POVERTY IN DAERAH ISTIMEWA YOGYAKARTA (DIY): POLICIES AND EFFORTS TO SOLVE IT (DATA YEAR OF 2010-2016)

Muhammad Findi Alexandi [1*] and Edi Victara Tinambunan [2]

[1,2] IPB University, Bogor, Indonesia

Abstract

This research analyze some factors that influence of poverty level and some formulation policies to solve poverty in Daerah Istimewa Yogyakarta (DIY). By 2017 Province of DIY becomes the highest poverty rate in Java Island. The percentage of poor people in Province of DIY is also above the average percentage level of poverty in Indonesia. Therefore our research is conducted on what are the factors of affect poverty and what can be implemented to solve it. This research used panel data and calculated with Ms Excel and software of Eviews 9. The range period of this research from year of 2010 to 2016 with five districts/cities in Province of DIY. The result of the estimation in this research showed that economic growth has positively affect to poverty, while the health facilities, educational facilities and the number of labor agricultural sector have negatively affect to poverty level in Province of DIY.
JEL Classification: I30, I32, I38
Keywords: Economic Growth, Educational Facilities, Health Facilities, Labor Of Agricultural Sector, Poverty

1. INTRODUCTION

Development is a process towards change that is continuously pursued to improve the welfare of the community. The goals of development are to increase economic growth, create employment, and reduce poverty (Todaro and Smith 2006). One of the problems that must be overcome to achieve successful development is poverty alleviation.

Poverty is an economic problem that still exists in all countries, especially developing countries, including Indonesia. Economically, poverty can be seen from a lack of resources that can be used to meet the life necessities and improve the welfare of a group of people. The poverty term arises when a person or group of people are unable to meet the level of economic prosperity, which is considered as a minimum requirement of a certain standard of living. If the government cannot overcome this poverty problem, it will affect public trust in the government.

Poverty is one of the government responsibilities, including the regional government, and this problem has not been resolved until today. One of the objectives in the regional autonomy policy is to bring prosperity by reducing poverty and unemployment. On the other hand, the central and regional governments are trying to reduce poverty through poverty reduction policies. Funds in trillions of rupiah have been spent by the Indonesian government to implement various policy programs in reducing poverty.

Daerah Istimewa Yogyakarta (D.I. Yogyakarta) is a province in Indonesia which still bears from the poverty problem. In 2017 D.I. Yogyakarta province became the poorest province on Java. Figure 1 shows the percentage of people living in poverty on Java Island and Indonesia. The province with the lowest percentage of poverty is DKI Jakarta Province at 3.75 percent in 2016 and 3.77 percent in 2017.

The poverty rate in DIY Province is 13.22 percent and then decreases in the following year to 12.69 percent. There is a significant gap between poverty in DKI

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* Corresponding author. *Email address*: muhammadfindi73@yahoo.com

Jakarta and D.I. Yogyakarta. When compared to other provinces in Java, D.I. Yogyakarta Province has the smallest area after DKI Jakarta. When compared with the average percentage of poverty in Indonesia in 2016 and 2017, the DIY province is still higher.
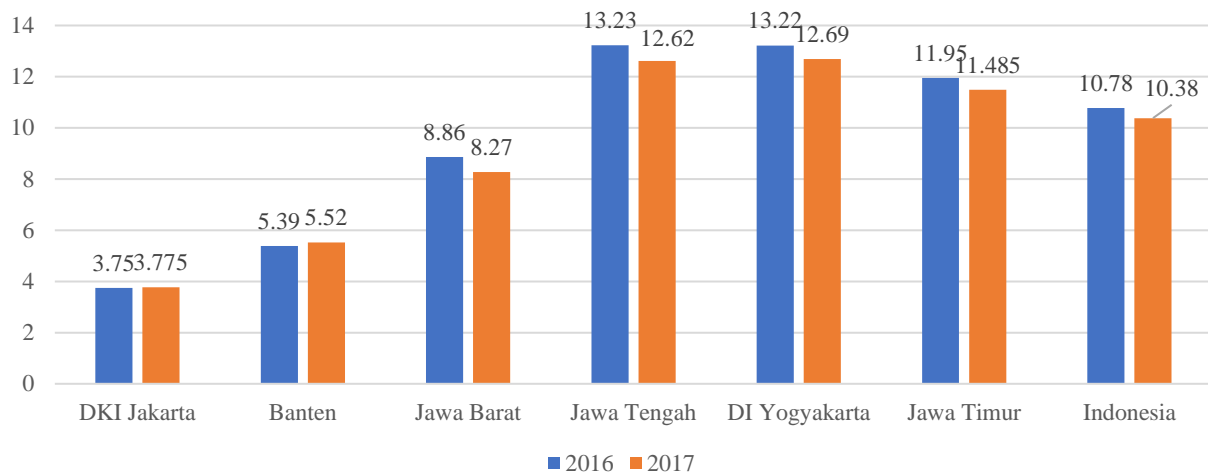

Figure 1 Percentage of people living in poverty in Java island and Indonesia in 2016-2017
Source: Statistics Indonesia, 2018.

