# ANALYSIS OF POVERTY ALLEVATION IN SPECIAL REGION OF YOGYAKARTA

**Rini Raharti✉, Danang Wahyudi, Fikri Budi Aulia, Ade Riska Ayu Septiani**
Faculty of Economics and Business, Janabadra University
✉riniraharti@janabadra.ac.id

***ABSTRACT***

*This study aims to analyze government spending in the education and health sectors on the poverty level in the Special Region of Yogyakarta in 2008-2022. This research is quantitative research, while the type of data used in this research is secondary data. This study uses multiple linear regression analysis, with hypothesis testing, namely t-test, F-test, and determination test ($R^2$). From the results of simultaneous hypothesis testing (F-test) shows that simultaneously government spending in the education and health sectors has an effect on the poverty level with a calculated F statistic of 19.54413. Based on the t-test, the regression coefficient value of government spending in the education sector is -0.000131 indicating that government spending in the education sector has a negative effect on the poverty level. Meanwhile, the coefficient value of government spending in the health sector is -0.000234, indicating a negative and significant effect on the poverty level.*

*Keywords: poverty, education sector, health sector, government spending*

## INTRODUCTION

Poverty is a complex problem in a country because poverty is not only related to the problem of low levels of income and consumption, but also to low levels of education, health and the powerlessness of the poor to participate in the development process (Fithri & Kaluge, 2017). In general, poverty is a form of gap in life in meeting daily needs or basic needs such as food, clothing, a decent place to live, education, and health (Andriani, A. D., et al., 2022). Meanwhile, the Indonesian Central Statistics Agency defines poverty as a condition of life that is completely deprived experienced by a person or household so that they are unable to meet the minimum or decent needs for their life.

Poverty is a common phenomenon that occurs in many countries in the world and is a global social problem (Sofia, 2017). Poverty has also become a very complex problem in a country because poverty is not only related to the problem of low levels of income and consumption, but low levels of education and health are also included in poverty (Lund et al., 2011). Poverty according to (Kuncoro & Idris,

2015) is the inability to meet a low standard of living which is also related to a small amount of income, inadequate housing, poor health and health services, low levels of public education, resulting in low human resources and high unemployment. The level of living standards in a country can be measured from several indicators, including Gross National Product (GNP) per capita, relative national growth and per capita income, distribution of national income, poverty level, and level of community welfare.

According to (Andriani, A. D., et al., 2022), the concept that refers to the poverty line is called absolute poverty, while the concept whose measurement is not based on a poverty line is called relative poverty. Absolute poverty is the degree of poverty below, where the minimum needs for survival cannot be met, relative poverty is a measure of the gap in the distribution of income, usually defined in terms of the average level of the distribution in question.

In a development process, according to Musgrave, the ratio of private investment to Gross National Product (GNP) is getting bigger. But the ratio of government investment to GNP will be smaller. Meanwhile, Rostow argues that at an advanced stage of development there is a shift in government activity from providing economic infrastructure to spending on social services such as old-age welfare programs, education programs, public health service programs and so on (Andriani, A. D., et al., 2022).

In addition, according to (Anser et al., 2020) the poverty of an area leads to the theory of a vicious circle of poverty from the supply side, the low level of community income caused by low productivity levels causes people's ability to save is low. A low ability to save causes a low level of capital formation, a low level of capital formation (investment) causes a shortage of capital, and thus a low level of productivity and so on.

Research conducted by (Taurusandika et al., 2021) which discusses the evaluation of non-fuel subsidies policy on poverty alleviation in Indonesia. In addition, various efforts have also been made by the Government of Indonesia to alleviate poverty that has occurred in Indonesia so far. However, due to the lack of an evaluation process related to the weaknesses and strengths of each of these efforts, the implementation is less perceived by the Indonesian people.

Therefore, it is necessary to conduct an in-depth study regarding which aspects are influential and which aspects are not very influential in alleviating poverty in the Special Region of Yogyakarta. This is necessary so that the government can focus more on optimizing aspects that are influential in the context of alleviating poverty in the Special Region of Yogyakarta. The Special Region of Yogyakarta itself is one of the provinces in Indonesia which consists of 4 regencies and 1 city with a population of 3.67 million people at the time of the 2020 population census. The large number of regencies/cities and the population in the Yogyakarta area can provide an overview of human development which varies with the number of poor people.

