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How Government Spending Priorities Breaks the Poverty Cycle: Evidence from East Indonesia

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Abstract

This study aims to evaluate the effectiveness of fiscal policy in reducing poverty in Eastern Indonesia, both directly and indirectly through health and education spending and economic growth. In this context, fiscal policy is measured through local own-source revenue, transfer funds, and regional borrowing, used for funding the health and education spending. Meanwhile, the dependent variable will be proxied by the percentage of poor people (P0). Pandemic will also included in the analysis as control variable. Regression with the Three-Stage Least Square (3SLS) method will be employed in this study, incorporating twelve provinces from 2010 to 2023, with a fixed effect model estimation. After conducting robustness checks, this paper reveals that regional incomes, measured by local own-source revenue, transfer funds, and government borrowing have significantly affected poverty, either directly or indirectly through education and health spending and economic growth channel. It means that those variables can play a significant role in mitigating poverty in Eastern Indonesia. Therefore, policies aimed at enhancing regional income, optimizing fund transfer, and prioritizing the allocation of expenditures and borrowing on developments that broadly benefit the Poor, are crucial for accelerating poverty reduction in Eastern Indonesia.
Keywords: *Fiscal Policy, Poverty, Economic Growth*
JEL*: E62, I32, O47*

Abstrak

Penelitian ini bertujuan untuk mengevaluasi efektivitas kebijakan fiskal dalam mengurangi kemiskinan di Indonesia Timur, baik secara langsung maupun tidak langsung melalui belanja kesehatan dan pendidikan serta pertumbuhan ekonomi. Dalam konteks ini, kebijakan fiskal diukur melalui pendapatan asli daerah, dana transfer, dan pinjaman daerah, yang digunakan untuk membiayai belanja kesehatan dan pendidikan. Sementara itu, variabel terikat akan diproksikan dengan persentase penduduk miskin (P0). Pandemi juga akan dimasukkan dalam analisis sebagai variabel kontrol. Regresi dengan metode Three-Stage Least Square (3SLS) akan digunakan dalam penelitian ini, melibatkan dua belas provinsi dari tahun 2010 hingga 2023, dengan estimasi model fixed-effect. Setelah melakukan robustness check, penelitian ini menunjukkan bahwa pendapatan daerah, yang diukur melalui pendapatan asli daerah, dana transfer, dan pinjaman pemerintah, telah secara signifikan mempengaruhi kemiskinan, baik

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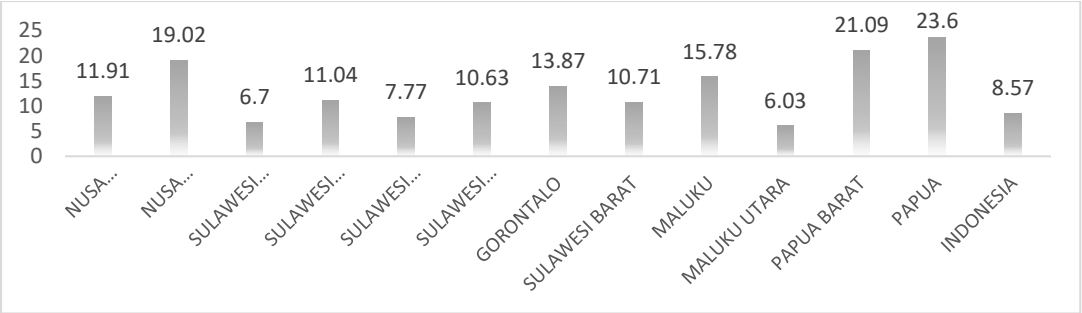
secara langsung maupun tidak langsung melalui pengeluaran untuk pendidikan dan kesehatan serta saluran pertumbuhan ekonomi. Ini berarti bahwa variabel-variabel tersebut dapat memainkan peran yang signifikan dalam mengurangi kemiskinan di Indonesia Timur. Oleh karena itu, kebijakan yang bertujuan untuk meningkatkan pendapatan daerah, mengoptimalkan transfer dana, dan memprioritaskan alokasi pengeluaran serta pinjaman pada pembangunan yang secara luas menguntungkan masyarakat miskin, sangat penting untuk mempercepat pengurangan kemiskinan di Indonesia Timur.
Keywords: *Kebijakan Fiskal, Kemiskinan, Pertumbuhan Ekonomi*
JEL*: E62, I32, O47*

INTRODUCTION

Poverty remains a central issue faced by various regions in Eastern Indonesia. This problem has been exacerbated by the pandemic, which has caused many vulnerable groups to fall into poverty. According to data released by Badan Pusat Statistik (BPS), Indonesia's poverty rate fell to 9.66% in September 2018, a decline from the rate recorded in March of that year, corresponding to approximately 25.67 million individuals living in poverty. However, the number climbs from to 10.19% by September 2020, a surge that placed approximately 27.55 million people below the poverty line. The Covid-19 pandemic has forced many regions to restrict the movement of their communities to reduce the risk of virus transmission. However, these preventive measures have had the unintended consequence of crippling and disrupting economic activity, making it more difficult to achieve development goals aimed at addressing various macroeconomic issues, particularly poverty (Sari dan Fisabilillah, 2021). Even after the pandemic ended, poverty rates remained well above the levels targeted in sustainable development goals.

