

MACROECONOMIC DETERMINANTS OF POVERTY IN YOGYAKARTA

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Abstract

This study aims to analyze the factors influencing poverty in Yogyakarta from 2021 to 2025. The variables used in this study are the Human Development Index (HDI), unemployment, and Gross Regional Domestic Product (GRDP). This study is expected to analyze how and to what extent the aforementioned independent variables influence poverty in Yogyakarta, which is ultimately expected to serve as a basis for formulating policies to reduce poverty in Yogyakarta. This study uses panel data from five regencies/cities during the period of 2021-2025. The data used is secondary data obtained from the Central Statistics Agency (BPS) of Yogyakarta. The analysis technique used in this study is panel data regression with a Random Effect Model (REM) approach. The results indicate that the Human Development Index has a negative and significant effect on poverty in Yogyakarta while, the unemployment and GRDP variables do not have a significant effect on the poverty level in Yogyakarta.

Keywords: Human Development Index, Unemployment, Gross Regional Domestic Product, Poverty.

INTRODUCTION

Over the past few decades, poverty has continued to be a pressing global issue. Poverty eradication efforts are integrated as one of the main pillars in the 17 Sustainable Development Goals (SDGs) to realize an ideal and sustainable future. Although all countries have promoted various alleviation programs, poverty has not been completely resolved and remains a crucial problem that requires in-depth research. To date, severe poverty rates remain a structural constraint burdening the majority of developing and underdeveloped countries (Ruja et al., 2024). The Indonesian government has implemented numerous programs to alleviate poverty; however, the poverty rate in Indonesia remains high. The poverty rate in Indonesia in 2025 stands at 8.25%. The largest number of poor people is located on the island of Java. Java Island consists of six provinces, with the three largest populations of poor people located in East Java, Central Java, and West Java. However, in terms of the percentage of poor people, the Special Region of Yogyakarta Province has the highest rate at 10.23%. This is despite the fact that among the six provinces on Java Island, Yogyakarta is the smallest province. The poverty rate in Yogyakarta Province is still higher than the national poverty rate; therefore, this poverty issue must be further researched.

The quality of human resources is a contributing factor to poverty. This can be seen from the Human Development Index (HDI), which consists of three dimensions: health, education, and purchasing power. This is a development indicator that is negatively correlated with poverty conditions in a given region. Therefore, the higher the HDI value of a region, ideally the better the quality of life of the community and the lower the poverty rate (Priambodo, 2021).

In addition to the Human Development Index, another indicator used to determine the number of poor people in the regencies/cities in Yogyakarta Province is the unemployment rate in those areas, as unemployment is a demographic issue closely related to poverty. Unemployment

can be caused by the increase in the new labor force that occurs every year, while labor absorption does not increase proportionally. A high unemployment rate leads to low income, which subsequently triggers the emergence of poverty (Syaifullah, Gandasari, 2024).

Furthermore, there is another factor, namely the Gross Regional Domestic Product (GRDP). A high GRDP in a region indicates that the region has a strong economy. Conversely, a low GRDP signifies that the region's economy is not in a favorable state. The economy in question refers to one that can support the community's livelihood, thereby preventing poverty. A high GRDP will reduce the poverty rate, because with a high GRDP, development can be optimized to achieve community welfare (Damanik, 2016).

While previous studies have extensively examined the macroeconomic determinants of poverty, this research offers a novel contribution by contextualizing statistical findings within the specific, contemporary socio-economic dynamics of the Special Region of Yogyakarta. First, this study extends the understanding of the Human Development Index (HDI) by linking educational quality to the community's rapid adaptation to the digitalization of the economy post-pandemic. Second, it spatially unpacks the unemployment paradox by distinguishing the "working poor" phenomenon in rural areas from the "educated unemployment" concentrated in urban and educational hubs. Finally, this research addresses the anomaly of Gross Regional Domestic Product (GRDP) by specifically attributing the lack of a trickle-down effect to recent capital-intensive mega-projects, such as the Yogyakarta International Airport (YIA) ecosystem and toll road construction. These contextualizations bridge the gap between macroeconomic data and the structural realities occurring in Yogyakarta.

Based on the elaboration described above, the author is interested in analyzing the factors that influence poverty in the Special Region of Yogyakarta.

