THE EFFECT OF ECONOMIC GROWTH ON MULTIDIMENSIONAL POVERTY

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Abstract. Poverty is a complex problem, so a more appropriate approach is needed to represent this complex phenomenon and multidimensional reality. This study aims to analyze the effect of GRDP per Capita on multidimensional poverty. The method used to measure multidimensional poverty in this study is the Alkire Foster method. The multidimensional poverty index that was built refers to the index developed by Alkire and Santos, as well as several previous studies with several changes that were adjusted to the availability of data. The results of this study resulted in panel data regression analysis and involved the HDI control variable. It was found that partially, economic growth as measured by gross regional domestic product per capita at constant market prices in 2010 had no significant effect on the multidimensional poverty rate in Lampung Province, Indonesia 2017-2019.

Keywords: economic growth; poverty; and multidimensional.

INTRODUCTION

Poverty is a serious problem that must solve immediately. This is reflected in the first goal in the Sustainable Development Goals (SDGs), which was sparked at countries globally on September 25, 2015, namely eliminating poverty anywhere and in any form. This goal at least gives a message to all countries globally, including Indonesia, to focus more on overcoming poverty from one side and from various sides. Thus, by 2030, poverty is expected to have been overcome (Hapsari, 2019); (Khalifah et al., 2017).

Statistics Indonesia views poverty as an inability to meet basic needs, so in its measurement, Statistics Indonesia uses a household expenditure approach in line with the measures used by the World Bank. However, the calculation of poverty has not been able to consider people who are not poor, but in certain circumstances, the expenditure is indeed small. The calculation method with this expenditure approach also cannot describe the poor who are prone to illness, lack access to education or public facilities, live in slum environments, or have an inadequate standard of living. The expenditure approach has not been able to fully answer the first objective of the SDGs, namely, eliminating poverty in all its forms.

Another approach to measuring poverty is emphasizing the monetary dimension, and the results are easy but not always satisfactory. (Rogan, 2016) revealed that the poverty approach using monetary analysis could only capture a small part of poverty. According to Sen, the issue of poverty is not only related to purchasing power parity, income, or consumption, but there is a broader dimension of poverty. Apart from income and consumption, people who have limited access to basic education or health services due to economic limitations can also be poor. Communities with poor sanitation conditions, sources of lighting, and cooking fuel are not suitable; the condition of houses with earth floors is also said to be poor (Conti et al., 2010); (Conti & Heckman, 2010).

The study of multidimensional poverty prompted (Yu, 2013) to estimate multidimensional poverty in China, a country with a high disparity rate between provinces and rural and urban areas. Yu's research found that the rapid rate of economic growth had an impact on reducing poverty in China over the past few years, both from a monetary and multidimensional perspective.

Studies on multidimensional poverty in Indonesia have also been carried out by several researchers, such as . These studies were conducted at the provincial level with different methods and dimensions of poverty. Although some researchers have carried out studies of multidimensional poverty in Indonesia, similar research is still needed, especially studies of poverty at a smaller level, namely districts/cities, such as those conducted by (Artha & Dartanto, 2018), (Alkire & Santos, 2014); (Beycan et al., 2019); (Alkire et al., 2018).

The complexity of poverty is quite visible in Lampung Province. At first, glance, if we look at economic growth and poverty reduction in Lampung Province, it tends to run quite well. However, it should be re-examined that in addition to the

percentage of the number of poor people, which far exceeds the national figure, it turns out that Lampung's economic growth, which reached 4.30 percent in 2019, occupies a fairly good position, namely the third-highest among other provinces in the Sumatra Island region. However, this is not in line with the percentage of poor people in Lampung Province, which ranks fourth highest in Sumatra.

The quality of human resources in Lampung Province can be reflected in the HDI. From year to year, Lampung HDI shows an increase. However, when compared to other provinces on the island of Sumatra, the HDI of Lampung Province is in the last rank. If you look at the percentage figures for the poor and the HDI for the provinces throughout Sumatra Island, it seems at first glance that there is no relationship between poverty rates and HDI. Several provinces on the island of Sumatra have a higher percentage of poor people than the percentage of poor people in Lampung Province. Still, Lampung Province has the lowest HDI compared to other provinces.

The phenomenon that occurs in conditions of poverty in Lampung shows that the problem of poverty is not just an economic problem (Martin & Petersen, 2019); (Font & Maguire-Jack, 2020). Demographic factors such as education level or family structure can also influence poverty ("*Growth Has Been Good for Decades*," *nd*). Multidimensional poverty means seeing poverty from various aspects and dimensions, not only one side. Poverty from this point of view is more in line with the goals of the SDGs because, from this point of view, all kinds of poverty will be detected.

