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Income Inequality, Poverty, and Inclusive Economic Development: Evidence from Gorontalo Province, Indonesia

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ABSTRACT

Income distribution (Gini ratio) plays an important role in determining the level of public welfare and the quality of inclusive economic development. High income inequality can worsen poverty conditions and hinder the creation of equitable development. This study aims to analyze the effect of income distribution on inclusive economic development in Gorontalo Province by considering poverty as an intervening variable. The method used is path analysis with secondary data from the Gorontalo Province BPS during 2011–2024. The results show that income inequality has a positive and significant effect on poverty and a negative and significant effect on inclusive economic development. Poverty also has a negative impact on inclusive economic development and serves as a significant intervening variable. These findings imply that reducing inequality and poverty is crucial in promoting sustainable inclusive economic development in Gorontalo Province.

Keywords: Economic Development; Inclusive Economy; Income Distribution; Inequality; Poverty

INTRODUCTION

In recent decades, the discourse on economic development has shifted from a narrow focus on growth rates to a broader concern for inclusivity, equity, and sustainability. This paradigm shift reflects growing recognition that economic growth alone does not necessarily translate into improved welfare for all segments of society (Kamran et al., 2023; Gupta et al., 2015). The global experience demonstrates that countries with sustained GDP growth can still face persistent poverty, widening income gaps, and social exclusion if growth is not accompanied by equitable distribution mechanisms (World Bank, 2022).

In Indonesia, inclusive economic development has become a central theme in national and regional policy agendas, particularly under the Sustainable Development Goals (SDGs) framework and the government's long-term development vision (RPJPN 2025–2045). Yet, achieving inclusive growth remains a formidable challenge, especially in peripheral provinces such as Gorontalo. Despite notable macroeconomic improvements, Gorontalo continues to record poverty rates higher than the national average and a Gini ratio that has remained persistently elevated over the past decade (BPS Gorontalo, 2024).

Income inequality, commonly measured by the Gini ratio, serves as a key indicator of disparities in wealth distribution and access to economic resources (Yusuf & Sumner, 2015). High inequality can restrict low-income groups' access to education, healthcare, and productive employment, thereby reinforcing cycles of poverty and limiting social mobility. In Gorontalo, the persistence of inequality suggests that the benefits of growth are concentrated in certain segments of the population, undermining efforts to create a more inclusive economy.

Inclusive development aims to ensure that economic growth benefits all members of society, especially the poor and marginalized. Achieving this requires not only sustaining economic expansion but also addressing the structural determinants of poverty and inequality, such as unequal access to productive assets, uneven infrastructure development, and gaps in human capital formation. While national-level studies have explored the relationship between these variables, there is limited empirical research that examines their interlinkages at the subnational level in Indonesia, where economic structures and social contexts can vary widely.

This study addresses this gap by investigating the causal relationships between income inequality, poverty, and inclusive economic development in Gorontalo Province. By applying path analysis, it examines both the direct and indirect effects of income distribution on inclusive development, with poverty functioning as a mediating variable. The research is expected to contribute to the empirical literature by providing province-level evidence that integrates these three critical dimensions within a single analytical framework.

The findings will not only enhance academic understanding of the mechanisms linking inequality, poverty, and inclusive development but also offer actionable insights for policymakers. Specifically, they can inform the design of targeted, evidence-based interventions to reduce inequality and poverty while promoting equitable and sustainable regional development in line with Indonesia's inclusive growth agenda.

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LITERATURE REVIEW

The relationship between income inequality, poverty, and inclusive economic development has been extensively examined in economic literature, yet empirical studies focusing on subnational or provincial contexts remain relatively limited. Most research in Indonesia addresses these issues at the national level, overlooking regional disparities that may arise from differences in economic structure, resource endowments, and governance quality. This study builds on three interrelated theoretical perspectives—the Kuznets Hypothesis, Endogenous Growth Theory, and the Inclusive Development Framework—to construct a comprehensive analytical lens.

The Kuznets Hypothesis (Kuznets, 1955) posits an inverted U-shaped relationship between economic growth and income inequality. In the early phases of development, inequality tends to rise as structural transformations shift resources from low-productivity sectors such as agriculture to higher-productivity sectors like industry, often concentrating benefits among a relatively small segment of the population. Over time, as average incomes increase and social policies expand, inequality is expected to decline. While this hypothesis has received empirical support in several developing economies, more recent research suggests that inequality does not automatically diminish with growth and may persist—or even intensify—without deliberate redistributive measures (Piketty, 2014; Kakwani & Siddiqui, 2023). This critique is especially pertinent to Gorontalo, where structural disparities in market access, infrastructure allocation, and employment opportunities hinder the equitable distribution of growth benefits across the population.