In 2017 Province D.I. Yogyakarta is a province with the highest average percentage of poverty on Java Island. The poverty in this province is also higher than the average national poverty rate. During 2012 until 2016 there was a decreasing trend in poverty level except in 2014 and 2015. The high poverty percentage demonstrates that poverty reduction program by the regional government is not optimal.

Table 1 Number and percentage of people living in poverty in the D.I Yogyakarta

Province	Year	Population living in poverty in D.I. Yogyakarta	Percentage of population living in poverty
Special Region of Yogyakarta	2012	562.100	15.88 percent
	2013	541.900	15.03 percent
	2014	532.590	14.55 percent
	2015	550.230	14.91 percent
	2016	494.940	13.34 persen

The high level of poverty that exists in Yogyakarta is caused by many factors that are interconnected with each other, in accordance with the theory of the poverty circle according to Kuncoro (2000) who argues that poverty is not only caused by the absence of development in the past but also caused by development constraints in future. Development of human resources through the development of physical infrastructure and human resources. In accordance with research conducted by Suryandari (2017) which shows that improving the quality of human resources through education significantly influences the level of poverty in the Province of DIY.

Figure 2 shows a graph of the poverty percentage in D.I. Yogyakarta province. There is a downward trend from 2010 to 2016, except from September 2014 to March 2015. In September 2014 the percentage increased from 14.55 percent to 14.91 percent in March 2015. The increase does not only occur in D.I. Yogyakarta Province but almost in all provinces in Indonesia. This happened because of an increase in inflation

caused by adjustments to the policy of subsidized fuel in Indonesia between September 2014 and March 2015. This caused the inflation rate in Indonesia to accumulate to 7.26 percent (BI, 2014).

Figure 2 Percentage of people living in poverty in the Province of D.I. Yogyakarta in 2010-2016
Source: Statistic Indonesia DIY 2018 (processed)

Poverty levels in Indonesia appear to be low and show a decline, but do not reflect an increase in people's welfare. This is because most Indonesian people still face several problems, including low levels of education and skills (Mansur 2012). The poverty per district/city in the Province of D.I. Yogyakarta from 2012 to 2016 is quite varied. The region with the lowest poverty rates is in the Jogjakarta city, while the highest poverty rate alternately from 2012 to 2016 are in Gunung Kidul and Bantul district. The poverty rate in the Yogyakarta city is low due to several factors such as high economic growth and better education and health facilities. It is reasonable because Jogjakarta city is the capital of the D.I. Yogyakarta Province.

The high number of poor people in Gunung Kidul and Bantul districts is partly due to the fact that most of the population living in the area work as small farmers, according to the theory of Suselo and Tarsidin (2008) in their research concluding that the agriculture, plantation and fisheries sectors are not alone is the business sector with the highest poverty level, but also has the highest poverty elasticity of economic growth.

Table 2 Percentage of people living in poverty according to city and district

District/City	2012	2013	2014	2015	2016
Kulon Progo Distrct	23.31	21.39	20.64	21.4	20.3
Bantul Distrct	16.97	16.48	15.89	16.33	14.55
Gunung Kidul Distrct	22.71	21.7	20.83	21.73	19.34
Sleman Distrct	10.44	9.68	9.5	9.46	8.21
Jogjakarta City	9.38	8.82	8.67	8.75	7.7

The regional government in collaboration with the National Team for the Acceleration of Poverty Reduction had implemented a poverty reduction program. The program was divided into 3 main programs, namely: (1) Family-based integrated social assistance program; (2) Community empowerment-based poverty reduction programs; (3) Poverty reduction programs based on the empowerment of micro and small economic enterprises (SMEs) (TNP2K 2018). This program should reduce poverty in the Province of D.I. Yogyakarta, but in reality, the poverty rate in the province is still quite high. Based on the description above, the problems in this study are:

1. What factors influence the level of poverty in the D.I Yogyakarta Province?
2. What policies can be implemented to reduce poverty in the D.I Yogyakarta Province?

Research Purposes
1. Analyze the factors that influence the poverty level in the D.I Yogyakarta Province.
2. Formulate policies for the government in an effort to reduce the poverty level in the D.I Yogyakarta Province.

