
ANALYSIS OF POVERTY DETERMINANT FACTORS BASED ON INDONESIAN PROVINCE DATA 2017-2023

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Abstract

This study aims to identify factors contributing to poverty in Indonesia and map the distribution of poverty levels. The data used in this study are secondary data sourced from the Central Statistics Agency (BPS). This is panel data, a combination of time-series and cross-sectional data covering 34 provinces in Indonesia for 2017-2023, with multiple linear regression and selection of the best regression model using the Chow test and the Hausman test. The independent variables used are Education, GRDP, TPT, and the Human Development Index. The results show that Education, with the number of schools (Primary Schools, Junior High Schools, and Senior High Schools), has a significant positive effect; GRDP has a significant negative effect; TPT has a significant negative effect; and the Human Development Index has a significant negative effect. Mapping the distribution of poverty levels with the GeoMaps feature in the Orange Data Mining application is a visualization technique used to understand the distribution of poverty in various regions geographically. The purpose of utilizing Orange is to provide a platform for predictive models and recommendation systems.

Keywords: Poverty, Determinant, Indonesian Province Data

INTRODUCTION

In general, poverty can be defined as a state or condition in which an individual is unable to meet the needs for survival. These needs include food, clothing, and shelter, or necessities (Abram and Yeniwati, 2021). Poverty is a reality that cannot and cannot be eliminated. Poverty arises from differences in abilities, opportunities, and resources. In the life of a nation, poverty is a persistent problem. Poverty is a complex issue with multiple interdependencies (Sofa & Wicks, 2017).

Poverty is the reason for Indonesia's low Human Development Index. Overall, the quality of Indonesian human resources is relatively low compared to other countries in the world. The United Nations Development Programme (UNDP) ranked Indonesia's HDI 107th out of 189 countries in 2020. In the same year, the number of poor people in Indonesia reached 30 million, 37% of whom lived in urban areas and 63% in rural areas (Susanto and Pangesti 2019). The Human Development Index (HDI) is a breakthrough in assessing human development. The Human Development Index is one of the benchmarks for a region's development, negatively correlated with poverty levels in that region (Nopriansyah, Junaidi, and Umiyati 2015).

Figure 1.
Number of Poor People in Indonesia 2017-2023 (in thousands of people)

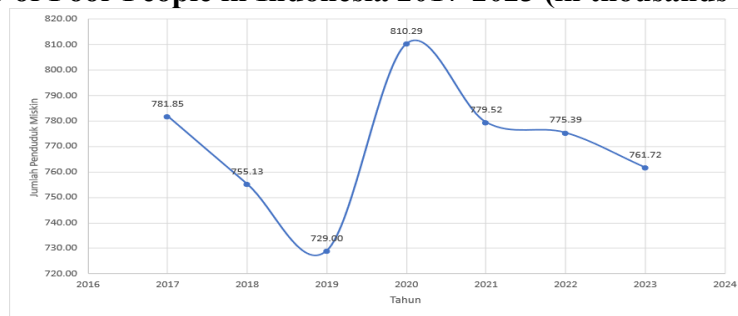


Figure 1. shows the trend in the number of poor people in Indonesia from 2017 to 2023. In 2017, the number of poor people was recorded at 781.85 thousand. This figure decreased in the following years, to 755.13 thousand in 2018, and reached its lowest point in 2019 at 729,000. However, in 2020, there was a significant spike to 810.29 thousand, likely due to the economic impact of the COVID-19 pandemic. After that, the number of poor people decreased again, to 779.52 thousand in 2021 and 775.39 thousand in 2022. In 2023, the number of poor people continued to decline to 761.72 thousand. These data indicate that despite post-pandemic improvements, the number of poor people has not yet returned to its lowest level in 2019.

Poverty is a complex problem faced by many developing countries, including Indonesia. One key factor contributing to poverty alleviation efforts is education. The availability of educational facilities, which can be measured by the number of schools, plays a significant role in improving public access to and the quality of education. According to Todaro and Smith (2011), education is crucial to an economy's ability to achieve sustainable development and growth, as well as its ability to adapt to modern technology in the future. Education has a significant influence and benefits on poverty reduction, thus demonstrating

the need for education, as well as improving the quality of education and easy access to education (Iqbal Salsabil and Westi Rianti 2023).

Education can be a path to progress for a country. The skills and knowledge a person acquires come from a good education. These skills and knowledge can be used to increase the chances of achieving prosperity by increasing the chances of earning a decent income (Adhitya, Prabawa, and Kencana 2022). The more schools available, the more people, especially those from poor families, have the opportunity to receive an education. Better education will improve the skills and competitiveness of the workforce, ultimately reducing the risk of poverty. Regions with a small number of schools are often those lagging in development. Inequality in the distribution of schools can reflect inequality in economic development, contributing to high poverty rates in those regions.

Poverty is also a chronic problem, and the government must study to monitor its development and monitor its progress. One factor that can influence poverty is the Gross Domestic Product (GDP). A high GDP in a region indicates a healthy economy, while a low GDP indicates a poor economy. A high GDP in a region is considered high if the region can optimize its potential by utilizing adequate facilities and infrastructure. A high GDP will reduce poverty levels because it optimizes development, thus achieving community welfare. Conversely, a low GRDP will increase poverty levels because development efforts to improve community welfare are not optimal (Damanik & Sidauruk, 2020).

Figure 2.

