GOVERNMENT EXPENDITURE AND POVERTY
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Abstract

Poverty is a problem in developing countries. Poverty alleviation requires comprehensive and integrated handling, because this problem is multysectoral and multidimensional. This study aimed to analyze the effect of government education, health, and infrastructure expenditures on poverty in Central Java Province, Indonesia. The data in this study was the pooling data from 35 districts/cities in Central Java Province from 2018 to 2020. The data analysis method in this study is multiple regression analysis with panel data. The results of the analysis show that the regression coefficient for the variable government spending on education was negative. Health expenditure has a negative effect on poverty levels. Public work expenditure has a negative effect on poverty levels in Central Java Province, Indonesia. This policy implies that the role of local governments is very large in reducing poverty in Central Java, so a larger budget is needed to reduce poverty in Province of Central Java.

Keywords: *government education expenditure, government health expenditure, government infrastructure expenditure, poverty*

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INTRODUCTION

A very complex problem faced by all countries in the world is poverty. Handling poverty alleviation is very complex. Poverty alleviation has been done a lot. The role of government in poverty alleviation is very necessary. Government policies that are carried out must be oriented to reducing poverty. Indonesia as one of the developing countries with complex poverty problems has implemented this poverty alleviation policy. With still airings of poverty in Indonesia, needed a more effective policy formulation to overcome the problems of poverty in a more comprehensive (Sasana and Kusuma, 2018)

Poverty alleviation needs to be an important policy agenda in Indonesia. Therefore, when the government neglects the problem of poverty, it also violates the constitution. In addition, poverty alleviation can now be said to be a necessity for the government since this has become a global commitment since the United Nations (UN) summit in 2000 which has launched the Millennium Development Goals Declaration (MDGs) to achieve people's welfare in 2015.

Considering that poverty is a multidimensional problem, the efforts to overcome it require various steps and involve all parties. Of the various existing ways, one of the paths that can be chosen is through fiscal decentralization. There are several arguments on the relationship between fiscal policy for decentralization and poverty reduction

program. According to (Boex, 2006) although the meaning is different, the concepts of decentralization and poverty reduction have similar characteristics. First, the definition used to explain both changes along with the development of human understanding of both. Second, as a consequence, the two concepts are not easily quantified. Third, more substantively, both of which were related to empowerment. Decentralization is related to community empowerment through empowering local governments, while poverty reduction also involves empowering a group of people, namely the poor.

Fiscal decentralization and regional autonomy is one of the instruments in the form of giving authority to local governments to manage various development indicators based on development priorities in each region. Governments play a role in capital formation through government spending in various fields as the level of decentralization will affect the composition of government spending (Grosatio and Prota, 2015), such as government spending on public facilities and infrastructure that will increase economic growth and reduce the number of poor people.

Many researches on poverty have been carried out in Indonesia. This researches include from (Ferezagia, 2018; Hutahaean, 2020; Sumargo and Simanjuntak, 2019; Susanto and Pangesti, 2021) .

There have been many studies on effect government expenditure on poverty, but there

is no uniformity of research result. The result of the research conducted by ((Boex, 2006) (Miar and Ahmad, 2020) found that government spending affects poverty reduction. It mean that the greater the government expenditure will be take effect on poverty reduction. The research result conducted by (Jütting et al., 2004), (Nursini and Tawakkal, 2019) and (Crook, 2003) showed that government expenditure does not significantly influence poverty reduction. This means that there is no effect of government spending on poverty alleviation.

Many studies had been conducted relating to poverty and its influencing factors. From the results of the studies, there are many different factors that affect poverty. The level of education is one of the factors that affect the level of poverty. The studies conducted by (Taruno, 2019),(Sasana and Kusuma, 2018), (Nabeela Asghar, 2012) on the effect of education on poverty show that the level of education is a negative. This is in contrast to the results of research by (Saraswati, 2013) which shows that reducing poverty was not influenced bygovernment spending on education. This is supported by research conducted by (Omari and Muturi, 2016) which shows that government expenditure on education was found to have an insignificant relationship with poverty in Kenya.

Other factors affect poverty levels. One of them is government expenditure for health. The research conducted by (Nabeela Asghar, 2012) show that government spending in health does not affect poverty alleviation in Pakistan. Meanwhile, the result of research by (Omari and Muturi, 2016) show that government expenditure on health were found to be positive and significant to poverty reduction in Kenya.