In contrast, Endogenous Growth Theory, advanced by Romer (1990) and Lucas (1988), underscores the role of internal factors—such as human capital development, technological innovation, and institutional quality—in sustaining long-term economic growth. This perspective highlights that investments in education, healthcare, and research and development (R&D) are essential not only for enhancing productivity but also for ensuring that the gains from growth are broadly shared. The theory suggests that regions with strong institutions, effective governance, and high levels of human capital are better positioned to achieve inclusive and sustainable development. Empirical evidence from Indonesian provinces supports this assertion, demonstrating that improvements in educational attainment, healthcare provision, and governance effectiveness have been instrumental in narrowing the development gap between core and peripheral regions (Nurlaili & Sugiharti, 2023; Sholikhah et al., 2024).

The Inclusive Development Framework proposed by Gupta et al. (2015) broadens the growth discourse by integrating economic, social, and environmental dimensions into a cohesive approach. It emphasizes that economic expansion must be complemented by deliberate efforts to foster social equity, participatory governance, and environmental sustainability. Within this framework, poverty is understood not merely as an outcome of unequal growth, but as a structural barrier that constrains the capacity of individuals and communities to actively participate in, and contribute to, development processes (Kamran et al., 2023). This perspective is particularly relevant to the context of Gorontalo, where the interplay between poverty and inequality significantly restricts engagement in economic activities, thereby diminishing the inclusiveness and overall impact of growth.

Despite the rich theoretical discourse, there is a notable lack of empirical research in Indonesia that integrates these three perspectives—inequality, poverty, and inclusive development—within a single causal framework at the provincial level. Existing studies often focus on national trends or investigate only two of the three variables in isolation

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(Amar & Pratama, 2020; Sirtama, 2021). By adopting a path analysis approach, this study aims to address this gap, providing a more comprehensive understanding of how inequality and poverty jointly influence inclusive economic development in Gorontalo Province. The integration of these perspectives allows for a nuanced analysis that can inform both academic debates and the formulation of targeted, evidence-based policy interventions to foster equitable regional development.

RESEARCH METHOD

This study employs a quantitative research design utilizing path analysis to investigate the direct and indirect effects of income inequality and poverty on inclusive economic development in Gorontalo Province, Indonesia. Path analysis is applied to assess the mediating role of poverty and to examine the causal relationships among the key variables within a structured analytical framework.

The research uses secondary panel data obtained from the Central Bureau of Statistics (Badan Pusat Statistik/BPS) of Gorontalo Province, covering the period from 2011 to 2024 across six regencies and municipalities (BPS Gorontalo, 2024). The variables examined include Inclusive Economic Development (IED), measured using the Inclusive Economic Development Index (IPEI); Poverty (POV), represented by the percentage of the population living below the national poverty line; and Income Inequality (GINI), measured using the Gini ratio.

The relationships among these variables are specified through path equations, with the data standardized and log-transformed to ensure comparability and minimize heteroskedasticity. The model estimation is conducted using EViews statistical software, and the Sobel test is applied to evaluate the significance of the indirect effect of income inequality on inclusive economic development through poverty.

Path analysis is selected for its ability to decompose total effects into direct and mediated effects within a system of interrelated variables. This methodological choice is particularly relevant in the context of this study, as poverty is hypothesized to act as a mediator in the relationship between income inequality and inclusive growth, thereby providing a deeper understanding of the structural dynamics shaping inclusive development in Gorontalo Province.

RESULTS

Over the 2011–2024 period, Gorontalo Province showed a steady upward trend in the Inclusive Economic Development Index (IED), accompanied by a gradual reduction in the poverty rate. However, income inequality, as measured by the Gini ratio, remained persistently high, indicating that economic gains were not evenly distributed across the population. These contrasting trends suggest that while overall development indicators improved, structural disparities persisted.

