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Understanding Poverty Dynamics in Indonesia: The Role Economic Growth, Income Distribution, and Human Development

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ABSTRACT

This study aims to analyze the influence of economic growth, income distribution, and the Human Development Index (HDI) on poverty in Indonesia, both partially and simultaneously. The data used in this research is secondary data, comprising a total of 680 observations from 34 provinces in Indonesia over the period 2018-2022. The data analysis technique employed in this study is panel data regression. The results of this study indicate that, partially, economic growth and income distribution have significant effects on the poverty level in Indonesia. Meanwhile, the Human Development Index (HDI) does not have a significant impact on poverty levels in Indonesia. Simultaneously, economic growth, income distribution, and the Human Development Index (HDI) together have a significant effect on poverty in Indonesia. Based on the results of this study, it is recommended that the government implement effective policies through progressive taxation, direct cash transfers to poor families, and social protection programs targeted specifically at those below the poverty line. Additionally, investment in education must be increased to ensure broader access and better-quality education for all segments of society.

Keywords: Economic Growth, Human Development, Inequality, Poverty

JEL Classification: E01, E02, O11, O40

INTRODUCTION

Poverty in Indonesia represents a multifaceted challenge, reflecting the profound socioeconomic disparities in the nation's development trajectory. With its vast population and diverse geographical and cultural landscapes, Indonesia grapples with an array of issues contributing to heightened poverty levels across various regions. Understanding the nuanced dimensions of poverty in Indonesia is crucial for formulating effective policy interventions aimed at alleviating this pervasive issue (Nasution, 2014; Pangkiro et al., 2016). Despite notable strides in poverty reduction in recent years, persistent inequalities underscore the need for comprehensive analysis and targeted interventions to address the root causes of poverty. A comprehensive review of existing literature reveals several key gaps in understanding poverty dynamics in Indonesia. While previous studies have shed light on various aspects of poverty, there remains a dearth of research focusing on the nuanced interplay between economic growth, income distribution, and human development indicators in shaping poverty outcomes (Breunig & Majeed, 2021; Mukhtar et al., 2019; Purwono et al., 2021; Rostiana et al., 2022). Limited attention has been paid to the differential impacts of these factors across diverse demographic and geographic contexts within Indonesia. Furthermore, existing research often lacks a holistic perspective that integrates theoretical insights with empirical evidence, hindering a nuanced understanding of poverty dynamics.

Economic growth is a primary focus in poverty alleviation, and previous research presents various perspectives on the complex relationship between economic growth and poverty levels (Fagbemi et al., 2022; Fosu, 2017; Marrero & Servén, 2021). Overall, economic growth can have a positive impact on reducing poverty levels (Fagbemi et al., 2022). Fagbemi et al. (2022) argue that economic growth can increase the average income of the population, create new job opportunities, and, in turn, reduce poverty levels. Zhu et al. (2022) support this view, showing that countries with high economic growth often experience significant reductions in the percentage of the population living below the poverty line. While increased economic growth may reduce poverty, it is crucial to consider equitable income distribution as a critical factor in measuring the impact of economic growth on poverty (Aba et al., 2015; Deutsch et al., 2020; Djulius et al., 2019, 2022; Kavya & Shijin, 2020). Kavya & Shijin, (2020) emphasize the importance of inclusive and equitable economic growth in addressing poverty challenges. According to Deutsch et al. (2020), uneven growth can increase inequality, even if poverty levels decrease. Therefore, widening income inequality can be an undesirable side effect of economic growth not accompanied by effective income distribution policies.

Equitable income distribution can play a crucial role in reducing poverty levels (International Monetary Fund, 2021; Jencova et al., 2015; Nakabashi, 2018). Jencova et al. (2015) emphasize that high inequality in income distribution can hinder the ability of economic growth to lift poorer segments of society out of poverty. This research provides a strong theoretical foundation for the argument that effective income distribution policies can be vital instruments in poverty alleviation efforts. Meanwhile, the influence of the Human Development Index (HDI) on poverty levels is also a major subject in economic and development research (Cingano, 2014; Crouch et al., 2021). Cingano (2014) highlights that the HDI can offer a more comprehensive view of poverty compared to single metrics like per capita income. The HDI is an excellent tool for understanding the relationship between human development and poverty (Muqorrobin & Soejoto, 2017; Nurlita et al., 2017; Yakunina & Bychkov, 2015). Research by Comim & Hirai (2022) indicates that HDI levels can be an important determinant in addressing poverty. Similarly, Syaifullah & Malik (2017) found that countries with higher HDI tend to have lower poverty levels. This study provides empirical evidence that improvements in dimensions of human development, such as health and education, can be directly related to reductions in poverty levels.

