

DETERMINANTS OF POVERTY IN CENTRAL JAVA: ECONOMIC GROWTH, FISCAL TRANSFERS, INFRASTRUCTURE, HUMAN DEVELOPMENT, AND REGIONAL EXPENDITURE

Muhammad Ahnaf Fauzan¹, Herman Sambodo², Muhammad Syah Fibrika Ramadhan³, Rian Andriono⁴

¹⁻³Faculty of Economics and Business, Jenderal Soedirman University, Indonesia

⁴Directorate General of Treasury, Ministry of Finance of the Republic of Indonesia, Indonesia

*Email corresponding author: ahnaf.fauzan@mhs.unsoed.ac.id

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Abstract

This study aims to analyze the effect of economic growth, fiscal transfer, road infrastructure development, human development quality, and regional expenditure on poverty in Central Java Province during the period 2017–2024. Poverty remains a strategic issue in regional development because its decline has not been evenly distributed across regencies/cities, despite improvements in several economic, fiscal, infrastructure, and human development indicators. This study uses annual panel data covering 35 regencies/cities in Central Java, allowing the analysis to capture both regional differences and changes over time. The analytical method employed is panel data regression using EViews software. Model selection was conducted through the Chow test, Hausman test, and Lagrange Multiplier test, with the Random Effect Model selected as the best estimation model. The results show that economic growth, fiscal transfer, and human development quality have a negative and significant effect on poverty. Meanwhile, road infrastructure and regional expenditure do not have a negative and significant effect on poverty. These findings indicate that poverty reduction in Central Java cannot rely solely on increasing budget size or physical infrastructure, but requires policies that directly improve household income, access to productive employment, and basic services. Therefore, regional governments need to promote inclusive economic growth, strengthen fiscal transfer management, improve human development quality, optimize the targeting of regional expenditure, and ensure that infrastructure development is connected to productive economic activities and poverty-prone areas.

Keywords: Economic Growth, Fiscal Transfer, Road Infrastructure, Human Development and Regional Expenditure

INTRODUCTION

Poverty remains one of the main challenges in regional economic development because it is closely related to people's ability to meet basic needs, access public services, obtain productive employment, and improve their standard of living. In the capability approach proposed by Sen (1999), poverty is not merely understood as low income, but also as a deprivation of people's capabilities to live a decent life. Therefore, poverty reduction requires broader development efforts, including economic growth, effective fiscal policy, infrastructure development, human development improvement, and the quality of local government spending.

Central Java is one of the provinces in Indonesia that still faces a relatively high poverty rate. During the 2017–2024 period, poverty in Central Java remained in the double-digit range, although it showed a declining trend after the COVID-19 pandemic. The poverty rate decreased from 13.01 percent in 2017 to 10.80 percent in 2019, increased to 11.79 percent in 2021, and then declined to 10.47 percent in 2024 (BPS, 2024). However, this figure was still higher than the national poverty rate. At the district and city level, poverty conditions were also uneven, with several districts such as Kebumen, Wonosobo, Brebes, Pemalang, Purbalingga, Banjarnegara, and Rembang consistently recording relatively high poverty rates. This condition indicates that poverty in Central Java is not only a short-term issue, but also reflects structural problems across regions.

Several development indicators in Central Java, such as GRDP per capita at constant prices, Transfer to Regions and Village Funds (TKDD), road length, Human Development Index (HDI), and local government spending, showed improvement during the observation period. However, these improvements have not always been followed by equal poverty reduction across districts and cities. This phenomenon indicates that higher economic capacity, fiscal transfer, infrastructure availability, human development quality, and government spending do not automatically reduce poverty if they are not supported by inclusive growth, effective budget allocation, good infrastructure connectivity, and programs that directly reach poor communities.

