



HUMAN DEVELOPMENT IN EMERGING ECONOMIES: THE ROLE OF POVERTY, ECONOMIC GROWTH, AND LOCAL REVENUE IN JAWA TENGAH PROVINCE

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Abstract

Human development remains a crucial challenge in developing regions, particularly in Jawa Tengah Province, which continues to face high poverty rates, fiscal disparities, and uneven access to basic services. These issues contribute to low Human Development Index (HDI) scores and hinder inclusive growth. This study aims to examine the effect of poverty rate, economic growth, and Original Local Government Revenue (OLGR) on HDI across 35 districts and cities in Jawa Tengah Province from 2019 to 2023. Employing a quantitative approach, the research applies Partial Least Squares–Structural Equation Modeling (PLS-SEM) using SmartPLS software. The findings indicate that poverty rate and OLGR have a significant effect on HDI, while economic growth does not show a statistically significant relationship. Collectively, the three variables explain 49.1% of the variation in HDI. These results highlight the importance of strengthening local fiscal capacity and implementing equitable redistribution policies to improve human development outcomes at the regional level.

Keywords: Economic Growth; Human Development; Indonesia; Poverty.

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Abstrak

Pembangunan manusia menjadi isu sentral dalam ekonomi negara berkembang, termasuk di Provinsi Jawa Tengah yang masih menghadapi tantangan kemiskinan, ketimpangan, dan keterbatasan Pendapatan Asli Daerah (PAD). Ketimpangan tersebut berdampak pada rendahnya kualitas hidup yang tercermin dalam nilai Indeks Pembangunan Manusia (IPM). Penelitian ini bertujuan untuk menganalisis pengaruh tingkat kemiskinan, pertumbuhan ekonomi, dan PAD terhadap IPM di 35 kabupaten/kota di Provinsi Jawa Tengah selama periode 2019–2023. Metode yang digunakan adalah pendekatan kuantitatif dengan teknik analisis *Partial Least Square–Structural Equation Modeling (PLS-SEM)* menggunakan software *SmartPLS*. Hasil penelitian menunjukkan bahwa tingkat kemiskinan dan PAD berpengaruh signifikan terhadap IPM, sedangkan pertumbuhan ekonomi tidak menunjukkan pengaruh yang signifikan. Secara simultan, ketiga variabel independen berkontribusi sebesar 49,1% terhadap variasi IPM. Temuan ini menunjukkan pentingnya kebijakan redistribusi ekonomi dan penguatan kapasitas fiskal daerah sebagai instrumen untuk meningkatkan kualitas pembangunan manusia secara merata di tingkat lokal.

Kata Kunci: Pertumbuhan Ekonomi; Pembangunan Manusia; Indonesia; Kemiskinan.

INTRODUCTION

Human development, often measured through the Human Development Index (HDI), remains a major focus in developing country economies.¹ Along with global efforts to achieve the Sustainable Development Goals (SDGs), especially the first goal of eliminating poverty and the eighth goal of promoting inclusive and sustainable economic growth (Decent Work and Economic Growth), critical questions arise about the extent to which economic growth and Original Local Government Revenue (OLGR) can improve the quality of human life in developing countries. However, the debate among academics and policymakers about the relationship between poverty, economic growth, and human development is far from a consensus.² While some studies emphasize that sustained economic growth can reduce poverty and, in turn, increase HDI, other studies show that economic growth alone is not enough to achieve significant progress in human development, especially in countries with high levels of inequality.

The Human Development Index (HDI), developed by the United Nations Development Programme (UNDP), is a composite measure designed to evaluate human well-being by capturing achievements in health, education, and income. Beyond functioning as a developmental benchmark, HDI also serves as a critical analytical tool to assess disparities between regions. In the context of Jawa Tengah Province, which consists of diverse districts and cities with varying levels of development, HDI offers a lens to

¹Jason Hickel, "The Sustainable Development Index: Measuring The Ecological Efficiency Of Human Development In The Anthropocene," *Ecological Economics* 167 (2020): 106331.

²Juliette Alenda-Demoutiez, "From Economic Growth To The Human: Reviewing The History Of Development Visions Over Time And Moving Forward," *Third World Quarterly* 43, no. 5 (2022): 1038–55.

examine how socioeconomic and fiscal factors such as poverty, economic growth, and Original Local Government Revenue (OLGR) influence human development outcomes.

According to UNDP's human development framework, development should be understood as a process of expanding people's choices and capabilities, enabling them to lead productive and meaningful lives. HDI reflects this notion by capturing the fundamental abilities individuals need to attain well-being, beyond mere economic indicators. This perspective highlights that sustainable development entails more than income growth; it also requires improved access to quality health services and education. In this regard, OLGR becomes a vital instrument for local governments. Districts with stronger local revenue capacity are better positioned to fund social infrastructure and essential services that directly contribute to improved HDI performance. However, the effectiveness of OLGR depends not only on revenue levels but also on how strategically those resources are allocated toward human development priorities.

Developing countries generally have similar characteristics, such as high poverty rates, significant economic inequality, and dependence on limited local resources.³ Therefore, the findings from this study can be adapted and applied in various global contexts. The findings show how the increasing OLGR can contribute to the increase in HDI and can be a guide for other developing countries in managing local resources more effectively to improve people's welfare. In addition, an analysis of the impact of poverty and inequality on HDI can also provide insights into the importance of targeted redistribution policies in countries that are struggling to reduce social inequality.

Indonesia is a developing country consisting of various regions with diverse development challenges, the relationship between economic growth, poverty, and human development is becoming increasingly complex.⁴ The regional autonomy system implemented since 2001 adds a new dimension to this analysis, where OLGR is one of the key indicators that determine the success of regional development. However, in-depth literature that examines the interaction between poverty, economic growth, and OLGR in influencing HDI is still limited, especially for provinces such as Jawa Tengah.