This study contributes to the existing literature in several significant ways. Firstly, by adopting a comprehensive approach that considers the interplay between economic, social, and human development factors, this research offers a holistic understanding of poverty dynamics in Indonesia. Secondly, by elucidating the differential impacts of economic growth, income distribution, and human development indicators on poverty outcomes, this study provides valuable insights for policymakers and practitioners seeking to formulate evidence-based interventions aimed at poverty alleviation.

Against this backdrop, this study aims to address these gaps by examining the multifaceted determinants of poverty in Indonesia. Specifically, the research objectives are as follows: 1). to analyze the partial influence of economic growth, income distribution, and Human Development Index on poverty in Indonesia, 2). to analyze the simultaneous influence of economic growth, income distribution, and the Human Development Index on poverty in Indonesia. Moreover, the nuanced understanding of poverty dynamics generated by this study will facilitate the development of contextually relevant policies and programs tailored to the diverse needs of Indonesia's population.

METHOD

This study employs panel data regression to investigate the multifactorial relationships between poverty, economic growth, income distribution, and the Human Development Index (HDI) in Indonesia. Panel data regression is chosen due to its ability to combine cross-sectional and time series data, providing a more comprehensive understanding of the dynamic relationships among variables over time and across different provinces (Supianti, 2023). This method enhances the robustness of the estimates by increasing the number of observations and the degrees of freedom, which is crucial for reliable statistical testing (Manik et al., 2023; Setiawan et al., 2021; Sihombing et al., 2019; Wooldridge, 2002). Panel data analysis is particularly advantageous because it captures the effects of variables that vary both across entities (provinces) and over time (2018-2022). According to Yalçin et al. (2021), this approach mitigates the effects of multicollinearity, reduces the risk of omitted variable bias, and allows for the examination of both short-term and long-term dynamics, making it suitable for economic and social studies.

The observation in this study comprises all provinces in Indonesia. The total data observations used amount to 680, derived from 34 provinces in Indonesia over the period 2018-2022. In this study, the independent variables used are Economic Growth (PE), Income Distribution (DP), and the Human Development Index (IPM). Meanwhile, the dependent variable in this study is Poverty (K) in Indonesia. The regression equation in this study is as follows:

$$K = \beta_1 + \beta_2 PE_{it} + \beta_3 DP_{it} + \beta_4 IPM_{it} + \varepsilon_{it} \dots \dots \dots \dots \dots (1)$$

Explanation:

K	: Poverty
β	: Regression Coefficients
PE	: Economic Growth
DP	: Income Distribution
IPM	: Human Development Index
ε	: Error

The following are the operational definitions of the variables in the analysis of the poverty structure in Indonesia using a multifactorial approach:

Table 1. Operational Definition of Variables

Variable	Description	Measurement	Data Source
Poverty (K)	The percentage of the population living below the poverty line.	Percentage of the population below the poverty line	Central Bureau of Statistics of Indonesia
Economic Growth (PE)	The annual growth rate of Gross Domestic Product (GDP).	Annual GDP growth rate	Central Bureau of Statistics of Indonesia
Income Distribution (DP)	The inequality of expenditure measured using the Gini ratio.	Gini ratio	Central Bureau of Statistics of Indonesia
Human Development (IPM)	Average achievements in three areas of human development: health, knowledge, and standard of living	Human Development Index	Central Bureau of Statistics of Indonesia

RESULT

In this study, a panel data regression model was estimated to analyze the factors influencing the poverty rate. To select the most appropriate model, several tests can be performed, including the Chow Test, the Hausman Test, and the Lagrange Multiplier Test. The Chow Test is used to compare the Common Effect Model with the Fixed Effect Model. Below is Table 2, which presents the results of the Chow Test.

Table 2. Chow Test

Effects Test	Statistic	d.f.	Prob.
Cross-section F	417.53	(33,133)	0.00
Cross-section Chi-square	790.52	33.00	0.00

Source: Data Analysis Results

The Prob(F-statistic) value in Table 4 is 0.00. Since this value is clearly lower than the established significance level (0.05), the null hypothesis (Ho) is rejected, and thus, the Fixed Effect Model is chosen. Next, the Hausman Test is conducted to compare the Fixed Effects Model with the Random Effects Model in the panel data analysis. Below is Table 5, showing the results of the Hausman Test.