Poverty seen only from one side is thought to have not been able to capture the impact of economic growth, which tends to be broader. And secondly, there is a large enough inequality so that economic growth can only be felt by the upper-middle class and not the lower middle class. To answer this conjecture, an approach to calculating poverty is needed to cover all or more aspects. Therefore, this study aims to analyze the effect of GRDP per Capita on multidimensional poverty.

METHODS

The early stages of research, an approach was taken to measure multidimensional poverty in Lampung Province. The method used to measure multidimensional poverty in this study is the Alkire Foster method. The built multidimensional poverty indicators refer to the indicators developed by (Welker et al., 2013) and several previous studies with some modifications adapted to the availability of data.

Inferential analysis was conducted to test the hypothesis to prove whether there is an effect of GRDP per capita and HDI on the multidimensional poverty level, using panel data regression to select the best model. Time series data is from 2017-2019, and cross-sectional data are districts/cities in Lampung Province.

This study uses secondary data. The data used to calculate the multidimensional poverty of districts/cities in Lampung Province in this study is secondary data derived from the National Socio-Economic

Survey (Susenas) collected by the Statistics Indonesia of Lampung Province in 2017-2019.

The secondary data needed to build the regression model is GRDP per capita based on constant prices for the base year 2010 for all regencies/cities in Lampung GRDP per capita, and HDI data used are from publications published by Statistics Indonesia.

The Alkire Foster method is used in calculating multidimensional poverty variables. The calculation of multidimensional poverty using the Alkire Foster method uses several dimensions and indicators and determines the amount of weight for each indicator. This study uses three types of dimensions, and these three dimensions are divided into ten indicators.

Table 1. Dimensions, Indicators, Deprivation Cutoffs and Weights for Multidimensional Poverty Calculation

Dimension	Indicator	*Cut off* deprivation	Weights
(1)	(2)	(3)	(4)
Education	Length of school	No household member who has completed nine years of education (junior high school or equivalent)	1/6
	School participation	There are school-age children (7-15 years) who have dropped out of junior high school or the equivalent	1/6
Health	Household calorie consumption	Household calorie consumption is less than 70 percent of the Nutrition Adequacy Rate (2019)	1/12
	Household Protein Consumption	Household protein consumption per day is less than 80 percent of the Nutrition Adequacy Rate (2019)	1/12
	Drinking water	Deprived if households do not have access to clean drinking water or access to clean water	1/12

	Sanitation	Deprived of the household does not have proper sanitation or if the toilet is shared with other households	1/12
Standard of living	Electricity	Deprived of the household does not have access to PLN electricity	1//12
	Floor	Deprived of the household lives in a building with a dirt or sand floor	1/12
	Fuel	Deprived of the household cooks using firewood or charcoal	1/12
	Floor area	Deprived of the household lives in a house with a floor area per capita of less than or equal to 7.2m2	1/12

Source: Alkire Foster, modified

This multidimensional poverty gauge uses a nested weighting system, unit of analysis, selection of indicators, dimensions, first cutoff point, and second cutoff point used by UNDP in calculating MPI. A household or individual can be categorized as a household or individual experiencing multidimensional poverty if the total weight per individual or household is greater than or equal to 33.33 percent. Each individual is given a score according to the deprivation experienced in the household, based on the ten constituting indicators. The maximum score for all indicators is 100 percent, so each dimension has the same weight, namely 33.33 percent, as well as the weight of each indicator.

Economic growth is the influence of the value of income expressed in unit price/nominal amount. Economic growth also describes an increase in the physical production of goods or services within a certain period. Economic growth reflects the economic development of a country or region, which can be measured by national income or Gross Domestic Product (GDP), or Gross Regional Domestic Product (GRDP). The economic growth variable in this study was measured by the 2010 GRDP per capita approach. The GRDP per capita is useful for knowing the real per capita economic growth of the population of an area. HDI is a measure of development performance formed using three dimensions, namely long and healthy life,

knowledge, and a decent living.

The effect of GRDP per Capita and HDI on multidimensional poverty, regression analysis was used. Regression analysis in this study uses panel data. Panel data (pooled data or longitudinal data) combines cross-section data and time-series data. Regarding the purpose of this study, the model used is as follows.

logMPIit = 0 + 1logPDRBcapit + 2logIPMit + it   (1)

where:
i: each district/city;
t: year t;
: error

MPI: percentage of the multidimensional poverty level;

GRDPkap: GRDP per capita 2010;
HDI: Human Development Index;

Regression analysis was used to see the effect of GRDP per Capita and HDI on multidimensional poverty. Regression analysis in this study uses panel data. Panel data (pooled data or longitudinal data) combines cross-section data and time-series data.

