Determinants of poverty levels in Indonesia: The roles of economic growth, HDI, and unemployment

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Abstract
Poverty remains a major challenge that impedes sustainable development in Indonesia. Although a range of poverty alleviation programs has been implemented, reductions in the poverty rate have not been as substantial as expected. This condition suggests that economic growth and improvements in quality of life have not fully reached vulnerable groups, highlighting the need for empirical analysis to identify the factors shaping poverty levels. This study examines the effects of economic growth, the Human Development Index (HDI), and the unemployment rate on poverty in Indonesia. The study uses a quantitative approach with secondary time-series data from 2011 to 2023 obtained from Statistics Indonesia (BPS). Multiple linear regression is applied to test the relationships among variables. The findings indicate that economic growth and unemployment do not have a statistically significant effect on poverty levels in Indonesia. In contrast, HDI has a significant effect on poverty, underscoring the importance of improving human development through education, health, and a decent standard of living as a key pathway for poverty reduction.

Keywords: Poverty, GDP, HDI, Unemployment.

Abstrak
Kemiskinan masih menjadi permasalahan utama yang menghambat pencapaian pembangunan berkelanjutan di Indonesia. Meskipun berbagai program penanggulangan telah dijalankan, penurunan tingkat kemiskinan belum menunjukkan hasil yang optimal. Kondisi ini mengindikasikan bahwa pertumbuhan ekonomi serta peningkatan kualitas hidup belum sepenuhnya menjangkau kelompok masyarakat rentan, sehingga diperlukan kajian empiris untuk mengidentifikasi faktor-faktor yang memengaruhi tingkat kemiskinan. Penelitian ini bertujuan menganalisis pengaruh pertumbuhan ekonomi, Indeks Pembangunan Manusia (IPM), dan tingkat pengangguran terhadap tingkat kemiskinan di Indonesia. Penelitian menggunakan pendekatan kuantitatif dengan data sekunder deret waktu (time series) periode 2011–2023 yang diperoleh dari Badan Pusat Statistik (BPS). Analisis dilakukan menggunakan regresi linear berganda untuk menguji pengaruh antarvariabel. Hasil penelitian menunjukkan bahwa pertumbuhan ekonomi dan tingkat pengangguran tidak berpengaruh signifikan terhadap tingkat kemiskinan di Indonesia. Sebaliknya, IPM berpengaruh signifikan terhadap tingkat kemiskinan, yang menegaskan bahwa peningkatan kualitas manusia melalui dimensi pendidikan, kesehatan, dan standar hidup layak memiliki peran penting dalam menurunkan kemiskinan.

Kata kunci: Kemiskinan, PDB, IPM, Pengangguran.

1. Introduction

A country's economic growth is considered good if its gross domestic product growth rate is higher than its population growth rate. This can occur if GDP growth has a positive impact on public welfare, as economic development fundamentally aims to improve public welfare by boosting productivity, strengthening investment, developing human resources, and expanding employment opportunities (Budhijana, 2020). These dynamics are especially relevant for Indonesia, where demographic change continues to shape the scale and urgency of development challenges.

Indonesia is one of the developing countries with the largest population in ASEAN, contributing 41.049% of the total population of the ASEAN region in 2022 (https://kompas.com). Then, during the 2010-2020 period, Indonesia's population growth rate reached 1.25%, and it decreased to 1.13% in the 2020-2023 period. Based on the 2020 population census, Indonesia's population was recorded at 270 million people. Although the population growth rate continues to decline, the population continues to increase in absolute terms every year. During the 2010-2020 period, Indonesia's population increased by 32.56 million people, averaging 3.25 million per year. Meanwhile, in 2023, Indonesia's population is expected to be 278.698 million people, representing an increase of more than 8.5 million people per year (BKKBN, 2024)