Many poor people in Indonesia still face limited access to basic needs such as education, health, clean water, and sanitation.⁵ This hinders their ability to fully participate in economic activities and improve their quality of life. In addition to regional inequality, Indonesia also faces sharp social disparities between community groups. Groups of people with higher levels of education and those living in urban areas tend to have better access to economic opportunities, while those who are in rural areas or come from minority groups are often left behind. Although Indonesia has experienced fairly steady economic growth in recent decades, poverty is still a significant problem. Data shows that the percentage of

³Rafael Alvarado et al., "Heterogeneous Impact Of Natural Resources On Income Inequality: The Role Of The Shadow Economy And Human Capital Index," *Economic Analysis and Policy* 69 (2021): 690-704.

⁴Robi Kurniawan and Shunsuke Managi, "Economic Growth And Sustainable Development In Indonesia: An Assessment," *Bulletin of Indonesian Economic Studies* 54, no. 3 (2018): 339-61.

⁵D Daniel et al., "Financial, Institutional, Environmental, Technical, And Social (FIETS) Aspects Of Water, Sanitation, And Hygiene Conditions In Indigenous-Rural Indonesia," *BMC Public Health* 21 (2021): 1-15; Anne Booth, Raden Muhamad Purnagunawan, and Elan Satriawan, "Towards a Healthy Indonesia?," *Bulletin of Indonesian Economic Studies* 55, no. 2 (2019): 133-55.

people living below the poverty line is still quite high, especially in rural areas and eastern Indonesia.⁶

This study makes a significant contribution to understanding how factors such as poverty rates, economic growth, and Original Local Government Revenue (OLGR) collectively affect the Human Development Index (HDI) in the districts and cities of Jawa Tengah Province. By analyzing this relationship, the research not only addresses gaps in the existing literature on regional human development in Indonesia, but also provides empirical evidence that can inform more targeted and effective policy interventions.

Jawa Tengah was specifically chosen due to its complex and varied development profile. Despite being one of the most populous provinces in Indonesia, with strong agricultural and industrial sectors, Jawa Tengah continues to struggle with persistent poverty in rural areas, uneven regional fiscal capacity, and disparities in public service quality. As of recent years, the province exhibits a wide range in HDI scores among its 35 districts and cities reflecting stark contrasts in education attainment, health outcomes, and income levels. Moreover, many local governments in Jawa Tengah remain highly dependent on central transfers due to limited OLGR, which constrains their autonomy and ability to finance strategic development initiatives tailored to local needs.

The province also reflects key structural challenges common in many developing regions: a demographic pressure on public services, a rural-urban development gap, and insufficient alignment between economic growth and social welfare outcomes. These multidimensional issues make Jawa Tengah an ideal case to examine how economic and fiscal variables interact in shaping human development outcomes at the subnational level.

By focusing on Jawa Tengah, this study offers a grounded and contextualized analysis that is not only relevant for regional policymakers in Indonesia, but also contributes valuable insights for the broader discourse on development strategies in decentralized and developing country contexts. The remaining parts of the study are arranged as follows: Section two presents a review of relevant literature on HDI, poverty, economic growth, and OLGR; section three outlines the research methodology; section four discusses the findings and their implications; and section five provides the main conclusions and recommendations.

LITERATURE REVIEW

The HDI is a composite measure developed to assess the quality of life in a region based on three main dimensions: health (life expectancy), education (average length of schooling and expected length of schooling), and standard of living (per capita income). HDI has been widely recognized as an important indicator to measure the success of human development which depends not only on economic growth but also on the more equitable distribution of development benefits across all levels of society.

Poverty directly affects all components of HDI with complex implications for health, education, and income.⁷ Some experts argue that poverty is a form of inability that deprives

⁶Maxensius Tri Sambodo and Rio Novandra, "The State Of Energy Poverty In Indonesia And Its Impact On Welfare," *Energy Policy* 132 (2019): 113–21; Rudi Purwono et al., "Poverty Dynamics In Indonesia: Empirical Evidence From Three Main Approaches," *World Development Perspectives* 23 (2021): 100346; Hal Hill, "What's Happened To Poverty And Inequality In Indonesia Over Half A Century?," *Asian Development Review* 38, no. 1 (2021): 68–97.

⁷Rajabrata Banerjee, Vinod Mishra, and Admasu Asfaw Maruta, "Energy Poverty, Health And Education Outcomes: Evidence From The Developing World," *Energy Economics* 101 (2021): 105447; Syed

individuals of their basic ability to live a meaningful life.⁸ This view places HDI as a more holistic measure in assessing the impact of poverty because poverty is not only an economic problem but also a problem of limited access to education and health services. Some traditional economists argue that increasing per capita income, which is a component of living standards in HDI, is the main path to reducing poverty and improving human development.⁹ However, this view has been criticized by academics who point out that economic growth that is not accompanied by equitable distribution tends to exacerbate social inequality and does not automatically increase HDI. That income does not always correlate with welfare when inequality is high, and this is seen in the mismatch between rapid economic growth and stagnant increase in HDI in some developing countries.¹⁰

Economic growth is often considered the main driver of human development, but its relationship with HDI is more complex than it seems. Empirical research shows that while economic growth can provide the resources needed to improve health and education, its impact on HDI is highly dependent on how the results of that growth are distributed.¹¹ The measurement of economic performance and social progress, emphasizes that GDP per capita is insufficient as a measure of well-being because it ignores important aspects of the quality of life covered by HDI.¹² The trickle-down theory often associated with neoliberal economists claims that economic growth will eventually flow to all levels of society, thereby increasing the HDI.¹³ However, this theory has been widely criticized because empirical evidence shows that without effective redistributive policies, the benefits of growth tend to be concentrated in the wealthy, which in turn widens the gap and hinders the overall increase in HDI. In the inverted U-curve hypothesis state that inequality tends to increase

Tauseef Hassan et al., "Environmental Complexity Of Globalization, Education, And Income Inequalities: New Insights Of Energy Poverty," *Journal of Cleaner Production* 340 (2022): 130735; Emilie Le Caous and Fenghueih Huang, "Economic Complexity And The Mediating Effects Of Income Inequality: Reaching Sustainable Development In Developing Countries," *Sustainability* 12, no. 5 (2020): 2089.