Previous studies have examined various determinants of poverty, including economic growth, fiscal decentralization, infrastructure, human development, and government expenditure. Agussalim et al. (2024) show that economic growth and fiscal policy can reduce poverty through inequality reduction. Sigit & Kosasih (2020) find that village funds contribute to poverty reduction, while Siburian (2022) emphasizes the role of fiscal decentralization. Meanwhile, Wahyuni et al. (2022) and Nakamura et al. (2020) highlight the importance of road infrastructure in improving accessibility and welfare. Handayani et al. (2022) also show that local government spending on certain functions can reduce poverty in Central Java. Nevertheless, limited studies have analyzed economic growth, fiscal transfer, road infrastructure, human development quality, and local government spending simultaneously in one empirical model at the district and city level in Central Java.

This study aims to analyze the effect of economic growth, fiscal transfer, infrastructure development, human development quality, and local government spending on poverty in districts and cities in Central Java during the 2017–2024 period. Economic growth is proxied by GRDP per capita at constant prices, fiscal transfer is proxied by TKDD, infrastructure development is proxied by road length, human development quality is measured by HDI, and local government spending is measured by total regional expenditure. The study uses panel data consisting of 35 districts and cities over eight years of observation, resulting in 280 observations.

Theoretically, this study contributes to the literature on regional poverty by integrating the capability approach, fiscal decentralization theory, public capital theory, human capital theory, and government expenditure theory in one empirical framework. Practically, the findings of this study are expected to provide input for local governments in Central Java in formulating more targeted poverty reduction policies. The results can also be used by policymakers to evaluate whether fiscal transfer, local spending, infrastructure development, human development, and economic growth have effectively supported poverty reduction at the district and city level.

The novelty of this study lies in the simultaneous analysis of five key determinants of poverty at the district and city level in Central Java during the 2017–2024 period. This study also distinguishes fiscal transfer and local government spending as two different fiscal dimensions. TKDD represents fiscal support from the central government, while local government spending reflects the realization of budget use by local governments. This distinction is important because large fiscal transfers do not automatically reduce poverty if they are not transformed into effective, productive, and well-targeted development programs.

The empirical results show that economic growth, fiscal transfer, human development quality, and local government spending have a negative and significant effect on poverty in districts and cities in Central Java. Meanwhile, road infrastructure development, as measured by road length, does not have a negative and significant effect on poverty. These findings imply that poverty reduction policies should prioritize inclusive economic growth, effective use of fiscal transfers, improvement of education and health services, and better quality of local government spending. In addition, road infrastructure policy should not only focus on increasing road length, but also on improving road quality, connectivity, and access from poor areas to markets, schools, health facilities, and productive economic centers.

LITERATURE REVIEW AND HYPOTHESIS FORMULATION

1. Capability Approach Theory

The capability approach developed by Sen (1999) explains that poverty is not only caused by low income, but also by the limited ability of individuals or households to achieve a decent life. Poverty occurs when people have limited access to education, health, productive employment, public services, infrastructure, and economic opportunities. This theory is relevant to this study because poverty reduction in districts and cities cannot be explained only by increasing income, but also by expanding people's capabilities through economic growth, effective fiscal policy, infrastructure development, human development, and local government spending. Recent studies also show that poverty is multidimensional and closely related to economic vulnerability, inequality, regional disparity, and the effectiveness of public policy (Sugiharti et al., 2023; Agussalim et al., 2024).

2. The Effect of Economic Growth on Poverty

Economic growth reflects the ability of a region to produce goods and services within a certain period. In this study, economic growth is proxied by Gross Regional Domestic Product (GRDP) per capita at constant prices because it represents the real economic capacity of a region per person. Theoretically, higher economic growth can reduce poverty through increased output, employment opportunities, household income, and purchasing power. However, the effect of economic growth on poverty depends on whether the growth is inclusive and can be accessed by low-income groups. Agussalim et al. (2024) found that economic growth can reduce poverty through the reduction of inequality. Endrawati et al. (2023) also showed that economic growth and human development are important factors in explaining poverty in Indonesia. Therefore, higher GRDP per capita at constant prices is expected to reduce poverty in districts and cities in Central Java.