A large increase in population will have a positive impact on a country's development (Saputra & Lubis, 2023). However, on the other hand, population growth can also have negative impacts in various fields if not properly anticipated (BKKBN, 2024). One of the negative impacts of population growth is poverty. Poverty is a complex problem in various developing countries, including Indonesia (Zuhdiyaty & Kaluge, 2018). The poverty condition of a country reflects the level of welfare of its people (Budhijana, 2020). Budhijana, (2020) stated that poverty can be caused by several influencing factors, including slow economic growth, a low human development index, and increasing unemployment.
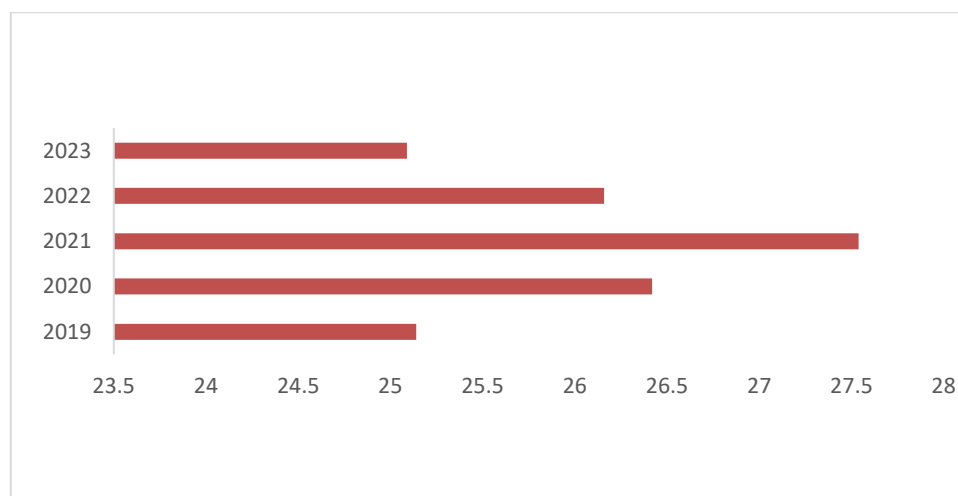

Figure 1. Poverty Rate Trends in Indonesia 2019-2023
Source: www.bps.co.id , 2023 (processed data)

Between 2019 and 2021, the Central Statistics Agency (BPS) reported that the poverty rate in Indonesia experienced a significant increase, peaking in 2021 when the poverty rate reached 27.54 million people, largely due to the impact of the COVID-19 pandemic. However, after that, the poverty rate in Indonesia continued to decline gradually until 2023, when the poverty rate reached 25.9 million people (www.bps.go.id). The trend in poverty rates in Indonesia over the last 5 years is illustrated in Figure 1.

Indonesia's GDP continues to experience changes due to various factors. As a developing country, the government plays a crucial role in ensuring a stable economy that is less susceptible to shocks from internal and external factors. In addition to GDP, the Human Development Index (HDI) significantly impacts poverty levels (Irawati & Pakereng, 2023). Budhijana, (2020) and Nufus & Husein, (2021) note that the Human Development Index (HDI) impacts poverty. This demonstrates that improved human quality is a contributing factor in reducing the number of poor and vulnerable populations. Syaifullah & Malik, (2017) also argue that an increase in the HDI indicates a higher quality of life and higher levels of well-being, ultimately leading to a reduction in poverty.

Another factor influencing poverty levels is the unemployment rate in a country. In both developing and developed countries, unemployment is a problem closely related to a country's poverty level (Dahliah, 2023). Azizah et al., (2023) also stated that a continuously increasing unemployment rate will hamper a country's economic productivity. Fadhilah et al., (2023); Azizah et al., (2023); Humam et al., (2022) and Dahliah, (2023) found that unemployment has a positive impact on poverty levels in Indonesia. This suggests that high unemployment rates have a significant impact on household income, thereby directly reducing people's purchasing power. This condition increases the risk that individuals will be unable to meet their basic needs, potentially pushing vulnerable groups into poverty (Prasetya & Sumanto, 2022).

Based on this background, a review is urgently needed to analyze the continued fluctuations in poverty levels, caused by several factors both before and after the COVID-19 pandemic, as well as the latest government policies aimed at reducing poverty in Indonesia. Therefore, the author is interested in examining the determinants of poverty levels in Indonesia from 2011 to 2023.

