Effectiveness of Village Funds in Reducing Rural Poverty: Panel Data Analysis of 33 Provinces

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ABSTRACT

This study aims to examine the effect of Village Fund (VF), Village Fund Allocation (VFA), Gross Regional Domestic Product (GRDP), and Village Development Index (VDI) on the reduction of rural poverty levels across 33 Indonesian provinces during the 2015–2023 period. This quantitative research uses longitudinal panel data for 33 provinces over eight years (2015–2023), resulting in 264 observations. Given the characteristics of persistent dependent variables in dynamic models, the estimation method employed is the Two-Step Difference Generalized Method of Moments (GMM). The results confirm that VF, VFA, GRDP, and VDI simultaneously and partially exert a significant negative influence on rural poverty reduction. Notably, GRDP (coefficient -7.5173) and VDI (coefficient -4.1816) demonstrate the largest quantitative impact on poverty reduction. The government should reformulate the VF allocation formula to emphasize poverty criteria (equalization grant) and encourage the shift of village spending priority from physical infrastructure towards human capacity and economic empowerment, aligning with Amartya Sen's capability approach. This research addresses the gap in longitudinal studies by utilizing a comprehensive set of variables (VF, VFA, VDI, and GRDP) at the national scale (33 provinces, 2015–2023), providing a robust empirical contribution to the effectiveness of Indonesia's deep fiscal decentralization policy.

Keywords: *GRDP, Rural Poverty, Village Development Index, Village Fund, Village Fund Allocation.*

INTRODUCTION

Poverty continues to be a global problem, with the majority concentrated in rural areas (Ravallion & Chen, 2009). Rural poverty alleviation efforts are further complicated by the informal nature of employment and the focus on self-consumption (Rammohan & Tohari, 2023). Indonesia, as a developing country, faces significant poverty, and the government continues to roll out various programs to address it. Among fiscal policy instruments, the most crucial is the Village Fund (VF) Program, implemented through a fiscal decentralization scheme following the ratification of the 2019 fiscal policy. Law Number 6 of 2014 concerning Villages. The purpose of the village fund is to grant villages autonomy to plan development in accordance with their residents' needs. This is expected to reduce poverty and encourage economic growth.

At a macro level, the rural poverty rate in Indonesia has shown a positive downward trend, from 14.09% in 2014 to 12.61% in 2023. Village fund disbursement has also continued to increase throughout the period from 2015 to 2023. This decline is partly attributed to more inclusive economic growth. However, the poverty picture in Indonesia still shows sharp inequality, with rural areas experiencing significantly higher levels of poverty than urban areas. Furthermore, regional disparities are evident: regions such as Papua, Maluku, and Nusa Tenggara consistently record the highest rural poverty rates, far above the national level, while Java-Bali and Kalimantan tend to fall below. This

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inequality phenomenon hinders the potential for rural development and contributes to broader regional disparities (Salim et al., 2017; Digdowiseiso et al., 2020; Handoyo et al., 2021; Hilmawan et al., 2023).

In a way, this issue is examined through the framework of fiscal decentralization and the capability approach. Musgrave's theory by Bahl and Linn (1998) emphasizes that the allocation function (adjusting public spending to regional preferences) should be delegated to local governments (or, in this case, villages as the most minor government units) due to their proximity to information (Faguet & Pal, 2023). The village fund and Village Fund Allocation (VFA) are manifestations of profound fiscal decentralization in Indonesia, aiming to achieve vertical and horizontal fiscal equity (Martinez-Vazquez, 2025; Suparto et al., 2025). Furthermore, poverty is analyzed through Amartya Sen's lens as a form of capability deprivation. Capability deprivation, where poverty is not only a lack of income but also limited access to health, education, and social participation (Sen, 1999). Village Development (VD), with its Community-Driven Development (CDD) approach, is expected to be a mechanism to address this specific capability deprivation. The success of village development is measured holistically through the Village Development Index (*Indeks Desa Membangun*/IDM), which integrates social, economic, and ecological dimensions. Finally, Gross Regional Domestic Product (GRDP), the leading macroeconomic indicator of regional economic growth, is expected to increase employment and income in a region, thereby reducing poverty in that area.