Based on data from the Central Statistics Agency (BPS), most regions in Eastern Indonesia still experience high levels of poverty. In 2024, a number of regions still recorded double-digit poverty rates. Overall, although the number and percentage of poor people have tended to show a downward trend over the past 15 years, the rate of decline has been very slow.

Poverty rates in several regions in Eastern Indonesia are even higher than the national level. Of the twelve provinces in this region, only three have rates below the national level, namely North Maluku, North Sulawesi, and South Sulawesi. Meanwhile, the other nine provinces have poverty rates that are far above the national level. In fact, for Papua and West Papua provinces, the percentage of poor people is still above 20 percent. This condition shows that poverty alleviation efforts have not achieved the expected results. In the same period, poverty, when viewed in terms of percentage, depth index, and severity index, also shows similar conditions. The slow decline in poverty rates will certainly affect the level of community welfare. Thus, poverty remains a major challenge that must be prioritized by the regions.



Source: Source: Central Bureau of Statistics (2025)

Figure 1. Poverty levels in Eastern Indonesia Provinces, 2024

One important component that can help improve community welfare is economic growth. Economic growth is expected to accelerate poverty reduction because it can create jobs , increase community income, and improve community access to basic services, such as education and health and create appropriate conditions for innovation and increased competitiveness (Hajighasemi, et, al., 2022). However, this growth must be accompanied by inclusive policies so that its benefits can be felt by all levels of society, especially those who are vulnerable or poor.

Marinho et al. (2017) and Iqbal et al. (2021) found that an increase in economic growth can significantly reduce poverty rates in Brazil and the Asian countries they studied. Furthermore, Rezk et al. (2022) found that an increase in economic growth was also able to reduce poverty rates in Egypt. However, reducing poverty rates will be difficult if economic growth is not accompanied by specific interventions to support the poor. Tri (2020) found that economic growth reduced poverty rates in Vietnam but has not been sustainable.

On average, economic growth in Eastern Indonesia has ranged from 3 to 10 percent over the past 14 years, with most provinces showing growth above the national average (Indonesia Statistics, 2024). Overall, this condition indicates that the economic performance of this region is quite good, with the majority of provinces having the potential to continue developing. Out of a total of 12 provinces, Central Sulawesi recorded the highest average economic growth at 10.74 percent, followed by North Maluku and Southeast Sulawesi at 9.61 and 6.42 percent, respectively.

However, behind the progress in some areas, there are four provinces that have shown an average economic growth below the national level, namely Papua, West Papua, East Nusa Tenggara, and West Nusa Tenggara. West Nusa Tenggara recorded the lowest economic growth at 3.26 percent. This slow growth is caused by various factors including limited infrastructure (Khurriyah & Istifadah, 2019), suboptimal natural resource management (Alfalah et al., 2025), as well as geographic isolation that affects connectivity between regions (Ashraf & Galor, 2011). Therefore, these areas require special interventions to stimulate faster and more inclusive growth in the future.

In order for poverty rates to be reduced significantly and sustainably, increases in output levels in a region should not only come from the industrial or service sectors, but also from sectors where the majority of the poor work, such as agriculture and

labor-intensive sectors. Increased productivity in the agricultural sector has a greater impact on reducing poverty than the industrial and service sectors (Ivanic and Martin, 2018). Therefore, economic growth should be inclusive in the sense that it not only increases production levels but is also accompanied by a reduction in poverty and various other macroeconomic problems.

So far, the government has made various efforts to reduce poverty in Indonesia, especially in the Eastern Region, which tends to lag behind other regions. One of the main approaches implemented is a fiscal policy that focuses on increasing budget allocations for regional development. In implementing fiscal policy, the government carries out policies related to changes in regional revenue and expenditure. Regional governments can allocate their budgets to programs that can overcome various regional economic problems, including poverty.

The fiscal policy instruments that are commonly used are related to regional revenue and expenditure. Regional revenue is expected to increase the region's ability to fund regional expenditures. Several components of regional revenue include regional original revenue (PAD) and central government transfer funds to the regions. Each region tends to have an increasing trend in the realization of local revenue (PAD) from year to year. Among the 12 provinces, South Sulawesi shows the fastest progress in realization compared to others, with an average realization of IDR 6.77 trillion per year. In addition, the provinces of West Nusa Tenggara and Papua also recorded relatively high growth progress, amounting to IDR 2.95 trillion and IDR 2.54 trillion, respectively. More specifically, the total realization of local revenue in South Sulawesi in the last year was recorded at IDR 10.58 trillion, or about 26.95 percent of the total local revenue realization in the entire Eastern Indonesia region. The high realization of regional original revenue in South Sulawesi is supported by the high local tax revenue, which contributes 88.26 percent of the total regional revenue. The high tax revenue is primarily due to the government's efforts in implementing more practical digital service technology, including facilitating online tax payments via the internet, SMS banking, e-commerce, QRIS, as well as providing easier access for the public to consult with tax officers (Bank Indonesia, 2023).