## LITERATURE REVIEW

### Poverty

Poverty is a multidimensional problem. Approaches with one particular field of science are not sufficient to decipher the meaning and the accompanying phenomena. The general definition commonly used in calculations and academic studies is the notion of poverty introduced by the World Bank, namely the inability to achieve a minimum standard of living.

Chambers in (Listyaningsih et al., 2021) says that poverty is an integrated concept that has five dimensions, namely: 1) poverty, 2) powerlessness, 3) vulnerability to emergency situations, 4) dependence, and 5) isolation both geographically and sociologically. The United Nations Development Program (UNDP) defines poverty as the inability to expand choices in life, including by including: assessment of "absence of participation in public decision-making" as an indicator of poverty (Wiranatakusuma & Primambudi, 2021). (Sajogyo, 1995) defines the poverty line as the value of rupiah that a person must spend in a month in order to meet the basic needs of calorie intake of 2,100 calories / day per capita (food poverty line) plus the minimum non-food which is a person's basis, namely board, clothing, school, and transportation and other basic individual and household needs (non-food poverty line) minimum basic standards translated as financial measures in terms of money. The value of the minimum needs for basic needs is known as the poverty line. People whose income is below the poverty line are classified as poor (*UNDP*, 1994)

According to Sharp in (Kuncoro & Idris, 2015) there are three factors that cause poverty when viewed from an economic perspective. First, poverty arises because of the unequal pattern of resource ownership which results in an unequal distribution of income. The poor have only limited resources and low quality. Second, poverty arise due to differences in the quality of human resources. The low quality of human resources means low productivity, which in turn low wages. The low quality of human resources is due to low education, disadvantaged fate, discrimination or heredity. Third, poverty arises because of differences in access to capital. These three causes of poverty lead to the vicious circle of poverty theory.

### Government Expenditure

Budget (APBN) or Regional Revenue and Expenditure Budget (APBD). where every year to various sectors or fields with the aim of prospering the people/society through various programs that have been made. Government spending plays a role in meeting community demands with the provision of facilities and infrastructure that cannot be met by the private sector (Astri Dwi Andriani, Asep Mulyana , I Gde Dhika Widarnandana, Aris Armunanto, Imas Sumiati, Leni Susanti, Leonita Siwiyanti, Qomarotun Nurlaila, Dheni Dwi Pangestuti, 2022).

In the book (Kuncoro, n.d.) government spending involves all expenditures to finance its activities, the expenditure is aimed at achieving the welfare of society as a whole. According to (Astri Dwi Andriani, Asep Mulyana , I Gde Dhika Widarnandana, Aris Armunanto, Imas Sumiati, Leni Susanti, Leonita Siwiyanti, Qomarotun Nurlaila, Dheni Dwi Pangestuti, 2022) government consumption expenditure, which is usually only called government expenditure, government expenditure or government purchase includes all expenditures where the government directly receives remuneration. From some of the opinions above, it can be concluded that government expenditure is expenditure issued by the government to finance government consumption, activities and other expenditures in order to achieve the welfare of society as a whole.

**Education Sector**

Government spending on education and health is basically an investment in economic growth (Jaiyeoba, 2015). Based on the Law of the Republic of Indonesia Number 20 of 2003 concerning the Education System, education is a conscious and planned effort to create a learning atmosphere and learning process so that students actively develop their potential to have spiritual spiritual strength, self-control, personality, intelligence, noble character, as well as the skills needed by himself, society, nation and state. The purpose of education is to develop the potential of students to become human beings who believe and fear God Almighty, have noble character, are healthy, knowledgeable, capable, creative, independent, and become democratic and responsible citizens. In an effort to achieve sustainable economic development (sustainable development), the education sector plays a very strategic role that can support the production process and other economic activities. In this context, education is considered as a tool to achieve sustainable targets, because with education development activities can be achieved, so that opportunities to improve the quality of life in the future will be better. Analysis of investment in education is embedded in the human capital approach. Human capital is a term often used by economists for education, health, and other human capacities that can increase productivity if they are improved (Almendarez, 2013).