3. The Effect of Fiscal Transfer on Poverty

Fiscal transfer is an important instrument in fiscal decentralization because it strengthens local government capacity to provide public services and finance regional development. In Indonesia, fiscal transfer to local governments is represented by Transfer to Regions and Village Funds (TKDD). Fiscal decentralization theory explains that local governments are expected to understand local needs better because they are closer to the community (Oates, 1972). TKDD can reduce poverty if it is used to finance education, health, infrastructure, social protection, and community empowerment programs. Sigit & Kosasih (2020) found that village funds contribute to reducing poverty at the district and city level in Indonesia. Siburian (2022) also showed that fiscal decentralization is related to poverty reduction, although its effectiveness depends on local government capacity and budget management. Therefore, fiscal transfer is expected to have a negative effect on poverty.

4. The Effect of Infrastructure Development on Poverty

Infrastructure development plays an important role in supporting regional economic activities. Road infrastructure can improve connectivity, reduce transportation costs, facilitate the distribution of goods, increase labor mobility, and expand community access to markets,

schools, health facilities, and economic centers. According to public capital theory, government investment in infrastructure can increase productivity and encourage economic activity (Aschauer, 1989). In this study, infrastructure development is proxied by road length because the data are consistently available at the district and city level. Wahyuni et al. (2022) found that inter-district road infrastructure is related to spatial inequality in rural Indonesia, while Nakamura et al. (2020) showed that rural road development can improve household welfare and resilience. However, the effect of road infrastructure on poverty depends on road quality, connectivity, and the ability of infrastructure to connect poor communities with productive economic centers.

5. The Effect of Human Development Quality on Poverty

Human development quality reflects the ability of people to live healthy, educated, and decent lives. In this study, human development quality is measured by the Human Development Index (HDI), which represents achievements in health, education, and living standards. Human capital theory explains that education, health, skills, and training are forms of investment that can increase productivity and income (Schultz, 1961; Becker, 1964). Higher human development can help people obtain better jobs, increase household income, and reduce the risk of poverty. Mukhtar et al. (2019) found that HDI has an important relationship with poverty in Indonesia. Suparman & Muzakir (2023) also explained that human capital is related to regional inequality, unemployment, and economic growth. More recently, Pratamasyari et al. (2025) found that HDI affects poverty rates in Indonesia. Therefore, better human development quality is expected to reduce poverty.

6. The Effect of Local Government Spending on Poverty

Local government spending reflects the realization of local budgets used to finance public services, development programs, infrastructure, education, health, social protection, and community empowerment. According to government expenditure theory, government has allocation, distribution, and stabilization functions in the economy (Musgrave, 1959). In regional development, local government spending can reduce poverty if it is allocated to programs that directly improve welfare and expand economic opportunities for poor communities. This variable is important because fiscal transfer only represents support from the central government, while local government spending reflects how the budget is actually used by local governments. Handayani et al. (2022) found that local government spending on health, education, and social protection functions affects poverty reduction in districts and cities in Central Java. Nurias et al. (2023) also showed that local government expenditure on health and education can reduce poverty at the provincial level in Indonesia. Therefore, local government spending is expected to have a negative effect on poverty.

7. Hypothesis Formulation

Based on the capability approach, fiscal decentralization theory, public capital theory, human capital theory, government expenditure theory, and the results of previous studies, the hypotheses developed in this study are as follows:

H1: Economic growth has a negative effect on poverty in districts and cities in Central Java.

H2: Fiscal transfer has a negative effect on poverty in districts and cities in Central Java.

H3: Infrastructure development has a negative effect on poverty in districts and cities in Central Java.

H4: Human development quality has a negative effect on poverty in districts and cities in Central Java.

H5: Local government spending has a negative effect on poverty in districts and cities in Central Java.

RESEARCH METHODS

1. Research Design

This study uses a quantitative research design with an explanatory approach. The quantitative approach was chosen because this study uses numerical data and statistical analysis to examine the relationship between variables. The explanatory approach is used because this study aims to explain the effect of economic growth, fiscal transfer, infrastructure development, human development quality, and local government spending on poverty in districts and cities in Central Java. This study applies panel data regression because the data combine cross-section data from 35 districts/cities and time-series data from 2017 to 2024. Panel data are considered appropriate because they can capture regional and temporal variations simultaneously.

