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# Influence Fiscal Decentralization of Poverty in Papua Province

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**ABSTRACT**

Poverty remains one of the most persistent development challenges in Papua Province, which consistently records the highest poverty rate in Indonesia. Fiscal decentralization is expected to enhance regional autonomy and public service effectiveness through the distribution of government expenditure across priority sectors. This study aims to analyze the influence of fiscal decentralization on poverty levels in Papua Province by examining government expenditure in the infrastructure, education, health, and economic sectors. Using panel data from 29 districts and cities in Papua covering the period 2010–2021, the research employs a dynamic panel data regression approach using the Arellano–Bond GMM estimation model. The results indicate that education expenditure has a significant negative effect on poverty, with a coefficient of −1.259, and economic expenditure also reduces poverty with a coefficient of −0.497. In contrast, health expenditure shows a positive coefficient of 0.455, indicating that spending in this sector has not yet contributed to welfare improvement, while infrastructure expenditure records a positive coefficient of 0.492, demonstrating unexpected results and budget utilization inefficiencies. These findings suggest that policy strategies should prioritize education and economic strengthening, improve the effectiveness of health spending, and redesign infrastructure policies based on contextual regional needs to achieve equitable poverty reduction in Papua.

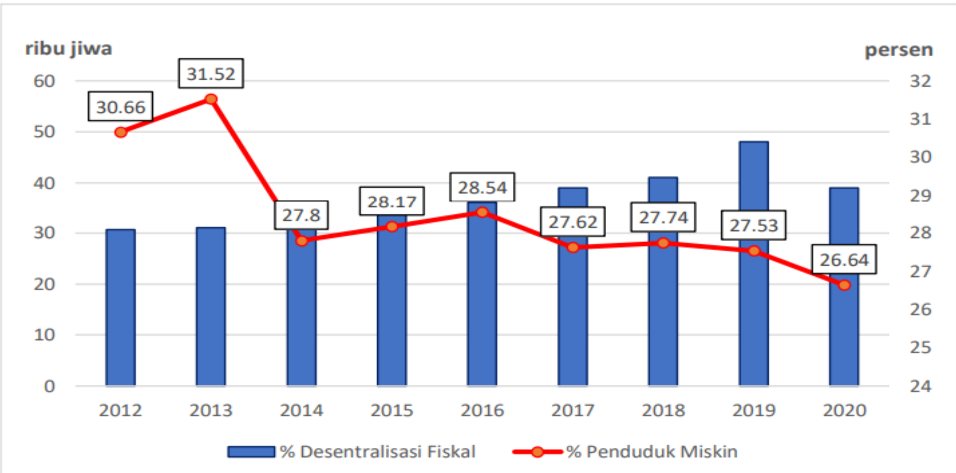
**Keywords:** Fiscal Decentralization; Government Expenditure; Papua; Panel Data; Poverty

## INTRODUCTION

Poverty is a serious socio-economic problem faced by many countries, including Indonesia. Despite various government initiatives, poverty alleviation remains a persistent challenge. Papua Province, which consistently records the highest poverty rate in Indonesia, has become the primary focus of this study. According to the Central Statistics Agency (BPS) (2022), the poverty rate in Papua reached 26.9% in 2022, far above the national average of 9.57%. These conditions indicate large disparities in welfare distribution and limited access to basic public services.

Fiscal decentralization is expected to provide autonomy to local governments in managing financial resources, strengthening governance capacity, and improving community welfare (Obisanya & Hassan, 2022). Papua Province receives special autonomy funds and financial allocations from the central government. However, challenges in regional financial management still exist, and these limitations have the potential to hinder poverty eradication efforts. Previous studies provide differing conclusions regarding the influence of fiscal decentralization on poverty levels. Many empirical studies recommend that granting financial management authority to regional governments has a positive impact on poverty reduction (Masdar et al., 2021). However, several studies show that this policy does not operate optimally in decreasing poverty. The study by Hiktaop et al. (2020), for example, found that fiscal decentralization had no significant effect on poverty alleviation in Papua Province, suggesting unresolved weaknesses in the policy implementation.

