Review Article

The Effect of Expenses on Education, Health, Public Services, And Investment on Poverty in East Java Province in 2014-2018

Gabriella Stefanny[1], Karim Kamil[2], Mauluha Sandra[3], Imam Mukhlis[4]

[1,2,3,4] *Faculty of Economics, Universitas Negeri Malang*
Jl. Semarang No.5, Malang, Jawa Timur, Indonesia

Abstract - Poverty is a very issue to be discussed in Indonesia. The government has not turned a blind eye to it; thus, many efforts have been made to alleviate poverty. Some examples of which are the existence of government subsidies in the health and education sectors, which is very helpful for people to get access to education and health easily. The government also continues to improve the public service system to serve the community better. The community itself should strive to avoid poverty; one of the ways is to invest. This investment, to be particularly in assets, is done in the hope that there will be long-term benefits obtained in the future. This study aims to determine whether there is an influence between education spending, health spending, public services, and investments towards poverty. The results of this study are partial; the variable education spending has a significant positive effect on poverty, the variable of health spending, public services, and investment each have a significantly negative effect on poverty. Simultaneously, the variables of education, health, public services, and investment have a significant effect on poverty. Seeing the results of the coefficient of determination test, it shows that the ability of the variable expenditure on education, health, public services, and investment in picturing poverty variables is 99.57%, and the rest-0.43%-is explained by other variables which are not included in the model.

Keywords - Poverty, Education, Health, Public Services, Investment.

I. INTRODUCTION

Indonesia, as a developing country, is dealing with poverty as a problem. Poverty is a condition in which a person does not have the ability to meet the standard of living of a community in an area. This can be characterized by low income, which will have an impact on meeting living standards as the average community such as health and education standards (Kuncoro, 1997). Poverty in Indonesia is multidimensional. This can be seen from various aspects, including primary and secondary aspects. What is meant by primary aspects is poverty in terms of assets, socio-political organization, and low knowledge and skills. Whereas the secondary aspect of poverty can be seen in terms of social networks, financial resources, and information obtained.

With a large area, Indonesia has some regions with different levels of poverty. The main focus is the condition in Java, where the poverty rate is quite high compared to other provinces in Indonesia. Regarding the condition of access and facilities in Java which, on average, has met the aspects of economic development, they should not encounter these conditions. However, the data shows that the poverty rate in East Java province is quite high, especially in 2014-2018. The Central Bureau of Statistics (*Badan Pusat Statistik/BPS*) has uploaded the highest poverty data from five provinces in Java in 2014-2018 onto its website as follows:

Table 1. Poverty in Indonesia

Year	East Java	Central Java	West Java	North Sumatera
2014	4748.4	4561.8	4239.0	1360.6
2015	4776.0	4505.8	4485.7	1508.1
2016	4638.5	4493.8	4168.1	1452.6
2017	4405.3	4197.5	3774.4	1326.6
2018	4292.2	3867.4	3539.4	1292.0

Source: Central Bureau of Statistics Indonesia (Badan Pusat Statistik/BPS)

From the data above, provinces in Java Island occupy the three highest ranks on poverty among the other provinces, with East Java province which has the highest poverty rate among the three provinces on Java. Need to bear in mind that East Java province has revenues from the largest state budget in Indonesia. This province receives the largest general allocation fund in Indonesia which the general allocation of this fund is for the needs of the people in the province. The data above shows the number of poor people in East Java Province is on the second rank. Now the East Java Provincial Government has established various policies through numerous programs to reduce poverty.

Based on the background of the problems above, the problems of this study are (1) Is there a partial effect between, education sector government expenditure, health sector government expenditure, public service sector government expenditure, and investment on poverty in East Java Province, (2) Is there any simultaneous influence between education sector government expenditure, health sector government expenditure, public service sector government expenditure and investment on poverty in East Java Province.