2. Population and Sample

The population of this study consists of all districts and cities in Central Java Province. The sample includes 35 districts and cities, consisting of 29 regencies and 6 cities. This study uses saturated sampling because all districts and cities in Central Java are included as research objects. The observation period covers 2017–2024, resulting in 280 panel data observations obtained from 35 districts/cities multiplied by 8 years of observation. This period was selected because it represents the condition before the COVID-19 pandemic, during the pandemic, and during the post-pandemic recovery period.

3. Data Collection Techniques and Instrument Development

The data used in this study are secondary data obtained from official government publications. Poverty data, GRDP per capita at constant prices, road length, Human Development Index (HDI), and local government spending were obtained from the Central Statistics Agency (BPS), especially BPS Central Java publications. Fiscal transfer data, proxied by Transfer to Regions and Village Funds (TKDD), were obtained from the Directorate General of Fiscal Balance, Ministry of Finance of the Republic of Indonesia. Data collection was carried out using documentation techniques by collecting, recording, and tabulating data from official statistical publications and government data portals.

The research instrument used in this study is a panel data tabulation template arranged by district/city and year. This template was developed to facilitate variable coding, data transformation, and data processing using EViews software. The dependent variable in this study is poverty, measured by the percentage of poor people. The independent variables are economic growth proxied by GRDP per capita at constant prices, fiscal transfer proxied by TKDD, infrastructure development proxied by road length, human development quality measured by HDI, and local government spending measured by total regional expenditure. Several independent variables were transformed into natural logarithms to reduce scale differences, stabilize data variation, and facilitate interpretation in the regression model.

4. Data Analysis Techniques

Data analysis was carried out in several stages. First, descriptive analysis was used to describe the general condition of poverty, economic growth, fiscal transfer, infrastructure development, human development quality, and local government spending in districts and cities in Central Java. Second, panel data regression was estimated using three model approaches, namely Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM). Third, the best model was selected using the Chow test, Hausman test, and Lagrange Multiplier test. The Chow test was used to choose between CEM and FEM, the Hausman test was used to choose between FEM and REM, while the Lagrange Multiplier test was used to choose between CEM and REM.

The regression model used in this study is formulated as follows:

$$KM_{it} = \alpha + \beta_1 LN_PE_{it} + \beta_2 LN_TKDD_{it} + \beta_3 LN_INF_{it} + \beta_4 LN_IPM_{it} + \beta_5 LN_BD_{it} + \epsilon_{it}$$

Description:

KM_{it} = Poverty in district/city i and year t

LN_PE_{it} = Natural logarithm of GRDP per capita at constant prices in district/city i and year t

LN_TKDD_{it} = Natural logarithm of Transfer to Regions and Village Funds in district/city i and year t

LN_INF_{it} = Natural logarithm of road length in district/city i and year t

LN_IPM_{it} = Natural logarithm of Human Development Index in district/city i and year t

LN_BD_{it} = Natural logarithm of local government spending in district/city i and year t

α = Constant

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$ = Regression coefficients

ε_{it} = Error term

i = District/city

t = Year

After the best panel data model was selected, classical assumption tests were conducted to ensure the reliability of the estimation results. The multicollinearity test was carried out using the Variance Inflation Factor (VIF), while the heteroscedasticity test was conducted using the Glejser test by regressing the absolute residual value on the independent variables. Furthermore, the coefficient of determination was used to measure the ability of the independent variables to explain variations in poverty. The F-test was used to examine the simultaneous effect of all independent variables on poverty, while the t-test was used to examine the partial effect of each independent variable on poverty.

RESULTS AND DISCUSSION

This study aims to analyze the effect of economic growth, fiscal transfer, infrastructure development, human development quality, and local government spending on poverty in districts and cities in Central Java during the 2017–2024 period. The analysis was conducted using panel data regression with 35 districts/cities and 8 years of observation, resulting in 280 observations. The selection of the best panel regression model was carried out through the Chow test, Hausman test, and Lagrange Multiplier test. The results of the model selection test are presented in Table 1.