Similar to local revenue (PAD), there is a tendency for an increase in the realization of transfer funds in various provinces. Among all the provinces in Eastern Indonesia, Papua Province recorded the highest average realization at IDR 30.99 trillion per year, followed by South Sulawesi and East Nusa Tenggara with averages of IDR 23.69 trillion and IDR 17.41 trillion, respectively. The substantial distribution of transfer funds in Papua Province indicates the central government's priority in meeting infrastructure needs and accelerating development in the region, which had previously lagged behind other provinces. Conversely, Gorontalo Province occupies the last position with an average transfer fund realization of only IDR 5 trillion per year. In 2023, the total realization of transfer funds in Papua reached IDR 47.84 trillion, or around 21.24 percent of the total transfer funds across all Eastern Indonesia regions. On the other hand Gorontalo Province had the lowest realization, amounting to Rp 6.08 trillion, or only 2.70 percent of the total transfer funds in KTI.

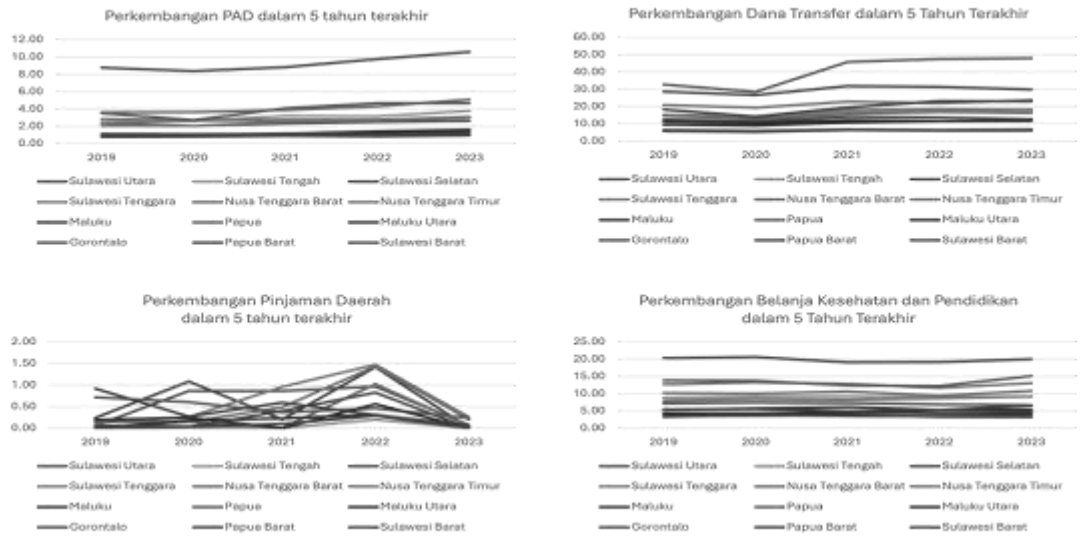
The low realization in Gorontalo province is due to technical issues in several activities and changes in the management of the Special Allocation Fund (DAK) for

education, which was previously managed independently by the local government but then changed to contracts with third parties, adding complexity to the process of disbursement and realization of fund usage (Bank Indonesia, 2023). This situation indicates the need to improve capacity and effectiveness in fund utilization in the next period in order to maximize the potential benefits of transfer funds.

Meanwhile, regional expenditure is generally used to finance regional development, which in turn is expected to improve the welfare of the community. In fact, it is expenditure that plays a more direct role in reducing poverty, because regional revenue is not necessarily fully directed towards poverty alleviation. However, if regional revenue is used to fund expenditures related to the poor, such as health and education, then this revenue can contribute to poverty alleviation. Therefore, the effectiveness of fiscal policy greatly depends on how much of the regional revenue budget is allocated to fund productive sector expenditures that can meet the needs of the poor.

More specifically, several components of local government spending that can directly affect the poor include health and education spending. This is because poverty is often caused by limited access to these basic services, which greatly affect their quality of life. Therefore, spending in this sector is important because it can be used to improve the quality of human resources, which in turn can drive higher productivity and increase the income of vulnerable and poor communities.

On the other hand, regional loans are also an important fiscal instrument in regional financing. Local governments can use loans as an alternative source of financing to cover regional budget deficits and overcome limitations in regional financial capacity. In theory, government spending is generally funded by government revenue, so when government spending is increased, it needs to be accompanied by an increase in revenue in order to fund these various expenditures. However, empirically, the government cannot balance both simultaneously, especially during and after a pandemic, resulting in expenditures being funded by other sources such as loans to cover the deficit. During 2020, local governments even used large loans from the national economic recovery fund (PEN) to finance their priority activities in order to accelerate the handling of the pandemic's impact in their respective regions. It is hoped that by optimizing the use of these loans, local governments can more quickly restore their regional economies so that economic activity can return to normal and poverty issues can be addressed. The following is data on the development of fiscal policy instruments over the past five years:



Source: Central Bureau of Statistics (2025)

Figure 2. The Growth of Fiscal Policy Instrument in 2019-2023

Several empirical studies on the effect of government spending on poverty have yielded mixed findings. Liu et al. (2020) showed that increased spending on education successfully reduced poverty levels in China, while, Anderson et al. (2018) shows no relationship. Komarudin and Oak (2020) suggest that increased spending on health successfully reduced poverty levels Kenya, while Maisarah and Sari (2020) demonstrated reverse outcomes in Aceh.

This research is important for two reasons. First, while numerous empirical studies on the impact of government spending on poverty exist, the results are still inconclusive. One contributing factor to the persistently high poverty rate in Indonesia is that each region has its own unique characteristics that contribute to poverty, while government policies generally tend to be homogeneous. This often results in programs that fail to achieve the desired results due to their lack of relevance to the priority needs of the poor. Therefore, this study specifically examines the impact of this spending in a national context. The second urgency is that empirical studies examining these indirect effects are still relatively limited, particularly in Eastern Indonesia. In fact, fiscal policy can also effectively influence poverty, but indirectly through economic growth, as found by Romer (1986), Barro (2000) and Barro Robert J. and Sala-i-Martin (2004), Sepulveda and Martinez-Vazquez (2011).