Effect of Income Distribution on Poverty

Table 1. Effect of Income Distribution (gini ratio) on Poverty.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-3.16E-16	0.226581	-1.39E-15	1.0000
GR	0.580125	0.235134	2.467209	0.0296

Statistic	Value	Statistic	Value
R-squared	0.336545	Mean dependent var	2.03E-15

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Adjusted R-squared	0.281257	S.D. dependent var	1.000000
S.E. of regression	0.847787	Akaike info criterion	2.639190
Sum squared resid	8.624921	Schwarz criterion	2.730484
Log likelihood	-16.47433	Hannan-Quinn criter.	2.630739
F-statistic	6.087122	Durbin-Watson stat	0.402873
Prob(F-statistic)	0.029645		

The regression results in Table 1 indicate that the Gini ratio has a positive and significant effect on poverty levels in Gorontalo Province. With a p-value of 0.0296, the relationship is statistically significant at the 5% level. The coefficient value (0.580125) implies that a 1% increase in income inequality is associated with a 0.580% rise in the poverty rate. This finding confirms that greater disparity in income distribution exacerbates the economic vulnerability of low-income households.

Moreover, the R-squared value (0.336545) shows that approximately 33.65% of the variation in poverty levels can be explained by changes in the Gini ratio. The relatively high impact of inequality on poverty aligns with previous studies (e.g., Kakwani & Siddiqui, 2023; Kamran et al., 2023) that emphasize inequality as a structural driver of poverty persistence, particularly in developing regions.

Effect of Income Distribution and Poverty on Inclusive Economic Development

Table 2. Effect of Income Distribution (Gini Ratio) and Poverty on Inclusive Economic Development

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.90E-15	0.108856	3.58E-14	1.0000
GR	-0.378922	0.138688	-2.732186	0.0195
POV	-0.654458	0.138688	-4.718914	0.0006

Statistic	Value	Statistic	Value
R-squared	0.859627	Mean dependent var	1.05E-15
Adjusted R-squared	0.834104	S.D. dependent var	1.000000
S.E. of regression	0.407303	Akaike info criterion	1.228890
Sum squared resid	1.824852	Schwarz criterion	1.365831
Log likelihood	-5.602232	Hannan-Quinn criter.	1.216214
F-statistic	33.68125	Durbin-Watson stat	1.478631
Prob(F-statistic)	0.000020		

The regression model in Table 2 reveals that income inequality (Gini ratio) has a negative and significant effect on inclusive economic development, with a coefficient of -0.378922 and a p-value of 0.0195. This means that a 1% increase in inequality results in a 0.378% decline in inclusive development. The finding suggests that unequal societies struggle to ensure that economic progress benefits all population segments, reducing the inclusiveness of growth.

Poverty also exerts a strong and significant negative influence on inclusive economic development (coefficient = -0.654458, p-value = 0.0006). This indicates that a 1% increase in poverty levels reduces the inclusiveness of economic progress by 0.654%. The effect size analysis shows that poverty explains 57.22% of the variation in inclusive economic development, underscoring its role as a primary barrier to equitable growth.

These results emphasize that both inequality and poverty are not only undesirable in themselves but also critical impediments to achieving inclusive and sustainable development.

Results of Indirect Influence

The Sobel test was employed to assess the mediating role of poverty in the relationship between income inequality and inclusive economic development. The calculation yielded:

$$S_{\{ab\}} = \sqrt{\{b^2 S_a^2 + a^2 S_b^2 + S_a^2 S_b^2\}}$$

$$S_{\{ab\}} = \sqrt{\{(-0.654)^2 (0.235)^2 + (0.580)^2 (0.139)^2 + (0.235)^2 (0.139)^2\}}$$

$$S_{\{ab\}} = \sqrt{\{0.0236807 + 0.0064732 + 0.0010634\}}$$

$$S_{\{ab\}} = \sqrt{\{0.0312174\}}$$

$$S_{\{ab\}} = 0.1766843$$

$$Z_{\{Hitung\}} = \frac{ab}{S_{ab}}$$

$$Z_{\{Hitung\}} = \frac{-0.654 \times 0.580}{0.1766843}$$

$$Z_{\{Hitung\}} = \frac{-0.379}{0.1766843}$$

$$Z_{\{Hitung\}} = -2.149$$

$$Probability\ Z_{\{Hitung\}} = 0.015823$$

Since the absolute Z-value (2.149) exceeds the critical value of 1.96 at the 5% significance level, the indirect effect is statistically significant. This confirms that poverty mediates the effect of inequality on inclusive development. In other words, higher inequality increases poverty, which in turn reduces inclusive economic development. This mediating pathway highlights the interconnected nature of these economic issues and supports the argument for integrated policy interventions.