The research on the effect of government expenditure on infrastructure on poverty levels turns out there are differences between one region and another. Research conducted by (Hutahaean, 2020) in Indonesia turned out to show that poverty reduction was not affected by government spending. Meanwhile, the result of research by (Alamanda, 2020) showed that spending for infrastructure is negatively and correlated with poverty in Indonesia.

Indonesia is implementing a decentralized system in carrying out governance. This can be seen in Law No. 22 of 1999. This law amended by Law No. 23/2004 which has shifted the paradigm of governance that was initially centralized to a decentralized government system. Law No. 32/2004 concerning Regional Government and Law No. 33 of 2004 concerning Fiscal Balance between the Central and Regional Governments mandates that decentralization be implemented in the form of regional autonomy. Based on this Law, regional autonomy is outlined in the form of granting the rights, authority, and obligations of autonomous regions to manage their own

regions. It is implemented with more authority given by the central government and funding support through central government transfers which are then expected by the regional government to be able to provide services to the public better.

In Indonesia, Transfer fund is one of several sources of regional revenue (APBD). The revenues of the APBD are ultimately used to fund the functions which are the authority and responsibility of the region. This is the crucial point whether the regional expenditure is prioritized in the areas / functions that have a positive effect on poverty alleviation efforts or not. The Regulation of Minister of Domestic Affairs No.13 of 2006 concerning Guidelines for Management of Regional Financial says that regional expenditure is used to fund various functions classified into compulsory affairs (such as education, health, public works, and social, labor) and optional affairs (such as agriculture, forestry, fisheries and marine, and trade). However, these functions have different degrees of interrelation with the efforts to reduce poverty in the regions.

RESEARCH METHODS

The data used in this study were secondary data issued by the Indonesian Central Statistics Agency. The data in this research was panel data, which is merging of cross section and time-series data. The panel data collected to were the data from 35 regencies and cities in Province of Central Java, Indonesia from 2018-2020 with a total of 105 data.

The technical data analysis used in this study was the panel data regression model. In conducting data analysis, the stages carried out include were the Chow test, the Hausman test Furthermore, hypothesis testing was also performed which included coefficient of determination, t test, and F test.

The equation model used in this study was to recognize a connection between government spending as the instrument of pro-poor expenditure in poverty alleviation. The dependent variable used in this equation was the poverty index (Po), while the independent variable was government expenditure suspected to be pro-poor, namely education, health and infrastructure expenditures. Thus, the relationship in the variables can be denoted as follows:

$Poverty =$
f (*Government Expenditure on Education* (BP),
Government Expenditure on Education Health (BK),
Government Expenditure on Infrastructure (BPU)

Then, this study constructed the relationship between variables used in research. The model used in this study was as follows:

$$P_{0it} = \beta_0 + \beta_1 \log (BP)_{it} + \beta_2 \log (BK)_{it} + \beta_3 \log (BPU)_{it} + \varepsilon_{it}$$

where:

Po   : Percentage of Poor Population

BP   : government expenditure on education of region i in year t

BK   : government expenditure on health of region i in year t

BPU   : government expenditure on infrastructure of region I year t

β_0 : intercepts

$\beta_1, \beta_2, \beta_3$: regression coefficient

ε : confounding variable

i   : 1,2,3,4,5 .....

t   : 2018-2020

Research Variable and Operational Definition of Variables

a. government expenditure on education (BP) is the total realization of region expenditure in education functions divided by the population in each region.

b. government expenditure on health (BK) is the total realization of the regional expenditure on health functions divided by the population in each region.

c. government expenditure on infrastructure (BPU) is the total relation of regional expenditure on infrastructure divided by the population in each district of the city.

d. Poverty Index (Po) is the percentage of the poor population to the population of the region. This figure can show the conditions of poverty in a region. The higher the poverty index, the lower the welfare level of a region.

Several stages of testing that must be carried out in regression analysis with panel data, namely: (Gudjarati, 2009)

1. Common effect approach
2. Fixed effect approach
3. Random effect approach

Hausman statistics is:

$M = \chi^2 \, stat = q\,'var\,(q)\,1\text{-}q\ q$

Where

$q = [[\beta\text{-}\beta\ GLS]$ and var $(q) = nar\ (\beta) - var\ (\beta\ GLS)$

Hausman's test statistics follow the distribution of chi squares with degrees of freedom symbolized by k. k is the number of independent variables in the study. When the Hausman statistical value is more than the critical value, the right model is the model of fixed effect (FEM). In turn, when the value of Hausman statistical is smaller than the critical value, the right model is the model of random effect when the critical value is bigger than the Hausman statistical value.