**Figure 1.** Comparison of Fiscal Decentralization and the Number of Poor People in Papua Province 2012–2021




Boret et al. (2021) identified the evolution of fiscal decentralization, which initially functioned as decentralization of spending aimed at reducing poverty and generating revenue, and later developed into a mechanism with the potential to sustainably increase tax revenues toward fiscal independence. However, previous studies still demonstrate strong hierarchical intervention from provincial and district or city governments, while the influence of local communities in managing revenues and alleviating poverty has not yet been adequately addressed (Cai et al., 2022). This issue highlights the need for further study that incorporates contextual and cultural approaches within the Papuan community.

In this context, fiscal decentralization from the government spending perspective in reducing poverty is examined according to customary areas in Papua Province, which represent the lives and identity of Indigenous Papuans. The mapping of customary areas is based on geographical characteristics, shared cultural traditions among tribes, and indigenous Papuan languages. One of the important strategies mandated in Presidential Instruction No. 9 of 2017 (Indonesia, Central Government, 2017) to accelerate development and community welfare in Papua is the implementation of a development approach based on culture and customary regions, prioritizing Indigenous Papuans.

The location of this study was selected because customary areas represent cultural similarity and social closeness between regions. Papua consists of five customary regions: Mamta, Saereri, Anim Ha, Meepago, and La Pago. These customary areas serve as focal points of development throughout the Land of Papua, including in the equitable eradication of poverty. Fiscal decentralization supports the governmental functions and public services aligned with the distribution of authority across administrative and cultural structures.

This study aims to analyze the influence of government spending in the infrastructure, education, health, and economic sectors on poverty levels in Papua Province and to examine whether differences exist across the customary regions in reducing poverty levels in Papua.

## LITERATURE REVIEW

### Fiscal Decentralization Theory

Fiscal decentralization refers to the transfer of authority for financial management from the central government to regional governments in order to strengthen local autonomy and improve public service delivery. This concept emphasizes the distribution of budgetary resources and decision-making to lower levels of government to support governmental functions and public services in accordance with the delegated authority. According to Saraghih (2003, p. 83), fiscal decentralization is a process of budget distribution from a higher level of government to a lower level to enhance regional capacity in managing development priorities based on local needs.

This theory is also strongly associated with Keynesian economic perspectives, which argue that an increase in government spending can stimulate economic growth, enhance public welfare, and contribute to poverty reduction. Keynesian theory suggests that fiscal instruments, particularly government expenditure in development sectors, have the potential to increase income distribution, employment opportunities, and access to essential public services, which ultimately support poverty alleviation. Therefore, fiscal decentralization is expected to enable regions to allocate resources more effectively in accordance with local socio-economic characteristics and priorities.

### Poverty Theory

The concept of poverty has evolved over time and continues to be widely discussed in academic and policy contexts. Poverty is generally understood as a condition of deprivation experienced by individuals or groups, resulting from the inability to obtain sufficient resources to meet basic needs. Suparlan (1984) defines poverty as a condition of lacking valuable assets or resources, causing individuals or groups to struggle to adequately finance essential aspects of life. Similarly, Dibaba (2019) emphasizes that poverty is closely related to an individual's or community's inability to access basic needs, including food, health, education, and shelter.

Perspectives on poverty can be classified into two general approaches. The first is the absolute approach, which defines poverty as the inability to obtain goods and services required to meet minimum living standards. The second is the relative approach, which views poverty as a condition where individuals have substantially lower income compared to the average income of the population. Zastrow (2017, p. 114) highlights that poverty occurs when a person's or household's income is significantly below the general income level within a community, leading to social and economic exclusion.