⁸Deb Batterham, "Homelessness As Capability Deprivation: A Conceptual Model," *Housing, Theory and Society* 36, no. 3 (2019): 274–97; John Sylvestre et al., "Poverty And Serious Mental Illness: Toward Action On A Seemingly Intractable Problem," *American Journal of Community Psychology* 61, no. 1–2 (2018): 153–65; Jane Rowley et al., "The Impact Of Poverty And Deprivation At The End Of Life: A Critical Review," *Palliative Care and Social Practice* 15 (2021): 26323524211033870.

⁹Mario Biggeri and Vincenzo Mauro, "Towards A More 'Sustainable' Human Development Index: Integrating The Environment And Freedom," *Ecological Indicators* 91 (2018): 220–31; Nicola Amendola, Giacomo Gabbuti, and Giovanni Vecchi, "On Some Problems Of Using The Human Development Index In Economic History," *European Review of Economic History* 27, no. 4 (2023): 477–505; Zhaohua Wang, Bin Zhang, and Bo Wang, "Renewable Energy Consumption, Economic Growth And Human Development Index In Pakistan: Evidence Form Simultaneous Equation Model," *Journal of Cleaner Production* 184 (2018): 1081–90.

¹⁰Seung-Jin Baek, "The Quest For Inclusive Sustainable Development: Economic Growth, Inequality And Environmental Interactions In The Process Of Structural Transformation Of Low-Income Countries" (University of Bath, 2020).

¹¹Ronald Miranda-Lescano, Leonel Muinelo-Gallo, and Oriol Roca-Sagalés, "Human Development And Decentralization: The Importance Of Public Health Expenditure," *Annals of Public and Cooperative Economics* 94, no. 1 (2023): 191–219; Nguyen Thanh Hung and Su Dinh Thanh, "Fiscal Decentralization, Economic Growth, And Human Development: Empirical Evidence," *Cogent Economics & Finance* 10, no. 1 (2022): 2109279.

¹²Christopher Barrington-Leigh and Alice Escande, "Measuring Progress And Well-Being: A Comparative Review Of Indicators," *Social Indicators Research* 135 (2018): 893–925.

¹³Danelle Fourie, "The Neoliberal Influence On South Africa's Early Democracy And Its Shortfalls In Addressing Economic Inequality," *Philosophy & Social Criticism* 50, no. 5 (2024): 823–43.

in the early stages of economic development before eventually decreasing, but this pattern does not always apply in all countries, especially in developing countries.¹⁴

Poverty and economic growth are two variables that are fundamentally interrelated in the study of development economics.¹⁵ In the economic literature, the relationship between these two variables has been a topic of debate among academics and policymakers. Economic growth is considered the main driver for poverty alleviation, but the effectiveness of this relationship depends on various structural factors and policies implemented in a country. Empirical evidence shows that the impact of economic growth on poverty varies depending on the social, economic, and policy contexts applied.¹⁶ However, in many other countries, especially in sub-Saharan Africa and South Asia, economic growth has not been able to have the same impact.¹⁷ The elasticity of poverty to economic growth varies between countries with high levels of inequality tend to experience slower poverty reduction despite experiencing economic growth.¹⁸ This shows that economic growth alone is not enough and that more proactive redistribution policies are needed to ensure that the benefits of growth can be felt by the most vulnerable groups.

Several studies have highlighted the relevance of Original Local Government Revenue (OLGR) in supporting regional development under a decentralized governance framework. Regions with stronger OLGR capacity tend to exhibit more stable and sustainable patterns of economic growth, particularly when local fiscal autonomy is supported by sound institutional governance and planning capacity. In the Indonesian context, that OLGR is positively associated with regional economic performance, especially in provinces with diversified economic bases and greater administrative capabilities (XXX). However, subsequent analyses that this relationship is not always linear, and in some cases, growth in OLGR does not guarantee proportional improvements in public welfare indicators, such as the Human Development Index (HDI) (XXX).

This discrepancy highlights the critical role of fiscal decentralization in mediating the OLGR–development nexus. In theory, decentralization allows subnational governments to

¹⁴Alfonso Diez-Minguela et al., “The Long-Term Relationship Between Economic Development And Regional Inequality: South-West Europe, 1860–2010,” *Papers in Regional Science* 99, no. 3 (2020): 479–508.

¹⁵Rajesh H Acharya and Anver C Sadath, “Energy Poverty And Economic Development: Household-Level Evidence From India,” *Energy and Buildings* 183 (2019): 785–91; Travis J Lybbert and Bruce Wydick, “Poverty, Aspirations, And The Economics Of Hope,” *Economic Development and Cultural Change* 66, no. 4 (2018): 709–53; Michael Batuo, Kupukile Mlambo, and Simplice Asongu, “Linkages Between Financial Development, Financial Instability, Financial Liberalisation And Economic Growth In Africa,” *Research in International Business and Finance* 45 (2018): 168–79.

¹⁶Syed Abdul Rehman Khan, “The Nexus Between Carbon Emissions, Poverty, Economic Growth, And Logistics Operations-Empirical Evidence From Southeast Asian Countries,” *Environmental Science and Pollution Research* 26, no. 13 (2019): 13210–20; Pramod K Singh and Harpalsinh Chudasama, “Evaluating Poverty Alleviation Strategies In A Developing Country,” *PloS One* 15, no. 1 (2020): e0227176; Muhammad Khalid Anser et al., “Dynamic Linkages Between Poverty, Inequality, Crime, And Social Expenditures In A Panel Of 16 Countries: Two-Step GMM Estimates,” *Journal of Economic Structures* 9 (2020): 1–25.