II. LITERATURE REVIEW

A. Expense on Education

Regional expenditure in the field of Education is one aspect of mandatory spending (DGTK of the Ministry of Finance, 2019). This mandatory spending is an expenditure or state expenditure that has been regulated by law. The Mandatory spending in local government financial includes the following matters: (i) Education budget allocation of 20% of the APBD in accordance with the mandate of the 1945 Constitution Article 31 paragraph (4) and Law no. 20 of 2003 concerning the national education system article 49 paragraph (1); (ii) The provincial, district/city government health budget is allocated a minimum of 10% (ten percent) of the regional income and expenditure budget outside of salary (Law No. 36 of 2009 on health); (iii) General Transfer Fund (DTU) is directed use, which is a minimum of 25% (twenty-five percent) for regional infrastructure expenditure which is directly related to the acceleration of the construction of public and economic service facilities in order to increase employment opportunities, reduce poverty, and reduce the gap in the provision of public and economic services in order to increase employment opportunities, reduce poverty, and reduce disparities in the provision of inter-regional public services (UU APBN); (iv) Village fund allocation (ADD) at least 10% of the balance funds received by the district/city in the regional income and expenditure budget after deducting the Special Allocation Fund (Law No. 6 of 2014 concerning Villages).

B. Expense on Health

Health is a dynamically balanced state, influenced by genetic factors, the environment, and patterns of daily living such as eating, drinking, sex, work, rest, to the management of emotional life. The health status will be ruined if the balance is disturbed. (Santoso, 2012).

According to WHO (World Health Organization), health is a state of physical, mental, and social well-being and not just the absence of disease or weakness. Meanwhile, according to the Ministry of Health, health is a normal and prosperous state of a person's body, social and soul to be able to carry out activities without significant disruption where there is continuity between one's physical, mental, and social health, including interacting with the environment. This statement is strengthened by the statement in Law No. 23 of 1992 that health is a prosperous state of body, soul, and society that enables everyone to live productively, socially, and economically.

Juanita (2002) has stated that one of the basic assets in implementing economic development is good conditions of public health. In economic development, health development must also be considered. Both need to run in a balanced way in order to achieve the goals expected for all, that is, prosperity, and this prosperity is for all people of Indonesia. Health development in question is a process of changing the level of public health from unfavorable levels to better according to health standards. Therefore, health development is a development carried out as an investment to build the quality of human resources.

C. Investment

Indonesia, as a developing country, has investors from various countries in the world. The function of investment for the state is to increase state revenue which will then be allocated to the public interest. Investment is divided into two, facility investment and non-facility investments. In Indonesia, there have been many non-facility investments, such as MSMEs. Along with the government's decision to alleviate poverty which should adjust to the conditions of the people and the environment of Indonesia, the government has invested a lot in the form of non-facility investment in the form of equitable SME procurement.

Harianto and Sudomo (1998) stated that investment is an activity of placing funds in one or more assets for a certain period in the hope of earning income and or increasing investment. While the definition of investment, according to Sadono Sukirno, is the spending of capital or company to purchase capital goods and also the equipment of production to increase profits in producing goods and services available in the economy. On the other hand, Kasmir and Jakfar (2012) argued that investment is an activity that has a relatively long period of time in various businesses helps. Investments that are deposited in the narrow sense are in the form of specific projects, both physical and non-physical, such as factory construction projects, roads, bridges, construction buildings, and research projects and development. Mankiw (2000) said that investments are goods purchased by individuals or companies to increase their capital stock.

D. Public Service

Public services are all service activities carried out by public service providers in an effort to meet the needs of service recipients in the implementation of statutory provisions. (Adisasmita, 2011). Improvement of efficient and effective public services will support the achievement of financial efficiency, meaning that when the public services provided by service providers to the parties being served are in accordance with the actual conditions or the mechanism or procedure is not complicated, it, then, will reduce costs or burdens for service providers and service recipients.

Government expenditure in the public service sector includes many things regarding public facilities needed by the community. Every year Indonesia spends costs on the public service sector related to fiscal decentralization to build a Bottom-Up economy. This is because all

government expenditures for the community have to be adjusted to the needs of the people. Therefore, the community should plan a budget that will be used from year to year then the government will provide a budget in accordance with community proposals.