LITERATURE REVIEW AND HYPOTHESIS FORMULATION

Grand Theory: Kuznets' Inverted-U Hypothesis

The theoretical framework of this study is anchored in the Inverted-U Hypothesis developed by Simon Kuznets (1955). This theory posits that in the early stages of economic development, represented by an increase in Gross Regional Domestic Product (GRDP), income inequality tends to rise before eventually declining as the economy matures. This phenomenon suggests that rapid economic growth does not automatically translate into poverty reduction, especially if the growth is concentrated in capital-intensive sectors that do not facilitate a "trickle-down effect" to the lower-income groups (Müller-fürstenberger & Wagner, 2006).

In the context of the Special Region of Yogyakarta, the transition toward a modern service and infrastructure-based economy highlighted by mega-projects such as the Yogyakarta International Airport (YIA) and toll road construction often leaves the traditional agricultural sector behind. Consequently, while the GRDP increases, the benefits are predominantly captured by capital owners and skilled labor, failing to significantly impact the poverty rate of rural populations who remain in low-productivity sectors. This theoretical lens provides a critical basis for understanding why economic growth in Yogyakarta may not show a significant correlation with poverty Alleviation.

Poverty

There are many definitions and concepts regarding poverty. The World Bank defines poverty as deprivation, which is often measured by the level of welfare. Meanwhile, according to the Central Statistics Agency (Badan Pusat Statistik, 2020), poverty refers to an individual classified as poor if they are unable to meet their basic needs; in other words, poverty is viewed as an economic inability to fulfill basic needs, both food and non-food, measured from the expenditure side. Furthermore, according to Kuncoro (as cited in Damanik, 2016), poverty is the inability to meet the minimum standard of living. The needs that must be fulfilled consist of clothing, shelter, and health.

There are three factors causing poverty, namely: a) poverty arises due to the lack of equality in resource ownership patterns, leading to unequal income distribution; b) poverty arises due to differences in the quality of human resources; and c) poverty arises due to differences in access and capital.

Ragnar Nurkse (1953), renowned for his theory on the vicious circle of poverty, stated that the underdevelopment of human resources reflected by a low HDI market imperfections, and a lack of capital result in low productivity. Low productivity leads to a decrease in received income, which is reflected in low wages earned below the minimum standard. Low wages will be associated with low consumption, savings, and investment; low investment results in low capital accumulation, causing a low rate of job creation, which is reflected by low labor absorption. The low capital accumulation is caused by underdevelopment and so forth (Salsabilla et al., 2019).

The Effect of Human Development Index on Poverty

One of the factors influencing poverty is education. The HDI variable consists of three components: health status and longevity as indicated by life expectancy, education as measured by the literacy rate and the mean years of schooling, and income as measured by public purchasing power (Yektiningsih, 2018). An individual's increase in education is often associated with an increase in income or wages earned. If wages reflect productivity, then the more people who have a high level of education or training experience, the higher their productivity, and consequently, the national economy will grow higher. In addition to education, health also plays a vital role in increasing income. The impact of health on income includes the fact that improved population health will increase labor force participation. Improvements in health can also lead to improvements in educational levels and the development of personal potential, which subsequently contributes to economic growth through increased income (Prasetyoningrum, 2018).

The Effect of Unemployment on Poverty.

Unemployment is a problem faced by various regions, including the Special Region of Yogyakarta. According to the (Badan Pusat Statistik, 2014), unemployment refers to the number of the labor force who are not working and are actively looking for work. Meanwhile, the technical definition of unemployment includes all individuals within a certain period (working-age population) who are not working, either for wages or self-employment, and are actively seeking employment. According to Kuncoro (as cited in Prasetyoningrum, 2018), the unemployed are those who are looking for work, those preparing a business, or those who are not looking for work because they feel it is impossible to find a job (previously categorized as working), and at the same time, they are not working. Unemployment defined by this concept is usually referred to as open unemployment.

The Effect of Gross Regional Domestic Product on Poverty

Gross Regional Domestic Product is one of the indicators used to measure the economic performance of a region over a certain period. GRDP represents the total value added generated by all business units in a specific area and can also be defined as the sum of the value of final goods and services produced by all economic units (Badan Pusat Statistik, 2025). The purpose of calculating GRDP is to assist the government in formulating regional policies or planning, evaluating development outcomes, and providing information that can illustrate regional economic performance. Economic growth is an indicator to assess the success of development and is a necessary condition for reducing poverty levels. The sufficient condition is that this economic growth is effective in reducing poverty rates. This means that such growth should spread across every income group, including the poor population (Giovanni, 2013).