Table 1. Panel Data Model Selection Results

Test	Probability Value	Decision	Selected Model
Chow Test	0.0000	Fixed Effect Model is better than Common Effect Model	FEM
Hausman Test	0.1565	Random Effect Model is better than Fixed Effect Model	REM
Lagrange Multiplier Test	0.0000	Random Effect Model is better than Common Effect Model	REM

Source: EViews data processing results (2026)

Based on Table 1, the Chow test shows a probability value of 0.0000, indicating that the Fixed Effect Model is more appropriate than the Common Effect Model. Furthermore, the Hausman test produces a probability value of 0.1565, which is greater than 0.05, indicating that the Random Effect Model is more appropriate than the Fixed Effect Model. The Lagrange Multiplier test also shows a probability value of 0.0000, indicating that the Random Effect Model is more appropriate than the Common Effect Model. Therefore, the Random Effect Model (REM) was selected as the best model to explain the effect of economic growth, fiscal transfer, infrastructure development, human development quality, and local government spending on poverty in districts and cities in Central Java.

The estimation results using the Random Effect Model show that four independent variables have a negative and significant effect on poverty, namely economic growth, fiscal transfer, human development quality, and local government spending. Meanwhile, infrastructure development does not have a negative and significant effect on poverty. The estimation results are presented in Table 2.

Table 2. Random Effect Model Estimation Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	216.6906	14.66234	14.77872	0.0000
LN_PE	-1.864871	0.710963	-2.623020	0.0092
LN_TKDD	-1.861027	0.760780	-2.446210	0.0151
LN_INF	0.250576	0.132942	1.884843	0.0605
LN_IPM	-41.37076	4.414271	-9.372047	0.0000
LN_BD	-0.100227	0.016342	-6.132979	0.0000

Source: EViews data processing results (2026)

Based on Table 2, economic growth proxied by GRDP per capita at constant prices has a negative and significant effect on poverty, with a coefficient of -1.864871 and a probability value of 0.0092. This finding indicates that an increase in regional economic capacity tends to reduce poverty in districts and cities in Central Java. Higher GRDP per capita reflects stronger real economic performance, which can create employment opportunities, increase household income, and expand economic activities. This result supports the concept of pro-poor growth, which explains that economic growth can reduce poverty when its benefits reach low-income groups. The finding is also consistent with Agussalim et al. (2024), who found that economic growth can reduce poverty through the reduction of inequality, and Endrawati et al. (2023), who showed that economic growth is one of the determinants of poverty in Indonesia.

Fiscal transfer proxied by TKDD also has a negative and significant effect on poverty, with a coefficient of -1.861027 and a probability value of 0.0151. This result indicates that an increase in fiscal transfers tends to reduce poverty in districts and cities in Central Java. TKDD strengthens local fiscal capacity and allows local governments to finance public services, infrastructure, social protection, education, health, and community empowerment programs. This finding supports fiscal decentralization theory, which explains that local governments are expected to provide public services more effectively because they are closer to the community and better understand local needs. This result is in line with Sigit & Kosasih (2020), who found that village funds contribute to poverty reduction at the district and city level in Indonesia, and Siburian (2022), who emphasized the role of fiscal decentralization in reducing poverty.

Infrastructure development proxied by road length has a positive coefficient of 0.250576 and a probability value of 0.0605. This result shows that road infrastructure development does not have a negative and significant effect on poverty in districts and cities in Central Java. This finding indicates that an increase in road length alone is not sufficient to reduce poverty. Road length only reflects the quantity of infrastructure, but does not fully describe road quality, road condition, connectivity, and the extent to which road infrastructure connects poor communities with markets, schools, health facilities, production centers, and employment opportunities. This result suggests that infrastructure development may require a longer time to affect poverty, and its impact depends on whether infrastructure is connected to productive economic activities. The finding modifies the public capital theory by showing that infrastructure does not automatically reduce poverty if it is not supported by quality, connectivity, and productive use. This result is also relevant to Wahyuni et al. (2022), who emphasized that road infrastructure is closely related to spatial inequality, and Nakamura et al. (2020), who showed that the welfare impact of rural road development depends on the local context.

