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Village funds and poverty in Aceh Province

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ABSTRACT

The village legislation has placed the village as the spearhead of development and improvement of social welfare. Villages are given adequate authority and funding sources to manage their potential to improve the economy and community welfare. The research objective is to analyze the influence of village funds on poverty in Aceh Province, Indonesia. This research uses secondary data from panel data, namely Village Fund, Poverty, and Gross Regional Domestic Product (GRDP) data from regencies and cities in Aceh Province, Indonesia, from 2010 to 2018. These data are sourced from the Statistics Indonesia (BPS). This research uses a qualitative descriptive analysis model and panel data analysis. Regression analysis in this study uses static panel data. The variable village funds in this research influence poverty reduction in districts and cities in Aceh Province. However, the effect is not too significant because the exertion of village funds is not yet on target, as village funds are widely used for infrastructure construction.

KEYWORDS

Vilage funds; development; poverty

ARTICLE HISTORY

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1. Introduction

Economic development in Indonesia is currently faced with the problem of poverty. Generally, in developing countries like Indonesia, low income and poverty are major problems in economic growth. Thus, those problems are together in the economic goals to become one sentence: increasing national income and reducing poverty. Poverty is a condition where there is an inability to meet basic needs, such as food, clothing, shelter, education, and health. Low living standards are also related to low incomes, inadequate housing, poor health and health services, and low levels of community education, which results in low human resources and a lot of unemployment.

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The problem of poverty is faced by all countries, especially in developing countries like Indonesia. Many negative impacts are caused by poverty, and in addition to the emergence of many social problems, poverty can also affect a country's economic development. High poverty causes the expenses for economic growth to be more considerable and indirectly hampers economic development.

Poverty is a complex social problem; the right formula must be developed to decompose it. As a developing country with a large population, Indonesia cannot desist from this problem. This is evidenced by the large number of indigent people, the majority of whom live in rural areas that are difficult to access. Poverty can be interpreted as when a person is laborious to meet their daily needs due to various causes, one of which is the low level of income earned.

The number of indigent people is relatively high in Indonesia. Figure 1 illustrates that the number of indigent communities in Indonesia is tremendous. In 2006 there were 39.30 million indigent people, but this number dropped to 28.67 million in 2013. However, from 2015 to 2017, the number of underprivileged people in Indonesia tends to decline, amounting to 27.77 million.