2. Literature Review
Economic Growth (GDP)

Economic growth is defined as an increase in aggregate output across all commodities produced through economic activity (Lubis et al., 2024). Furthermore, economic growth is defined as an effort to increase a country's production in order to achieve long-term increases in per capita expenditure on economic activity (Nur Arifianti & Hidayati, 2023). The stages of economic growth can be observed in a country's ability to develop and utilize its existing resources effectively and efficiently. Therefore, when the quality of a country's resources improves, the potential for economic growth increases (Lubis et al., 2024). *Gross Domestic Product* (GDP) is an indicator used by the Indonesian

government to measure national economic growth (Nurfitiah & Fathoni, 2023). GDP plays a significant role in determining the rate of economic growth achieved by a country each year (Egita et al., 2024).

Susanto & Pangesti, (2021) stated that continuous economic growth can reduce poverty levels, provided the rate of economic growth proceeds in a coordinated and planned manner through efforts to create equal opportunities and share development outcomes among all levels of society. Research by Suci et al., (2023) and Budhijana, (2020) indicates that GDP has no significant impact on poverty levels. Meanwhile, research by Azizah et al., (2023), Yahya, (2023), and Kusuma & Iskandar, (2022) found that GDP has an insignificant positive impact on poverty levels.

H1: Economic growth has no effect on poverty in Indonesia

Human Development Index (HDI)
The Human Development Index (HDI) is an index used to calculate the average of life expectancy, literacy (education), and a decent standard of living (Dahliah, 2023). The HDI serves as a snapshot of the results of development programs implemented by the government in the preceding year. The HDI is used to measure and demonstrate the progress of development programs from their inception to their completion over the period. Therefore, the HDI serves to explain how the population can effectively access development outcomes, such as income, healthcare, education, and others (Budhijana, 2020).

Research conducted by Aprilliyanto et al., (2024) and Arifin et al., (2022) found that the HDI had no impact on poverty levels. However, research by Aini & Islamy, (2021), Kusuma & Iskandar, (2022), Dahliah, (2023), and Suci et al., (2023) found that the HDI had a significant negative impact on poverty levels in Indonesia.

H2: The Human Development Index has a significant negative effect on the poverty rate in Indonesia.

Unemployment Rate
Unemployment is a situation where individuals actively seek employment but have not yet found it. Open unemployment occurs when the rate of job growth is slower than the increase in the workforce. High unemployment rates reflect the lack of success in a country's development due to an imbalance between labor demand and job availability (Aini & Islamy, 2021)**.** Increasing unemployment rates directly impact poverty levels, which will increase. Sukirno, (2016), in Budhijana, (2020) research, explains that reduced income due to unemployment ultimately results in decreased community welfare. Research conducted by Budhijana, (2020), Fadhilah et al., (2023), and Yahya, (2023) stated that unemployment has a significant positive impact on poverty levels.

H3: The unemployment rate has a significant positive effect on the poverty rate in Indonesia.

3. Research Methods

This study employs a quantitative approach, utilizing *time series data* for the period 2011-2023 with a monthly frequency of data. The data in this study utilize secondary data, which were obtained from https://bps.go.id. The software used by the researcher to support this research is EViews 12 and Microsoft Excel. The poverty rate (PL) is the dependent variable. Then, economic growth is projected using the GDP, the human development index (HDI), and the unemployment rate, as measured by the open unemployment index (UR).