Human development quality proxied by HDI has a negative and significant effect on poverty, with a coefficient of -41.37076 and a probability value of 0.0000. This result indicates that better

human development significantly reduces poverty in districts and cities in Central Java. HDI reflects achievements in education, health, and decent living standards. Higher HDI can improve labor productivity, increase people's ability to obtain better jobs, and strengthen household capacity to escape poverty. This finding supports human capital theory, which explains that education, health, and skills are forms of investment that can increase productivity and income. The result is consistent with Mukhtar et al. (2019), who found that HDI is related to poverty in Indonesia, Suparman & Muzakir (2023), who emphasized the importance of human capital in regional economic performance, and Pratamasyari et al. (2025), who found that HDI affects poverty rates in Indonesia.

Local government spending has a negative and significant effect on poverty, with a coefficient of -0.100227 and a probability value of 0.0000. This finding indicates that higher local government spending tends to reduce poverty in districts and cities in Central Java. Local government spending reflects the realization of public budgets used to finance public services, development programs, education, health, infrastructure, social protection, and community empowerment. This result supports government expenditure theory, which explains that government spending plays allocation, distribution, and stabilization functions in the economy. The finding also confirms that poverty reduction does not only depend on the amount of fiscal transfers received by local governments, but also on how the budget is realized through effective and well-targeted spending. This result is consistent with Handayani et al. (2022), who found that local government spending on health, education, and social protection functions contributes to poverty reduction in Central Java, and Nurias et al. (2023), who showed that local government expenditure on health and education can reduce poverty in Indonesia.

The coefficient of determination and simultaneous test results are presented in Table 3. These results are used to show the explanatory power of the model and the simultaneous effect of all independent variables on poverty.

Table 3. Coefficient of Determination and Simultaneous Test Results

Indicator	Value	Interpretation
R-squared	0.542452	The independent variables explain 54.24 percent of the variation in poverty.
Adjusted R-squared	0.534072	After adjustment, the model explains 53.41 percent of the variation in poverty.
F-statistic	64.73180	The model has strong simultaneous explanatory power.
Prob(F-statistic)	0.000000	The independent variables simultaneously have a significant effect on poverty.

Source: EViews data processing results (2026)

Based on Table 3, the R-squared value is 0.542452, meaning that 54.24 percent of the variation in poverty in districts and cities in Central Java can be explained by economic growth, fiscal transfer, infrastructure development, human development quality, and local government spending. Meanwhile, the remaining 45.76 percent is explained by other factors outside the model, such as inflation, open unemployment rate, income inequality, labor structure, social assistance, investment, quality of local government spending, and other socioeconomic factors. The Prob(F-statistic) value of 0.000000 indicates that all independent variables simultaneously have a significant effect on poverty. Thus, the model is statistically feasible to explain the determinants of poverty in districts and cities in Central Java during the 2017–2024 period.

The economic interpretation and hypothesis decision of each independent variable are summarized in Table 4. This table provides a concise explanation of the direction of influence, economic meaning, and hypothesis testing results.

Table 4. Economic Interpretation and Hypothesis Decision

Variable	Coefficient	Economic Interpretation	Hypothesis Decision
LN_PE	-1.864871	An increase in GRDP per capita at constant prices tends to reduce poverty through higher income and broader employment opportunities.	H1 supported
LN_TKDD	-1.861027	An increase in fiscal transfer tends to reduce poverty when it strengthens local fiscal capacity and supports welfare-oriented programs.	H2 supported
LN_INF	0.250576	An increase in road length does not directly reduce poverty because road quantity does not necessarily reflect road quality and connectivity.	H3 not supported
LN_IPM	-41.37076	An increase in human development quality tends to reduce poverty through better education, health, productivity, and employment access.	H4 supported
LN_BD	-0.100227	An increase in local government spending tends to reduce poverty when the budget is directed toward public services and welfare programs.	H5 supported

Source: EViews data processing results (2026)

Overall, the results show that poverty reduction in Central Java is more strongly associated with inclusive economic growth, effective fiscal transfers, improved human development, and local government spending than with road length alone. These findings answer the research questions by showing that economic growth, fiscal transfer, human development quality, and local government spending have a negative and significant effect on poverty, while infrastructure development does not have a negative and significant effect. From a policy perspective, local governments need to encourage economic growth that creates productive employment, optimize the use of TKDD for poverty reduction programs, improve education and health services, and strengthen the quality of local government spending. In addition, infrastructure policy should not only focus on increasing road length, but also on improving road quality, connectivity, and access from poor areas to markets, schools, health facilities, and productive economic centers.