Previous research has yielded mixed results regarding the effectiveness of the village fund. These studies confirm the positive impact of village funds on economic growth and poverty reduction, particularly in Eastern Indonesia (Elbawab, 2022; Rammohan & Tohari, 2023). However, other studies have found consistent poverty reduction only in Java, with minimal impact outside Java (Mardalena et al., 2023). The village fund has not been effective in addressing rural inequality, and its effectiveness is hampered by the dominant allocation of funds to physical infrastructure rather than economic empowerment (Arham & Rauf, 2020). In addition to the village fund, research also shows that village development, village fund allocation, and GRDP also have a significant negative impact on poverty reduction (Sigit & Kosasih, 2020; Andari & Fitria, 2023).

Based on the problem description and previous research, no study has comprehensively examined the influence of village funds, village fund allocation, GRDP, and village development index within a single model framework over the 2015 to 2023 period. This research provides an empirical contribution by filling a national-scale research gap by determining how these four variables affect the rate of decline in rural poverty across 33 provinces in Indonesia. This study aims to examine the effect of village fund, village fund allocation, GRDP, and Village Development Index (VDI) on the reduction of rural poverty levels across 33 Indonesian provinces during the 2015–2023 period.

LITERATURE REVIEW & HYPOTHESIS DEVELOPMENT

The Effect of Village Funds on Rural Poverty

The conceptualization of poverty has evolved from simple income-based definitions to multidimensional understandings (Bradshaw, 2007). In Indonesia, the Central Statistics Agency (*Badan Pusat Statistik*/BPS) employs the basic needs approach, defining poverty as the economic inability to meet fundamental food and non-food needs, measured against a nationally established poverty line. While income-based measures are useful for statistical purposes, they oversimplify poverty by reducing it to monetary insufficiency. The Bank emphasizes broader welfare dimensions, including individuals' ability to command resources for essential needs and access goods and services such as healthcare, education, housing, and nutrition that constitute a dignified standard of living.

The capabilities approach reframes poverty as deprivation of substantive freedoms rather than mere income insufficiency (Sen, 1999). Poverty arises from a lack of access to healthcare, education, meaningful community participation, and political or social freedoms. Nussbaum (2006) further underscores that traditional economic metrics like per

capita income fail to capture quality of life, advocating for capabilities as central to human dignity. Additionally, Davis and Sanchez-Martinez (2015) highlight the importance of social and structural contexts, noting that poverty emerges from the interaction between personal circumstances and broader environmental, institutional, and economic factors that constrain or enable individual capabilities.

Empirical research investigating village fund poverty reduction impact demonstrates mixed yet generally positive results. Hartojo et al. (2022) documented that eastern Indonesian villages achieved economic growth rates of approximately 156% during 2014-2019, substantially exceeding both central Indonesia (141%) and western Indonesia (98%), suggesting that village funds contributed to development convergence. Arham and Payu (2019) confirmed that the village fund significantly reduced poverty across 33 provinces during 2015-2017. Rammohan and Tohari (2023) demonstrated that village funds increased agricultural household consumption spending by approximately 1.7% and female labor force participation by 10%, with shifts toward service sector employment. Rachma et al. (2019) emphasized village independence through community-implemented activities (*swakelola*) in reducing income inequality.

H1: Village funds have a negative influence on rural poverty.

The Effect of Village Fund Allocation on Rural Poverty

Village fund effectiveness varies substantially across regions. Mardalena et al. (2023) found consistent poverty reduction in Java but minimal effects outside Java. More critically, Faoziyah and Salim (2020) documented poverty increases in regions including Nusa Tenggara, Kalimantan, and Papua despite increased village fund allocation. Arham and Hatu (2020) concluded that the village fund during 2015-2019 had not significantly addressed rural inequality.

Critical research identifies compositional issues underlying variable effectiveness. Arham and Hatu (2020) and Susilowati et al. (2017) found that dominant allocation toward physical infrastructure rather than economic empowerment reduced effectiveness in wealth distribution to lower-income groups. Poor infrastructure quality and weak technical management further constrained poverty reduction achievements.