Based on this, it is necessary to conduct research on the effectiveness of fiscal policy implementation in overcoming poverty in Eastern Indonesia. Thus, it will be possible to determine the role of each fiscal policy instrument, namely local revenue, transfer funds, and local loans, in influencing poverty, both directly and indirectly through their allocation to health and education spending and their impact on economic growth. It will also be possible to determine which types of fiscal instruments are more effective in helping the poor in the region escape poverty, as well as the appropriate strategies and programs to be implemented in future regional development planning. Lastly, the study aims to determine a more efficient budget allocation policy

formulation in future regional budget planning, primarily in order to reduce poverty rates.

RESEARCH METHOD

This study uses a quantitative approach with a panel data from 2010 to 2023. This study uses secondary data from the Central Bureau of Statistics (BPS) and the Directorate General of Fiscal Balance (DJPK). The method used is Three-Stage Least Squares (3SLS), which is one of the statistical approaches used to estimate the correlation between equations. This process consists of a first-stage regression to predict the value of the endogenous variable, followed by a second-stage regression to obtain the residual value used in estimating the correlation between equations, and a final stage to obtain comprehensive information by considering the constraints on each equation (Wooldridge, 2019). To facilitate data regression, this study uses R software.

The location of this study is all provinces in Eastern Indonesia, consisting of North Sulawesi, South Sulawesi, Central Sulawesi, Southeast Sulawesi, West Sulawesi, Gorontalo, West Nusa Tenggara, East Nusa Tenggara, Maluku, North Maluku, Papua, and West Papua. The functional model can be shown below:

$$Y_{it} = \delta_{0_{it}} + \delta_{1_{it}} LnX_1 + \delta_{2_{it}} LnX_2 + \delta_{3_{it}} LnX_3 + \delta_{4_{it}} LnX_4 + \in_{it} \quad (1)$$

The endogenous variable in this study is Poverty (Y) in province i in year t. Meanwhile, the exogenous variables in this study are Local Revenue (X1), Transfer Funds (X2), and Local Loans (X3), as well as one control variable, namely the Pandemic (X4). In Addition, there are two intervening variables, namely Health and Education Expenditures (Z1) and Economic Growth (Z2).

In more detail, the operational definitions of each variable are as follows. First, Local Revenue is the total revenue collected by a region over a certain period. In this study, the revenue data used is the sum of the realization of regional original revenue from all regency/city governments in twelve provinces in Eastern Indonesia, plus the realization of regional original revenue from the provincial government itself, expressed in billion rupiahs. Second, Transfer funds are assistance or injections of funds from the central government to local governments. In this study, transfer funds are measured by the sum of the realization of transfer funds from all regency/city governments in a province in Eastern Indonesia and the transfer funds from the government of each respective province, expressed in billions of rupiah.

Third, Regional loans are an alternative source of regional funding used to cover budget deficits. In this study, the measure used is the sum of the loan receipts realized by all regency/city governments in the provinces in Eastern Indonesia and the loan and local government bond receipts of the provincial governments in that area and expressed in billions of rupiah. Fourth, Spending on health and education refers to expenditures made to fund spending in the health and education sectors. In this study,

the data used is the proportion of health and education spending to the total regional spending of the regency/city and province. This variable is expressed as a percentage.

Fifth, Economic growth is the increase in the added value of goods and services produced by a country or region within one year. In this study, economic growth is reviewed based on GRDP data in each province in Eastern Indonesia at constant prices. Sixth, Poverty is the condition of a community's inability to meet basic food and non-food needs, measured from the expenditure side. The data used in this study is the poverty headcount index (P0) or the percentage of the population living below the poverty line in Eastern Indonesia and expressed as percentage.

Last, we also include the pandemic dummy variable to identify differences in the influence of independent variables on poverty before and during the Covid-19 pandemic period, where a value of $D = 0$ is given for the period before the pandemic (2010-2019), while a value of $D = 1$ is given for the pandemic and post-pandemic period (2020-2023).

RESULT AND DISCUSSION

Before discussing the regression results, this study first examined several assumptions underlying the panel data to ensure the accuracy and validity of the regression analysis. According to Stock and Watson (2019), testing the assumptions that underlie the estimation method is essential for establishing the validity of the regression model. Based on the normality test, the model's residuals were found to approximate a normal distribution, as indicated by the points in the Q–Q plot that follow or lie along the diagonal line, as shown in the following figure:

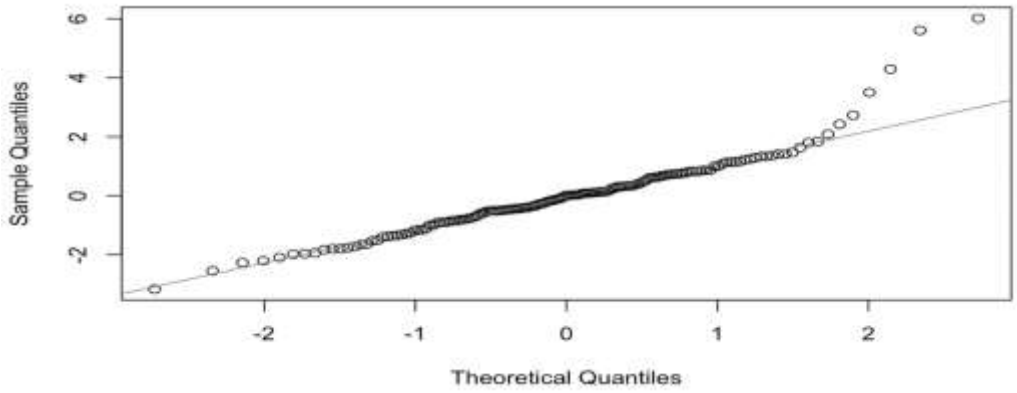


Figure 3. Q-Q Plot Residual Model Fixed Effect

Next, the multicollinearity test showed that all variables had Variance Inflation Factor (VIF) values below 10, indicating that no multicollinearity issues were present in the model. The Dickey–Fuller test was then conducted to assess the stationarity of the data. The results yielded p-values below 0.05, indicating that the time-series variables do not exhibit unit roots and can therefore be considered stationary.

The subsequent test assessed homoskedasticity using the Breusch–Pagan procedure. The results showed p-values greater than 0.05, suggesting insufficient evidence to reject the null hypothesis of constant residual variance. Thus, the data can be concluded to satisfy the homoskedasticity assumption, and the model is deemed valid for further analysis.

As outlined in the previous research methodology chapter, two estimation models are commonly used in panel data regression: the Fixed Effects model and the Random Effects model. To determine which model is most appropriate, the Mundlak Correction test was conducted. The following presents the results obtained using the R software:

Table 1. Mundlak Correction Test Estimation Result

Variables	Coefficient	Standar Error	z-statistic	Probability
PAD	-1.1169	0.8940	-1.2494	0.2115
Transfers	-0.9646	1.2357	-0.7806	0.4350
Loans	-0.0241	0.0121	-1.9838	0.0472
Pandemic	0.2357	0.3292	0.7161	0.4739
Health and Educ Expenditure	-1.6148	1.0783	-1.4975	0.1342
Mean_PAD	-23.4829	7.0715	-3.3208	0.0008
Mean_Transfer	-12.6420	7.1839	-1.7598	0.0784
Mean_Loan	-0.7833	0.2372	-3.3023	0.0009
Mean_ Health and Educ Expenditure	42.0068	13.6316	3.0816	0.0020
Total Sum of Squares	796.91			
Residual Sum of Squares	329.9			
R-squared	0.5860			
Adjusted R-Squared	0.5624			

Note: ******* $p < 0{,}001$; ****** $p < 0{,}01$; ***** $p < 0{,}05$

Based on the results of the Mundlak Correction test, most variables—namely PAD, loans, and health and education expenditures—have statistically significant mean values at the 1 percent level. This indicates the presence of correlation between most of the independent variables and the unobserved individual effects. Therefore, the Fixed Effects model is more appropriate for this study, as it is better suited to account for unobserved heterogeneity across provinces.

Direct Effects of Fiscal Policy on Poverty

Overall, the estimation results for the direct effects of fiscal policy—consisting of Regional Own-Source Revenue (X1), Intergovernmental Transfers (X2), Regional Loans (X3), and the pandemic control variable (X4)—on the dependent variable (Poverty Rate) in Eastern Indonesia during the 2010–2023 period, based on the Fixed Effects model, are presented in the following table:

Table 2. Estimation Results of the Direct Effects of PAD, Transfers, Loans, and the Control Variable on Poverty in Eastern Indonesia

Variables	Coefficient	Standar Error	t-statistic	Probability
PAD (X1)	-1,390	0,780	-1,781	0,077
Transfers (X2)	-2,471	1,107	-2,231	0,027*
Loans (X3)	-0,027	0,012	-2,332	0,021*
Control Variables				
Pandemic (X4)	0,240	0,313	0,767	0,444
R-squared	0,591			
Adjusted R-Squared	0,550			
F-statistic	54,8007			
Prob(F-statistic)	0.00000000			

Note: *** p < 0,001; ** p < 0,01; * p < 0,05

Regional Own-Source Revenue (PAD) has a coefficient of –1.390 with a p-value of 0.077, indicating that PAD does not have a statistically significant effect on poverty levels in Eastern Indonesia. This implies that increases or decreases in PAD realization do not lead to changes in the percentage of the poor population in the region during the study period. This finding is not consistent with the research hypothesis.

The estimation results for intergovernmental transfers show a coefficient of –2.471 with a p-value of 0.077. This indicates that the effect of transfers on poverty is both statistically significant and negative. Thus, a 1-percent increase in transfer realization reduces the poverty rate by approximately 2.471 percent. This result is consistent with the research hypothesis.

The estimation of the effect of regional loans on poverty yields a coefficient of –0.027 with a p-value of 0.021, demonstrating that regional loans have a statistically significant and negative effect on the poverty rate. Therefore, a 1-percent change in regional loan realization reduces the percentage of the poor population by 0.027 percent. This finding aligns with the research hypothesis.

The results also show that the pandemic dummy variable has a coefficient of 0.240 and a p-value of 0.444, indicating that the effect of fiscal policy on poverty during the pandemic period is statistically insignificant. This outcome does not support the research hypothesis.