E. Poverty

Poverty is a condition experienced by developing countries, one of which is Indonesia. As a country that has a high level of poverty, the Indonesian government has applied various ways to reduce poverty every year. According to Mahmudi (2007), in a vicious cycle of poverty, there are three main axes that cause a person to become poor, that are:1) low levels of health, 2) low incomes, and 3) low levels of education. The low level of health is one of the triggers of poverty because a low level of public health will cause a low level of productivity. Low levels of productivity further lead to low incomes, and low incomes cause poverty. Poverty then causes a person to not be able to reach qualified education and pay for maintenance and health care costs.

According to Poerwadarminta (1976), poverty comes from the basic poor word, which means "not possessed". In a broader sense, poverty can be connoted as a condition of disability both individually, groups, and families so that this condition is vulnerable to the emergence of other social problems. Meanwhile, according to Kuncoro (1997), poverty is defined as the inability to meet the minimum standard of living needs. Kartasasmita (1997) said that poverty is a problem in development characterized by unemployment and underdevelopment, which then increases to inequality. This is in line with what Friedmann (1992) said that poverty is a result of inequality of opportunity to accumulate its social basis.

III. RESEARCH METHODOLOGY

A. Data and Data Sources

The data used in this study are secondary data obtained from the official website of the Central Bureau of Statistics (*Badan Pusat Statistik/*BPS) and the official website of the Ministry of Finance Directorate General of Fiscal Balance (DJPK). The data needed in this study are education sector government expenditure (X1), health sector government expenditure (X2), public service sector government expenditure (X3), investment (X4), and the number of the poor population (Y) of East Java province in 2014- 2018.

The data obtained from the official website of BPS East Java is the East Java provincial poverty rate per city district in 2014-2018. And the data obtained from the official website of the finance ministry's directorate general of financial balance are Education sector government expenditure (X1), health sector government expenditure (X2), and public service sector government expenditure (X3), while variable X3 is investment obtained from the provincial government website of East Java.

B. Time and Place of Research

This research was conducted in September 2019 - February 2020, and this research was conducted in Malang City, East Java Province, Indonesia.

C. Data Analysis Techniques and Methods

This study uses a classical linear model (Ordinary Least Square/OLS), which is based on a series of three classical regression assumptions (Maddala in Basuki, et al.: 2014).
• Non-Autocorrelation

If there is no relationship between errors that occur in the time series of data.
• Homocedasticity

If the error in the regression equation has a constant variant.
• Non-Multicollinearity

If there is no relationship between explanatory variables in the regression.

D. Classic assumption test

To find out whether there is data that will be used as constraints or not, it is necessary to do data validity. In this research, a regression analysis tool is used in the form of a classic assumption test, which is to detect the presence or absence of multicollinearity, autocorrelation, and heteroscedasticity problems.

• Multicollinearity Test

Multicollinearity test was conducted to test whether the regression model found a correlation between independent variables. But the requirement that must be met in the regression model is the absence of Multicollinearity .

• Heteroscedasticity Test

The Heteroscedasticity Test is one of the main assumptions in the classical regression model (Ordinary Least Square/OLS) that the variance of each error term is the same for all values of the independent variables. To test the heteroscedasticity of the test used is the Breusch-Pagan-Godfrey test. Breusch-Pagan-Godfrey's rule is that if the probability of Obs * R-Squared $<\alpha$ ($\alpha = 0.05$) then it means there is no heteroscedasticity, then vice versa if the probability of Obs * R-Squared $<\alpha$ ($\alpha = 0.05$) then it means heteroscedasticity.

E. Hypothesis testing

• T-test

In this T-Test, it is used to determine whether the independent variables, i.e., Education, Health, Investment, and Public Service Expenditure, will influence the dependent variable, i.e., Poverty. By comparing the significance value of 0.05.
If $p \leq 0.05$, then H0 is rejected,
If $p \geq 0.05$, H0 is accepted.

H0 = there is no significant partial effect between the independent and dependent variables.

H1 = there is a partial effect between the independent and dependent variables.

• F-Test

In the F-Test, it is used to see how the influence of all the independent variables together with the dependent variable.

If p ≤ 0.05, then H0 is rejected,

If p ≥ 0.05, H0 is accepted.

F. Determination Coefficient Test (R^2)

This R^2 test is used to see how much the variation of the dependent variable changes and how well or exactly the regression line is obtained. The value of R^2 lies between 0 to 1. The greater the R^2 value is, the greater the ability of the dependent variable to explain the independent variable. On the other hand, the smaller R^2 value is, the smaller the ability of the dependent variable in explaining the independent variable.