Sigit and Kosasih (2020) explained that village funds and village fund allocation exert negative and significant influences on the number of poor people, demonstrating their effectiveness in reducing rural poverty rates at the district/city level in Indonesia. Susilowati et al. (2017) concluded that VFA, capital expenditures, and Gross Regional Domestic Product (GRDP) constitute significant determinants in reducing poverty in East Java, though early-period village fund allocation proved ineffective, attributed to dominant allocation for physical infrastructure versus economic empowerment. When directed toward increasing rural income, village fund allocation can effectively reduce rural poverty rates, but misuse and corruption associated with village fund allocation have caused poverty increases rather than a reduction.

H2: Village fund allocation has a negative effect on rural poverty.

The Effect of Village Development Index on Rural Poverty

Rural areas in developing economies, including Indonesia, face persistent poverty due to interconnected geographical constraints. Zhang et al. (2025) identified multiple barriers, including physical distance from markets, limited natural resources, inadequate infrastructure, slow adoption of modern technologies, and selective outmigration of human capital. These factors act synergistically as self-reinforcing poverty traps, limiting investment and skilled population retention, which further erodes local economic capacity. The heterogeneity of villages in size, location, development status, and preferences necessitates context-specific poverty reduction approaches, enabling communities to identify capability deprivations and allocate resources effectively (Paranata, 2022). Fiscal decentralization, transferring resource management and

authority from central to local governments, has become a common reform in developing nations (Bahl & Linn, 1998; Canare, 2020). Tiebout (1956) theorized that decentralization improves efficiency by aligning public goods provision with citizen preferences, fostering inter-governmental competition, and reducing free-rider problems. Decentralization also enhances accountability as local governments are closer to constituents, providing superior information about local needs and enabling citizens to monitor service delivery more directly (Faguet & Pal, 2023; Warna et al., 2024).

However, decentralization entails trade-offs, including challenges in managing externalities and achieving economies of scale when services are fragmented (Oates, 1999). The growth pole theory, Parr (1999) suggests that concentrated regional development can spread to surrounding areas, while later research emphasizes efficiency and accountability gains from informational advantages. Musgrave's three-function framework underpins fiscal decentralization worldwide, assigning stabilization and redistribution to the central government and allocation to local governments, enabling vertical and horizontal fiscal equalization through intergovernmental transfers to reduce regional disparities (Martinez-Vazquez & Boex, 2001; Von Braun & Grote, 2002; Bahl, 2008; Faguet, 2009). Village development represents efforts to establish, develop, and improve communities throughout Indonesia to effectively utilize economic, territorial, and social capital potential (Sumodiningrat & Wulandari, 2016). Andari and Fitria (2023) found that increases in the village development index demonstrate positive impacts on rural poverty reduction and SDG achievement, with village fund policy positively impacting village improvement and autonomy status, contributing to rural poverty alleviation.

H3: Village development index has a negative effect on rural poverty.

The Effect of Gross Regional Domestic Product on Rural Poverty

Economic growth is the sustained increase in a country's capacity to provide diverse goods and services, reflecting overall advancement in various aspects of life. Kuznets (1973) identified three key drivers: continuous increases in the supply of goods, technological development, and effective and efficient use of technology. At the regional level, economic growth is measured by Gross Regional Domestic Product (GRDP), defined by the Central Statistics Agency as the total value added generated by all business units or the total value of final goods and services produced within a region over a year, with a higher GRDP indicating greater economic advancement (Suliswanto, 2010).

High or rapidly growing GRDP reflects a conducive economic environment, boosting demand for goods and services, creating employment opportunities outside agriculture, and enabling households to diversify their incomes (Thong et al., 2025). Regions with higher GRDP also tend to have better infrastructure, reducing transportation costs and isolation for rural communities, which ultimately helps lower poverty rates. Indonesia's long-term economic growth since 1990 has been strong, significantly reducing extreme poverty from over 50% to under 6%, though the benefits have not been evenly distributed across regions and social groups. Despite impressive aggregate growth, poverty reduction has lagged in certain areas, indicating the need for better mechanisms to channel economic gains to disadvantaged populations.