This study examines the effect of three independent variables (Unemployment, HDI, and GRDP) on one dependent variable (poverty). Therefore, the hypotheses can be formulated as follows:

H1: Unemployment has a significant effect on the poverty rate in the Regencies/Cities of the Special Region of Yogyakarta.

H2: The Human Development Index (HDI) has a significant effect on the poverty rate in the Regencies/Cities of the Special Region of Yogyakarta.

H3: Gross Regional Domestic Product (GRDP) has a significant effect on the poverty rate in the Regencies/Cities of the Special Region of Yogyakarta.

RESEARCH METHODS

The type of research used in this study is causal associative research. Causal associative research is a study aimed at analyzing the relationship between one variable and another or how one variable affects another variable. The data used in this study are secondary data. Secondary data are data obtained in a ready-made form, having been collected and processed by other parties, usually already in the form of publications. The data obtained for this study originated from the Central Statistics Agency of Yogyakarta. The data consist of the poverty rate, open unemployment rate, human development index, and economic growth rate.

The data analysis technique used in this study employs multiple linear regression analysis using panel data, which is processed using the EViews 12 program. The panel data referred to in this study is a combination of the research period (from 2020 to 2025) and the data for all variables observed per regency/city in Yogyakarta Province (comprising Kulon Progo Regency, Gunungkidul Regency, Bantul Regency, Sleman Regency, and Yogyakarta City). There are several methods commonly used to estimate regression models with panel data, namely the Common Effect, Fixed Effect, and Random Effect approaches. The selection of the best-fitting model to be used for the analysis is conducted in two ways: first, by using the Chow test to choose between the Common Effect Model or the Fixed Effect Model; second, by using the Hausman test to choose between the Fixed Effect Model or the Random Effect Model. The final step evaluates the model's goodness of fit and the statistical significance of the variables. Initially, the R-squared analysis is presented to measure how well the independent variables explain the dependent variable. Once the model's explanatory power is established, hypothesis testing is performed. This includes the F-test to verify the simultaneous significance of all independent variables, and the t-test to evaluate the partial significance of each individual regression coefficient against the dependent variable (Iqbal, 2015).

RESULTS AND DISCUSSION

Model Selection Technique

Based on the results of the Chow Test, the Probability value is $0.0000 < 0.05$, thus the selected model is the Fixed Effect Model (FEM). Subsequently, in the Hausman Test, the Probability value is $0.1571 > 0.05$, so the selected model is the Random Effect Model (REM). Because the Chow Test and the Hausman Test selected different models, a further test using the Lagrange Multiplier Test was necessary. From the results of the Lagrange Multiplier Test, the Probability value is $0.0000 < 0.05$, indicating that the selected model is the REM. This means that in this study, the best estimation method used is the Random Effect Model.

Coefficient of Determination

The R^2 value of 0.7974 means that the poverty variable can be explained by the HDI, unemployment, and GRDP variables by 79.74%, while the remaining 20.26% is explained by other variables outside of this research model.

T-test

Based on the regression results, the Human Development Index (HDI) has a probability value of 0.0000, which is less than $\alpha=5\%$ ($p < 0.05$). Thus, statistically, the HDI variable has a significant

effect on poverty. It can be concluded that H_0 is rejected, meaning the HDI variable influences the dependent variable. Therefore, Hypothesis 1 is accepted.

Based on the regression results, unemployment has a probability value of 0.1990, which is greater than $\alpha=5\%$ ($p > 0.05$). Thus, statistically, the unemployment variable does not have a significant effect on poverty. It can be concluded that H_0 is accepted, meaning the unemployment variable has no influence on the dependent variable. Therefore, Hypothesis 2 is rejected.

Based on the regression results, GRDP has a probability value of 0.5628, which is greater than $\alpha=5\%$ ($p > 0.05$). Thus, statistically, the GRDP variable does not have a significant effect on poverty. It can be concluded that H_0 accepted, meaning the GRDP variable has no influence on the dependent variable. Therefore, Hypothesis 3 is rejected.

F-Test

The F-statistic probability value of 0.0000 is less than $\alpha=5\%$ ($p > 0.05$), so it can be concluded that the independent variables (HDI, Unemployment, GRDP) simultaneously have a significant effect on the dependent variable (poverty).