RESULTS AND DISCUSSION

A. Multidimensional Poverty in Lampung Province

Table 2. Multidimensional Poverty Profile of Lampung Province, 2017 – 2019

Year	MPI (%)	Intensity (%)
2017	29.99	11.79
2018	29.29	11.45
2019	26.06	11.03

Source: Socio-Economic Survey, processed

Table 2, shows the multidimensional poverty profile in Lampung Province from 2017 to 2019. The table contains information about the number of poor people, poverty rates, poverty intensity, and multidimensional poverty index. The number of multidimensional poor

people is the total number of individuals classified as poor multidimensionally. MPI is the proportion of multidimensional poor people to the total population. Poverty intensity is the average proportion of the weighted

indicators in which the poor are deprived (A). In 2019, 26.06 percent of the population was categorized as poor multidimensionally. These multidimensional poor people are deprived of at least a third of the indicators in the dimensions of health, education, and living standards (Weziak-Bialowolska, 2016); (Migala-Warchol & Pasternak-Malicka, 2018). These multidimensional poor people may not be eligible, for example, in terms of sanitation, school sustainability, cooking fuel, and so on. From 2017 to 2019, MPI in Lampung Province experienced a decline.

B. The Effect of Economic Growth on Multidimensional Poverty

To examine the effect of economic growth as measured by the GRDP per capita approach to the multidimensional poverty level, the model used refers to equation 1. Considering that the data used in this study is panel data, it is necessary to conduct three tests to determine the most appropriate technique for estimating panel data regression, namely the Chow test, Hausman test, and Breusch-Pagan Lagrange Multiplier (LM). After carrying out these three tests, it can be concluded that the fixed effects model or FEM is the best model that can be used to estimate the effect

of economic growth using the GRDP per capita approach to multidimensional poverty.

A simultaneous test for the random-effects model using reviews can be seen from the probability value 2. The simultaneous test was conducted to determine whether the independent variables in the model, namely: economic growth with the GRDP per capita approach and HDI, and the probability value 2 = 0.000 are smaller than the significance level = 5 percent for each regression model. Thus, it can be concluded that there is at least one or all independent variables that statistically influence the multidimensional poverty variable.

Table 3. Variable Estimation Results with Fixed Effect Random (FEM)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	64.06528	2221.967	0.028833	0.9772
LOGPDRB	-2.169786	1.489694	-1.456532	0.1564
LOGIPM	-2.875319	165.8276	-0.017339	0.9863

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.973589	Mean dependent var		3.314436
Adjusted R-squared	0.958496	S.D. dependent var		0.575689
S.E. of regression	0.117282	Akaike info criterion		-1.167378
Sum squared resid	0.385140	Schwarz criterion		-0.484861
Log likelihood	43.26600	Hannan-Quinn criter.		-0.912942
F-statistic	64.50937	Durbin-Watson stat		2.734319
Prob(F-statistic)	0.000000			

Source: Output Results Eviews

After conducting a simultaneous test of the fixed effects model, the next step is to test the coefficient of determination. This test determines how much the independent variables can explain poverty in the regression model. The R^2 value for the fixed effects model can use an adjusted R2 value of 0.894667 for the multidimensional

poverty model, which means that the diversity or variance of the multidimensional poverty level variable can be explained by independent

variables such as economic growth with the GRDP per capita and HDI of 97.36 percent. In comparison, other variables outside the model explain the remaining 2.64 percent.

Based on the parameter estimation results in Table 4.1, the general equation for the two models using the fixed effects model (FEM) approach can be written as follows.

Log M Plit = 64,065 – 2,170 log GDP capit – 2,875 log I PMit. In the multidimensional poverty model, the coefficient of economic growth with the GRDP per capita approach is -2.170. Based on the output eviews, the partial probability value of the economic growth variable with the GRDP per capita approach is 0.156, greater than the significance level of = 5 percent, so it does not significantly affect the growth of the multidimensional poverty rate. This indicates that the increase in value-added from the productive sectors in Lampung has not been fully accompanied by the capability of the population to meet the needs of nutrition and health, education, and living standards. The estimates in Table 3, produce the probability value of the HDI variable for the model of 0.986,

which is greater than the significance level of = 5 percent. Therefore, it can be concluded that the growth of the HDI variable does not significantly affect the multidimensional poverty variable.

CONCLUSIONS

The conclusions that can be drawn from the results of the multidimensional poverty analysis in Lampung Province during 2017-2019 are as follows.

1. Descriptively, the percentage of the multidimensional poor, the intensity of multidimensional poverty, and the multidimensional poverty level at the Lampung Province level show a downward trend.
2. Based on the partial test results, it was found that economic growth with the ADHK GRDP per capita approach had no significant effect on the multidimensional poverty level in Lampung. This indicates that the increase in value-added from the productive sectors in Lampung has not been fully accompanied by the capability of the population in terms of nutrition and health, education, and living standards.

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