The theoretical foundation of fiscal decentralization and poverty provides a basis for understanding how government spending and financial autonomy may influence regional poverty levels. Fiscal decentralization is expected to enable targeted and effective budget allocation, while poverty theory explains the socio-economic implications of inadequate resource distribution. Integrating both theoretical perspectives supports the relevance of assessing whether fiscal decentralization contributes to poverty reduction within specific regional contexts, such as customary areas in Papua Province.

## RESEARCH METHOD

This study uses an explanatory research design with panel data analysis to examine the effect of fiscal decentralization, represented by government spending in the infrastructure, education, health, and economic sectors, on poverty levels in Papua Province. The research focuses on 29 districts and cities in Papua as the units of analysis, representing the overall regional administrative areas in the province. The observation period covers annual data from 2010 to 2024, providing a longitudinal dataset that enables the evaluation of changes and trends over time.

The target population consists of all districts and cities in Papua Province, and the sampling technique used is census sampling, since the entire population of regional units was included in the study. This approach was chosen to ensure comprehensive representation of socio-economic variations across regions. The profile of each district and city is identified based on government budget allocation figures, demographic indicators, and recorded poverty levels.

Data collection was carried out using secondary data obtained from official sources, namely the Regional Revenue and Expenditure Budget (APBD) reports, the Central Statistics Agency (BPS), and the Directorate General of Fiscal Balance (DJPK) of the Ministry of Finance. These data sources were selected due to their validity, accessibility, and status as official national data references for fiscal and development studies.

The measurement of variables is based on the nominal value of government spending in each sector and the percentage of poverty levels recorded annually. Fiscal decentralization is represented by the allocation of regional government expenditure in priority development sectors, while poverty levels are measured using the official poverty percentage published by BPS.

Panel data regression analysis is used to measure the relationship between government spending variables and poverty levels over time and across regions. Model specification testing, including the Chow Test, Hausman Test, and Lagrange Multiplier Test, was conducted to determine the most appropriate regression model between the Fixed Effect Model and the Random Effect Model. The selected model forms the basis for interpreting the impact of fiscal decentralization on poverty reduction in Papua Province.

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## RESULTS

The results indicate that problems of non-normality and autocorrelation were found in the initial regression model, leading to the decision to apply a dynamic panel model. The dynamic panel estimation method using the Arellano-Bond Generalized Method of Moments (GMM) was chosen because it is able to address autocorrelation issues and incorporate lagged variables to capture dynamic behavior in poverty levels across regions and time while minimizing the effects of non-normal residual distribution.

Table 1 presents the coefficients of the dynamic panel regression model for both specifications, namely without and with customary area dummy variables. The estimation results show that several variables have a significant effect on poverty levels in Papua Province.

**Tabel 1.** Dynamic Panel Regression Coefficients

| Variabel | Tanpa Dummy Coef. | Std. Error | Dengan Dummy Coef. | Std. Error |
|---|---|---|---|---|
| lag(Pov, 1×2)1 | 0.443*** | (0.012) | 0.276*** | (0.021) |
| lag(Pov, 1×2)2 | 0.471*** | (0.011) | 0.463*** | (0.013) |
| PFasum | 0.179** | (0.066) | 0.492** | (0.088) |
| Pend | -0.989*** | (0.165) | -1.259*** | (0.222) |
| Kes | 1.032*** | (0.102) | 0.455** | (0.165) |
| Ekon | -0.164* | (0.064) | -0.497*** | (0.129) |
| Dummy_HaAnim | – | – | 25.252** | (4.087) |
| Dummy_LaPago | – | – | 28.932*** | (3.908) |
| Dummy_Mamta | – | – | 24.350** | (3.806) |
| Dummy_MeePago | – | – | 28.552*** | (4.060) |
| Dummy_Saereri | – | – | 27.490*** | (3.859) |
| RMSE | 1.811 | | 1.821 | |
| Sargan (p-value) | 1.000 | | 1.000 | |
| Arellano-Bond Test (1) (p-value) | 0.000 | | 0.000 | |
| Arellano-Bond Test (2) (p-value) | 0.018 | | 0.016 | |

