable. The model is said to be better if R2 is getting closer to 1 (Gujarati, 2003). The model estimation produces R2 of 0.996558. That is, the existence of independent variables (PE, HDI, and TPT) can explain the JPM dependent variable of 99.65 percent, the rest of which other variables outside the model explain 0.35 percent. With R2 of 0.996558, the estimation results meet the conformity test from the aspect of the coefficient of determination, so that the estimation results are feasible to be analyzed.

The partial test result is also called the test of significance. For PE variable the value of t value with probability is 0.0012, the value of t value is smaller than the probability value with $df \alpha = 0.05$, which means this means H0 is rejected and H1 is accepted and partially variable PE has a significant effect on the number of poor people in North Sumatra Province error rate of 5 percent. For the HDI variable with a probability value of 0.4837, the t value is higher than the probability value with $df \alpha = 0.05$, meaning this means H0 is accepted and H1 is rejected and partially the HDI variable does not affect the number of poor people in North Sumatra Province. For the open unemployment rate variable with a probability value of 0.5356, the t value is greater than the probability value with $df \alpha = 0.05$, meaning that this means H0 is accepted and H1 is rejected, and partially the TPT variable does not affect the number of poor people in North Sumatra Province.

CONCLUSIONS

Based on the results of the analysis, it can be presented several conclusions; namely, the influence of economic growth on the number of poor people in North Sumatra Province can be said to have a positive and significant effect. This can be seen from the results of the regression test; it turns out that it has a sig value = 0.0012 < 0.05, because the sign value is less than 0.05 means that there is a positive and significant influence. Thus the hypothesis is proven. Then, the effect of the percentage of the human development index and the open unemployment rate on the number of poor people in North Sumatra Province, the human development index can

be said to have a negative and insignificant effect, this can be seen from the results of partial tests for poor people having $\text{sig} = 0.4837 > 0, 05$ which means no effect. While the unemployment rate can be said to have a positive and insignificant effect. This condition can be seen from the results of the partial test for poor people having a sig value = $0.5356 > 0.05$ means that it has no effect. The magnitude of the coefficient value of the variables that explain the variable number of poor people, the largest are the variables of economic growth, open unemployment, and human development index variables.

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