Based on the estimation results, the R-squared value is 0.591, which indicates that approximately 59.1 percent of the variation in the poverty rate in Eastern Indonesia can be explained by changes in regional own-source revenue, intergovernmental transfers, regional loans, and the pandemic variable. The remaining 40.9 percent is determined by other variables or factors not included in the model. In addition, with an F value of 54.8007 and a Probability of 0.000000, it can be concluded that regional original revenue, transfer funds, loans, and the pandemic simultaneously can explain changes in the percentage of the poor population at a 5 percent significance level.

Indirect Effects of Fiscal Policy on Poverty

In this model, the Three-Stage Least Squares (3SLS) approach is employed. In the first stage, the effects of regional own-source revenue, intergovernmental transfers,

regional loans, and the pandemic on education and health expenditures are estimated. In the second stage, the estimated values from the first stage are used as inputs to estimate the effect of education and health expenditures on economic growth. Finally, all equations are estimated simultaneously to determine the indirect effects of each fiscal instrument on poverty through health and education spending and economic growth. This approach aims to assess how government budget allocation in the health and education sectors can foster economic growth and contribute to poverty reduction in the region. The stepwise 3SLS estimation results are presented in the following table:

Table 3. Estimation Results of the Effects of PAD, Transfers, Loans, and the Pandemic on Health and Education Expenditures in Eastern Indonesia, 2010–2023

Variables	Coefficient	Standar Error	t-statistic	Probability
PAD (X1)	0,399	0,061	6,568	0,000***
Transfers (X2)	0,505	0,086	5,860	0,000***
Loans (X3)	0,001	0,001	0,947	0,345
Control Variable				
Pandemic (X4)	0,054	0,024	2,208	0,029*
R-squared	0,888			
Adjusted R-Squared	0,872			
F-statistic	134,562			
Prob(F-statistic)	0.00000000			

Note: ******* p < 0,001; ****** p < 0,01; ***** p < 0,05

Based on the estimation results above, Regional Own-Source Revenue (PAD) has a coefficient of 0.399 with a p-value of 0.000, indicating a positive and statistically significant effect on health and education spending in Eastern Indonesia. Thus, a 1-percent increase in PAD realization raises the proportion of health and education expenditure to total regional spending by 0.399 percent. This finding is consistent with the research hypothesis.

The estimated effect of intergovernmental transfers yields a coefficient of 0.505 with a p-value of 0.000, demonstrating a significant and positive influence on health and education spending. Therefore, each 1-percent increase in transfer realization increases the proportion of health and education expenditure to total regional spending by 0.505 percent, which aligns with the research hypothesis.

Regional loans have a coefficient of 0.001 with a p-value of 0.345, indicating that they do not have a significant effect on health and education spending. This means that increases or decreases in regional loan realization do not affect the share of health and education expenditure within total regional spending in Eastern Indonesia.

The estimation results also show that the pandemic dummy variable has a coefficient of 0.054 and a p-value of 0.029, indicating a significant and positive effect. This suggests that during the pandemic, the proportion of health and education spending relative to total regional expenditure was 0.56 units higher compared to the pre-pandemic period. The second-stage estimation results are presented in the following table:

Table 4. Estimation Results of the Effect of Health and Education Expenditures on Economic Growth in Eastern Indonesia, 2010–2023

Variable	Coeficient	Standard error	t-statistic	Probability
Health and Education Expenditures	0,511	0,023	22,174	0,000000***

Note: *** p < 0,001; ** p < 0,01; * p < 0,05

Referring to the estimation results above, health and education expenditures have a coefficient of 0.511 with a p-value of 0.00000, indicating that their direct effect on economic growth is both statistically significant and positive. Thus, a 1-percent increase in the proportion of health and education spending to total regional expenditure raises economic growth in Eastern Indonesia by approximately 0.511 percent. Next, the final-stage estimation results of the Three-Stage Least Squares method can be observed in Table 5 below:

Table 5. Estimation Results of the Effects of PAD, Transfers, Loans, and the Pandemic on Poverty through Health and Education Expenditures and Economic Growth in Eastern Indonesia, 2010–2023

Variables	Coefficient	Standar Error	t-statistic	Probability
PAD (X1)	-6,033	2,012	-2,999	0,002**
Transfers (X2)	1,358	2,393	0,567	0,571
Loans (X3)	-0,026	0,012	-2,161	0,031*
Control Variables				
Pandemic (X4)	-0,116	0,339	-0,342	0,733
R-squared	0,572			
Adjusted R-Squared	0,527			
Prob(F-statistic)	0.00000000			

Note: *** p < 0,001; ** p < 0,01; * p < 0,05

Based on the R estimation results regarding the direct effects of regional own-source revenue, transfers, loans, and the pandemic on health and education spending; the effect of health and education spending on economic growth; and the effect of economic growth on poverty, the indirect regression equation capturing the influence of fiscal policy instruments on poverty through health and education spending and economic growth can be written as follows:

$$Y_{it} = -6{,}033LnX1_{it} + 1{,}358LnX2_{it} - 0{,}026LnX3_{it} - 0{,}116LnX4_{it} \quad (2)$$

Based on the results in Table 5, Regional Own-Source Revenue (PAD) has a coefficient of –6.033 with a p-value of 0.002, indicating a significant and negative indirect effect on poverty through health and education expenditure and economic growth. This means that a 1-percent increase in PAD realization reduces the poverty rate by 6.033 percent through its influence on these mediating variables. This finding is consistent with the research hypothesis.