¹⁷Oyakhilome Ibhagui, “How Does Foreign Direct Investment Affect Growth In Sub-Saharan Africa? New Evidence From Threshold Analysis,” *Journal of Economic Studies* 47, no. 1 (2020): 149–81; Muazu Ibrahim and Paul Alagidede, “Effect Of Financial Development On Economic Growth In Sub-Saharan Africa,” *Journal of Policy Modeling* 40, no. 6 (2018): 1104–25; Brijesh Mainali et al., “Evaluating Synergies And Trade-Offs Among Sustainable Development Goals (Sdgs): Explorative Analyses Of Development Paths In South Asia And Sub-Saharan Africa,” *Sustainability* 10, no. 3 (2018): 815.

¹⁸Guanghua Wan, Xiaoshan Hu, and Weiqun Liu, “China’s Poverty Reduction Miracle And Relative Poverty: Focusing On The Roles Of Growth And Inequality,” *China Economic Review* 68 (2021): 101643.

tailor fiscal policies to local needs, enabling more responsive budgeting, targeted service delivery, and locally appropriate development strategies. Effective fiscal decentralization promotes better alignment between local revenue generation and development priorities, enhancing both economic and social outcomes (XXX). Yet, in practice, many local governments struggle with limited institutional capacity, poor budget execution, and political capture, which undermine the potential developmental benefits of increased OLGR. The discussion also suggests that the mere availability of revenue is insufficient; the efficiency and equity of OLGR allocation are equally crucial. Human development outcomes depend not only on how much is spent, but also on how and where it is spent (XXX). In this context, poorly targeted expenditures or budget allocations focused on administrative overheads rather than basic services may dilute the developmental potential of OLGR. Effective fiscal decentralization can promote accountability and efficiency in the management of public finances, which in turn strengthens the link between economic growth and OLGR.¹⁹

Based on the discussion in the previous section, the following hypotheses are proposed in this study;

H₁: Poverty levels have a significant effect on the HDI

H₂: Economic growth has a significant effect on the HDI

H₃: Regional Indigenous opinion has a significant effect on the HDI

H₄: Poverty, economic growth, and OLGR simultaneously assert a significant influence on the HDI.

METHOD

This research employs a quantitative, causal-explanatory design aimed at empirically testing the influence of poverty rate, economic growth, and Original Local Government Revenue (OLGR) on the Human Development Index (HDI) across districts and cities in Jawa Tengah Province. The study observes panel data spanning five years (2019–2023), covering a population of 35 administrative areas (29 districts and 6 cities). The full population is used via a saturated sampling technique, ensuring comprehensive regional representation.

To test the hypothesized structural relationships, the study applies Partial Least Squares–Structural Equation Modeling (PLS-SEM) using the SmartPLS 4 software.²⁰ PLS-SEM was selected over covariance-based SEM (CB-SEM) due to its advantages in handling complex models with limited sample sizes, non-normal data distributions, and predictive-oriented research objectives. Additionally, PLS is robust in exploratory contexts and suitable for formative and reflective constructs, which aligns with the multidimensional nature of HDI and other latent variables in this study.²¹

In this study, we used panel data collected over the period 2019-2023 to provide a comprehensive overview of the variables. The population in this study covers all districts/cities in Jawa Tengah Province, with a total of 35 districts/cities. We applied a

¹⁹Christopher Dick-Sagoe, “Decentralization For Improving The Provision Of Public Services In Developing Countries: A Critical Review,” *Cogent Economics & Finance* 8, no. 1 (2020): 1804036.

²⁰Agus Purwanto and Yuli Sudargini, “Partial Least Squares Structural Squation Modeling (PLS-SEM) Analysis for Social and Management Research: A Literature Review,” *Journal of Industrial Engineering & Management Research* 2, no. 4 (2021): 114–23.

²¹Rosanna Cataldo et al., “Methodological PLS-PM Framework for SDGs System,” *Social Indicators Research* 156, no. 2 (2021): 701–23.

saturated technique, where the entire units/sample are observed. This allows for a more thorough analysis of the relationships between variables throughout Jawa Tengah Province. The data used in this study are secondary data obtained from various official sources, including the Central Statistics Agency (BPS), regional financial reports, and local government publications related to HDI, OLGR, economic growth, and poverty levels.

The data estimation technique used in this study is Partial Least Square (PLS). Evaluation of the structural model was carried out through R-square for dependent variables, Stone Geisser Q-square test to measure predictive relevance, and t-test and significance of structural path parameter coefficients. The assessment of the PLS model begins by observing the R-square value of each dependent latent variable, where the interpretation is similar to that performed on regression.²² Hypothesis testing in this study was carried out using full model analysis Structural Equation Modeling (SEM) through SmartPLS 4. The hypothesis was tested by analyzing the Path Coefficient value on the inner model test. A hypothesis is considered accepted if the statistical t-value is greater than the tabled t-value by 1.96 (α 5%), which means that if the statistical t-value of each hypothesis exceeds the tabled t-value, the hypothesis can be declared accepted or proven.

Each variable is operationalized as follows:

- Human Development Index (HDI): a composite score ranging from 0 to 100, derived from three dimensions—education (expected and average years of schooling), health (life expectancy), and standard of living (per capita expenditure), as reported by the Central Statistics Agency (BPS).
- Poverty Rate: measured as the percentage of population living below the national poverty line in each district/city annually (unit: %), sourced from BPS Kabupaten/Kota.
- Economic Growth: proxied by the annual growth rate of Gross Regional Domestic Product (GRDP) at constant prices, expressed in percentage terms (%), also obtained from BPS publications.
- Original Local Government Revenue (OLGR): measured in nominal terms (unit: Indonesian Rupiah) reflecting the total annual revenue generated from local taxes, retributions, and other legitimate sources, as documented in each region's APBD (Regional Budget) Realization Report.