The analysis method used in this study is multiple linear regression, which aims to predict the condition (rise and fall) of the dependent variable when two or more independent variables, serving as predictor factors, are manipulated (i.e., their value is increased or decreased) (Sugiyono, 2019). The multiple linear regression equation in this study is as follows:

$$PL = \beta 0 + \beta 1 GDP + \beta 2 HDI + \beta 3 UR + + \mu$$

Where:
PL   : poverty level
GDP   : domestic product
HDI   : human development index
UR   : unemployment rate
β0   : constant
β1-β5 : multiple regression coefficients
μ   : standard error

4. Results and Discussion

4.1. Research results
Descriptive Statistics

Table 2. Descriptive Statistics Test Results

Variables	Mean	Max	Min	Std. Deviation
Poverty	6,323	14,1000	1,8000	4,010
GDP	4,610	6,170	-2,070	2,093
HDI	70,768	74,390	67,090	2,381
Unemployment	41,536	42,780	33,080	5,041

From Table 2, it can be seen that the maximum value of the poverty variable (dependent variable) is 14.8000, the minimum value is 1.8000, with a mean value of 6.323 and a standard deviation of 4.010. Then, in the economic growth variable, the maximum value is 6.170, the minimum value is -2.070, and the mean value is 4.610 with a standard deviation value of 2.093. This means that the standard deviation value is smaller than the mean value, indicating that economic growth experienced less improvement during the research period. In the Human Development Index variable, the highest value is 74.390, the lowest value is 67.090, and the average value is 70.768, with a standard deviation of 2.381. Meanwhile, for the unemployment rate variable, the highest value was 51.530, the lowest value was 33.080, and the average value was 41.536, with a standard deviation of 5.041. This indicates that the GDP, HDI,

unemployment rate, and poverty rate variables performed well, as the standard deviations indicated smaller deviations from the mean.

Classical Assumption Test

Table 3. Classical Assumption Test Results

Tests		GDP	HDI	UR
Multicollinearity	VIF	1,630	4,628	3,790
Heteroscedasticity	Glejser	0.221	0.767	0.846
Autocorrelation	LM Test	0.259		
Normality	Jarque-Bera	0.667		

According to Table 3, it can be seen that the results of the multicollinearity test using the VIF (*Variance Inflation Factor) indicate values of 1.630 for* the GDP variable, 4.628 for the HDI, and 3.790 for unemployment. These results indicate that the value is smaller than 10.00, suggesting that the data in the study do not exhibit symptoms of multicollinearity. Then, the results of autocorrelation using the *Lagrange Multiplier method* are 0.259, which means that the value is greater than 0.05 (0.146>0.05). These results indicate that the data in this study do not contain autocorrelation.

The results of the normality test using the *Jarque-Bera method* show that the probability value for all variables is 0.667, which indicates that this value is greater than 0.05 (0.667 > 0.05). This means that the data in this study are normally distributed. Then, the results of the heteroscedasticity test using the *Glejser method indicate* that the GDP variable has a value of 0.221, the HDI has a value of 0.767, and unemployment has a value of 0.846, this means that the values are greater than 0.05. Therefore, it can be stated that the data does not exhibit heteroscedasticity, and the model is suitable for use.

Multiple Linear Regression

Table 4. Multiple Linear Regression Results

Variable	Coefficient	Std.Error	t-Statistic	Prob.
Constant	99.76173	27,09488	3.681940	0.0062
GDP	0.152655	0.204151	0.747754	0.4760
HDI	-1.386382	0.305096	-4.544091	0.0019
Unemployment	0.000983	0.001348	0.729729	0.4864
F-static	43.06887			
Prob (F-statistic)	0.000028			
R-Squared	0.941694			
Adjusted R-Square	0.919829			

In Table 4, the results of the t-test (partial test) show that the probability value of the GDP variable (projection of economic growth) (GDP) is 0.4456, which is greater than 0.05 (0.4760 > 0.05). This indicates that the GDP variable (GDP) has no significant effect on the poverty rate in Indonesia. Then, for the HDI variable (HDI), the probability value is 0.0013, which is smaller than 0.05 (0.0013 < 0.05). This shows that the HDI variable (HDI) has a significant effect on the poverty rate in Indonesia. And for the unemployment variable (UR), the probability value is 0.3323, which is greater than 0.05

(0.3323 > 0.05). This indicates that the unemployment variable has no impact on the poverty rate in Indonesia.

