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THE INFLUENCE OF GOVERNMENT EXPENDITURE AND VILLAGE FUND ON POVERTY IN EAST JAVA

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Abstract

This research aims to determine the influence of government expenditure in the education sector and village fund on poverty levels in East Java Province. This research uses a type of quantitative research with a panel data regression approach using the Fixed Effects Model (FEM). This research produces: 1) The Education Expenditure variable (X1) partially has a significant negative effect on Poverty (Y) in the districts of East Java Province. 2) The Village Fund variable (X2) partially has a positive but not significant effect on Poverty (Y) in the districts of East Java Province. 3) The variables Education Expenditure (X1) and Village Fund (X2) simultaneously have a significant influence on Poverty (Y) in the districts of East Java Province.

Keywords: Education Expenditure; Village Fund; Poverty; Fixed Effects Model

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1. INTRODUCTION

Poverty remains a central issue in the socio-economic development agenda of Indonesia, especially in regions such as East Java Province where large disparities still exist between rural and urban populations. Despite numerous development programs and economic growth over the past decades, poverty reduction has not progressed evenly across all regions. The Indonesian government has consistently emphasized the role of fiscal policy, particularly through targeted government expenditures, in addressing this complex issue. Public sector spending on social services, especially education and infrastructure, is intended to empower communities and stimulate local economies. Likewise, the implementation of the Village Fund program, initiated through Law No. 6 of 2014 on Villages, provides direct fiscal transfers to support rural development, reduce inequality, and alleviate poverty at the grassroots level.

The allocation of government spending across different sectors is believed to have differing impacts on poverty depending on how efficiently and equitably those resources are used. Education expenditure, for instance, is expected to build long-term human capital that can break the intergenerational cycle of poverty. Improved access to education enhances individual productivity and employability, which in turn increases household income. Meanwhile, the Village Fund aims to empower local governance, strengthen village infrastructure, and directly target community needs, thereby reducing poverty through bottom-up development strategies. However, the effectiveness of these expenditures is not always consistent across regions. Implementation challenges, mismanagement, and limited administrative capacity often hinder the realization of the intended benefits.

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East Java, as one of the most populous provinces in Indonesia, illustrates both the progress and challenges in poverty alleviation. While it contributes significantly to the national reduction in poverty, it still harbors some of the highest absolute numbers of poor people in the country. The wide variation in economic capacity, public service delivery, and infrastructure among its regencies highlights the need for more granular analyses to assess which public investments yield the most impactful outcomes. Understanding the influence of sectoral government expenditure and the Village Fund on poverty levels in East Java can inform better policy designs that are spatially aware and responsive to local needs.

This study, therefore, seeks to investigate the effects of education-related government spending and village fund allocations on poverty in East Java's regencies using a panel data approach. By applying the Fixed Effects model, the research controls for unobserved heterogeneity across regencies and over time. The objective is to derive empirical evidence that can support more effective fiscal strategies for regional poverty alleviation.

2. LITERATUR REVIEW

2.1 Poverty

According to the World Bank (2020), poverty is defined as a condition in which an individual or group cannot fulfill basic needs such as food, clothing, shelter, education, and health. Amartya Sen (1999) argues that poverty should be understood not just in terms of low income, but also as a deprivation of basic capabilities, such as the ability to live a long and healthy life, to be educated, and to have a decent standard of living.

Townsend (1979) defines poverty as a condition where people lack the resources to participate in activities, consume diets, and have living conditions and amenities which are customary, or at least widely encouraged or approved, in the societies to which they belong. From these perspectives, it can be concluded that poverty is a multidimensional problem, not limited to income alone but also involving access to opportunities and rights.

Indicators of Poverty:

a) Income below poverty line
b) Inability to meet basic needs (food, education, health)
c) Limited access to public services
d) Poor living conditions

2.2 Goverment Expenditure

Government expenditure refers to the amount of money spent by the government in various sectors to provide public services. Musgrave (1959) divides the function of government expenditure into three main roles: allocation, distribution, and stabilization. Government expenditure in the education sector, in particular, is intended to improve human capital, which in turn can reduce poverty levels. Ridwan & Nawir (2021) explain that public spending in education includes funding for infrastructure, teaching staff, and facilities that support learning. According to empirical findings by Taruno (2019), educational spending has a significant negative impact on rural poverty in Indonesia. Thus, government expenditure in education is expected to:

a) Improve access to quality education
b) Enhance human capital and skills
c) Increase employability and income

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Indicators of Government Education Expenditure:

a) Total allocation for education per region
b) Proportion of education spending in local budget
c) Growth in school enrollment and literacy rate