The assumption used in human capital theory is that formal education is the dominant factor to produce a high-productivity society. Human capital theory can be applied on condition that there are high-tech resources efficiently and human resources that can utilize existing technology. This theory believes that investment in education is an investment in increasing the productivity of society. Investment in education is absolutely necessary, so the government must be able to build a good education facility and system. The government's budget allocation for education is a tangible manifestation of investment to increase productivity.

**Health Sector**

Some economists assume that health is an economic phenomenon that can be assessed from stock or also assessed as an investment so that the health

phenomenon becomes a variable which can later be considered as a factor of production to increase the added value of goods and services, or as a target of various goals to be achieved by the government. individuals, households and communities, known as welfare goals. Therefore, health is considered as capital that has a positive rate of return both for individuals and for the wider community. Health is a basic need for every human being, without public health it cannot produce a productivity for the country. The economic activity of a country will run if there is health insurance for every resident. Related to the theory of human capital, human capital plays a significant role, even more important than technological factors in spurring economic growth (Teixeira & Fortuna, 2010). Developing countries such as Indonesia are undergoing a medium stage of development, where the government must provide more public facilities such as health to increase economic productivity. Health facilities and health insurance must be designed in such a way by the government through government spending. According to research conducted by (Darmayanti & Rustariyuni, 2019) shows that the sector health, the rate of deliveries assisted by medical personnel and the percentage of government spending on health have a significant effect on the infant mortality rate. In general, health shows that the increase in government spending on the health sector has proven to be quite large in increasing the performance of the sector.

Given the large influence of government spending on improving the performance of health, it is necessary for the government to gradually increase its spending on the health sector. The low capacity of local budgets to increase budget allocations in the health sector has implications for the continued dominance of the central government as a source of financing.

## METHOD

The data used in this research is secondary data. Secondary data is data collected through a second party (usually obtained through agencies/agencies engaged in the data collection process, both government and private agencies, for example: Publication of the Central Statistics Agency 2023, Indonesian Research Survey, and others). The type of data used in this study is time series data for the period 2008.1-2022.4. The data taken are the poverty level ($Y$), government spending in the education sector ($X_1$), government spending in the health sector ($X_2$).

As a sampling criterion, this study used data on the number of poor people and the poverty line and government expenditures obtained from the Central Statistics Agency of the Special Region of Yogyakarta and then used as a data source for analysis.

The analytical tool used in this research is multiple linear regression analysis, which is an analysis that uses more than one independent variable to estimate the dependent variable. To examine the relationship between government spending in the education sector and government spending in the health sector, the ordinary

least squares (OLS) model is used. The multiple linear regression equation is as follows:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \varepsilon \ldots\ldots (1)$$

Where:

$Y$ : Poverty Level (%)
$\alpha$ : Constanta
$\beta_1 \beta_2$ : Regression Coefficient
$X_1$ : Education Sector Government Expenditure (%)
$X_2$ : Health Sector Government Expenditure (%)
$\varepsilon$ : Error term

## RESULTS AND DISCUSSION

### Analysis of Multiple Linear Regression

The results of multiple linear regression test the effect of government spending on education and health sectors on poverty alleviation. The results of data processing with multiple linear regression analysis are presented as follows:

**Table 1. The Results of Multiple of Linear Regression**

| Variable | Coefficient | T-stat. | Prob. |
|---|---|---|---|
| C | 150128.1 | 6254855 | 0.0000 |
| Sector Government Expenditure Education | -0.000131 | -2.995371 | 0.0049 |
| Sector Government Expenditure Health | -0.000234 | -2.962827 | 0.0053 |
| F. stat = 19.54413 (p = 0.000002)<br>$R^2$ = 0.513723<br>Adjusted $R^2$ = 0.487437<br>DW-stat = 0.331346 | | | |