2.   RESEARCH METHODS
Data Types and Sources
Secondary data consisted of the number of people living in poverty, the unemployment rate, economic growth, the number of people working in the agricultural sector, dependency ratio, health facilities, and the average education level in the D.I. Yogyakarta Province. Supporting data were obtained from Statistics Indonesia (BPS) and the IPB library, while other information came from scientific journals and textbooks. Secondary data used was the time series for the period 2012-2016 and cross-section data covering 5 districts/cities in the D.I Yogyakarta Province.

Data Analysis
The analysis consisted of descriptive and quantitative analysis. Descriptive analysis was used to describe and facilitate data interpretation using tables or graphs. The analytical method was used to analyze the current conditions in poverty and develop a more effective policy strategy to reduce poverty in the D.I. Yogyakarta Province. The quantitative analysis used was data panel analysis, in the form of a cross section with 5 districts/cities in the D.I. Yogyakarta Province and time series from 2012 to 2016. The quantitative analysis method of panel data was used to analyze the factors that influence poverty rates in the D.I. Yogyakarta Province in 2012-2016. Panel data was processed using Ms. Software, Excel and Eviews 9.

$$LNPOVERTY_{it} = \beta 0 + \beta 1\ GROWTH_{it} + \beta 2\ LNKES_{it} + \beta 3\ TPT_{it} + \quad \beta 4\ LNTKTANI_{it} + \beta 5\ RK_{it} + \beta 6\ LNPEN_{it} + \varepsilon it$$

In the above equation, LNPOVERTY is the natural logarithm of poverty; GROWTH is economic growth; LNKES is the natural logarithm of health facilities; TPT is Open unemployment rate; LNTKTANI is natural logarithm of labor in the agricultural sector; RK is dependency ratio; LNPEN is logarithm of average length of school.

3.   RESULTS AND DISCUSSION
Gujarati (2005) explains that panel data (pooled data) is a combination of time series data and cross section. Data Panel Analysis Method can use three models, namely Pooled Least Square (PLS), Fixed Effect Model (FEM), and Random Effect Model (REM). The best model was chosen based on the Chow test and the Hausman test. In the Chow test, the probability value (p-value) was 0.0000, meaning that the best model between PLS and FEM is FEM because the probability value of chi-square was less than the confident level of 5 percent. The Hausman test was not performed on panel data processing because the cross-section data in this study was less than the variable so that the output of the estimated Random Effect Model (REM) was not produced.

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Table 3 Chow Test Results

Effects Test	Statistic	d.f.	Prob.
Cross-section F	86.093217	(4,24)	0.0000
Cross-section Chi-square	95.586464	4	0.0000

Table 4 Estimated results of the best model Fixed Effect Model

Dependent Variabel: LN_VOL			
Independent Variabel	Coefficient		Probability
GROWTH	0.031114		0.0167*
LNKES	-0.321695		0.0138*
TPT	0.015124		0.1670
LNTKTANI	-0.005299		0.0000*
RK	0.003306		0.2060
LNPEN	-0.778219		0.0375*
C	14.71893		0.0000
Weighted Statistics			
R-squared	0.995342	Sum squared resid	0.043414
Prob(F-statistic)	0.046618	Durbin-Watson stat	2.014267
Unweighted Statistics			
R-squared	0.995342	Mean dependent var	11.47366
Sum squared resid	0.046618	Durbin-Watson stat	1.965733

Description: * Significant to the confident level of 5% ** Significant at the cofiesent level of 10%

There are four classic assumption tests, namely multicollinearity, heteroscedasticity, autocorrelation, and normality test. The multicollinearity test showed that the variable of dependency ratio and labor force working in the agricultural sector was above 0.8, namely 0.911438. According to Klein's test, forasmuch as the largest correlation between the independent variables is smaller than the R-squared of the model, the indications of multicollinearity can be neglected so that the model used is considered to have no multicollinearity problems.

The heteroscedasticity test showed that the Sum Square Residual Weighted Statistic was 0.043414, smaller than the Sum Square Unweighted Statistic of 0.046618, and it has been weighted GLS on the model, meaning that there was no problem of heteroscedasticity. The autocorrelation test can be detected by looking at the Durbin – Watson Statistic (DW) value. A model is clear from the autocorrelation problem if the DW value is between 1.55 to 2.46 (Juanda, 2009). In this study, the DW statistic model value was 2.078212, meaning that the model is free from the autocorrelation problem.