2.3 Village Fund

The Village Fund is a fiscal transfer from the central government to village governments, regulated under Law No. 6 of 2014. Its objective is to promote rural development and poverty reduction through community empowerment and infrastructure development. According to Arham & Hatu (2020), the Village Fund is one of Indonesia's largest pro-poor fiscal interventions and aims to reduce disparities between urban and rural areas. However, the effectiveness of this fund depends heavily on governance capacity at the village level. Abdullah (2022) found that Village Fund has a negative and significant influence on rural poverty when used effectively. In contrast, Wahyuddin et al. (2019) discovered that in some regions, Village Fund allocations showed no significant impact due to misuse or lack of community involvement.
Indicators of Village Fund Implementation:

a) Amount of Village Fund allocated per village
b) Percentage used for poverty-related programs
c) Community participation in planning and monitoring
d) Outcomes in rural infrastructure and services

3. RESEARCH METHOD

Research Type

This study employs a quantitative approach using inferential statistics to examine the causal relationship between government spending and poverty levels. The panel data analysis applies a Fixed Effects regression model.

Population and Sample

The population includes all regencies in East Java. The sample consists of the 29 regencies that receive village fund transfers and have complete data for all variables during the study period

Analytical Methode

The Fixed Effects panel regression model used in this study can be expressed in the following equation:

$$Y_{it} = \beta_0 + \beta_1 X1_{it} + \beta_2 X2_{it} + \alpha_i + \varepsilon_{it}$$

Where:

Y_{it} : Number of poor people in district i during year t
$X1_{it}$: Government expenditure in the education sector in district iii during year ttt
$X2_{it}$: Village Fund allocation in district iii during year ttt
α_i : Unobserved time-invariant individual effect for each district
ε_{it} : Error term capturing idiosyncratic shocks over time

This model accounts for unobserved heterogeneity across districts by including fixed effects (α). It allows for more consistent estimation of the effects of education spending and village funds on poverty levels in East Java over time.

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RESULTS AND DISCUSSION

4.1 Overview of Research Data

Panel Data Regression Analysis (Fixed Effects Model)

Based on the Fixed Effects regression analysis with robust standard errors (clustered by district), the following results were obtained:

Table 1 . Results of Fixed Effects Regression on Poverty in East Java (2019–2024)

Variable	Coefficient	Std. Error	t-Statistic	p-Value	Significance
Education Expenditure	-3.31e-08	1.10e-08	-3.01	0.0008	Significant
Village Fund	2.61e-07	1.86e-07	1.40	0.176	Not Significant

Source: processed data, 2025

Based on the results of the Fixed Effects regression analysis as presented in Table 1, the variable Government Expenditure (X1BP) exhibits a negative and statistically significant coefficient of -3.31e-08 with a p-value of 0.008. This finding implies that increased government spending in the education sector is associated with a reduction in poverty levels across districts in East Java. The significance at the 1% level reinforces the strong influence of education-related expenditure in alleviating poverty by enhancing human capital and access to essential services.In contrast, the variable Village Fund (X2DD) shows a positive coefficient of 2.61e-07, but the relationship is statistically insignificant (p = 0.176). This suggests that, over the study period, the allocation of village funds does not exhibit a consistent or measurable effect on poverty reduction. The lack of significance may be attributed to variations in fund utilization, governance quality, or the focus of village development programs which may not directly address poverty-related outcomes.Overall, the model is statistically significant with an F-statistic of 5.28 and a model p-value of 0.0113, indicating that the explanatory variables collectively contribute to the variation in poverty levels. The high rho value (0.7878) further confirms the importance of accounting for district-level fixed effects in explaining poverty variations across East Java.

Hausman Test Result

Table 1. Hausman Test

Chi-Square Statistic	Df	p-Value
7.71	2	0.0211

Source: Data processed by the author, 2025

The Hausman test result shows a chi-square value of 7.71 with a p-value of 0.0211, which is less than the 5% significance level. This indicates that there is a significant difference between the Fixed Effects and Random Effects estimators. Therefore, the Fixed Effects model is deemed more appropriate and consistent for this analysis

Classical Assumption Test

Multicolliniearity Test (VIF)

Table 3 Multicolliniearity Test

Variable	Vif Value	Interpretation
Goverment Expenditure(X1)	1.25	No multicollinearity
Village Fund(X2)	1.25	No multicollinearity

Source: Data processed by the author, 2025

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Based on the results presented in Table 3, all VIF values are less than 2, which is well below the commonly accepted critical thresholds of 5 or 10. This indicates that there is no multicollinearity problem between the independent variables X1 (Government Expenditure) and X2 (Village Fund), and thus the regression model is not biased due to multicollinearity.