De Janvry and Sadoulet (2010) emphasized the interdependence between rural economies and broader regional development. Rural economic advancement is not isolated from regional performance but instead exhibits systematic connections with the overall regional economic trajectory. Rural underdevelopment contributes to broader regional economic backwardness, just as regional advancement generates positive externalities enabling rural progress.

H4: Gross Regional Domestic Product (GRDP) has a negative influence on rural poverty.

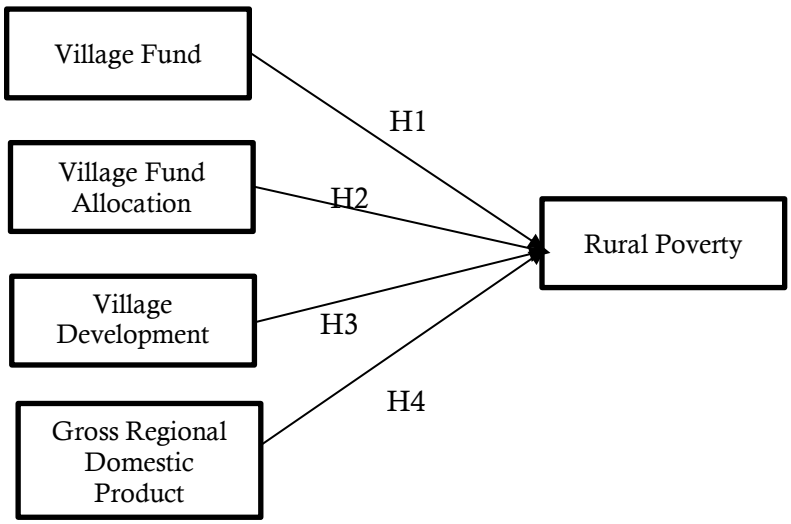

Figure 1. Conceptual Framework

Figure 1 illustrates the relationships between village-level economic variables and rural poverty. The diagram shows that village fund and village fund allocation influence the village development index, which, together with gross regional domestic product, affects rural poverty. Arrows indicate the directional impact, suggesting that improvements in fund allocation, village development, and regional economic output can reduce rural poverty.

RESEARCH METHODS

This study uses a quantitative, positivist approach to test and analyze the effect of Village Funds on rural poverty in Indonesia (Sugiyono, 2021). The data used are secondary, in the form of panel data, namely a combination of time-series data (period 2015 to 2023, totaling 8 years) and cross-sectional data (analysis units: 33 provinces in Indonesia, excluding DKI Jakarta because it does not receive Village Fund transfers). The total observations used are 264. Data on village funds and village fund allocations were obtained from the Directorate General of Fiscal Balance of the Ministry of Finance. In contrast, data on GRDP and the percentage of rural poor population were obtained from the BPS. The data collection involved systematically compiling official statistical reports from these institutions and cross-checking them for consistency across provinces and years. This procedure ensures transparency and allows other researchers to replicate the study. The dependent variable is the percentage of rural poor population, while the independent variables are village funds, village fund allocations, gross regional domestic product, and the village development index. The estimated equation model is:

PMit = a +*b*1PM*i*,*t*−1 + b2 VFit + β3 VFAit + β4 GRDPit + β5 VDIit +εi with explanation:

PMit: Percentage of Rural Poor Population (in percent)
a: Intercept
βk: Regression Coefficient
PM*i*,*t*: Lag of the Poor Population Variable
D It is: Village Funds (in million of IDR)
VFA: Village Fund Allocation (in million IDR)
GRDPit: Gross Regional Domestic Product (in million IDR)
VDIit: Village

Given that this study uses longitudinal panel data with a persistent dependent variable (the lag of the dependent variable is significant), the use of a static panel model, such as

the Fixed Effects Model (FEM), risks producing biased and inconsistent estimates. Therefore, the data analysis technique used is dynamic panel data regression with the two-step difference Generalized Method of Moments (GMM), which is ideal when the number of individuals is relatively large and the number of periods is relatively small, and for overcoming heteroscedasticity and autocorrelation.