IV. RESULTS AND DISCUSSIONS

Method Results of Model Estimation

This study uses multiple regression methods using the reviews-10 program in which the data used is panel data, a combination of cross-section data and time-series data. There are several steps in analyzing the data of this study, and the first is the selection of models. There are three models of approaches while using the panel data; common effect method, fixed effect, and random effect.

A. Common Effect Method

The common effect model is the simplest method of calculating panel data. This model combines both cross-section and time-series data without considering differences between time and space. This model is the same as the ordinary least square (OLS) model, where it only uses is only the smallest square.

Table 2. Regression of Common Effect Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
X1	4.42E-05	2.36E-05	1.874293	0.0625
X2	-9.53E-05	6.43E-05	-1.483129	0.1397
X3	7.25E-05	1.91E-05	3.806238	0.0002
X4	2.33E-05	0.000935	0.024959	0.9801
C	88.33371	8.547261	10.33474	0.0000
R-squared	0.128502	Mean dependent var		122.0545
Adjusted R-squared	0.109658	S.D. dependent var		74.49274
S.E. of regression	70.28979	Akaike info criterion		11.36909
Sum squared resid	914021.2	Schwarz criterion		11.45454
Log likelihood	-1075.064	Hannan-Quinn criter.		11.40371
F-statistic	6.819522	Durbin-Watson stat		0.217471
Prob(F-statistic)	0.000038			

Based on the table Table 1, the regression equation is obtained as follows:

$$Y = 88,33371 + 4,42000\,X_1 + (-9,53000)X_2 + 7,25000X_3 + 2,33000X_4 + \varepsilon$$

R Square value of the Common Effect model is 0.128502 or 12.85 percent. These results indicate that variable X1 represents government spending in the education sector, X2 represents government spending in the health sector, X3 represents government spending in the public service sector, and X4 represents investment can explain the variable, and the Y representing poverty by 12.85 percent.

B. Fixed Effect

The Fixed Effect method is a model using various intercepts for each subject (cross-section), but the slope of each subject does not change over time (Gujarati, 2012). This model implies that the intercept is different in each subject while the slope remains the same between subjects. The fixed effect is known as the Least Square Dummy Variables (LSDV).

Table 3. Regression of Fixed Effect Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
X1	7.58E-06	2.40E-06	3.163825	0.0019
X2	-2.06E-05	6.54E-06	-3.156996	0.0019
X3	-7.57E-06	1.78E-06	-4.256314	0.0000
X4	-0.000238	0.000164	-1.451297	0.1488
C	127.0677	0.863701	147.1199	0.0000

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.995707	Mean dependent var	122.0545
Adjusted R-squared	0.994518	S.D. dependent var	74.49274
S.E. of regression	5.515696	Akaike info criterion	6.445366
Sum squared resid	4502.590	Schwarz criterion	7.163130
Log likelihood	-570.3098	Hannan-Quinn criter.	6.736122
F-statistic	837.2143	Durbin-Watson stat	1.695949
Prob(F-statistic)	0.000000		

Based on the Table 2, the regression equation is obtained as follows:

$$Y = 127,0677 + (7,58000)X_1 + (-2,06000)X_2 + (-7,57000)X_3 + (-0,000238)X_3 + \varepsilon$$

The R Square value of the fixed effect model is 0.995707 or 99.57 percent. These results indicate that variable X1 represents government spending in the education sector, X2 represents government expenditure in the health sector, X3 represents government spending in the public service sector, and X4 represents an investment that explains the variable, also Y represents poverty by 99.57 percent.

C. Random Effect

The Random Effect (RE) method estimates panel data where the residual variable has a relationship between time and subject. The panel data analysis method using the Random Effect model has a requirement where the number of cross-sections must be greater than the number of research variables. There was some independent variable in this model. The result from Random Effect Model is presented below.