The estimated effect of intergovernmental transfers yields a coefficient of 1.358 with a p-value of 0.571, indicating that transfer funds do not have a statistically significant indirect effect on poverty via health and education spending and economic growth. Thus, increases or decreases in transfer realization do not affect poverty levels through these channels.

Regional loans have a coefficient of –0.026 with a p-value of 0.031, showing a significant and negative indirect effect on poverty through health and education spending and economic growth. Accordingly, a 1-percent increase in regional loan realization reduces the poverty rate by 0.026 percent through these mediating pathways. This result is also in line with the research hypothesis. Finally, the pandemic dummy variable has a coefficient of 0.116 and a p-value of 0.733, indicating that the pandemic does not have a significant indirect effect on poverty.

The Effect of Regional Own Source Revenue on Poverty in Eastern Indonesia

The analysis shows that Regional Own Source Revenue (PAD) does not have a direct effect on poverty, but it does have an indirect effect through health and education spending and its influence on economic growth. This means that increasing PAD alone is not enough to reduce poverty. PAD can help lower poverty levels only when the funds are directed to important sectors such as health and education. Higher spending in these sectors improves public access to basic services and raises the quality of human resources. This can increase people's productivity, allowing them to produce more goods and services. As productivity improves, economic growth also increases. When the economy grows through important sectors like health and education, more jobs are created, giving people better income opportunities. This helps reduce poverty in Eastern Indonesia. Therefore, the more PAD that is allocated for health and education spending, the greater the chance of reducing poverty in the region.

One explanation for this relationship is that higher PAD improves the financial capacity of local governments. With higher PAD, local governments have more resources and more flexibility to fund development programs that match local needs. However, the impact on poverty depends on how the government allocates the budget. If the increase in PAD is not directed to essential sectors such as health and education, then it will not significantly help reduce poverty because it does not improve the living conditions of poor households.

Higher PAD also gives local governments more space to increase spending on programs that support the poor, such as education, health, and social assistance. When more PAD is used for health and education, the government can improve facilities, raise service quality, and expand access for poor communities. Better access to these services helps poor individuals build skills and abilities, making it easier for them to find better jobs. Over time, this reduces their dependence on social assistance or low paying work.

These findings are supported by previous studies. Research by Abdillah and Mursinto (2016) and Laurens and Putra (2020) shows that PAD has a negative and significant effect on poverty in Indonesia and Central Sulawesi. This occurs because higher PAD allows regions to improve basic services such as education, health, clean water, and

sanitation, all of which help improve the living conditions of poor households. Similar results were found in Southeast Sulawesi by Astuti and colleagues (2019), who reported that higher PAD allows local governments to fund development programs that raise community income and improve living standards.

The findings also agree with a study by Wibisono, Abidin, and Ekowati (2024), which shows that PAD can support economic growth, and stronger economic growth can reduce poverty. When PAD increases, local governments can invest more in development, including infrastructure. Improved infrastructure strengthens regional connectivity, lowers transportation costs, and increases market access for small and medium enterprises, which are often run by low-income communities.

The Effect of Transfer Funds on Poverty in Eastern Indonesia

Transfer funds have a negative effect on poverty. This means that an increase in the realization of transfer funds can reduce the percentage of poor people in Eastern Indonesia. This happens because transfer funds help improve basic services that are important for low-income communities. One key component of transfer funds is the Special Allocation Fund, which is provided by the central government to local governments to finance specific activities that fall under regional responsibilities and support national priorities. These activities often focus on improving the welfare of poor households and strengthening basic services such as infrastructure, education, and health. With a higher realization of transfer funds, local governments have more financial capacity to increase the allocation to the Special Allocation Fund, which directly supports development priorities including poverty reduction.

The findings of this study are consistent with research by Putra (2017) who found that transfer funds helped reduce poverty in 17 provinces in Indonesia. A one percent increase in transfer funds was able to reduce the poverty rate by 3.17 percent. This is because larger transfer funds allow local governments to design and implement targeted policies that can improve people's living conditions, especially for the poor. A more recent study by Ninu (2024) also found that transfer funds, especially the general allocation fund and the special allocation fund, helped reduce poverty in West Nusa Tenggara. This is because these funds are used to meet basic needs such as education, health, and social services, which directly improve the quality of life of poor households. These results are also in line with the study by Nursini and Tawakkal (2019), which showed that higher transfer funds increase the fiscal capacity of local governments, enabling them to finance poverty reduction programs more effectively.

Although transfer funds have a direct effect on poverty, the study also finds that transfer funds do not have a significant effect on poverty when the impact must pass through economic growth. There are several reasons for this. First, the effect of transfer funds on economic growth is limited because the management of transfer funds in some regions of Eastern Indonesia is not efficient. Even though the amount of funds has increased each year, the allocation is often not well targeted and is mostly used for long term infrastructure projects, as observed in Papua and West Papua. This is similar to the findings of Rambe and colleagues (2024), who reported that transfer funds did not significantly reduce poverty because of low efficiency and weak fund management in many eastern provinces, which prevented the funds from supporting economic growth effectively.