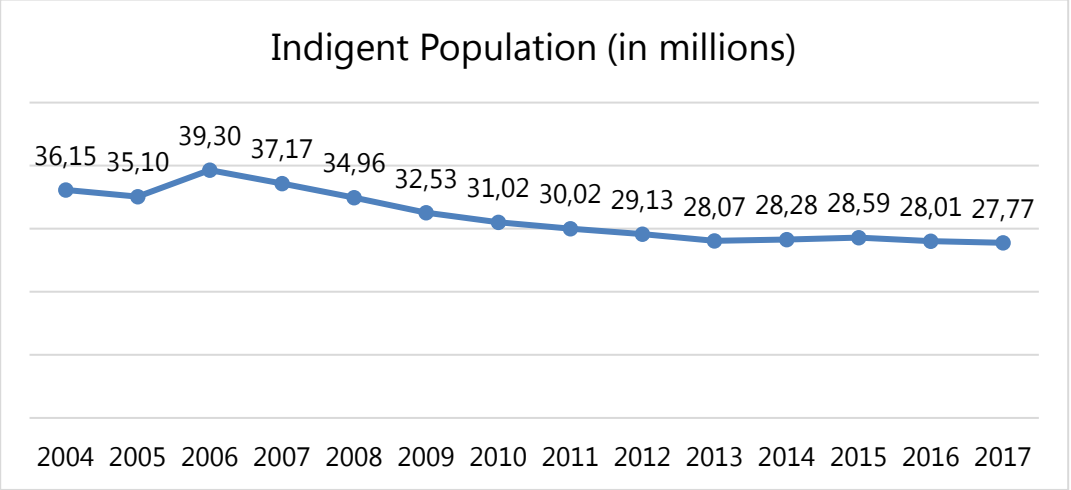

Figure 1. Poverty data in Indonesia
Source: BPS-Statistics Indonesia

Not only in Indonesia but also in Aceh Province, the number of underprivileged people is tremendous. According to the data presented by Statistics Indonesia, Aceh is at the 7th national level and has the largest number of indigents. This is relevant to the data from Statistics of Aceh Province on indigent statistics.

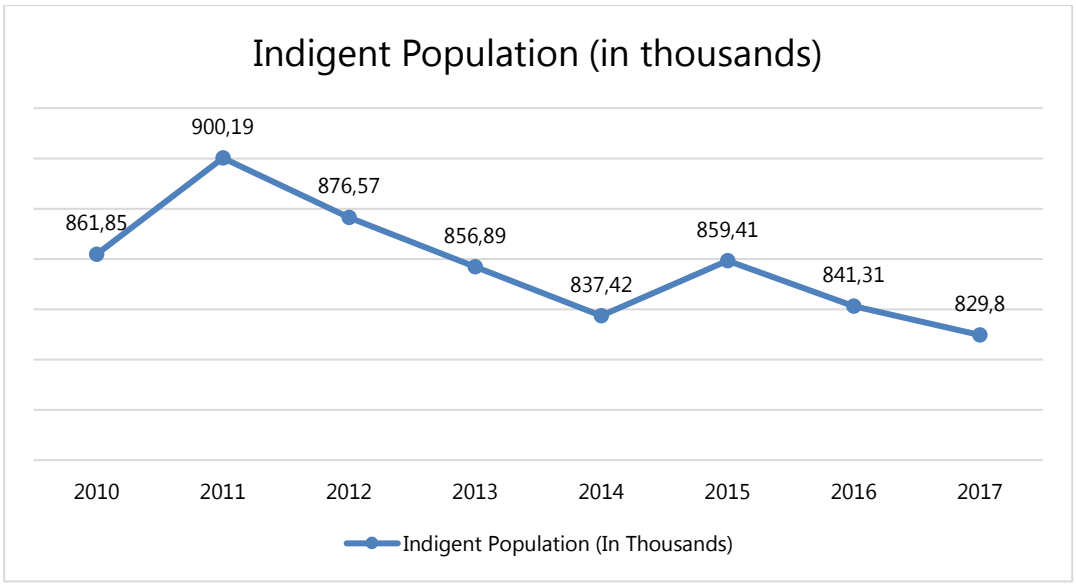

Figure 2. Poverty data in Aceh Province in September
Source: BPS-Statistics Indonesia

Figure 2 concluded that the indigent population in Aceh Province from 2010 to 2020 escalated from 861.85 thousand to 900.19 thousand people. In 2013, it subsided to 856.89 thousand people. However, from 2014 to 2018, the total number of indigents in Aceh Province fluctuated. The total number of indigents in the cities and villages in Aceh Province is in immense divergence, where the number of poor people in the village is greater than the poor population in the city.