GMM model specification testing is conducted to ensure the model's consistency and validity. The estimation consistency test requires that the lag regression coefficient for the dependent variable in the GMM estimation be between the Ordinary Least Squares (OLS/PLS) and FE coefficients. The instrument validity test (Hansen Test) assesses the exogeneity of the instrument; the model is considered valid if the test fails to reject H0 (p-value > the significance level). Finally, the Arellano–Bond Test is used to detect autocorrelation of order i. The model is considered valid if the autocorrelation in the second difference/AR (2) is not significant (fails to reject H0), even though the autocorrelation in the first difference/AR (1) is significant.

RESULTS

This study uses a total of 264 observations collected from 33 provinces in Indonesia, excluding DKI Jakarta, over the period 2015 to 2023. The data combines both cross-sectional differences between provinces and time-series variations across the eight-year period, allowing for a comprehensive analysis of rural development and poverty trends. A statistical summary of the research variables, including descriptive measures such as mean, minimum, maximum, and standard deviation, is presented in Table 1 to provide an overview of the dataset and its characteristics.

Table 1. Dataset Characteristic

Variable	Code	Obs	Mean	Std. Dev	Min	Max
Rural Poverty (%)	PM	297	13.47	7.62	4.72	37.94
Village Fund (IDR Billion)	VF	297	1,794.11	1,840.60	79.20	8,167.98
Village Fund Allocation (IDR Billion)	VFA	297	1,216.64	1,098.25	63.36	5,482.49
Village Development Index	VDI	297	0.61	0.09	0.40	0.855
Gross Regional Domestic Product (IDR Trillion)	GRDP	297	270.96	373.81	20.38	1,844.81

Descriptive data show extreme variation in the distribution of rural poverty, ranging from 4.72% to 37.94%. Village funds exhibit an unusually high standard deviation (IDR 1,840.60 billion), even exceeding the mean, indicating substantial disparities in fiscal resources between regions. A similar trend is observed for GRDP, where the standard deviation (IDR 373.81 trillion) reflects fundamental differences in regional economic structures across provinces. In contrast, the Village Development Index (VDI) has a much lower standard deviation (0.09), with a mean of 0.61, placing the majority of sample villages in the "Developing" category.

The average village fund allocation was IDR 1,794.11 billion, with a standard deviation of IDR 1,840.60 billion (coefficient of variation of 1.03), indicating substantial inequality in the distribution of fiscal resources across provinces. The minimum value of IDR 79.199 billion (Riau Islands) and the maximum of IDR 8,167.984 billion (East Java) indicate that the Village Fund allocation to East Java was more than 100 times higher than that to Riau Islands. This disparity reflects the village fund allocation formula, which considers the number of villages, area, and poverty levels, but also reveals fundamental inequalities in the distribution of resources across Indonesia's islands. The three provinces with the highest village fund allocations (East Java, Central Java, and West Java) accounted for 22.4 trillion IDR of the national village fund total. In contrast, the eastern islands with higher poverty rates received significantly lower allocations.

The average village fund allocation was IDR 1,216.64 billion with a standard deviation of IDR 1,098.25 billion, ranging from a minimum of IDR 63.359 billion to a maximum of IDR 5,482.486 billion. Village Allocation Funds (VFA), as a component of a more

equitable revenue-sharing system, exhibited lower variability than village funds, but still exhibited significant inequality. The more equitable distribution pattern of VFA reflects a legislative formula designed to reduce horizontal fiscal disparities between regions.

The village development index averaged 0.61 on a scale of 0-1 with a standard deviation of 0.09, placing the majority of villages in the "Developing" category (0.600-0.707). The Human Development Index (HDI) ranged from 0.40 (West Papua, in the Underdeveloped category) to 0.855 (Bali, in the independent category). The lower variability of the HDI compared to monetary transfers indicates that while development disparities exist between provinces, the variability is not as extreme as the disparity in fiscal resources.