RESEARCH RESULTS AND DISCUSSION

Lag Length

Before conducting the analysis with the data panel, first, we conducted a test to find the lag length. The selection of the model was pursued through lag length testing. The impact of regional expenditure policy usually does not directly impact poverty but requires time. Therefore, in order to get the right model, the selection of inaction length used the Akaike Information Criterion (AIC) or the Schwarz

Information Criterion (SIC). The length of lag was chosen based on the smallest AIC or SIC values (absolute number). Both of these criteria were applied in the selection of the models in this study with the results presented in the following Table 1.

Table 1. AIC and SIC Values

Model		AIC	SIC
Po	without lag	0.7756	0.8767
	Lag 1	0.7028	0.8313

Source: processed data

By looking at the AIC and SIC values, the lower regression equation model is in the lag-1 model. Therefore, for the equation model (model Po), it is more appropriate to use lag-1 which means that the dependent variable in the period t is influenced by the independent variable in the period t-1. The testing was only made until lag-1 because the study period was only three years, so when followed by lag-2, the equation model formed is just a pooled data or ordinary crossection model.

Regression estimation with Panel Data

After testing in the previous stage, then a significance test was carried out to choose which method was more suitable for this research model. This significance test is carried out in 2 (two) stages:

The result of Chow Test

This Chow Test is was applied to choose which model is better between the models assuming that the slope and intercept are the same (common effect) and the model assuming that the slope is the same but has different intercept (fixed effect). The null hypothesis of this test is the common effect model, while the alternative hypothesis is the fixed effect or model of random effect. The data processing results of the chow test are shown in Table 2.

Table 2. Chow Test

RSS1	7.3831
RSS2	0.0402
F count	3059.57

From the Chow test results, it is deduced that the fixed effect or model of random effect is preferable than the common effect model, so the assumption that the coefficients of intercept and slope are the same does not apply. In other words, the appropriate data panel model to analyze the behavior of the thirty-five districts/ cities in this study is the model of fixed effect with the technique of least square dummy variable (LSDV) rather than the common effect model.

Hausman Test

Here in after step was to conduct the Hausman Test to select which one among the fixed effect model and the random effect model which is suitable for estimating the poverty model. The null hypothesis of this test is the model of random effect, while the alternative hypothesis is the model of fixed effect. By looking at the value of $\chi 2$ count of 6.6309 compared to the $\chi 2$ table of 6.2514, it can be concluded that Ho is refused, so the

model of fixed effect is better than the random effect.

After going through the two stages of the model significance tests (Chow and Hausman Tests), it was found that the fixed effect is more suitable for the research model. The results of data processing with the regression method with the model of fixed effect can be written as follows:

Table 3. Estimation Result

	Koefisien	t count
Constant	7.9860	
Log BP	- 0.3140	(-12.03)
Log BK	- 0.0672	(-3.80)
Log BPU	- 0.0398	(-1.2060
F	3515.059	
R2	0.8973	

Be base on estimation regression results, the magnitude of the determination coefficient obtained (R2) is 0.8973, or by 89.73 percent. This value indicates that the variables of education, health, and public work expenditures can explain 89.73 percent of the variation in the poverty level variable. Meanwhile, 10.27 percent variation in the dependent variable (poverty level) is contributed by another variables.

The F test was used for test whether the independent variables together (ß1, ß2, ß3) have an important effect on the dependent variable. This test was applied by comparing the F-stat with the F-table or by comparing the probability of the F-stat with the tolerance error level (α).

From the results of data processing the equation I, an F-stat value of 3515,059 is obtained with a probability value (ρ-value) of 0.0000. The test results reject Ho, so education, health and public works expenditures, together, affect the poverty level.

The regression result of the impact of government expenditure on poverty are presented in Table 4. Be base the analysis results, it was obtained that the expenditure on education affairs is the regression coefficient value of -0.3140. It shows that every 1% add in education expenditure per capita, assuming ceteris paribus (the other variables are assumed to be constant or unchanged), it will reduce the number of the poor by 2.52 percent. Therefore, the initial hypothesis in which education function expenditure is significantly influential on poverty alleviation is accepted.

The research results of this study are accordance by (Sulistyowati et al., 2017) finding that the combination of the increase in government expenditure for education and infrastructure produce better performance in increasing welfare in Central Java. This is in contrast to (Kusumaningrum, 2013) research which shows that spending on education and health does not reduce poverty in Indonesia.