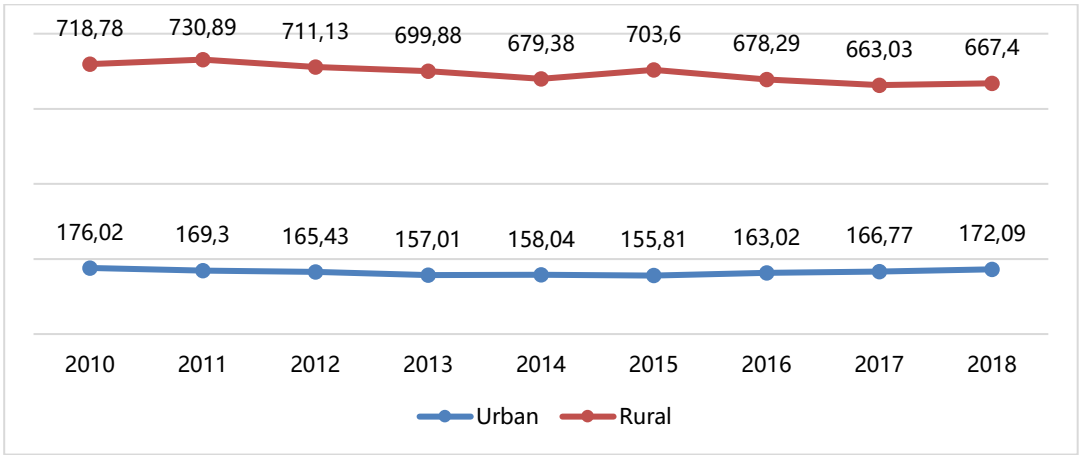

Figure 3. The poverty level in cities and villages of Aceh Province (thousand people)
Source: BPS-Statistics Indonesia

Economic inequality between villages and cities is immense, and villages are left behind in various development aspects compared to urban areas. Therefore, the Government established the Law of The Republic of Indonesia Number 6 of 2014 concerning Villages and various regulations related to village fund management. This brings new hope to the villagers to build their respective villages. Village legislation mandates that villages manage their finances based on transparent, participatory, and accountable principles.

Under Government Regulation Number 43 of 2014 concerning Law Enforcement Regulation Number 6 of 2014 concerning Villages, the details of the village funds usage stipulated in the APBD are 30 percent for village administration, which is used for routine expenses such as operational costs, allowances, fixed income, business trip costs while 70 percent is to fund village governance, implementation of village development, community development, and community empowerment (Republic of Indonesia, 2014a).

According to Government Regulation Number 60 of 2014 concerning Village Funds sourced from State Budget (APBN) in article and section that has been amended in Government Regulation Number 168 of 2014 in 11 article section 2, which states that village funds are allocated equitably based on: (a) Basic allocation; and (b) Allocations calculated by considering the population, poverty rate, area, and geographical difficulty of villages in each district/city (Republic of Indonesia, 2014b). Village funds are sourced from the State Budget (APBN) and allocated for villages transferred through the Local Government Budget (APBD). These funds finance government administration, implementation, community development, and community empowerment.

In Law of The Republic of Indonesia Number 6 of 2014 concerning Villages, there is a state commitment to protect and empower villages to be substantial, developed, autonomous, and democratic to create a steady foundation in carrying out governance and development for an equitable and prosperous society (Republic of Indonesia, 2014c).

Therefore, the village administrators should take action on the central government policy, which has given the village funds equitably and placidly as a stimulus for village development. The government plays a crucial role in developing villages. It is the primary implementing unit in the development, which will be assisted by several other institutions, such as the Village Council (BPD) and the Village Consultative Body (BPD), the Community Empowerment Institute (LPM), and the Villagers.

Table 1. Data of village funds in Aceh Province

Year	Village Funds Allocation (Rupiah)
2015	1.707.817.995.000
2016	3.829.751.986.000
2017	992.571.795.000
2018	4.459.312.896.000

Source: Community Empowerment Service (DPMG) Aceh Province

In Table 1, the village funding program from 2015 to 2018 is a policy of the Joko Widodo administration, which aims to reduce poverty inequality and support village autonomy. Therefore, the allocation of village funds is prioritized for village development, community empowerment, and community development. However, village fund allocations are not appropriately managed, leading to incongruity in allocating village funds as mandated in the constitution.

Several factors cause inappropriate management of village funds, such as being unprepared to manage large budgets, lack of human resources, and transparency. It has been proven that there are denunciations and findings in each regional Inspectorate and provincial Ombudsman, as well as data on alleged misuse of village funds handled by the police. Based on this background, the writers are interested in discovering to what extent the Village Funds influence the poverty rate reduction in Aceh Province.