Note: *p < 0.1, **p < 0.05, ***p < 0.001

Based on the estimation results, the following regression equation for the model without dummy variables was generated:

$$Pov_{i,t} = 0.443 * Pov_{i,t-1} + 0.471 * Pov_{i,t-2} + 0.179 * \ln PFasum_{i,t} - 0.989 * \ln Pend_{i,t} + 1.032 * \ln Kes_{i,t} - 0.164 * \ln Ekon_{i,t}$$

This equation shows that poverty in the previous period has a positive and significant effect on current poverty, indicating strong poverty persistence. Housing and public facilities have a positive and significant relationship to poverty, implying that improvements in access have not directly reduced poverty. Education shows a significant negative effect, meaning that improving educational quality reduces poverty. Health expenditure has a positive relationship with poverty, reflecting that increasing health sector spending has not yet resulted in measurable improvements in welfare. Economic spending demonstrates a negative and significant influence on poverty, although relatively small in magnitude.

The following equation presents the regression model including customary area dummy variables:

$$Pov_{i,t} = 0.276 * Pov_{i,t-1} + 0.463 * Pov_{i,t-2} + 0.492 * \ln PFasum_{i,t} - 1.259 * \ln Pend_{i,t} + 0.455 * \ln Kes_{i,t} - 0.497 * \ln Ekon_{i,t} + 25.252 * D_{HaAnim;i,t} + 28.932 * D_{LaPago;i,t} + 24.350 * D_{Mamta;i,t} + 28.552 * D_{Meepago;i,t} + 27.490 * D_{Saereri;i,t}$$

The model with dummy variables remains consistent with the previous one, but the strength of influence differs among variables. Poverty persistence remains significant but weaker compared to the model without dummies. Housing and public facilities have a stronger effect, while education, economy, and health have slightly weaker coefficients. Dummy variables for customary areas demonstrate a significant effect on poverty levels, where La Pago, Mee Pago, and Saereri experience higher poverty levels compared to the Anim Ha reference area. This indicates that socio-economic, geographic, and access-related constraints in customary regions significantly contribute to poverty variations.

## DISCUSSION

The results of the dynamic panel regression analysis show that fiscal decentralization, represented through government spending in key development sectors, has a significant relationship with poverty levels in Papua Province. The findings demonstrate that poverty persistence is a dominant factor influencing current poverty levels. The strong and positive effect of lagged poverty confirms that poverty in Papua tends to be inherited and continues over time, indicating structural and long-term socioeconomic challenges. This finding supports the view that poverty reduction policies require sustained efforts and cannot rely solely on short-term financial or distributive interventions (Ayoo, 2022).

The analysis also reveals that spending on housing and public facilities has a significant positive effect on poverty. This indicates that although infrastructure investments may improve access, they have not yet directly contributed to reducing poverty levels. The results may reflect inefficiencies in implementation, regional disparities in access to infrastructure benefits, or a lack of alignment between infrastructure development and community needs. Large-scale construction projects without strengthening productive sectors often fail to generate income improvements for the poor (Wang et al., 2022).

Education expenditure has a significant negative relationship with poverty, showing that improvements in educational access and quality play an important role in reducing poverty. Better education creates broader employment opportunities and enhances workforce capacity, which ultimately increases income and reduces welfare disparities. This result is consistent with the human capital theory perspective that education serves as a long-term strategic investment for socioeconomic improvement (Bykova et al., 2024).

Health expenditure shows a positive significant relationship with poverty. This suggests that increased health spending has not produced immediate benefits for reducing poverty. Higher health spending may be associated with high treatment costs, limited access to adequate health services, or inefficient allocation of health resources (Brikci et al., 2024). The poor often face barriers in accessing healthcare, and public health investments may not yet be distributed equitably across remote regions (Houghton et al., 2023).