The results of the simultaneous test (F-test) show that the probability value is 0.000028, which is smaller than 0.05 (0.000028 < 0.05). This indicates that simultaneously, both GDP, HDI, and unemployment variables collectively have a significant effect on the poverty rate in Indonesia. Meanwhile, the coefficient determination (R^2) of 0.919829 indicates that approximately 91% of the poverty rate in Indonesia is influenced by factors outside the scope of this research.

5.2. Discussion

Economic Growth and Poverty in Indonesia

The study finds that economic growth, proxied by GDP, does not translate into a direct reduction in Indonesia's poverty rate. The increase in GDP has not been effective enough to directly reduce poverty rates, possibly due to the uneven distribution of economic growth. This means that growth has not yet reached all levels of society, particularly among low-income groups. Suci et al., (2023) stated that this growth has not occurred directly in sectors where the poor are employed, such as agriculture or labor-intensive sectors.

The results of this study align with those of Budhijana, (2020), Arifin & Hendriyani, (2022), and Suci et al., (2023), who found that economic growth had no effect on poverty levels in Indonesia. This suggests that existing economic growth is more supported by the consumer sector than by the capital or investment sector. Low economic growth also suggests that existing economic growth is of poor quality and, therefore, unable to reduce poverty levels (Budhijana, 2020)

Human Development Index and Poverty Levels in Indonesia

The study finds that the Human Development Index (HDI) has a substantial impact on poverty levels in Indonesia. Fundamentally, the HDI itself comprises three primary dimensions: education, health, and a decent standard of living, which are key factors in determining human quality. In this context, improvements in the quality of education, health, and the standard of living of the community can significantly reduce poverty levels in Indonesia. Nufus & Husein, (2021) also stated that improving the quality of human life will be one of the supports in reducing the poverty population.

This research aligns with Dahliah, (2023); Kusuma & Iskandar, (2022), and Suci et al., (2023), who found that the HDI has a direct impact on poverty levels in Indonesia. This means the government plays a crucial role in maintaining and improving the HDI in efforts to improve the quality of life and reduce poverty. Therefore, this study concludes that the HDI tends to reduce poverty levels in Indonesia.

Unemployment and Poverty Levels in Indonesia

The results indicate that the unemployment rate is not directly associated with changes in Indonesia's poverty rate. This diverges from the common assumption that higher unemployment necessarily leads to higher poverty. This is likely because the officially recorded open unemployment rate does not fully reflect the reality of employment and

poverty in Indonesia (Hakim & Wijaya, 2023).This may also be because in Indonesia, many people work in the informal sector who are not officially registered and have very low incomes. The results of this study align with those of Prasetya & Sumanto, (2022) and Suci et al., (2023), who found that the unemployment rate does not have a significant impact on poverty in Indonesia.

5. Conclusion

Based on the study's results and discussion on the determinants of poverty in Indonesia, economic growth, proxied by GDP, does not have a direct effect on the poverty rate. In contrast, the Human Development Index (HDI) influences poverty levels, indicating that improvements in education, health, and living standards are closely linked to poverty reduction. The unemployment rate also does not show a direct effect on poverty, which may reflect Indonesia's labor market structure where informal and low-quality employment is widespread and not fully captured by open unemployment measures. Taken together, economic growth, HDI, and the unemployment rate are jointly associated with changes in Indonesia's poverty rate over the 2011–2023 period.

Thus, improving the quality of education, health, and the standard of living of the community are important factors in reducing poverty. However, these three variables simultaneously have a joint influence on the poverty rate, which means that poverty alleviation efforts must be carried out comprehensively. Therefore, the policy implications that can be drawn from this study are the need for an integrated poverty alleviation strategy, one that not only encourages economic growth but also ensures the equitable distribution of development outcomes, expands decent employment opportunities, and improves the quality of human capital. To enrich the analysis in future studies, it is recommended to add other variables closely related to poverty dynamics, such as inflation, income inequality, investment, minimum wage levels, and financial access, so that the results of the study can provide a more comprehensive picture of the factors that influence poverty in Indonesia.

Acknowledgements

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