Source: secondary data processed, 2023

Mathematically the results of multiple linear regression in the following equation:

$Y = 150128.1 - 0.000131X_1 - 0.000234X_2$ …… (2)

In the above equation, it shows that the effect of the education sector government expenditure variable, health sector government expenditure on the poverty level. The meaning of these coefficients are:

a. $\beta_0$ = 150128.1
   This means that if the education sector government expenditure variable ($X_1$), health sector government expenditure ($X_2$), is equal to zero (no change), then the poverty rate decreases by 150128.1.
b. $\beta_1$ = -0.000131
   That is, if the increase in government spending in the education sector ($X_1$) is 1 million, then the poverty rate will decrease by 0.000131 thousand with the assumption that other variables are constant (cateris paribus).
c. $\beta_2$ = -0.000234
   This means that if government spending on the health sector ($X_2$) is 1 million, the poverty rate ($Y$) will decrease by 0.000234 thousand, assuming other variables are constant (cateris paribus).

**F-Test**

The calculated F value in the regression equation above is 19.54413 with probability (p < 0.005), so that the independent variables jointly affect the dependent variable. Government spending on the education sector, and government spending on the health sector together have an effect on the level of poverty.

**T-Test**

The t test is used to prove the effect of the independent variable on the dependent variable individually with the assumption that the other variables are constant. The regression coefficient value of government spending in the education sector is -0.000131 and the probability value is 0.0049. Based on the value of the negative regression coefficient and p < 0.05, it indicates that government spending in the education sector has a negative effect on the poverty level. The higher the education sector government expenditure, the lower the poverty rate, and vice versa, the lower the education sector government expenditure, the higher the poverty level.

The coefficient value of the health sector government expenditure is -0.000234 and the probability value is 0.0053. Based on the value of the negative regression coefficient and p < 0.05, it indicates that government spending in the health sector has a negative and significant effect on the poverty level. The higher the government spending on the health sector, the lower the poverty rate, and vice versa, the lower the government spending on the health sector, the higher the poverty rate. The government Special Region of Yogyakarta should take action so that the people of Yogyakarta do not fall into poverty. Likewise for the years ahead, it is hoped that the government Special Region of Yogyakarta will have awareness of small communities, because in remote areas there are still many people who

complain because of the lack of a livelihood and sufficient income, there are still many at least providing them with adequate business or job opportunities.

This program will certainly help the community to meet their needs, besides that it will also affect the small community for their survival. This government program will certainly be very helpful so that the community will not be burdened with the poverty that afflicts them in this phenomenon, of course, it can reduce the level of inequality in economic development that exists.

**$R^2$ Test**

From the results of the regression of the effect of government spending on the education sector, and government spending on the health sector on the poverty rate in the Special Region of Yogyakarta in 2008-2022, an $R^2$ value of 0.513 was obtained. The results of the regression with the OLS method obtained $R^2$ (coefficient of determination) of 0.513, meaning that the variation of the dependent variable ($Y$) in the model, namely the poverty level ($Y$) can be explained by the variation of the independent variable ($X$), namely government spending in the education sector ($X_1$), government spending in the education sector health ($X_2$).

**Classical Assumption Deviation Test Result**

**Normality Test**

One of the assumptions in the linear regression model is that the probability distribution of has an expected mean equal to zero, is uncorrelated, and has a constant variance. The normality test aims to test whether in the regression model the confounding or residual variables have a normal distribution or not (Imam Ghozali, 2005). The result of calculating the JB statistic value is 2.633211 with df = 2 then 2 – table 5.991. The value of JB statistic is 2.633211 < 2 –table 5.991 then the result means that the variable is normally distributed.

**Linearity Test**

The calculation results obtained that the F-Count Probability value is 0.653792 with an alpha (α) value of 5%. The probability value of 0.5174 > 0.05, it can be concluded that the model has met the assumption of linearity and optimism that there is a linearity relationship.

**Heteroscedasticity Test**

The results of the calculation of the heteroscedasticity test using the Breusch-Pagan Godfrey test if the value of Prob. Obs*R-squared 0.3590 with a value of 5%. Obtained the value of Prob. Obs*R-squared 0.3590 > 0.05 with these results means that the estimated model does not have heteroscedasticity problems.