Economic spending has a negative and significant effect on poverty, highlighting that investment in economic sectors can stimulate productive activity, expand employment, and improve household income (Mbodj & Laye, 2025). However, the coefficient magnitude indicates that the effect remains relatively limited, which may reflect the slow responsiveness of economic development programs in areas with difficult geographical access, limited market structures, and low participation of indigenous communities.

The model incorporating customary area dummy variables strengthens the understanding that poverty levels vary significantly across customary regions in Papua. The coefficients for La Pago, Mee Pago, and Saereri show the highest poverty levels compared to the Anim Ha reference area, suggesting substantial differences in the distribution of economic opportunities, public service accessibility, cultural structures, and geographic conditions. These findings imply that fiscal decentralization policies should consider local socio-cultural identity and regional characteristics rather than adopting uniform approaches across regions.

Overall, the inclusion of customary region dummy variables provides a deeper understanding of poverty disparities in Papua, confirming that the effectiveness of fiscal decentralization depends largely on region-specific conditions. This reinforces the importance of designing development strategies based on local cultural contexts, community involvement, and equitable allocation of resources. The results align with the mandate of Presidential Instruction No. 9 of 2017 (Indonesia, Central Government, 2017), which emphasizes development through a customary area-based approach to accelerate welfare improvement for Indigenous Papuans.

## CONCLUSION

The findings of this study indicate that government expenditure in the education and health sectors has a stronger and more significant impact on reducing poverty levels in Papua Province compared to expenditure in the infrastructure and economic sectors. Education spending demonstrates a significant negative effect on poverty, showing that improvements in access to and quality of education meaningfully enhance community capabilities and contribute to long-term welfare improvement. Economic expenditure also shows a negative relationship with poverty, although the magnitude of the effect remains relatively limited, suggesting that economic development programs have not yet produced substantial changes in local productivity and household income. In contrast, infrastructure spending exhibits a positive coefficient that contradicts theoretical expectations, indicating that investments in physical facilities have not been effectively utilized or have not generated direct benefits for low-income groups. Health spending also displays a positive relationship with poverty, implying that increased medical costs and limited accessibility to services may still burden disadvantaged communities rather than improve welfare outcomes.

The results further reveal significant regional variation in the effectiveness of government spending across customary territories. The LaPago, MeePago, and Saereri regions record higher poverty levels than the reference region, Ha Anim, reflecting structural disparities in socio-economic conditions, geographic access, and resource distribution. Mamta is the only region showing improvement, suggesting that localized strengths and targeted government interventions may influence poverty dynamics. These findings indicate that a uniform poverty reduction strategy is insufficient and that context-specific and region-based policy approaches are essential for achieving effective fiscal decentralization outcomes.

Policy directions should therefore be tailored to the unique characteristics and needs of each customary region. LaPago requires empowerment through locally driven economic development initiatives emphasizing entrepreneurship and optimization of regional sectoral potential, including agriculture, crafts, and tourism. Mamta would benefit from continued investment in education and health to strengthen poverty reduction progress and improve community participation in economic growth. MeePago requires enhanced infrastructure and transportation access to connect communities with markets and public services. Saereri requires strengthened social protection and safety net programs to mitigate short-term poverty impacts and provide support for vulnerable households.

Overall, the implementation of fiscal decentralization in Papua will be more effective when aligned with cultural identities, geographical constraints, and socio-economic priorities of Indigenous Papuans. A development paradigm that positions customary territories at the center of planning and policymaking is essential for ensuring equitable welfare improvement. These results reinforce the importance of promoting targeted, community-based, and sustainable poverty reduction strategies to accelerate welfare transformation across all regions of Papua.

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## DECLARATION OF CONFLICTING INTERESTS
The authors have declared no potential conflicts of interest concerning the study, authorship, and/or publication of this article.

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