To ensure the robustness of the model, several statistical tests were performed:

- The coefficient of determination (R^2) was used to assess the explanatory power of independent variables toward the dependent variable.
- The predictive relevance (Q^2) was calculated using the Stone-Geisser formula to evaluate out-of-sample predictive capability.
- Hypothesis testing was conducted using bootstrapping analysis with t-statistics and p-values, where a threshold of $t > 1.96$ and $p < 0.05$ was used to determine statistical significance.

Prior to analysis, the data were subjected to consistency checks by cross-referencing datasets across multiple official sources (BPS Jawa Tengah, APBD Audit Reports, and

²²Peterson K Ozili, "The Acceptable R-Square in Empirical Modelling for Social Science Research," in *Social Research Methodology and Publishing Results: A Guide to Non-Native English Speakers* (IGI global, 2023), 134-43.

Ministry of Finance publications). Descriptive statistics were also reviewed to identify potential anomalies or outliers.

FINDINGS AND DISCUSSION

Findings

The estimated model shows that all factor loads are more than the minimum level to qualify for the next analysis.

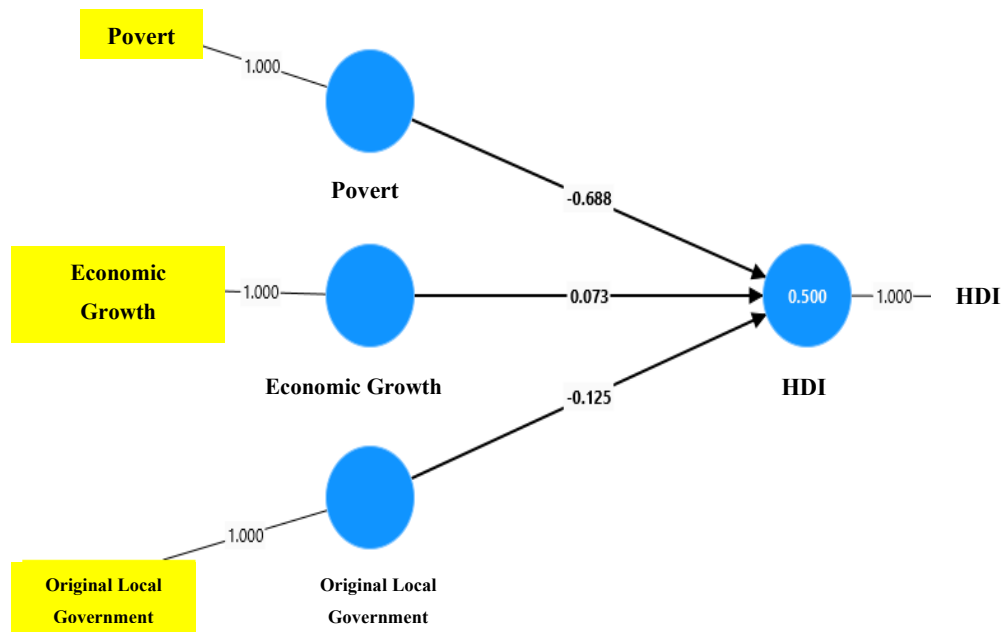


Figure 1. Factor loadings. Source: Authors’ construct (2025).

Table 1. Simultaneous Influence Test Values.

	R-Square	R-Square Adjusted
HDI	0.500	0.491

Source: Authors’ computation (2025).

The results in Table 1 show that the R-square value of the simultaneous influence or joint influence of explanatory variables on the explained variable is 0.500 with an adjusted R-square value of 0.491. It can then be explained that all exogenous constructs together affect HDI by 0.491 or 49.1%. Q-square using the Stone Geisser formula Q-square test is as follows:²³

$$\begin{aligned}
 \text{Q-square} &= 1 - (1 - R^2) \\
 &= 1 - (1 - 0,491) \\
 &= 0,491
 \end{aligned}$$

Based on the results of the calculation above, the Q-square result was obtained at 0.491 or 49.1%. This shows that the amount of diversity of research data that can be explained from the research model is 49.1%. While the remaining 50.9% is influenced by other factors that were not analyzed in this study.

²³M Tri Satria Jaya and AHMAD NURUL Fajar, “Analysis Of The Implementation Quantum GIS: Comparative Effect And User Performance,” *J. Theor. Appl. Inf. Technol* 97, no. 9 (2019).

Table 2. The Statistics of Hypotheses Testing.

	(O)	(M)	(STDEV)	T Statistic	P Values
$P \rightarrow HDI$	-0.688	-0.687	0.037	18.587	0.000
$EG \rightarrow HDI$	0.073	0.072	0.051	1.424	0.155
$OLGR \rightarrow HDI$	-0.125	-0.123	0.059	2.100	0.036

Source: Authors' computation.

The estimate for the path coefficients is the value of the path coefficient or the magnitude of the latent construct relationship or influence carried out by the bootstrapping procedure. The results of the significance test will have a significant effect if the p-value < 0.05 and the t-value > 1.96. The proof of the significant level can be seen from the outer loading value of the poverty indicator of -0.688 with a t-statistic of 18.587 and a p-value of 0.000. This means that poverty has a negative and significant effect as a form of fundamental factor variables because the statistical t-value > 1.96 and the p-value < 0.05.

The H_1 hypothesis which states that "it is suspected that the poverty level has a significant effect on the HDI in Jawa Tengah province" is accepted. The proof of a significant level can be seen from the outer loading value of the economic growth indicator of 0.073 with a statistical t-value of 1.424 and a p-value of 0.155.