DISCUSSION

The path analysis results indicate that income inequality significantly increases poverty, while both inequality and poverty exert negative effects on inclusive economic development. Furthermore, the Sobel test confirms that poverty plays a mediating role in the relationship between inequality and inclusive growth. These findings highlight that inequality is not merely a matter of income distribution but a structural barrier to achieving broad-based and sustained prosperity. In the case of Gorontalo Province, unequal income distribution constrains access to basic services, productive assets, and economic opportunities, thereby perpetuating poverty cycles and limiting participation in the benefits of economic progress.

This outcome aligns with the shared prosperity framework of Kakwani and Siddiqui (2023), which highlights that sustainable poverty reduction hinges on narrowing income disparities and ensuring equitable access to economic opportunities. In a similar vein, Kamran et al. (2023) argues that inclusive growth is fundamental to effective poverty alleviation, cautioning that growth without equity tends to concentrate benefits among more affluent groups. Gupta et al. (2015) further contend that inequality erodes social inclusion by channeling advantages toward already privileged segments of society, thereby weakening social cohesion and undermining the effectiveness of development policies.

The persistence of a high Gini ratio in Gorontalo, despite a declining poverty rate, reflects a "growth without equity" phenomenon. While economic growth may have lifted some individuals out of poverty, it has not significantly altered the underlying distributional structure. This mirrors Piketty's (2014) argument that without deliberate redistributive measures, economic expansion tends to reinforce, rather than reduce, inequality.

From a policy perspective, these empirical patterns suggest that economic growth, in the absence of equity-oriented measures, is insufficient to ensure balanced and sustainable development outcomes. Addressing inequality and poverty in tandem requires a comprehensive strategy encompassing progressive fiscal policies, equitable public investment in education, healthcare, and infrastructure, and empowerment-based interventions that enhance the capabilities of low-income households. Additionally, strengthening institutional capacity and participatory governance is crucial for ensuring that development initiatives are inclusive and responsive to local needs.

In the specific context of Gorontalo Province, targeted interventions aimed at rural and coastal communities—where poverty and inequality are often most pronounced—could be particularly effective. Enhancing access to financial services, promoting micro and small enterprise development, and integrating value-added agricultural and fisheries activities into regional supply chains could serve as key drivers of inclusive growth. Such measures, if combined with continuous monitoring and evaluation, would not only accelerate poverty reduction but also improve the inclusiveness and resilience of Gorontalo's economic development trajectory.

CONCLUSION

This study empirically examined the interrelationships between income inequality, poverty, and inclusive economic development in Gorontalo Province. The findings reveal that income inequality significantly exacerbates poverty, and that both inequality and poverty exert negative effects on inclusive development, with poverty serving as a significant mediating variable. These results affirm that economic growth alone is insufficient to ensure inclusivity; without redistributive mechanisms and deliberate social inclusion strategies, the benefits of development risk becoming concentrated within certain population segments.

To address these challenges, policy interventions should prioritize strengthening income redistribution mechanisms, including the implementation of progressive taxation and the provision of targeted support for micro, small, and medium-sized enterprises (MSMEs). Empowerment-based poverty reduction initiatives—such as vocational skills training, enhanced financial access, and community-based entrepreneurship—are essential to fostering long-term self-reliance. Equitable access to quality education, healthcare, and infrastructure must be expanded to create an enabling environment for inclusive growth. Furthermore, the institutionalization of robust monitoring and evaluation frameworks will be critical to ensuring that policies remain evidence-based, adaptive, and responsive to evolving socio-economic conditions.

Achieving inclusive development in Gorontalo Province requires a dual focus on reducing inequality and alleviating poverty, pursued through collaborative, data-driven, and people-centered approaches. By systematically addressing these structural barriers, Gorontalo can progress toward a more equitable, resilient, and sustainable economic future.

LIMITATION

This study is constrained by the use of a limited set of variables—namely, the Gini ratio, poverty rate, and the Inclusive Economic Development Index—without accounting for other potential determinants such as educational attainment, infrastructure development, governance quality, or labor market conditions. The exclusion of these factors may overlook important moderating or confounding influences on the relationship between inequality, poverty, and inclusive development.

Furthermore, the analysis relies on aggregated provincial-level data, which may obscure significant intra-regional disparities and localized dynamics. Differences between rural and urban areas, for example, could yield distinct patterns of inequality and development that are not captured in the present dataset. This aggregation may therefore limit the ability to fully understand the nuanced and context-specific mechanisms shaping inclusive economic growth.

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DECLARATION OF CONFLICTING INTERESTS

The author declares that there is no conflict of interest, whether financial, personal, or institutional, that could have influenced the conduct or reporting of this study. All analyses and interpretations were carried out independently and reflect the author's objective scientific judgment.

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