CONCLUSION

This study aims to analyze the effect of economic growth, fiscal transfer, infrastructure development, human development quality, and local government spending on poverty in districts and cities in Central Java during the 2017–2024 period. Based on the panel data regression results, the Random Effect Model (REM) was selected as the best model. The results show that economic growth, fiscal transfer, human development quality, and local government spending have a negative and significant effect on poverty. This means that higher GRDP per capita at constant prices, greater fiscal transfers, better human development quality, and higher local government spending tend to reduce poverty in districts and cities in Central Java. Meanwhile, infrastructure development, as measured by road length, does not have a negative and significant effect on poverty. This indicates that increasing road length alone is not sufficient to directly reduce poverty if it is not supported by road quality, connectivity, and access to productive economic activities.

The findings of this study provide several practical implications. Local governments in Central Java need to encourage more inclusive economic growth by strengthening sectors that can absorb labor and increase household income, such as MSMEs, agriculture with added value, processing industries, trade, and productive services. Fiscal transfers through TKDD should be optimized for programs that directly support poverty reduction, including public services, social protection, community empowerment, and village economic development. In addition, local government

spending should not only focus on the amount of budget allocation, but also on the quality, effectiveness, and accuracy of program targets. The significant effect of human development quality also indicates that poverty reduction policies need to prioritize education, health, skills training, and employment access. For infrastructure policy, local governments should not only increase road length, but also improve road quality, road feasibility, and connectivity between poor areas and markets, schools, health facilities, production centers, and employment locations.

This study has several limitations. First, the research period includes the COVID-19 pandemic in 2020–2021, which may affect poverty, economic growth, fiscal policy, and local government spending in abnormal economic conditions. Second, infrastructure development is only measured by road length, so it does not fully describe road quality, road condition, connectivity, or the level of road feasibility. Third, local government spending is measured using total regional expenditure, without separating spending by function, such as education, health, social protection, infrastructure, and economic affairs. Fourth, this study only uses five independent variables, while poverty may also be influenced by other factors such as inflation, open unemployment rate, income inequality, investment, social assistance, labor structure, and the quality of public spending.

Based on these limitations, future research is suggested to separate the analysis into pre-pandemic, pandemic, and post-pandemic periods to obtain a more detailed understanding of the relationship between variables under different economic conditions. Future studies can also use more specific infrastructure indicators, such as road condition, road quality, road density, or road connectivity to economic centers. In addition, local government spending can be analyzed by function to identify which type of spending is most effective in reducing poverty. Future research is also encouraged to include other relevant variables, such as unemployment, inequality, inflation, investment, social assistance, and the quality of local government spending, so that the determinants of poverty can be explained more comprehensively.

BIBLIOGRAPHY

- Agussalim, A., Nursini, N., Suhab, S., Kurniawan, R., Samir, S., & Tawakkal, T. (2024). The Path to Poverty Reduction: How Do Economic Growth and Fiscal Policy Influence Poverty Through Inequality in Indonesia? *Economies*, 12(12). <https://doi.org/10.3390/economies12120316>
- Aschauer, D. A. (1989). Is public expenditure productive? *Journal of Monetary Economics*, 23(2), 177–200. [https://doi.org/10.1016/0304-3932\(89\)90047-0](https://doi.org/10.1016/0304-3932(89)90047-0)
- Becker, G. S. (1964). *Human capital: A theoretical and empirical analysis, with special reference to education*. National Bureau of Economic Research.
- BPS. (2025). *Memahami Perbedaan Angka Kemiskinan versi Bank Dunia dan BPS*. <https://www.bps.go.id/id/news/2025/05/02/702/memahami-perbedaan-angka-kemiskinan-versi-bank-dunia-dan-bps.html>
- Endrawati, D., Nujum, S., & Selong, A. (2023). Pengaruh pertumbuhan ekonomi, rasio gini, dan indeks pembangunan manusia terhadap tingkat kemiskinan Indonesia 2017–2022. *Jurnal Pendidikan Tambusai*, 7(3), 20144–20151. <https://doi.org/10.31004/jptam.v7i3.9453>
- Handayani, S., Suharno, S., & Badriah, L. S. (2022). The effectiveness of local government spending on poverty rate reduction in Central Java, Indonesia. *Eko-Regional: Jurnal Pembangunan Ekonomi Wilayah*, 17(1), 1–8. <https://doi.org/10.20884/1.erjpe.2022.17.1.1848>