Economic growth has a positive and insignificant effect as a form of fundamental factor variables because the statistical t-value < 1.96 and the t-value > 0.05. The H_2 hypothesis which states that "it is suspected that economic growth has a significant effect on the HDI in Jawa Tengah Province" is rejected. The proof of the significant level can be seen from the outer loading value of the OLGR indicator of -0.125 with a statistical t-value of 2.100 and a p-value of 0.036. This means that OLGR has a negative and significant effect as a fundamental factor variable because the t-value of the statistic > 1.96 and the p-value < 0.05. The H_3 hypothesis which states that "it is suspected that OLGR has a significant effect on the HDI in Jawa Tengah Province" is accepted. The value of the simultaneous influence test or R-square shows that the R-square value for explanatory variables has the same or simultaneous influence on HDI of 0.500 with an adjusted R-square value of 0.491. It can then be explained that all exogenous factors simultaneously affect HDI by 0.491 or 49.1%. Since the R-square adjusted is less than 0.67% or 67% and more than 0.33 or 33%, the influence of all exogenous variables on HDI is moderate. Exogenous latent variables in this study were able to affect the HDI by 49.1%. The H_3 hypothesis which states that "it is suspected that simultaneously, there is a significant influence between poverty, OLGR, and economic growth on HDI in Jawa Tengah Province" is accepted.

Discussion

A. The Effect of Poverty Rate on the Human Development Indeks

The cause of poverty is the existence of unequal patterns in resource ownership that causes inequality in income distribution.²⁴ Poverty also arises because of differences in the quality of human resources, the low quality of human resources results in low productivity resulting in low income. The low quality of human resources is caused by the poor population having a low average level of education. The low HDI will result in the low work productivity of the population. Low productivity will lead to a high number of poor people.

²⁴M Usman Mirza et al., "Technology Driven Inequality Leads To Poverty And Resource Depletion," *Ecological Economics* 160 (2019): 215-26.

Low work productivity will cause a decrease in income and will have the potential to reduce the desire and ability to meet average living standards such as education standards and health standards in the community.

The statistical *t*-value of this study is $18.587 > 1.96$ and the *p*-value or significant value is $0.000 < 0.05$, so the independent variable has a significant effect on the dependent variable. The poverty rate variable measured using the percentage of poverty from 29 districts and 6 cities per year from 2019 to 2023 obtained from the Central Statistics Agency website has a negative value but has a significant effect on the HDI of Jawa Tengah Province from the period 2019 - 2023. That the poverty level has a significant effect on the HDI.²⁵ The H_1 hypothesis which states that the poverty level has a significant effect on the HDI is accepted.

The statistical analysis in this study confirms a significant negative relationship between poverty rate and the Human Development Index (HDI) in Jawa Tengah Province during the period of 2019–2023. With a *t*-statistic of 18.587 ($p < 0.001$), the poverty variable emerges as the most dominant determinant of HDI variation among the three exogenous constructs examined. This reinforces the theoretical proposition that poverty not only limits income but also undermines broader human capabilities, such as access to education, health, and a dignified standard of living.

The persistent poverty in several districts across Jawa Tengah—particularly those with rural characteristics and limited fiscal capacity—reflects structural constraints that inhibit individuals from fulfilling their basic needs. Poverty in this context represents a multidimensional deprivation. When individuals or communities lack access to health facilities, adequate nutrition, or education opportunities, their productivity diminishes, creating a reinforcing cycle that keeps HDI levels low. In other words, poverty diminishes both the input and output dimensions of human development.

From a policy perspective, the strong statistical evidence in this study suggests that reducing poverty is not only a moral imperative but also a pragmatic strategy for improving HDI. Conventional approaches focusing solely on economic growth may overlook deep-rooted social inequalities. The findings call for integrated poverty alleviation programs that combine income support, skills development, health insurance coverage, and educational access—especially for marginalized and geographically isolated populations.

Moreover, this result emphasizes the need for sub-national governments in Jawa Tengah to implement more spatially targeted interventions. Not all districts experience poverty in the same way. For instance, urban poverty often stems from informal labor market exclusion, whereas rural poverty is more likely driven by agricultural underemployment and lack of public infrastructure. Thus, policies must be adaptive, data-driven, and capable of addressing local poverty dynamics to effectively elevate the HDI at the district level.

B. The Effect of Economic Growth on the Human Development Index

Economic growth is one of the important indicators to assess the success of a region's economic development. Economic growth is also the key to reducing poverty in a region. With an increase in economic growth in an area, it shows an increase in people's welfare so that poverty is reduced. In this study, the statistical *t*-value is $1.424 < 1.96$ and the *p*-

²⁵Devita Andri and Hetty Rohayani, "Measuring the Poverty Level Of Society In Jambi Province," *Turkish Online Journal of Qualitative Inquiry* 12, no. 9 (2021).

value is $0.155 > 0.05$, so the independent variable does not have a significant effect on the dependent variable. The economic growth variable measured using the percentage of gross regional domestic product based on constant prices from 29 districts and 6 cities per year from 2019 to 2023 obtained from the Central Statistics Agency has a positive value but does not have a significant effect on the HDI of Jawa Tengah Province from the period 2019 – 2023. This result is in line with a study conducted in South Minahasa Regency which stated that economic growth had an insignificant effect on the HDI.²⁶ The H_2 hypothesis which states that economic growth has a significant effect on the HDI is rejected. This is because economic growth in Jawa Tengah Province during the period 2019 – 2023 experienced instability, namely in 2019 (189.9%), 2020 (-67.95), 2021 (122.41%), 2022 (188.88%), and 2023 (174.48%), while the HDI in Jawa Tengah Province during the period 2019 – 2023 increased every year so that it does not illustrate that if economic growth increases, the HDI also increases.