2. Method

The data used in this research is secondary data using panel data, namely Village Fund data from 2015 to 2018, Poverty rate data, and regional GRDP data in Aceh Province from 2010 to 2018. These data are sourced from the Central Statistics Agency (BPS) Aceh. The 2018 GRDP data, in particular, is prediction data obtained from the results of the Microsoft Excel analysis using the Forecast Exponential Smoothing (ETS) algorithm.

This research uses a qualitative descriptive analysis model and panel data analysis. Panel data is a combination of cross-section data with time series. If each cross-section unit has the same number of time series observations, it is called a balanced panel (total number of observations). Regression analysis in this research using static panel data. This is because dependent lag is not used as its regressor.

This static panel data has three models: common effect, fixed effect, and random effect models.

The model used in this research is formulated as follows:

$$\ln POV_{it} = \alpha + \beta_1 GRDP_{it} + \beta_1 VF_{it} + \alpha_2 DUMMY_{it} + \varepsilon_{it} \quad (1)$$

Where lnPOV is the logarithm of the total indigent, GRDP is Gross Regional Domestic Product, VF is village funds, Dummy is 0 for the period before the village funds, 1 for the period after the Village Funds, and ε is the error term component.

Data analysis used the Common, Fixed, and Random Effect methods. Chow and Hausman and classical assumption tests with Multicollinearity, Heteroscedasticity, and autocorrelation tests were used as a model selection method. The statistical tests used include the F-Test, T-Test, and R^2 (coefficient of determination) to find out how the influence of independent variables on dependent variables simultaneously or partially (each variable). The data analysis used in this research is multiple linear regression. The model equation is shown in Equation (1).

$$RGDP_t = \beta_0 + \beta_1 POP_t + \beta_2 LF_t + \beta_3 HDI_t + \varepsilon_t \quad (2)$$

RGDP is the real gross domestic product, *POP* is population growth, LF is the labor force, and HDI is the human development index. β_0 is constant, $\beta_1 - \beta_3$ is regression coefficient, t is time, and ε_t is error term. All of these variables have transformed into natural logarithms.

3. Results and discussion

3.1. Descriptive statistics

According to Law No. 6 of 2014: "Village Funds are funds sourced from the State Budget (APBN) which are intended for villages that are transferred through the Local Government Budget (APBD) and are used to finance governance, implementation of development, community development and community empowerment" (Republic of Indonesia, 2014c). Based on the Ministry of Villages, Underdeveloped Regions and Transmigration of the Republic of Indonesia states that the priority use of village funds is to develop and empower communities. Village funds directed for village development movements include (a) Construction, development, and maintenance of infrastructure or facilities livelihoods, including food security and settlements; (b) Construction, development, and maintenance of public health facilities and

infrastructure; (c) Construction, development and maintenance of educational, social and cultural facilities and infrastructure; (d) Community Empowerment.

According to Village Legislation No. 6 of 2014 Article 78, village development aims to improve community welfare and life quality and tackle poverty through basic needs fulfillment, facilities and infrastructure construction, local economic potential growth, and sustainable use of natural resources.

Figure 4 shows that the Village Fund has not yet positively impacted poverty in Aceh Province because the Village Fund is still widely used for infrastructure construction. This is consistent with the results of the presentation of the Village Community Empowerment Agency (DPMG) regarding the realization of the village fund in 2015-2017.

The large allocation for physical development seems to be the implication of government directives (through the President and the Minister of the Village and PDTT) to allocate village funds for infrastructure construction because infrastructure development will absorb labor, and improve the village economy. The problem that arose was that many infrastructure facilities had been built solely because they followed the central government's instructions, which were warmly welcomed by many heads of the village. In addition, the quality of infrastructure constructed using the village fund is poor. This was allegedly because the design and budget plan for the infrastructure of the infrastructure did not meet the requirements and were incomplete, the procurement of goods and services in the village was not well regulated, the environmental impact and maintenance were not considered, the absence of village authorities who mastered the technical infrastructure, and the lack training on infrastructure management planning.