Table 3. Hausman Test

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	30.17	3.00	0.00

Source: Data Analysis Results

Based on Table 3, the Chi-Square statistic is 30.17 with 3 degrees of freedom and a p-value of 0.00, indicating strong evidence to reject the null hypothesis. This means there is a significant difference between the Fixed Effect Model and the Random Effects Model, leading to the choice of the Fixed Effect Model. Thus, based on the results of both the Chow Test and the Hausman Test, the selected panel data regression model is the Fixed Effect Model.

Table 4. Regression Result Using Fixed Effect Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	15.63	5.04	3.10	0.00
PE	-0.03	0.01	-3.73	0.00
DP	9.64	3.68	2.62	0.01
IPM	-0.12	0.06	-1.91	0.06
R-squared	1.00			
Adjusted R-squared	0.99			
F-statistic	904.56			
Prob(F-statistic)	0.00			

Source: Data Analysis Results

The coefficient of Economic Growth (PE) of -0.03 indicates a significant negative relationship between economic growth and poverty at a significance level of 0.05 (p-value = 0.00). This means that higher economic growth is associated with lower poverty likelihood. The coefficient of Income Distribution (DP) of 9.64 indicates a significant positive relationship between income distribution and poverty at a significance level of 0.05 (p-value = 0.01). This implies that a more equal income distribution is associated with lower poverty levels. The coefficient of the Human Development Index (IPM) of -0.12 indicates a negative relationship between HDI and poverty, but it is not significant at the 0.05 significance level (p-value = 0.06).

The R-squared value of 1.00 indicates that the model can explain all the variations in the dependent variable (poverty) with the independent variables in the model.

The F-statistic value of 904.56 with a p-value of 0.00 indicates that the regression model overall is statistically significant. Based on the analysis results, it can be explained that economic growth and income distribution have a significant impact on the poverty rate in this model, while the effect of the Human Development Index is not statistically significant.

DISCUSSION

Economic growth is often considered a crucial factor in reducing poverty levels in a country. However, its impact can vary depending on the economic, social, and policy context. Economic growth in Indonesia has been a primary focus of development policies, but questions remain about how effectively this growth has reduced poverty levels (Harman et al., 2022; Soleh, 2012; Susilowati & Suliswanto, 2015). economic growth is measured as changes in Gross Domestic Product (GDP) over time. This is an important indicator of a country's economic health (Aba et al., 2015; Mirza, 2012; Zhu et al., 2022). The results of this study show a significant negative relationship between economic growth and poverty. This indicates that higher economic growth is associated with lower poverty levels in Indonesia.

This finding aligns with the theory that economic growth can create new economic opportunities, generate employment, and increase household incomes, which in turn can reduce poverty levels (Cingano, 2014; Crouch et al., 2021; Fosu, 2017; Romi & Umiyati, 2018). However, it should be noted that this relationship is not causal, and other factors also influence poverty. According to Teka et al. (2019), and Ani & Dwirandra (2014), sustainable economic growth can create a conducive environment for inclusive economic development, where the benefits of growth are evenly distributed across all societal layers. With increased economic opportunities and income, previously impoverished groups can improve their living standards and escape the poverty cycle.

Cingano (2014) revisited the relationship between economic growth and poverty using data from various countries. The main finding was that economic growth does not always lead to significant poverty reduction. Factors such as income inequality and access to quality employment also play crucial roles in determining the impact of economic growth on poverty. Meanwhile, Hidayat R. (2018) studied the relationship between inclusive economic growth and poverty reduction. The finding was that inclusive economic growth, which involves all societal layers in the economic development process, has a more positive impact on reducing poverty levels than non-inclusive economic growth.

The relationship between income distribution and poverty levels is a crucial topic in economics and public policy. Equitable income distribution can be a significant factor in reducing poverty levels in a country (Breunig & Majeed, 2021; Deutsch et al., 2020;

Marrero & Servén, 2021). The study results show a positive and significant relationship between these two variables, indicating that the more equitably income is distributed, the lower the poverty level. This means that if income is distributed more evenly across society, fewer people will live below the poverty line. Equitable income distribution significantly impacts poverty levels, underscoring the importance of policies aimed at income redistribution to reduce poverty. By implementing redistribution policies, governments can transfer income from wealthier groups to poorer ones, thus reducing income inequality and poverty.