Heteroskedasticity Test

Table 4 Heteroskedasticity Test

Text Description	Value	Interpretation	Correction Method
Correlation between residual and lagged residual	0.8253	Strong autocorrelation detected	Clustered standard error (vce(cluster fid))

Source: Data processed by the author, 2025

Based on the test results presented in Table 5, the correlation between the residuals and their lagged values is 0.8253. This indicates the presence of strong positive autocorrelation in the panel data model, which violates one of the classical assumptions of regression—that the error terms should be independent over time. Autocorrelation can lead to biased standard errors, which in turn affects the reliability of hypothesis testing. To address this issue, the model was re-estimated using clustered standard errors by district (vce (cluster fid)). This correction ensures that the coefficient estimates remain consistent and the standard errors are robust to autocorrelation, thereby enhancing the validity of the inference results in this study.

Panel Data Regression Analysis (Fixed Effects)

Table 5. Fixed Effect Regression Output

Variable	Unstandardized Coefficients (B)	Std Error
Government Expenditure (X1)	-3.31e-08	1.10e-08
Village Fund (X2)	2.61e-07	1.86e-07

Source: Data processed by the author, 2025

Based on the table above, the regression equation is formulated as follows:

$$Y=-3.31e-08X1+2.61e-07X2$$

Interpretation:

1. The regression model does not include a constant value, which is common in Fixed Effects models, as district-specific intercepts (αi\alpha_iαi) are already accounted for.
2. The regression coefficient of Government Expenditure (X1) is -3.31e-08. This indicates that an increase in education-related government spending is associated with a decrease in poverty. In other words, if X1 increases by one unit (rupiah), the poverty level (Y) will decrease by 3.31e-08 units, assuming the other variable remains constant.
3. The regression coefficient of Village Fund (X2) is 2.61e-07. This means that an increase in Village Fund allocation tends to increase the poverty level (Y) by 2.61e-07 units, although this effect is **not statistically significant**, suggesting that in the observed period and region, Village Fund allocations have not directly contributed to poverty reduction.

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4.2 Discussion

The Partial Effect of Government Expenditure on Poverty in East Java

Based on the results of the hypothesis testing for variable X1 (Government Expenditure), it is found that government expenditure has a partial and statistically significant effect on poverty levels (Y) across districts in East Java. This is supported by the t-test result which shows a p-value of 0.008 < 0.05, and the coefficient value is -3.31e-08. These findings indicate that increased government spending in the education sector is associated with a reduction in the number of poor people. The negative coefficient also confirms the theoretical expectation that education expenditure contributes to human capital development, which improves employment opportunities and income levels, ultimately reducing poverty. Therefore, H0 is rejected and H1 is accepted, meaning there is a significant effect of Government Expenditure on poverty.

The Partial Effect of Village Fund on Poverty in East Java

The results of hypothesis testing for variable X2 (Village Fund) show that the village fund allocation has a positive but statistically insignificant effect on poverty. This is indicated by a p-value of 0.176 > 0.05, with a coefficient value of 2.61e-07. Although the direction of the relationship is positive, it does not meet the criteria for statistical significance. This suggests that, during the observed period and across the sampled districts, the Village Fund has not had a consistent or measurable impact on poverty reduction. Possible explanations may include ineffective fund allocation, low administrative capacity at the village level, or a focus on general infrastructure projects rather than direct poverty alleviation. Based on these results, H0 is accepted and H2 is rejected, meaning there is no significant partial effect of the Village Fund on poverty.

The Simultaneous Effect of Government Expenditure and Village Fund on Poverty

The simultaneous hypothesis test using the F-statistic shows that the combination of Government Expenditure (X1) and Village Fund (X2) has a joint significant effect on poverty levels (Y). The model produces an F-statistic of 5.28 with a p-value of 0.0113 < 0.05, indicating that the independent variables together significantly explain the variation in poverty levels across districts. This confirms that fiscal interventions, when considered together, can influence poverty outcomes, even if one of the variables is not significant individually. Therefore, H0 is rejected and H3 is accepted, meaning that Government Expenditure and Village Fund simultaneously have a significant effect on poverty in East Java.

Conclusion

Based on the research conducted by the author in 29 regencies/cities in East Java Province regarding **The Influence of Government Expenditure and Village Fund on Poverty**, the following conclusions can be drawn:

1. The **Government Expenditure variable (X1)** has a **partial and significant effect** on **Poverty (Y)** in the regencies/cities of East Java Province. This indicates that an increase in government spending, particularly in the education sector, contributes significantly to reducing the number of poor people.

2. The **Village Fund variable (X2)** has a **partial and not significant effect** on **Poverty (Y)** in the regencies/cities of East Java Province. This shows that during the research period, the Village Fund did not demonstrate a strong or consistent effect in reducing poverty levels.
3. The variables **Government Expenditure (X1)** and **Village Fund (X2)** have a **simultaneous and significant effect** on **Poverty (Y)** in the regencies/cities of East Java Province. This means that together, these two fiscal variables significantly explain the variation in poverty across different regions.

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