This illustration of village funds usage reinforces the notion that village funds have been unable to encourage inclusive economic growth, especially for the absorption of labor from the poor and the procurement of goods and services by the community. Understandably, village funds have not been able to reduce poverty in Aceh province because only a small portion of funds is used for community economic empowerment activities. Meanwhile, the greater allocation of funds for physical development has not been directly related to poverty levels because physical development is generally public facilities. In some cases, some villages carry out their physical developments directly for the indigents, for example, the construction of decent housing (RUTILAHU), Integrated Service Post (POSYANDU) facilities, and Early Childhood Education (PAUD) facilities.

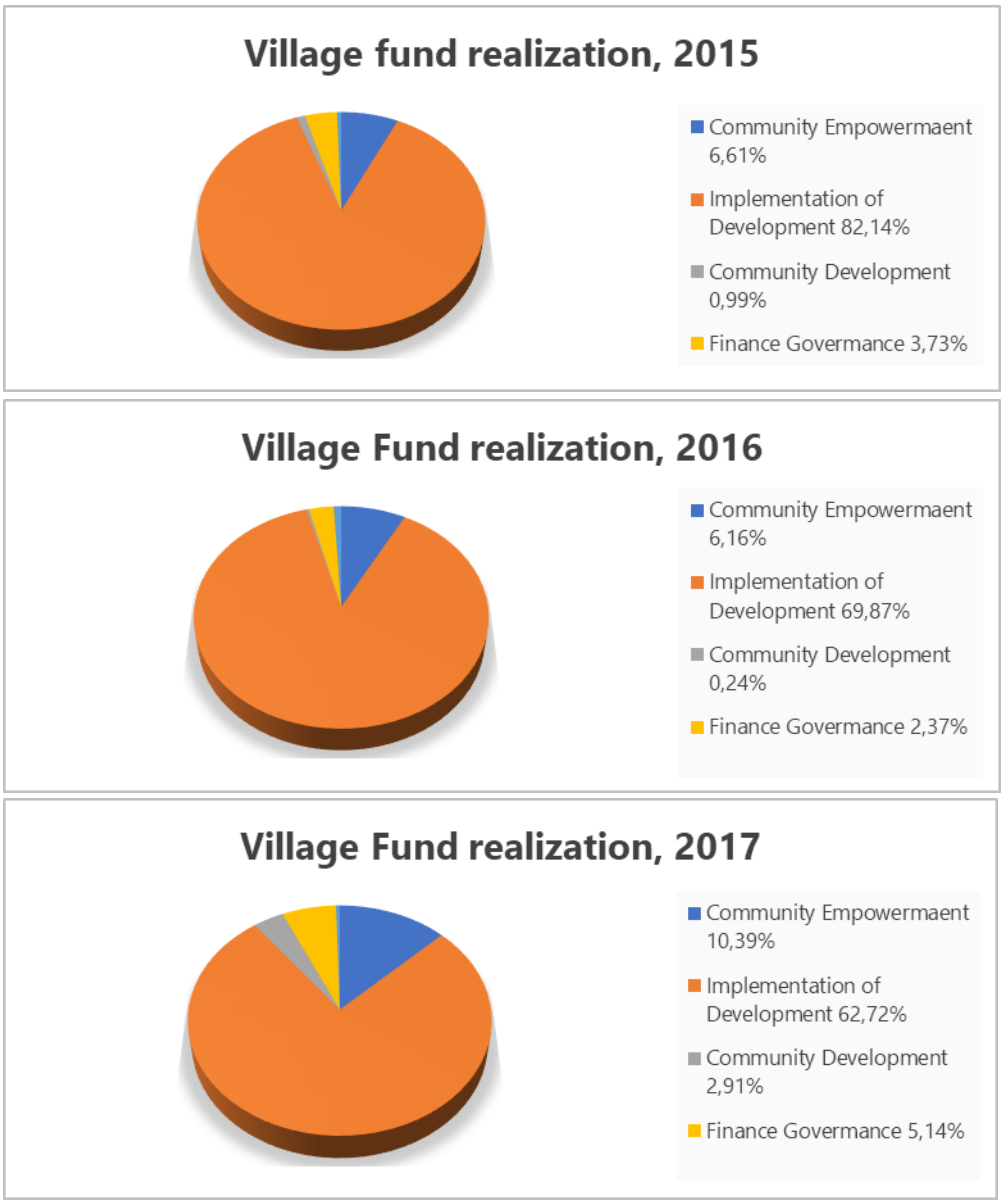

Figure 4. Realization of village funds in Aceh Province, Indonesia (2015-2017)
Source: BPS-Statistics Indonesia

4.1. Panel Data Analysis

Based on the presented regression results using the common effect model, it is known that the coefficient probability of all independent variables except DUMMY has a value smaller than the α level of 5 percent. This indicates that the independent variable significantly affects the dependent variable. While the R-squared value is 0.437626, it reveals that the combination of independent variables only explains the dependent variable at 43.76 percent. The Durbin-Watson value obtained using the

common effect model is 0.049433, far from the range of number two. This shows that the regression results indicate autocorrelation.

Table 2. Regression results using the common effect model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GRDP	5.52E-09	2.55E-10	21.68533	0.0000
VF	5.17E-08	1.53E-08	3.377401	0.0009
DUMMY	-5163.222	3237.080	-1.595025	0.1123
R-squared	0.437626			
Durbin-Watson stat	0.049433			

Note: POV is the dependent variable.
Source: Author's calculations

Based on Gujarati & Porter (2009), the Common Effect Model has a main problem: it cannot explain the individual effects of each cross-section. In addition, the resulting estimator is highly biased and inconsistent due to the correlation between the error term and some of its independent variables.