The empirical results of this study indicate that economic growth has a positive but statistically insignificant effect on the Human Development Index (HDI) in Jawa Tengah Province. With a t-statistic of 1.424 and a p-value of 0.155, the data suggest that increases in Gross Regional Domestic Product (GRDP) during the 2019–2023 period did not translate meaningfully into improvements in education, health, or income components of HDI. This finding challenges the conventional assumption that economic growth automatically enhances human development outcomes.

There are several plausible explanations for this disconnect. First, economic growth in Jawa Tengah may have been spatially concentrated in certain urban centers or capital-intensive industries that do not absorb large segments of the labor force, especially those with lower education levels. This pattern of growth may exacerbate regional disparities and limit the trickle-down effects that are often assumed in growth-led development strategies. Second, the volatility in economic performance—particularly the sharp contraction during the COVID-19 pandemic in 2020 followed by uneven recovery—may have disrupted public investments in health and education services, delaying the expected impact on HDI indicators.

Moreover, the structural nature of economic growth in the region is also a key consideration. If growth is driven primarily by sectors such as manufacturing or real estate that are not inclusive or labor-intensive, then its potential to reduce poverty and improve quality of life remains constrained. The quality and composition of growth thus matter more than the rate of growth alone. In many districts of Jawa Tengah, informal employment remains high, wages are stagnant, and social safety nets are limited—factors that weaken the link between aggregate economic performance and individual welfare.

These findings suggest that policy interventions must go beyond simply boosting GRDP figures. It is essential to direct economic growth toward sectors that generate broad-based employment, improve productivity among low-income groups, and enhance fiscal space for local governments to invest in public services. Inclusive growth strategies—such as rural enterprise development, labor upskilling, and pro-poor infrastructure—can better align economic performance with human development progress.

²⁶Agnes Lutherani Ch P Lapian, Een Novritha Walewangko, and Lis Melissa Yapanto, “The Effect of Population, Human Development Index, and Gross Regional Domestic Product on Poor Population,” *International Journal of Professional Business Review* 8, no. 5 (2023): e02221–e02221.

C. The Effect of Original Local Government Revenue on the Human Development Index

The OLGR is revenue obtained by the region from sources within its region which is collected based on regional regulations in line with applicable laws and regulations.²⁷ The regional revenue sector plays a very important role because through this sector it can be seen the extent to which a region can finance government activities and regional development. The t -value from the result of the study is $2.100 > 1.96$ and the p -value or significant value is $0.036 < 0.05$, then the independent variable has a significant effect on the dependent variable. The OLGR variable which is measured using the value of OLGR in rupiah from 29 districts and 6 cities per year from 2019 to 2023 obtained from the Central Statistics Agency has a negative value but has a significant effect on the HDI of Jawa Tengah Province from the period 2019 – 2023. This is in line with a study which states that OLGR has a significant effect on the HDI.²⁸ The H_3 hypothesis which states that OLGR has a significant effect on the HDI is therefore accepted.

The findings of this study show that Original Local Government Revenue (OLGR) has a statistically significant yet negative effect on the Human Development Index (HDI) in Jawa Tengah Province. With a t -statistic value of 2.100 and a p -value of 0.036, OLGR meets the criteria for significance at the 5% level. However, the negative coefficient presents a paradox that challenges the commonly held assumption that higher local revenue directly translates into better human development outcomes. This result prompts a more nuanced interpretation of the relationship between local fiscal capacity and public welfare.

One plausible explanation for this finding lies in the quality and structure of OLGR utilization. Although some districts may exhibit high revenue from local sources—such as regional taxes and retributions—these funds may not be effectively channeled into investments that directly impact HDI components, such as education quality, public health infrastructure, and social safety programs. Instead, a significant portion of OLGR may be allocated to routine expenditures or administrative costs, limiting its transformative effect on human development.

Additionally, disparities in institutional capacity across districts could influence how OLGR is managed. Local governments with weak planning and budgeting systems may struggle to prioritize pro-poor and pro-development spending. In such cases, increased revenue may not correlate with improved service delivery or access to basic needs. This highlights that revenue generation alone is insufficient; it must be accompanied by strategic, transparent, and accountable fiscal governance to produce meaningful improvements in human well-being.

Another consideration is that OLGR tends to be concentrated in urban or economically advanced districts, while poorer or rural regions remain dependent on intergovernmental transfers. This creates a spatial mismatch between where resources are generated and where development needs are most urgent. As a result, districts with higher OLGR may not always show better HDI performance if fiscal surpluses are not redistributed or reinvested equitably.

²⁷Louise Francis and Charles Livingstone, “Gambling’s Community Contributions: Does The Community Benefit?,” *Addiction Research & Theory* 28, no. 5 (2020): 365–78.

²⁸Wang, Zhang, and Wang, “Renewable Energy Consumption, Economic Growth And Human Development Index In Pakistan: Evidence Form Simultaneous Equation Model.”

From a policy standpoint, this finding suggests that efforts to improve HDI through fiscal means must be twofold: increasing the quantity of local revenue while simultaneously enhancing the efficiency, equity, and developmental orientation of public spending. Mechanisms such as performance-based budgeting, participatory planning, and outcome-based evaluation could help ensure that OLGR contributes more directly to human development objectives.