When further observed, the regression analysis obtained that the regression coefficient of per capita expenditure on education affairs is the largest, and then it is followed by the coefficient on the per capita expenditures on health and public works. This shows that education expenditure has the most direct effect or leverage to lower the

percentage of poor people and to alleviate them from poverty line. It is understood that education expenditure is an investment to provide knowledge, skills, values and behavior that can improve productivity and employment opportunities for most poor people. Education is the most important vertical mobility tool. When other capital is not owned, armed with education, they can compete to get a better life in the future. Along with increasing education and productivity, it will increase their income which is useful to meet the needs of a decent living in accordance with or exceeding the poverty line standards.

In this study, it was found that education expenditure has an effect on poverty alleviation in Central Java Province. These results are in line with the studies of (Alamanda, 2020) which states that expenditure for education has an effect on poverty levels. The results of this study basically support the results of other studies in which education is the main key in the formation of human capital which further influences poverty alleviation (Jhingan, 2011). (Jhingan, 2011) explains that an important factor causing the fast growth of economy in America is education funding which is relatively always increasing. Studies show that the dollars invested in education yiled a greater increase in Gross National Product. It is more than the dollars used for dams, highways, factories or other tangible capital goods.

Meanwhile the results of the research for the variable of government expenditure on heath on poverty indicate that the regression coefficient is 0.0672 and significant at α of 5% . The results are in accordance with the hypothesis that government health sector spending affects the poverty level, meaning that an increase in government spending for the health sector by 1 percent reduces poverty by 0.0672 percent. The results of this study are in line with the research conducted by (Arma et al., 2018)(Komarudin and Oak, 2020) who conducted a study of the effect of health spending on poverty levels in Indonesia. In addition, the results of the study of (Taruno, 2019) that concluded to reduce the level of poverty, the government should focus on investment programs in the health and education sectors. This is different from research from (Nabeela Asghar, 2012) which shows that spending on health has no effect on poverty reduction in Nigeria.

The coefficient of government expenditure on infrastructure variables per capita in the regression results to the poverty index (P0) is 0.0398 with a probability of 0.033. The interpretation of these results is that government expenditure on infrastructure has a negative relationship with poverty index. This shows that for every 1% increase in Public Works expenditure, assuming ceteris paribus (the other variable is assumed to be constant or unchanged), decreases the percentage of poor people (poverty index/ P0) by 0.0398.

Therefore, the initial hypothesis in which the spending on infrastructure function significantly influences poverty alleviation is accepted. The constructions of social and physical infrastructures such as village roads, irrigation, schools, access to electricity, clean water, and sanitation are very important to raise the level of welfare of the poor. The positive impact of infrastructure is not limited to production efficiency but also to living standards. This ini in line with the result of research conducted by (Chotia and Rao, 2017) which showed that infrastructure reduce poverty. This result is different from study conducted by (Arma et al., 2018) which says that infrastructure no effect on poverty reduction, because infrastructure development enjoyed more by the rich than the poor.

Good infrastructure development will guarantee efficiency facilitates the movement of goods and services, and increases economic added value. With an increase in the economy, it will certainly increase people's income and release them from the bondage of poverty. The availability of good infrastructures, such as roads and bridges, is one of the drivers of productivity. (Fan, 2009) who conducted a research on the relationship of road infrastructure expenditure (feeder, muram, tarmac roads) in Senegal proves that the spending on road infrastructure to improve the condition of land roads in rural areas has the greatest influence in alleviating poverty because the improvement of road conditions will increase the productivity and mobility of rural population.

CONCLUSIONS AND SUGGESTIONS

Based on the results of the analysis on the effects of education, health, and infrastructure expenditure on poverty levels discussed earlier, the following conclusions can be drawn:

Regional expenditure on education in the districts / cities in Central Java Province has a negative and significant effect on poverty in Central Java Province. Health expenditure in the districts / cities in Provinces in Central Java has a negative and significant effect in reducing poverty in Central Java Province. Infrastructure expenditure in the districts / cities in Central Java Province has a negative and significant effect on poverty in Central Java Province. In this study, the results show that pro-poor expenditure in Central Java Province in the form of education, health, and infrastructure expenditure can reduce poverty. The biggest influence is the regional expenditure on education matters.

This research still has many limitations. Researchers realize that the results of this study cannot be used as a benchmark for all provinces in Indonesia, because each region has its own uniqueness. Furthermore, for the time span of the study, if it is carried out in a longer time it will produce more accurate results. Based on the data used, not all data can be accessed properly, due to website improvements in the regions.