Table 4. Regression of Random Effect Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
X1	7.77E-06	2.39E-06	3.245708	0.0014
X2	-2.11E-05	6.53E-06	-3.225216	0.0015
X3	-7.25E-06	1.78E-06	-4.076579	0.0001
X4	-0.000210	0.000163	-1.287031	0.1997
C	126.8581	8.257234	15.36327	0.0000

Effects Specification

	S.D.	Rho
Cross-section random	50.62318	0.9883
Idiosyncratic random	5.515696	0.0117

Weighted Statistics

R-squared	0.211631	Mean dependent var	5.940249
Adjusted R-squared	0.194586	S.D. dependent var	6.882361
S.E. of regression	6.176567	Sum squared resid	7057.746
F-statistic	12.41546	Durbin-Watson stat	1.074261
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	-0.031879	Mean dependent var	122.0545
Sum squared resid	1082227.	Durbin-Watson stat	0.007006

Based on the Table 3 above, the regression equation is obtained as follows:

The R Square value of the random effect model is 0.211631 or 21.16 percent. These results indicate that variable X1 represents government spending in the education sector, X2 represents government spending in the health sector, X3 represents government spending in the public service sector, and X4 represents an investment that explains the variable, and also Y represents poverty by 21.16 percent.

C. Determination of the Best Model
• Chow Test

After the REM and FEM test, the next step is to determine the best choice used in estimating the data in this study; the selection of the model is using the chow test. This test was important to select an appropriate model based on the model specification that was prepared.

Table 5. Results of Chow Test

Redundant Fixed Effects Tests
Equation: Untitled
Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	807.995850	(37,148)	0.0000
Cross-section Chi-square	1009.508165	37	0.0000

Cross-section fixed effects test equation:
Dependent Variable: Y
Method: Panel Least Squares
Date: 02/24/20   Time: 15:36
Sample: 2014 2018
Periods included: 5
Cross-sections included: 38
Total panel (balanced) observations: 190

Variable	Coefficient	Std. Error	t-Statistic	Prob.
X1	4.42E-05	2.36E-05	1.874293	0.0625
X2	-9.53E-05	6.43E-05	-1.483129	0.1397
X3	7.25E-05	1.91E-05	3.806238	0.0002
X4	2.33E-05	0.000935	0.024959	0.9801
C	88.33371	8.547261	10.33474	0.0000

R-squared	0.128502	Mean dependent var	122.0545
Adjusted R-squared	0.109658	S.D. dependent var	74.49274
S.E. of regression	70.28979	Akaike info criterion	11.36909
Sum squared resid	914021.2	Schwarz criterion	11.45454
Log likelihood	-1075.064	Hannan-Quinn criter.	11.40371
F-statistic	6.819522	Durbin-Watson stat	0.217471
Prob(F-statistic)	0.000038		

D. Hausman Test

After FEM and REM testing, the next step is to determine the best choice used in estimating the data in this study; the selection of the model is using the Hausman test.

Table 6. Results of Hausman Test

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	50.987878	4	0.0000

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
X1	0.000008	0.000008	0.000000	0.0518
X2	-0.000021	-0.000021	0.000000	0.1074
X3	-0.000008	-0.000007	0.000000	0.0000
X4	-0.000238	-0.000210	0.000000	0.1202

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	127.0677	0.863701	147.1199	0.0000
X1	7.58E-06	2.40E-06	3.163825	0.0019
X2	-2.06E-05	6.54E-06	-3.156996	0.0019
X3	-7.57E-06	1.78E-06	-4.256314	0.0000
X4	-0.000238	0.000164	-1.451297	0.1488

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.995707	Mean dependent var	122.0545
Adjusted R-squared	0.994518	S.D. dependent var	74.49274
S.E. of regression	5.515696	Akaike info criterion	6.445366
Sum squared resid	4502.590	Schwarz criterion	7.163130
Log likelihood	-570.3098	Hannan-Quinn criter.	6.736122
F-statistic	837.2143	Durbin-Watson stat	1.695949
Prob(F-statistic)	0.000000		

E. Classic Assumption Test

The classic assumption test is to see the feasibility of each variable. The classic assumption test will show whether the regression model or panel bias or not. The classic assumption tests used in this study are multicollinearity and heteroscedasticity tests. Using the

reviews-10 program, the following are the results of testing classic assumptions:

a) Multicollinearity Test

In a multicollinearity test, see whether in the regression analysis there is a correlation between independent variables or not. This multicollinearity test uses the reviews-10 program. By comparing the coefficient of determination of each individual of each independent variable will show whether or not there is multicollinearity. If the coefficient of determination is more than 0.85, it means there is a multicollinearity problem between the independent variables. After multicollinearity testing using the reviews-01 program, the following are the results:

Table 7. Multicollinearity Test Results

	X1	X2	X3	X4
X1	1.000000	0.966946	0.381777	0.167181
X2	0.966946	1.000000	0.486388	0.261830
X3	0.381777	0.486388	1.000000	0.409783
X4	0.167181	0.261830	0.409783	1.000000

The multicollinearity test above shows that the coefficient value between the education sector expenditure variables with the health sector expenditure is 0.966946. The coefficient of government expenditure between the education sector and spending in the public service sector is 0.381777. Government expenditure in the Health sector and public service has a coefficient of 0.486388. The coefficient of education sector government expenditure on investment is 0.167181, on the health sector with investment is 0.261830, on the public service sector with investment is 1,000000. These results indicate that four related variables have less coefficient from 0.85, whereas the other two related variables have a coefficient of more than 0.85. Thus, in this regression model, there is multicollinearity.

b) Heteroscedasticity Test

A heteroscedasticity test is to check if there is interference in the regression model. This test uses the Glejser test with the reviews-10 program. The probability value will show whether there is heteroscedasticity or not. If the probability value is greater than alpha 0.05, then there is no heteroscedasticity. From the Glejser test, the following results were obtained:

Table 8. Glejser Test Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	61.53990	0.847052	72.65184	0.0000
X1	3.13E-06	2.35E-06	1.331777	0.1850
X2	-8.30E-06	6.41E-06	-1.295014	0.1973
X3	6.41E-07	1.74E-06	0.367663	0.7137
X4	7.46E-05	0.000161	0.463616	0.6436

Based on the Glejser test results in the Table 7, the results of each variable are education expenditure with a probability of 0.1850, health expenditure of 0.1973, public service strengthening of 0.7137, and investment of 0.6436. Those three probabilities have probability values of more than 0.05, which can means that in the classical assumption test, there is no heteroscedasticity interference in the model. Hence, a FEM weight test is not necessary to overcome heteroscedasticity.

F. Regression Equations

After conducting the Chow test in the Hausman test to determine the model, the Fixed Effect model was chosen as the best model in the regression equation of this study. Fixed Effect Model is a model that functions to predict panel data wherein there is an assumption that consistent intercept and slopes are difficult to perform. This causes dummy variables to be included to allow intercept differences between time and individuals.

The next step is an analysis to determine the magnitude of the influence of independent variables; education sector expenditure (X1), health sector expenditure (X2), public service sector expenditure (X3) to the dependent variable, and economic growth (Y). After analyzing the data using the Fixed Effect model with the help of the reviews-10 program, the regression model is obtained as follows:

Table 9. Regression Equations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
X1	7.58E-06	2.40E-06	3.163825	0.0019
X2	-2.06E-05	6.54E-06	-3.156996	0.0019
X3	-7.57E-06	1.78E-06	-4.256314	0.0000
X4	-0.000238	0.000164	-1.451297	0.1488
C	127.0677	0.863701	147.1199	0.0000

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.995707	Mean dependent var	122.0545
Adjusted R-squared	0.994518	S.D. dependent var	74.49274
S.E. of regression	5.515696	Akaike info criterion	6.445366
Sum squared resid	4502.590	Schwarz criterion	7.163130
Log likelihood	-570.3098	Hannan-Quinn criter.	6.736122
F-statistic	837.2143	Durbin-Watson stat	1.695949
Prob(F-statistic)	0.000000		

Based on the results of the analysis of the Fixed Effect model by using the least square dummy variable (LSDV) technique, an equation that shows the magnitude of the effect of the independent variable on the dependent variable is as follows:

$$Y = 127,0677 + (7,58000)X_1 + (-2,06000)X_2 + (-7,57000)X_3 + (-0,000238)X_3 + \varepsilon$$

Remarks Formula :
Y = Poverty
X1 = Education sector expenditure
X2 = Health sector expenditure
X3 = Public service sector expenditure
X4 = Investment

The interpretation of the equation in Table 8 is as follows:

1). From the results of the regression equation above, the obtained constant result is 127.0677, meaning that the four independent variables studied are Education sector expenditure (X1), health sector expenditure (X2), public service sector expenditure (X3), and Investment (X4) is stated as zero (0), then poverty will increase by 127.0677.