D. The Effect of Poverty Rate, Economic Growth, and Original Local Government Revenue on the Human Development Index

The implementation of development in an area certainly requires costs. Local governments in financing their regional expenditures use OLGR which is the main source of regional revenue.²⁹ The allocation of regional revenue funds in line with their use will certainly affect and increase the HDI in each region. The HDI is a benchmark for economic development. One of the things that can be seen and analyzed through the HDI is human resources. So, if a person's quality or productivity is low, then the HDI will also be low. If human resources are poor, there will be poverty and a decrease in economic growth in an area.³⁰

The r-square value for poverty rate, economic growth, and OLGR has a joint or simultaneous influence on the HDI of 0.500 with an adjusted R-square value of 0.491. It can be explained that all exogenous variables (poverty level, economic growth, and LGR) simultaneously affect HDI by 0.491 or 49.1%. Since the R-square adjusted is less than 0.67% or 67% and more than 0.33 or 33%, the influence of all exogenous variables (poverty level, economic growth, and OLGR) on HDI is moderate. The H₄ hypothesis which states that simultaneously poverty levels, economic growth, and OLGR affect the HDI is rejected.

The simultaneous analysis of poverty rate, economic growth, and Original Local Government Revenue (OLGR) on the Human Development Index (HDI) reveals a moderate but meaningful explanatory power, with an adjusted R-square value of 0.491. This indicates that these three variables collectively account for approximately 49.1% of the variation in HDI across districts and cities in Jawa Tengah during the period of 2019–2023. The result affirms that human development is influenced by a complex interplay of socioeconomic and fiscal factors, rather than by a single dominant variable.

The statistically significant influence of poverty rate within the multivariate model highlights its consistent and dominant role in shaping human development outcomes.³¹ This reinforces the argument that without substantial poverty alleviation efforts, any economic or fiscal advancements may yield limited improvements in quality of life

²⁹Bruce McDonald and Sarah Larson, "Implications Of The Coronavirus On Sales Tax Revenue And Local Government Fiscal Health," *Journal of Public and Nonprofit Affairs* 6, no. 3 (2020): 377–400; Isabel Narbón-Perpiñá and Kristof De Witte, "Local Governments' Efficiency: A Systematic Literature Review—Part II," *International Transactions in Operational Research* 25, no. 4 (2018): 1107–36; Zhuo Chen, Zhiguo He, and Chun Liu, "The Financing Of Local Government In China: Stimulus Loan Wanes And Shadow Banking Waxes," *Journal of Financial Economics* 137, no. 1 (2020): 42–71.

³⁰Fatimatuz Zahro and Mashudi Mashudi, "The Influence of Zakat on Education and Health As a Mediating Variable for Poverty Alleviation in Bangkalan Society," *Jurnal Al-Ijtima'iyyah* 11, no. 1 (2025): 47, <https://doi.org/10.22373/al-ijtima'iyyah.v11i1.30165>.

³¹Zohaib Hassan Sain et al., "Impact of Quality Education on Poverty Reduction Across Different Economic Contexts," *Jurnal Al-Ijtima'iyyah* 10, no. 2 (2024): 292, <https://doi.org/10.22373/al-ijtima'iyyah.v10i2.26108>.

indicators such as health, education, and income. In contrast, the role of economic growth appears marginal and statistically insignificant in the model, suggesting that aggregate increases in regional output do not directly translate into widespread human development unless accompanied by equitable distribution and inclusiveness in the growth process.

Meanwhile, the OLGR variable—despite showing significance individually—demonstrates a nuanced role in the joint model. Its effect may vary depending on how effectively local revenues are mobilized, allocated, and spent. In several districts of Jawa Tengah, high local revenue has not necessarily resulted in proportional improvement in HDI, possibly due to inefficiencies in public budgeting, capacity limitations, or misaligned development priorities. This underscores that the quality of fiscal governance is as important as the quantity of fiscal resources available.

The simultaneous test also reflects the need for integrative regional development planning. The interdependence of the three variables implies that isolated policies—such as merely boosting economic growth or increasing local revenue without addressing poverty—will likely be insufficient to significantly elevate HDI. Policy synergy is critical: effective poverty reduction programs must be supported by inclusive economic strategies and strengthened by adequate fiscal capacity at the local government level.³²

Furthermore, the remaining 50.9% of unexplained variation in HDI suggests that other structural factors, such as access to infrastructure, quality of education and health services, governance effectiveness, intergovernmental transfers, and demographic trends, also play vital roles in determining human development outcomes. These dimensions should be explored in future research for a more comprehensive understanding.

CONCLUSION

This study contributes to the growing body of literature on regional development by empirically examining how poverty rates, economic growth, and Original Local Government Revenue (OLGR) influence the Human Development Index (HDI) in Jawa Tengah Province. The findings confirm that poverty has a significant negative effect on HDI, while OLGR also exhibits a significant relationship, albeit with a complex directionality that warrants further investigation. In contrast, economic growth shows no statistically significant impact, highlighting the limitations of growth-oriented strategies in achieving equitable human development outcomes. These results underscore the importance of integrated fiscal and social policies in enhancing regional human capital.

From a policy perspective, the study recommends that regional governments strengthen the alignment between fiscal planning and human development priorities. Increasing OLGR alone is insufficient unless accompanied by targeted investments in health, education, and poverty alleviation programs. Development strategies must shift from growth-centric models toward inclusive, redistributive frameworks that are responsive to local socio-economic disparities. This research is subject to certain limitations. It focuses exclusively on a single province and a limited set of variables, which may not capture the full spectrum of factors influencing HDI.

Additionally, the use of secondary data restricts the ability to control for qualitative aspects such as institutional quality or governance effectiveness. Future research should

³²Khalezar Khalezar et al., “Pengaruh Program Aceh Besar Sejahtera (Pro Abes) Terhadap Pengentasan Kemiskinan Di Kabupaten Aceh Besar,” *Jurnal Al-Ijtima'iyyah* 9, no. 1 (2023): 147, <https://doi.org/10.22373/al-ijtima'iyyah.v9i1.18036>.

consider expanding the analytical model to include variables such as infrastructure access, labor market dynamics, intergovernmental transfers, and public service quality. Comparative studies across multiple provinces or longitudinal analyses incorporating post-pandemic recovery dynamics may also provide deeper insights into the structural determinants of human development in decentralized settings.

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