The social, economic, and environmental dimensions of the village show more distributed development than cash transfers. The average GRDP is IDR 270.96 trillion with a very high standard deviation of IDR 373.81 trillion (coefficient of variation 1.38), ranging from a minimum of IDR 20.38 trillion (Gorontalo) to a maximum of IDR 1,844.81 trillion (East Java). The difference in GRDP between East Java and Gorontalo reaches a factor of 90, indicating an extreme disparity in regional economic capacity. The highest GRDP coefficient of variation (1.38) reflects fundamental differences in regional economic structures, levels of industrialization, urban population concentrations, infrastructure quality, and human capital stocks.

Table 2. GMM Model Specification Tests

Test	Statistic / Result	p-value
Lag Coefficient Check	GMM: 0.6525 PLS: 0.9811 FEM: 0.6061	–
Instrument Validity Test	Sargan: –	0.284
	Hansen: –	0.122
Autocorrelation Test	AR(1)	0.014
	AR(2)	0.146

As shown in Table 2, model specification testing was conducted to validate the use of GMM estimation and the lag structure of the coefficients. The GMM result for Rural Poverty (0.6525) lies between the PLS coefficient (0.9811) and FEM (0.6061), indicating that the GMM model estimation is consistent and unbiased. Instrument validity was assessed using both the Sargan and Hansen tests, which produced p-values of 0.284 and 0.122, respectively. Since both values exceed the 5% significance level, it can be concluded that the instruments used in the model are valid and that there are no significant over-identifying restrictions. Autocorrelation was examined using the Arellano–Bond test. The results show that AR(1) is significant (p-value 0.014), while AR(2) is not significant (p-value 0.146) at the 5% significance level. This indicates that there is no second-order autocorrelation, confirming that the dynamic model meets the specification criteria for proper use. GMM estimation results and model significance test the estimation results using GMM are summarized in Table 3.

Table 3. Summary of GMM Estimation Results

Variables	Coefficient	Probability (P-value)	Significance Level
Lagged Rural Poverty	0.652473	0.000	1% ***
Village Funds (VF)	-0.0679713	0.001	1% ***
Village Fund Allocation (VFA)	-0.3905423	0.104	10% *
Village Development Index (VDI)	-4.181614	0.017	5% **
GRDP	-7.517367	0.000	1% ***
Constant	-7.239147	0.000	1% ***
F-Statistic (F-Prob)	–	0.000	Significant Simultaneous

As shown in Table 3, the lagged rural poverty variable has a positive and significant coefficient (0.6525, $p<0.01$), indicating that poverty in the previous period persists into the current period. This demonstrates the existence of poverty persistence, although the coefficient being less than one suggests partial adjustment, meaning that interventions can gradually reduce poverty over time.

All main independent variables demonstrate significant negative effects on rural poverty, highlighting their important role in poverty alleviation. village funds significantly reduce poverty (coefficient = -0.06797, $p<0.01$), showing that direct fiscal transfers to villages can empower communities to address their most pressing needs. Similarly, village fund allocations also have a negative effect at the 10% significance level (coefficient = -0.3905), suggesting that increased fiscal capacity at the village level contributes to poverty reduction, although the effect is slightly weaker. The village development index negatively affects poverty (coefficient = -4.1816, $p<0.05$), indicating that improvements in village infrastructure, social services, and institutional capacity are effective in mitigating poverty. Among all variables, gross regional domestic product has the largest negative impact (coefficient = -7.5174, $p<0.01$), reflecting the critical role of overall regional economic growth in creating employment opportunities, increasing household income, and providing a favorable environment for sustained poverty reduction. These findings emphasize that both targeted village-level interventions and broader regional economic growth are necessary to achieve meaningful and lasting reductions in rural poverty.

DISCUSSION

Based on the simultaneous test, the results show that all independent variables collectively influence the reduction of rural poverty. The persistence of poverty from the previous period indicates that communities experiencing high poverty tend to remain vulnerable, highlighting the need for sustained and targeted interventions, as emphasized by Elbawab (2022) in their study on temporal poverty continuity. The coefficient being less than one suggests that while poverty persists, it can gradually be reduced through effective policies and long-term adjustment mechanisms.