The results of the normality test can be seen from the value of Jarque-Bera (JB). The model analyzed had a JB value of 2.629735 and a probability value of 0.268510. Both values are higher than 5%, meaning the poverty model in D.I. Yogyakarta Province has a normal spread of the error term. The coefficient of determination in the model was 0.994116. It means that 99.4116 percent of the dependent variable diversity can be explained by independent variables and the remainder by other variables outside the model. Based on the estimation results, the following equations were obtained:

$LnPOVERTY_{it} = 14.71893 \ \alpha0 + \beta1 \ 0.031114 \ GROWTH_{it} - \beta2 \ 0.321695 \ LnKES_{it} + \beta3 \ 0.015124 \ TPT_{it} - \beta4 \ 0.005299 \ LnTKTANI_{it} - \beta5 \ 0.003306 \ RK_{it} - \beta6 \ 0.778219 \ LnPEN_{it}$

In this study, the economic growth has a significant positive effect on poverty in the D.I. Yogyakarta Province. An increase of 1 percent in economic growth will increase the poverty rate by 0.031114 percent, ceteris paribus. In Yogyakarta, increased economic growth led to an increase in poverty. It is alleged because the economy is

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dominated by the industrial sector with large capital so that it is only enjoyed by a handful of large entrepreneurs, while the majority of workers and small entrepreneurs are less well-paid.

Economic growth actually increases poverty in the Province of DIY, this is in accordance with research conducted by Safitri (2015) in his research showing that economic growth has a positive effect on poverty levels in Indonesia in 2010 to 2013.Health facilities have a significant negative effect on poverty levels in D.I. Yogyakarta province. It means that if there is an increase in health facilities by one percent, it will reduce the poverty rate by 0.321695 percent, assuming ceteris paribus. The results of this study are consistent with research conducted by Hapsari (2019) which shows that life expectancy that illustrates health facilities reduces poverty levels in Indonesia from 2010 to 2017. Research conducted by Afriyanti (2016) which shows that improved health facilities affect the level of poverty in Bengkulu Province. The variable of Open Unemployment Rate did not significantly affect poverty rates in the D.I. Yogyakarta Province.

The number of people working in the agricultural sector showed a significant negative effect on the poverty level in D.I. Yogyakarta Province. The increase in the workforce working in the agricultural sector by 1 percent will reduce the poverty rate by 0.005299 percent. This research is also in accordance with the results of Marlita's research (2017) which examines the Analysis of Factors Affecting Labor Productivity and Its Impact on Poverty in Indonesia where labor in the agricultural sector has a negative effect on poverty.

The variable dependency ratio in this study did not affect the poverty level in D.I. Yogyakarta Province. Education level or average length of school in this study showed a significant negative effect on poverty in D.I. Yogyakarta Province. The increase in the average length of school by 1 percent will reduce poverty by 0.778219 percent, assuming ceteris paribus.

Alternative Policies to Reduce Poverty in D.I. Yogyakarta Province

The central government, in coordination with the regional government, must be able to achieve economic equality where economic growth is not only enjoyed by the middle to upper-income levels. Equitable distribution of income is very important, considering D.I. Yogyakarta is the province with the highest inequality or Gini ratio in Java island at the end of 2017 (Statistics Indonesia, 2018). It shows that economic equality must continue to be pursued by the government through various policy programs such as infrastructure development in remote areas; continue to strive to procure progressive taxes; opening new jobs especially in labor-intensive sectors and in locations with high numbers of poor people such as in the agricultural sector.

Regional governments and the central government have to coordinate in carrying out the existing educational program and increasing the quantity and quality of education in the province. Increasing the health facilities quantity should be accompanied by guarantees of ease of access for the poor. The government can also increase the awareness of the poor to live a healthy lives with direct socialization.

4.   CONCLUSIONS AND SUGGESTIONS
Conclusions
Based on the results and discussion presented earlier, it can be concluded:
1. Factors that cause poverty in D.I. Yogyakarta Province is economic growth rates, the average length of the school, workers who work in the agricultural sector, and the number of health facilities.
2. Interventions from the central government are needed to reduce poverty, such as: increasing employment, especially in labor-intensive sectors and where many poor people work; increase the productivity of productive age population by providing soft skills training and incentives for SMEs; and improve health and education facilities in D.I. Yogyakarta Province.

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Suggestions
1. The unemployment rate affects the poverty level in D. I. Yogyakarta Province. The solution offered is to increase employment especially in labor-intensive sectors; carry out training; and providing stimulus to the SMEs such as the ease of building a business, facilitating loan from financial institutions so that labor absorption increases.
2. The government must also increase the quantity and quality of education in D.I. Yogyakarta Province. Increase the number of educational facilities such as schools; the addition of new educators must be accompanied by a guarantee that the poor can enjoy existing facilities without paying an expensive fee/free fees. The 12-year compulsory education program from the central government must continue to be carried out to improve the quality of human resources in D.I. Yogyakarta Province.
3. The Central Government must be able to increase the number of health facilities in D.I. Yogyakarta Province, improving health facilities evenly to the remote areas. Improving health facilities must also be followed by ease of access for the poor.

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