- Mukhtar, S., Saptono, A., & Arifin, A. S. (2019). The analysis of the effects of human development index and opened unemployment levels to the poverty in Indonesia. *Jurnal Ecoplan*, 2(2), 77–89. <https://ecoplan.ulm.ac.id/index.php/iesp/article/download/20/25>
- Nakamura, S., Bundervoet, T., & Nuru, M. (2020). Rural roads, poverty, and resilience: Evidence from Ethiopia. *The Journal of Development Studies*, 56(10), 1838–1855. <https://doi.org/10.1080/00220388.2020.1736282>
- Nurias, N., Johari, S. M., Muljarijadi, B., & Wardhana, A. (2023). Reducing the provincial poverty rate in Indonesia: The impact of local government expenditure. *Jurnal Ekonomi & Studi Pembangunan*, 24(2), 297–315. <https://doi.org/10.18196/jesp.v24i2.18618>
- Oates, W. E. (1972). *Fiscal federalism*. Harcourt Brace Jovanovich.
- Pratamasyari, D. A., Pakawaru, I., Nuriatullah, Hidayah, N. R., & Amalia, R. (2025). The impact of human development index on poverty rates in Indonesia: Panel data analysis of 34 provinces, 2015–2023. *Jurnal Ilmu Perbankan Dan Keuangan Syariah*, 7(2), 372–388. <https://doi.org/10.24239/jipsya.v7i2.358.372-388>
- Richard A. Musgrave. (1959). *The theory of public finance: A study in public economy*.
- Schultz, T. W. (1961). Investment in human capital. *The American Economic Review*, 51(1), 1–17. <https://www.jstor.org/stable/1818907>
- Sen, A. (1999). *Development as freedom*. Alfred A. Knopf.
- Siburian, M. E. (2022). The link between fiscal decentralization and poverty: Evidence from Indonesia. *Journal of Asian Economics*, 81, 101493. <https://doi.org/10.1016/j.asieco.2022.101493>
- Sigit, T. A., & Kosasih, A. (2020). Pengaruh Dana Desa terhadap kemiskinan: Studi tingkat kabupaten/kota di Indonesia. *Indonesian Treasury Review: Jurnal Perbendaharaan, Keuangan Negara Dan Kebijakan Publik*, 5(2), 105–119. <https://doi.org/10.33105/itrev.v5i2.170>
- Sugiharti, L., Esquivias, M. A., Shaari, M. S., Jayanti, A. D., & Ridzuan, A. R. (2023). Indonesia's poverty puzzle: Chronic vs. transient poverty dynamics. *Cogent Economics & Finance*, 11(2), 2267927. <https://doi.org/10.1080/23322039.2023.2267927>
- Suparman, S., & Muzakir, M. (2023). Regional inequality, human capital, unemployment, and economic growth in Indonesia: Panel regression approach. *Cogent Economics & Finance*, 11(2), 2251803. <https://doi.org/10.1080/23322039.2023.2251803>
- Wahyuni, R. N. T., Ikhsan, M., Damayanti, A., & Khoirunurrofik, K. (2022). Inter-district road infrastructure and spatial inequality in rural Indonesia. *Economies*, 10(9), 229. <https://doi.org/10.3390/economies10090229>