**Autocorrelation Test**

The calculated DW value is (0.331346) or is between -2 to +2 so it can be concluded that the regression model does not contain autocorrelation symptoms.

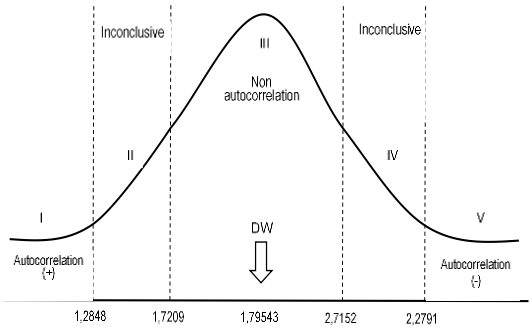


**Figure 1. Autocorrelation Test**
Source: secondary data processed, 2023

## Multicollinearity Test

**Table 2. Multicollinearity Test**

| Variable | Coefficient variance | Uncentered VIF | Centere VIF |
|---|---|---|---|
| X1 | 1.91E-09 | 6.035448 | 1.424502 |
| X | 6.24E-09 | 7.343099 | 1.424502 |
| C | 5760888 | 5.826025 | NA |

Source: secondary data processed, 2023

**Table 3. Multicollinearity test**

| Variabel | X1 | X2 |
|---|---|---|
| X1 | 1.000000 | 0.545894 |
| X2 | 0.545894 | 1.000000 |

Source: secondary data processed, 2023

Based on the multicollinearity output, the Variance Inflation Factor value is less than 10 and the tolerance value is less than 0.10. means that it can be concluded that in this study there is no multicollinearity.

## Discussion

This study aims to analyze the effect of the level of government spending on the education sector and government spending on the health sector on the poverty rate in the Special Region of Yogyakarta in 2008-2022. The results are discussed in the following paragraph.

The effect of government spending on the education sector on the poverty level of the Special Region of Yogyakarta in 2008-2022. The value of government expenditure in the education sector, the regression variable for government expenditure in the education sector, is negative, with a negative value of -0.000131, indicating that if government spending in the education sector increases by 1 million, it causes the poverty rate to decrease by 0.000131 thousand with the assumption that the variable is constant or fixed (cateris paribus). This result is obtained based on data on government spending in the education sector obtained from quarterly data from the Central Statistics Agency for the Special Region of Yogyakarta for the period 2008 to 2022. This indicates that increasing government spending in the education sector has led to a decrease in poverty rates in the Special Region of Yogyakarta. The research results are supported by previous research that increasing government spending in the education sector has led to a decrease in poverty rates in Carribean (Craigwell et al., 2012).

The effect of government spending on the health sector on the poverty level of the Special Region of Yogyakarta in 2008-2022. The value of government expenditure in the health sector, the regression variable for government expenditure in the health sector, is negative at -0.000234 indicating that if government spending in the health sector increases by 1 million, it causes the poverty rate to decrease by 0.000234 thousand with the assumption that the variable is constant or fixed (cateris paribus). These results are obtained based on data on government spending in the health sector obtained from quarterly data from the Central Statistics Agency for the Special Region of Yogyakarta for the period 2008 to 2022. This indicates that increasing government spending on the health sector has led to a decrease in poverty rates in the Special Region of Yogyakarta. The research results are supported by previous research that increasing government spending in the health sector has led to a decrease in poverty rates in developing caountries (Peters et al., 2008).

## CONCLUSION

This study aims to analyze the impact of government spending in the education and health sectors on the poverty level in the Special Region of Yogyakarta. The analysis revealed that both government spending on education and in the health sector are negatively associated with the poverty rate, based on the regression results. These findings indicate that increasing government spending in the education sector and health sector has led to a decrease in poverty rates in the

Special Region of Yogyakarta. This study applies these findings to the Special Region of Yogyakarta and may not generalize them to other provinces in Indonesia. Therefore, the next research project may conduct the same research in another province to ensure comparability of the results.

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