2). From the results of the regression equation above, the coefficient value of the Education sector expenditure (X1) is 7.58000. This means that if government spending in the

education sector increases by one unit, it will increase poverty in all districts/cities in East Java province by 7.58000 units.

3). From the results of the regression equation above, the coefficient of the Health sector (X2) expenditure is equal to -2.066000. This means that if government spending on the Health sector increases by one unit, it will reduce poverty in all districts/cities in East Java province by 2.06000 units.

4). From the results of the regression equation above, the obtained coefficient results in a value of the general service sector expenditure (X3) is -75.7000. This means that if government spending on the public service sector increases by one unit, it will reduce poverty in all districts/cities in East Java province by 75.7000 units.

5). From the results of the regression equation above, the coefficient value of the investment (X4) is -0,000238. This means that if investment increases by one unit, it will reduce poverty in all regencies/cities in East Java province by 0,000238 units.

G. Hypothesis testing

After going through the testing phase of classical assumptions and interpretation of the panel data regression results, the next process is to test the hypothesis. Testing this hypothesis is done to see whether there is a significant influence between the independent variables on the dependent variable. Some hypothetical tests that have to do are as follows:

$H0$ = The independent variable partially has no significant effect on the dependent variable.
$H1$ = The independent variable partially has a significant effect on the dependent variable.

Table 10. Partial Test Results (T-Test)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
X1	7.58E-06	2.40E-06	3.163825	0.0019
X2	-2.06E-05	6.54E-06	-3.156996	0.0019
X3	-7.57E-06	1.78E-06	-4.256314	0.0000
X4	-0.000238	0.000164	-1.451297	0.1488
C	127.0677	0.863701	147.1199	0.0000

From the results of the T-test, the following results were obtained:

a). In the Education sector expenditure variable got the probability value < alpha (0.05). The probability value of this variable is 0.0019 and has a positive coefficient. It implies that there are a significant influence and a positive relationship between the education sector government spending and poverty.

b). In the health sector expenditure variable, the probability value < alpha (0.05). The probability value of this variable is 0.0019 and has a negative coefficient. So it can be concluded that there are a significant influence and negative relationship between health sector government expenditure on poverty.

c). In the public service sector expenditure variable, the probability value < alpha (0.05). The probability value of this variable is 0.0000 and has a negative coefficient value. So it can be concluded that there are a significant influence and negative relationship between government spending in the public service sector on poverty.

d). In the investment sector expenditure variables, the probability value < alpha (0.05). The probability value of this variable is 0.01488 and has a negative coefficient. It can be concluded that there are a significant influence and negative relationship between investment and poverty.

H. Simultaneous Significance Test (F-Test)

The simultaneous test is to determine the effect of all independent variables on the dependent variable together. This simultaneous test can be known from the F-Statistical probability value with a significance level at alpha (0.05); if the F-Statistical probability value < 0.05, it can be concluded that together all the independent variables have a significant effect on the dependent variable.

Table 11. Simultaneous Test Results (Test F)

F-statistic	837.2143
Prob(F-statistic)	0.000000

Based on the Table 10, the F-statistics probability value is 0.000000. So it determines that all independent variables like government spending in the Education, health, and public service sectors together, have a significant effect on poverty.

I. Determination Coefficient Test (R^2)

R^2 test was used for examining the contribution of independent variables in explaining the dependent variable in the model used. If the value of R^2 is getting closer to 1, it can be concluded that the independent variable is getting stronger in explaining the dependent variable.

Table 12. Determination Coefficient Test (R^2)

R-squared	0.995707
Adjusted R-squared	0.994518

From the Table 11, the R^2 value is 0.995707 or 99.57 percent. It implies that the independent variables like government spending in education, health, public services, and investment sectors in the regression model can define the dependent variable (poverty) as 99.57 percent, while the remaining 0.43 percent is influenced by other variables outside the model.