Village funds play a crucial role in alleviating rural poverty by providing direct fiscal transfers to villages, which allow local governments to address urgent community needs. This finding supports the research of Rammohan and Tohari (2023), who demonstrate that community-driven development empowers residents to identify capability deprivations and prioritize interventions through participatory village deliberations. By enabling villages to make decisions on infrastructure, health, and education spending, village funds help communities transform resources into meaningful improvements in livelihoods (Khoirunurrofik et al., 2021). The effectiveness of village funds, however, depends heavily on transparent management and careful allocation, echoing the observations of Arham and Rauf (2020) that governance and absorption capacity are critical for translating fiscal resources into poverty reduction outcomes.

Village fund allocations, which enhance fiscal capacity at the local level, also show a meaningful negative effect on rural poverty. While some portions of the allocations may prioritize operational costs, the overall contribution supports local governments in designing and implementing programs tailored to community needs, a point highlighted in the work of Sigit and Kosasih (2020). These allocations allow for flexibility in addressing socio-economic disparities, especially when combined with village fund transfers, creating a more holistic approach to rural poverty reduction.

The village development index further illustrates the importance of human and institutional capacity in poverty alleviation. Villages with higher index scores benefit from improved infrastructure, access to education and health services, and stronger local institutions. Andari and Fitria (2023) show that investment in village development not only addresses immediate needs but also builds social capital and resilience, enabling communities to sustain poverty reduction over time. By focusing on holistic development, the village development index highlights how improving the capability of communities can have a lasting impact on well-being.

Regional economic growth, measured by gross regional domestic product, exerts the largest influence on rural poverty reduction. Increased economic activity stimulates demand for goods and services, creates jobs, and boosts household income, as discussed by Larasati (2024). However, inclusive growth is essential to ensure that benefits reach the most disadvantaged populations, since unequal growth can exacerbate social

disparities, a point emphasized by Prasetyia (2021). This shows that while economic growth provides opportunities, it must be paired with targeted policies to ensure that rural households can access the benefits.

These findings emphasize that reducing rural poverty requires integrated efforts combining sustained interventions, strategic fiscal transfers, strengthened village institutions, holistic development, and inclusive economic growth. Poverty reduction is not only about increasing resources or economic growth but also about ensuring communities have the knowledge, capacity, and empowerment to transform these resources into meaningful improvements. The human development index is critical in this process: villages with a high human development index are better able to utilize village funds effectively, supported by educated populations, healthier communities, stronger institutions, and more dynamic local economies. In contrast, villages with a low human development index face institutional and capacity constraints that limit the impact of fund transfers. This underscores that the effectiveness of fiscal transfers depends not merely on their size but on local institutional strength and human development, highlighting the need for policies that integrate financial support with capacity building and inclusive development to achieve sustainable and equitable poverty reduction.

CONCLUSION

This study concludes that all main independent variables, village funds, village fund allocations, village development index, and gross regional domestic product, have a negative effect on rural poverty, indicating that increases in these variables are associated with reductions in poverty levels. Most of these effects are statistically significant, while the effect of village fund allocation is marginally significant, reflecting that its impact is weaker relative to other variables. The persistence of poverty over time emphasizes that reducing rural poverty is a gradual process that requires continuous and targeted interventions.

The findings highlight that fiscal decentralization through village transfers is an important policy instrument, but its effectiveness strongly depends on local institutional capacity and regional economic conditions. Villages with higher development index scores can utilize funds more effectively, achieving tangible improvements in human welfare, while regions with lower economic growth or weaker institutions may struggle to convert transfers into meaningful poverty reduction. This underscores that poverty alleviation policies should integrate financial support with human capital development, institutional strengthening, and inclusive economic strategies to maximize impact.

Policy implications include shifting village fund priorities from physical infrastructure to economic empowerment and human development, reformulating allocation formulas to better account for poverty and geographic challenges, and aligning village programs with broader regional development initiatives. Strengthening governance and accountability mechanisms is also critical to ensure that resources are used effectively. The study has limitations, including reliance on provincial-level data, which may obscure heterogeneity at the village level, and the use of only the percentage of rural poor as the dependent variable, which cannot capture poverty depth or severity. Future research should use lower-level units of analysis, richer poverty indicators, and examine the interaction between regional economic growth and inequality measures to provide a more comprehensive understanding of rural poverty dynamics.

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