To overcome these problems, the following analysis uses a fixed effect model explaining each cross-section effect. The regression results using the fixed effect model in Table 3 show that the coefficient probability of each variable GRDP and DD has a value smaller than the real level of α by 5 percent and 10 percent. This shows that the GRDP and VF significantly influence the dependent variable. The R-squared value obtained is 0.995763, and the Durbin-Watson value is 0.826611.

Table 3. Regression results using the fixed effect model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Constant	39948.86	791.9816	50.44166	0.0000
GRDP	-3.84E-10	1.55E-10	-2.480852	0.0140
VF	-2.95E-09	1.69E-09	-1.743831	0.0829
DUMMY	-29.10424	389.9613	-0.074634	0.9406

Note: POV is the dependent variable.
Source: Author's calculations

Furthermore, to see which model is better, the common effect model and the fixed effect model, it is necessary to test statistically, in this case, by performing the Chow test. Chow test results are presented in Table 4.

Table 4 shows that the Chi-square probability value is smaller than the real level of α by 5 percent, which means reject H_0. This indicates that the model chosen is the fixed effect model. The results of the Chow test were then re-tested statistically using

another model, namely the random effect model so that the best analysis model would be obtained.

Table 4. Chow Test Result

Effects Test	Statistic	d.f.	Prob.
Cross-section F	760.985917	(22,181)	0.0000
Cross-section Chi-square	939.348112	22	0.0000

Note: POV is the dependent variable.
Source: Author's calculations

Based on the analysis using the random effect model, the regression results obtained are shown in Table 5. The probability value of the coefficient of the independent variable has a smaller value than the real level of α by 5 percent for GRDP and Dummy variables and has a smaller value than the real level of α of 10 percent for VF variables. This shows that all independent variables significantly influence the dependent variable. In addition, the R-squared value is very small at 0.049532, with a Durbin-Watson value of 0.325752, far from the range of number 2. Then, the results of the random effect model need to be tested statistically with the Hausman test to get the best analysis model. The results of the Hausman test are shown in Table 6.