Another reason is that programs aimed at improving health and education take a long time to show results, as noted by Collin and Weil (2020). Even if funds for these sectors increase, the effects on economic growth are slow because improvements in human capital take time. As a result, poor households do not immediately experience an increase in income within the same year. Furthermore, the insignificant impact may also occur because transfer funds have not yet contributed to empowering poor communities. In some cases, transfer funds make people dependent on assistance, which reduces their motivation to become self-sufficient. This is consistent with the findings of Akbar and Taufiq (2023), who reported that transfer funds tend to increase the dependence of poor households on government aid, making it harder for them to escape poverty without external support.

The Effect of Regional Loans on Poverty in Eastern Indonesia

Regional loans affect poverty both directly and indirectly through health and education spending and through economic growth. One main reason for this result is that local governments use loans for productive sectors, which helps reduce the number of people living in poverty. During the pandemic period, many regions also experienced an increase in regional loan realization, especially because of the National Economic Recovery loan program, which supported local governments in dealing with the impacts of the pandemic. Most of these loans were directed toward recovering economic sectors that were directly affected, and the benefits were also felt by poor communities. These findings suggest that regional loans, as an alternative source of funding for local governments, have been able to play a meaningful role in reducing poverty in Eastern Indonesia, even though the effect is still relatively small, as shown by the low regression coefficients. The significant indirect effect also indicates that regions in Eastern Indonesia have used regional loans fairly well to accelerate local development, which in turn supports higher economic output in the area.

These findings are consistent with Sahibi and Hamzaoui (2016) who found that regional loans allocated to development spending can improve regional convergence and reduce poverty in Morocco. Similar results were found by Phan and Vo (2022) in Vietnam. However, although regional loans contribute to poverty reduction, they must still be managed carefully and with attention to fiscal sustainability. This is important to reduce the risks of debt dependency and to avoid creating long term burdens on regional budgets. This aligns with the findings of Akram (2016), who noted that regional loans can become a burden that slows regional economic growth if they are not managed effectively.

The Effect of Health and Education Spending on Poverty through Economic Growth in Eastern Indonesia

The results show that health and education spending have a significant and negative effect on poverty when it works through economic growth. Health and education spending can influence economic growth by improving worker productivity. When people have better access to health and education services, they tend to be healthier, more skilled, and more able to take part in productive economic activities (Ilham and Fisabilillah, 2025). A healthy and productive population can create more output in a region, which then supports higher economic growth. Strong economic growth can

create more jobs, allowing more people to find work and earn higher incomes. When the income of poor households increases, they have a greater chance of rising above the poverty line. These findings are consistent with studies by Celikay and Gumus (2017) in Turkey, Muhammad and Saputra (2019) in Indonesia, Liu and colleagues (2020) in China, and Komarudin and Oak (2020) in several developing countries. Because of this, it is important for local governments as policy makers to focus not only on increasing the budget for health and education, but also on improving how these services are distributed and improving their quality. This will ensure that the benefits can be felt by all groups in society, including low-income communities.

Although this study has been conducted with the best efforts, it is not without several limitations. First, the data collection period is relatively short, covering only 14 years from 2010 to 2023. This is mainly due to data limitations, where some regions do not have complete data for certain years. As a result, the findings may not fully capture long-term trends related to poverty patterns in those areas. The second limitation is that this study is limited to only one region, namely Eastern Indonesia, without involving Western Indonesia or a national representation as a whole. This means that the findings only reflect the specific conditions in Eastern Indonesia, which cannot be fully generalized to the entire country.

In addition, it is necessary to consider adding other variables in the research. Poverty is a multidimensional issue, which is not only influenced by economic variables but also affected by various social factors. Therefore, the results of this study do not yet fully represent the complex relationships between factors that influence poverty.

The next limitation relates to changes in the global poverty line. During the research period, there were three changes in the poverty line, from $1.25 in 2010 to $2.15 in 2022. However, this study only used general poverty data without taking into account the impact of these changes in the poverty line. Therefore, this study is not fully able to provide a picture of how changes in the poverty line affect the poverty level in the region, especially since these changes have the potential to increase the number of people falling into poverty. Being aware of this limitation, future research is recommended to extend the observation period, broaden the sample coverage, and consider the dynamics of poverty line changes to provide a more comprehensive picture of the factors affecting poverty in Indonesia, as well as to allow for comparisons of conditions between regions.

CONLUSION

Based on the findings of this study, several conclusions can be drawn. First, fiscal policy in the form of Regional Own Source Revenue has an indirect negative effect on poverty through health and education spending and its impact on economic growth. This indicates that local revenue policies targeted toward these essential sectors can support economic expansion and contribute to poverty reduction in Eastern Indonesia. Second, transfer funds have a direct negative effect on poverty, but their indirect effect is not significant. This suggests that although transfer funds help reduce poverty, their allocation toward health and education has not been sufficient to stimulate economic growth, limiting their overall impact on poverty reduction. Third, regional loans have both direct and indirect negative effects on poverty, showing that loans can serve as an alternative source of development financing whose benefits can reach poor

communities. Overall, these findings highlight the importance of effective fiscal policy design and the strategic allocation of public funds to sectors that strengthen human capital and support inclusive economic growth.

This study is also subject to several limitations. Therefore, Future research is recommended to extend the observation period, broaden the sample coverage, and consider changes in the poverty line. This will provide a more comprehensive understanding of the factors influencing poverty in Indonesia and allow for comparisons across different regions.

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