V. CONCLUSION

Poverty has been an issue in Indonesia. The government has established various efforts to alleviate poverty. Some examples of which are the subsidies in the education and health sectors. The subsidies are the funds from the center that are distributed to the regions. In addition, the government is also trying to improve public services in Indonesia to improve the service system to the community. One of the community's efforts to obtain long-term benefits is an investment. It can be in the form of physical or non-physical investment, so the community can get results from investments that they invested. Those are some of the efforts made by the government and the community to be able to overcome social inequality or poverty. This study aims to determine whether efforts like spending on education, health, public services, and investment has an influence on poverty in the province of East Java.

This research concludes that partially the education sector has a significant positive effect on poverty, the health sector has a significant negative effect on poverty, the public service sector has a significant negative effect on poverty, and the investment sector has a significantly negative effect on poverty. Simultaneously has been examined using the F test, the education, health, public services, and investment sectors have an influence on poverty. The determination coefficient test from the R-squared table has a percentage value of 99.57%, which means that the ability of the education sector, the health sector, the public service sector, and the investment sector has the ability of 99.57% in defining the poverty variable, and the remaining 0.43% is another variable that not included in the model.

REFERENCES

[1] Adisasmita, Rahardjo, Pengelolaan Pendapatan dan Anggaran Daerah. Graha Ilmu, Yogyakarta, (2011).

[2] Badan Pusat Statistik Indonesia, Statistik Indonesia Tahun 2019. Jakarta Pusat : Badan Pusat Statistik, (2019).

[3] Badan Pusat Statistik Jawa Timur, Jumlah Penduduk Miskin tahun 2014 – 2018. Jawa Timur: Badan Pusat Statistik, (2019).

[4] Basuki, Agus dan Imamudin, Elektronik Data Prosesing (SPSS 15 dan EVIEWS 7). Yogyakarta : Danisa Media, (2014).

[5] Direktorat Jenderal Perimbangan Keuangan, 2019. Belanja per Fungsi tahun 2014 – 2018. Jakarta Pusat: DJPK

[6] Farid Harianto dan Siswanto Sudomo, Perangkat dan Teknik Analisis Investasi di Pasar Modal Indonesia. Jakarta. BT Bursa Efek Jakarta, (1998).

[7] Friedman, J, Empowerment: The Politics of Alternative Development. Jakarta. Erlangga, (1992).

[8] Damodar N., Gujarati dan Dawn C. Porter, Dasar-dasar Ekonometrika Buku 2. Edisi 5. Jakarta: Salemba empat, (2012).

[9] Juanita, Kesehatan dan Pembangunan Nasional. Medan: Tesis Magister AKK FKM USU, (2002).

[10] Kartasasmita, Ginanjar, Pemberdayaan Masyarakat: Konsep Pemnagunan yang Berakar Pada Masyarakat. Yogyakarta: Universitas Gajah Mada, (1997).

[11] Kasmir dan Jakfar, Studi Kelayakan Bisnis. Jakarta. Kencana Prenada Media Group, (2012).

[12] Kuncoro, Mudrajad, Ekonomi Pembangunan, Teori, Masalah dan Kebijakan. Yogyakarta. YKPN, (1997).

[13] Mahmudi, Analisis Laporan Keuangan Pemerintah Daerah. Yogyakarta: UPP STIM YKPN, (2007).

[14] Mankiw, N. Gregory, Teori Makro Ekonomi. Jakarta. Erlangga, (2000). Poerwadarminta, W.J.S, Kamus Umum Bahasa Indonesia, PN Balai. Pustaka, Jakarta, (1976).

[15] Santoso S, Kesehatan dan Gizi. Jakarta : Rineka Cipta; (2009).

[16] Undang - undang Dasar Negara Republik Indonesia, Pasal 31 tentang Alokasi anggaran Pendidikan (1945)

[17] Undang – undang Republik Indonesia Tentang Sistem Pendidikan Nasional (2003)

[18] Undang – undang Republik Indonesia Tentang Kesehatan (2009).

[19] Undang – undang Republik Indonesia Tentang Desa (2014)
Undang – undang Republik Indonesia Tentang Definisi Kesehatan (1992).