Table 5. Regression results using the random effect model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Constant	35417.61	1534.029	23.08796	0.0000
GRDP	5.22E-10	1.40E-10	3.731633	0.0002
VF	-2.95E-09	1.69E-09	-1.745088	0.0825
DUMMY	-1056.431	384.7828	-2.745526	0.0066

Note: POV is the dependent variable.
Source: Author's calculations

Table 6. Hausman test result

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	346.974732	3	0.0000

Note: POV is the dependent variable.
Source: Author's calculations

Based on the Hausman test results in Table 6, the cross-section test variance has a smaller probability value than the significance level α of 5 percent. This shows that the fixed effect model is better than the random effect model.

4.2. Final model selection overview

Based on statistical testing, the model used in this research is the fixed effect model. This model can accommodate the different characteristics of each individual (cross-section) on the intercept. So that the equation of the model among cross sections is different. In general, the equation of the model in this research can be written as follows:

$$POV_{it} = 39917{,}18 - 3{,}72E\text{-}10\,GRDP_{it} - 2{,}72E\text{-}09\,VF_{it} - 140{,}9131\,DUMMY_{it} \quad (3)$$

For the equation model before Village Funds (Dummy = 0), as follows:

$$POV_{it} = 39917{,}18 - 3{,}72E\text{-}10\,GRDP_{it} - 2{,}72E\text{-}09\,VF_{it} \quad (3)$$

The equation model after Village Funds (Dummy = 1) is as follows:

$$POV_{\text{it}} = 39776{,}27 - 3{,}72E\text{-}10\,GRDP_{it} - 2{,}72E\text{-}09\,VF_{it} \quad (4)$$

4.3. Testing the independent variable on poverty

Table 7 shows that the GRDP variable has a coefficient value of -3.72E-10 and a probability value smaller than the absolute level of α of 5 percent. This indicates that the GRDP significantly negatively affects the number of indigents. GRDP regression coefficient of -3.72E-10 means that every increase in GRDP is IDR 1, reducing the poor population by 3,572E-10 people, cateris paribus.

The village funds (VF) have a probability value smaller than the level α of 10 percent with a coefficient value of -2.72E-09. This shows that village funds significantly reduce the number of indigents at the level of α by 10 percent. The coefficient value VF -2.72E-09 means that each increase in village funds is IDR 1, reducing the number of poor people by -2.72E-09 people, cateris paribus.

While the DUMMY variable has a coefficient value of -140.9131 with a probability value more significant than the level of α of 5 and 10 percent, this shows that the DUMMY variable does not have a significant effect on reducing the number of poor people either before the village funds or after village funds exist.

Table 7 also shows that the F-stat probability value of 0.000000 is smaller than the α level of 5 percent, which means reject H_0. This indicates that the independent variables (GRDP, VF, DUMMY) have a significant simultaneous effect on the POV variable (number of indigents) at a 95 percent confidence level.

Based on the analysis of the fixed effect model, it is found that the characteristic differences of each region significantly affect the poverty level in each region, as shown in Table 7.