According to Fosu (2017), policies promoting inclusive and equitable economic growth can also help reduce income inequality and poverty. Inclusive economic growth ensures that the benefits of economic growth are shared evenly across all societal layers, not just the already wealthy. Thus, ensuring economic growth can be a long-term solution for reducing poverty. The findings showing a positive relationship between income distribution and poverty can be linked to various theories and other research. Classical economic theories by Adam Smith and David Ricardo emphasize the importance of free markets and competition in achieving economic efficiency. However, these theories also acknowledge the role of government in correcting income distribution inequalities through taxes and transfer policies (Breunig & Majeed, 2021; Jencova et al., 2015). Therefore, the findings showing a positive relationship between equitable income distribution and poverty levels support these ideas in the context of income redistribution by the government (Kurz, 2019).

The relationship between the Human Development Index (HDI) and poverty levels is a critical subject in development studies. The HDI is a composite measure used to evaluate human well-being by considering aspects such as life expectancy, educational attainment, and per capita income (Mukhtar et al., 2019). The findings indicating a negative relationship between these two variables suggest that the higher the HDI of a region, the lower the poverty level in that region. This implies that better human development, such as increased life expectancy, better access to education, and higher per capita income, can contribute to reducing poverty levels.

Some empirical studies also support the finding that the relationship between HDI and poverty may not be significant. Research by Syaifullah & Malik (2017), evaluating human development programs in various countries shows that although HDI increases, it is not always accompanied by a significant reduction in poverty levels. This suggests that other factors such as social policies, economic structures, and social inequalities may significantly influence poverty levels beyond what is measured by HDI. However, there are also studies with different results. Research by Yakunina & Bychkov (2015) shows a stronger relationship between HDI and poverty or even different overall relationships. This indicates the complexity of the relationship between human development and poverty and the need for further research to understand the factors influencing the linkage between these two variables.

The relationship between the Human Development Index (HDI) and poverty is a critical topic in development studies. HDI is a measure used to evaluate human well-being by considering aspects such as life expectancy, education level, and per capita income (Mukhtar et al., 2019). The findings indicating a negative but not significant relationship between these two variables suggest that while there is a tendency for higher HDI to be associated with lower poverty levels, this relationship is not statistically strong. This implies that other factors also influence poverty levels, and HDI may not fully capture all dimensions of poverty (Utami, 2020). HDI covers aspects such as life expectancy, access to education, and per capita income, but there may be other aspects of poverty that are not directly captured by HDI, such as access to decent jobs, food security, and basic infrastructure. This limitation suggests that while HDI can indicate general improvements in human development, it may not adequately reflect inequalities or the distribution of resources and opportunities that directly affect poverty levels.

Poverty alleviation has been a primary focus for many countries, including Indonesia, in achieving sustainable and inclusive development. As a developing country with a large and diverse population, Indonesia faces complex challenges in addressing poverty. The study results show that economic growth, income distribution, and HDI together significantly impact poverty in Indonesia. Economic growth is often seen as a key factor in reducing poverty. As a country's economy grows, more jobs are created, incomes increase, and access to basic services such as education and healthcare can be expanded. In Indonesia, stable and sustainable economic growth has played an important role in reducing poverty levels. Pro-poor development programs and economic policies have significantly contributed to improving the welfare of the Indonesian people.

CONCLUSION

Economic growth has a significant impact on the poverty level in Indonesia. Economic growth contributes to reducing poverty levels by opening new economic opportunities, creating jobs, and increasing people's incomes. The relationship between income distribution and poverty levels in Indonesia has a significant impact. The more equitable the distribution of income in society, the lower the poverty level. Meanwhile, the Human Development Index (HDI) and poverty levels in Indonesia show a negative relationship, indicating that the higher the HDI in a region, the lower the poverty level in that region. Simultaneously, economic growth, income distribution, and the Human Development Index (HDI) together have a significant influence on poverty in Indonesia.

The government needs to implement effective policies to reduce inequality in income distribution. This can be achieved through progressive taxation, cash transfers to poor families, and social protection programs that directly target those below the poverty line. Investment in education also needs to be increased to ensure broader access and better-quality education for all segments of society. Scholarship programs and educational assistance need to be expanded to help poor families so that their children can access quality education. Indonesia is a diverse country with significant regional variations in economic conditions, cultural practices, and social policies.

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