The implications of the result of this study is in alleviating poverty in Central Java, the role of local governments is still very large. So there needs to be a budget allocated to reduce poverty in Central Java.

REFERENCES

Alamanda, A., 2020. THE EFFECT OF GOVERNMENT EXPENDITURE ON INCOME INEQUALITY AND POVERTY IN INDONESIA. INFO ARTHA 4, 1–11.

Arma, N.A., Noor, I., Sujarwoto, 2018. INFRASTRUCTURE EXPENDITURE AND POVERTY REDUCTION IN INDONESIA. Russ. J. Agric. Socio-Economic Sci. 76, 40–51.

Boex, J., 2006. Fighting Poverty through Fiscal Decentralization. United States Agency of International Development (USAID).

Chotia, V., Rao, N.V.M., 2017. An empirical investigation of the link between infrastructure development and poverty reduction. Int. J. Soc. Econ. 44, 1906–1918.

Crook, R.C., 2003. Decentralisation and poverty reduction in Africa: the politics of local–central relations. Public Adm. Dev. 23, 77–88.

Fan, S., 2009. Public Expenditures, Growth, and Poverty: Lessons from Developing Countries. ASEAN Econ. Bull. 26, 235.

Ferezagia, D.., 2018. Analisis Tingkat Kemiskinan di Indonesia. J. Sos. Hum. Terap. 1.

Grosatio, M.., Prota, F., 2015. The Short and Long Relationship between Fiscal Decentralization and Public Expenditure Compotition in Italy. Econ. Lett. 130, 113–116.

Gudjarati, D., 2009. Basic Econometrics, 5th ed. Mc Graw-Hill Irwin.

Hutahaean, M., 2020. Implications of the Decentralization Policy on Poverty Reduction in Indonesia. Policy Gov. Rev. 4, 87.

Jhingan, M.., 2011. The Economics on Development and Planning, 40th ed. Vrinda Publications Ltd.

Jütting, J.P., Kauffmann, C., McDonnell, I., Osterrieder, H., Pinaud, N., Wegner, L., 2004. Decentralization and Poverty in Developing Countries: Exploring the Impact. SSRN Electron. J.

Komarudin, M., Oak, M., 2020. Public Health Spending, Governance Quality and Poverty Alleviation. Econ. Financ. Indones. 66, 157.

Kusumaningrum, R.S.., 2013. Link of Fiscal Decentralization to Poverty in Indonesia : Indonesia Contex. J. Econ. 9.

Miar, M., Ahmad, Y., 2020. The Analysis of Influence of The Government Expenditure on Poverty in Indonesia. J. Ekon. Pembanguan 18, 91–102.

Nabeela Asghar, 2012. The impact of government spending on poverty reduction: Evidence from Pakistan 1972 to 2008. AFRICAN J. Bus. Manag. 6.

Nursini, N., Tawakkal, T., 2019. Poverty alleviation in the contex of fiscal decentralization in Indonesia. Econ. Sociol. 12, 270–285.

Omari, L. V., Muturi, W., 2016. The Effect of Government Sectoral Expenditure on Poverty Level in Kenya. J. Econ. Sustain. Dev. 7, 220–242.

Saraswati, E., 2013. Public Spending Education and Inequality: A Case Studyin Indonesia. Int. J. Soc. Sci. Humanit. 427–431.

Sasana, H., Kusuma, P., 2018. Government Expenditure and Poverty in Indonesia. KnE Soc. Sci. 3, 142.

Sulistyowati, N., Sinaga, B.M., Novindra, N., 2017. Impacts of Government and Household Expenditure on Human Development Index. Jejak 10, 412–428.

Sumargo, B., Simanjuntak, N.M.M., 2019. Deprivasi Utama Kemiskinan Multidimensi Antarprovinsi di Indonesia. J. Ekon. dan Pembang. Indones. 19, 160–172.

Susanto, R., Pangesti, I., 2021. PENGARUH INFLASI DAN PERTUMBUHAN EKONOMI TERHADAP TINGKAT KEMISKINAN DI INDONESIA. JABE (Journal Appl. Bus. Econ. 7, 271.

Taruno, H.T., 2019. Public Spending and Poverty Reduction in Indonesia: The Effects of Economic Growth and Public Spending on Poverty Reduction in Indonesia 2009-2018. Indones. J. Plan. Dev. 4, 49–56.