Table 7. Fixed effect model coefficients

	Coefficients	Cross Section Effect
Constant	39917,18	
GRDP	-3,72E-10	
VF	-2,72E-09	
DUMMY	-140,9131	
Fixed Effects (Cross)		
SIMEULUE	-20895,27	19021,91
ACEH SINGKIL	-16689,54	23227,64
SOUTH ACEH	-7151,388	32765,792
SOUTHEAST ACEH	-8873,478	31043,702
EAST ACEH	27665,52	67582,7
CENTRAL ACEH	-3628,208	36288,972
WEST ACEH	4307,469	44224,649
ACEH BESAR	27554,31	67471,49
PIDIE	52147,98	92065,16
BIREUN	36787,72	76704,9
NORTH ACEH	84805,81	124722,99
SOUTHWEST ACEH	-13215,52	26701,66
GAYO LUES	-19886,67	20030,51
ACEH TAMIANG	4591,834	44509,014
NAGAN RAYA	-5595,344	34321,836
ACEH JAYA	-24816,42	15100,76
BENER MERIAH	-7883,612	32033,568
PIDIE JAYA	-5772,07	34145,11
BANDA ACEH	-14990,51	24926,67
SABANG	-33378,37	6538,81
LANGSA	-18161,98	21755,2
LHOKSEUMAWE	-13053,82	26863,36
SUBULUSSALAM	-23868,45	16048,73

Note: POV is the dependent variable.
Source: Author's calculations

Table 7 shows that North Aceh Regency has the most significant cross-section effect in influencing the poverty level of 23 districts and cities in Aceh Province, with an effect value of 124722.99. In comparison, the smallest cross-section effect is owned by Sabang City, with an effect value of 6538.81.

4.4. The effect of GRDP on poverty

GRDP variable has a negative and significant relationship to the poverty level. This shows that the more GRDP increases, the more poor people will decrease. This aligns with research conducted by Siregar & Wahyuniarti (2008) using data from 26 provinces in Indonesia from 1995-2005. Their results concluded that the GRDP negatively and significantly affected the number of indigents. They also argue that it is important to accelerate economic growth to reduce the number of poor people. In addition, research conducted by Datt & Ravallion (2002) on how economic growth affects poverty in India also concludes that one of the effective strategies for reducing poverty is through higher economic growth.

4.5. The effect of village fund on poverty

Based on Table 7, the village fund also negatively influences the number of poor people. This shows that village funds can partially reduce the number of underprivileged people. However, village funds obtained by each district and city in Aceh Province have not been able to be fully reduced. The number of indigents has increased and also decreased despite village funds. Some of the causes are the village fund policy, which has only been implemented for several years so that activities carried out with village funds have not had a significant impact on community welfare, the limited amount of budget in each village, the use of village funds is oriented on physical construction and the limited amount of human resources who can manage village funds appropriately.

According to Sutiyo & Maharjan (2017), fiscal decentralization policies, including village funds, should be implemented for programs or activities that cut spending on poor households and economic empowerment programs that help poor people to escalate their incomes. Cutting spending and escalating income will increase the capacity of poor households to escape poverty.

4.6. The effect of the DUMMY variable on poverty

The DUMMY variable in this research has a value of 1 for the years in which the village fund budgeted in 2015 -2018 and a value of 0 for the years before the village fund budgeted in 2010-2014. Based on Table 7, the DUMMY variable has a coefficient value of -140.9131 with a probability value of 0.33510, greater than the real level of α of 5 and 10 percent. This shows that the DUMMY variable does not affect the increase or decrease in the poverty rate. In other words, whether the village funds are budgeted or not, it does not influence the increase or reduction of poverty.

This aligns with research conducted by Chandoevwit & Ashakul (2008), which evaluated the village funding program in Thailand using quasi-experimental methods and double difference comparisons. They revealed that village funds did not positively impact poverty eradication. In addition, they also highlighted the fact that village funds through microcredit in Thailand do not have enough power to reduce poverty, but other power assistance such as investment, risk management, and technological knowledge must also be contributed.

4. Conclusion

This research used a fixed effect model approach to determine how economic growth and Village Funds influence poverty. Based on the analysis results, it can be summarized that the analysis model used in this study adequately explains the variation of dependent variables. The variable village funds in this research significantly influence reducing poverty levels in districts and regencies.

Conflict of interest

The authors declare that they have no conflict of interest.

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