The Effect of the HDI on Poverty in the Regencies/Cities of the Special Region of Yogyakarta

The results of the Random Effect Model test prove that the HDI has a significant effect on poverty in the Regencies/Cities of Yogyakarta. This is in line with the hypothesis that the HDI affects poverty, so H_1 is accepted. HDI is measured, among other things, by the indicators of mean years of schooling and expected years of schooling. Communities in regencies/cities such as Sleman, Bantul, and Yogyakarta City with higher education will have better skills and competitiveness. This makes it easier for them to be absorbed into the formal labor sector or to create their own employment (MSMEs/creative industries), which are thriving in Yogyakarta. Post-pandemic (2021-2022), the digitalization of the Yogyakarta economy has grown rapidly. A population with adequate education adapts more quickly to the digital economy, thereby preventing them from falling into the abyss of poverty. This test result is in line with research by Prasetyoningrum (2018), which proved that HDI has a negative effect on poverty rates across all provinces in Indonesia.

The Effect of the Unemployment on Poverty in the Regencies/Cities of the Special Region of Yogyakarta

The results of this Random Effect Model test prove that unemployment does not have a significant effect on poverty in the Regencies/Cities of Yogyakarta. This is not in line with the hypothesis that unemployment significantly affects poverty, so H_0 is accepted. This is due to the phenomenon of the "working poor." The majority of rural communities in regencies like Gunungkidul, Kulon Progo, and Bantul work in subsistence agriculture or as informal workers (odd-job laborers and small traders). Because they are working, statistically, they are not recorded as unemployed. However, the income they earn from these jobs is very low and falls below the poverty line. Consequently, the unemployment rate may drop or remain low, but the poverty rate remains high. In addition, there is the presence of "educated unemployment" in Yogyakarta, particularly in Sleman Regency and Yogyakarta City. These fresh graduates are unemployed, but they do not originate from the poor population group. Therefore, the fluctuation of the unemployment rate in this group does not affect the number of poor people in Yogyakarta at all. This test result aligns with research by Syaifullah, Gandasari (2024), which proved that unemployment has no significant effect on the poverty rate in 6 Regencies/Cities in Banten Province.

The Effect of the GRDP on Poverty in the Regencies/Cities of the Special Region of Yogyakarta

The results of this Random Effect Model test prove that GRDP does not have a significant effect on poverty in the Regencies/Cities of Yogyakarta. This contradicts the hypothesis that GRDP significantly affects poverty, hence H_0 is accepted. This occurs due to highly severe income inequality (Gini ratio). GRDP growth in Yogyakarta is mostly enjoyed by the middle to upper classes,

such as capital owners, property developers, and players in the modern service sector. Wealth does not trickle down (the trickle-down effect does not function), meaning economic growth expands, but the share received by the poor remains small. Furthermore, Yogyakarta's GRDP is largely driven by the accommodation, tourism, education, and construction sectors, such as the construction of toll roads and the Yogyakarta International Airport (YIA) ecosystem. These sectors are capital-intensive or require labor with specialized skills. Meanwhile, the majority of the poor population in Yogyakarta resides in rural areas and works in the traditional agricultural sector, which has low productivity and added value. This is consistent with research by Hafiz Nabawi (2020), which proved that the GRDP variable did not significantly affect poverty in Malang City due to unequal economic growth that failed to spread across all elements of society.

CONCLUSION

The Human Development Index (HDI) exerts a significant influence on poverty levels across the regencies and cities of the Special Region of Yogyakarta. This correlation stems from the fact that the population in DIY possesses higher levels of education, specialized skills, and superior competitiveness. Such attributes facilitate their absorption into the formal labor market or empower them to establish independent enterprises, particularly within the MSME and creative sectors that flourish in the region, thereby insulating them from the poverty trap.

Conversely, unemployment does not show a statistically significant effect on poverty in the regencies and cities of Yogyakarta, a phenomenon primarily attributed to the "working poor." A significant portion of the rural population is engaged in subsistence agriculture or informal labor, such as casual daily work and petty trading. Since these individuals are actively working, they are not categorized as unemployed in official statistics; however, the income generated from these activities remains marginal and falls below the official poverty line.

Furthermore, Gross Regional Domestic Product (GRDP) lacks a significant impact on poverty reduction in Yogyakarta due to a pronounced income inequality, as reflected in the high Gini ratio. Economic growth, as indicated by GRDP, is predominantly captured by the middle-to-upper-income groups. Consequently, while the regional economy expands, the proportion of wealth reaching the impoverished segments of society remains negligible.

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