TPT in Indonesia 2017-2023 (in Percentage Units)

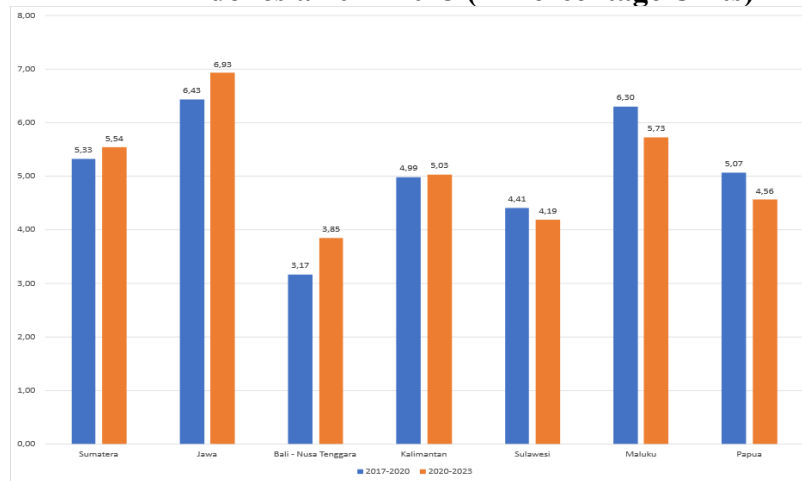


Figure 2 shows a comparison of the average Open Unemployment Rate across Indonesia. In general, the open unemployment rate in most regions increased after 2020, although there were variations between regions. Jawa recorded the highest unemployment in both periods, increasing from 6.43% in 2017–2020 to 6.95% in 2020–2023. In contrast, Bali-Nusa Tenggara had the lowest unemployment, although there was an increase from 3.17% to 3.85%, reflecting the significant impact of the COVID-19 pandemic. On the other hand, Maluku experienced a decrease in unemployment from 6.30% to 5.75% between the two periods.

Open unemployment occurs due to relatively slow job growth and rapid labor force growth. High unemployment reflects a country's lack of development success, as there is an imbalance between the labor force and available jobs.

Unemployment is defined by the International Labour Organization (ILO) as a group of people within the working age group who are unemployed for a certain period of time (Ishak et al., 2020). People who fall into the productive or working age category are those aged between 15 and 65. Unemployment generally occurs due to a disproportionate number of workers, or people looking for work, compared to the number of available jobs (Bulelang Manpower Office, 2019).

The quality of human resources can also be a contributing factor to poverty. Human resource quality can be seen from the quality of life index/human development index. A low HDI will result in low work productivity of the population. To produce quality human resources, efforts are needed to improve the quality of human resources. Human quality can be measured through the HDI (Ridho Andykha, Herniwati Retno Handayani, and Nenik Woyanti, 2018). According to Mulyadi (2003), improving human quality can be achieved through various policies. Educational development will also pay attention to the direction of economic development in the future. Health development must receive attention by instilling a healthy lifestyle and expanding the scope and quality of health services. For the poor, quality improvement is carried out by providing practical skills.

In the context of economic development in a region, the Human Development Index (HDI) is established as one of the main measures included in the regional development basic pattern. This indicates that the HDI occupies a crucial position in regional development management. The function of the HDI and other human development indicators will be key to the implementation of targeted planning and development. The HDI, which is a benchmark for a region's development, should have a positive correlation with the condition of poverty in that region because it is expected that a region with a high HDI, ideally, will also have a high quality of life for the community. It can also be said that if the HDI value is high, then the level of poverty in the community should be low (Kurnia Lismawati, 2007). Based on the explanation above, this study will discuss "Analysis of Factors Influencing Poverty in Indonesia".

RESEARCH METHOD

Research on the analysis of the determinants of poverty in Indonesia. The study was conducted in 34 provinces in Indonesia. This study focuses on analyzing the factors influencing poverty levels in Indonesia by examining the impact of education, health, and technology as independent variables on poverty as the dependent variable. This study uses quantitative methods and cross-sectional data from 2023. According to Sugiyono (2019), a quantitative approach is a research method that uses numbers to test hypotheses.

This research is a quantitative research with secondary data obtained from the Central Statistics Agency (BPS). <https://www.bps.go.id/>. The variables used in this study are poverty as the dependent variable and education, with proxies of the number of schools, GRDP, Open Unemployment Rate, and Human Development Index as independent variables. The secondary data used is panel data, namely a combination of time series data from 2017-2023 and cross-section data used, namely 34 provinces. According to (Sugiyono 2019), secondary data is data obtained indirectly by researchers, secondary data is obtained through intermediaries, such as through other people or through documents. The software used to process the data is Stata, and software to map the distribution of poverty levels using Orange Data Mining.

Data Analysis Techniques

1. Mapping the Distribution of Poverty Levels

In their research (Muharrom 2023), Hozairi et al. explained that the Orange application is an open-source data mining application capable of analyzing data. Mapping the distribution of poverty levels using the GeoMaps feature in the Orange Data Mining application is a visualization technique used to understand the distribution of poverty across various geographic regions. The purpose of utilizing Orange is to provide a platform for predictive models and recommendation systems.

2. Chow Test

The Chow test is a test carried out to select a good approach between the fixed effect model (FEM) and the common effect model (CEM). (Nandita et al. 2019). The provisions for the F-Stat/Chow Test are as follows:

- a. If the probability value of Cross-section F and Cross-section Chi-square is > 0.05 , then H_0 is accepted, and the regression model chosen is the Common Effect Model (CEM).
- b. If the probability value of Cross-section F and Cross-section Chi-square is < 0.05 , then H_0 is rejected, and the regression model chosen is the Fixed Effect Model (FEM).

3. Hausman Test

This test compares the fixed effect model with the random effect model in determining the best model to use as a panel data regression model. (Nandita et al. 2019). The provisions for the Hausman test are as follows:

- a. If the probability value of the random cross-section is > 0.05 , then H_0 is accepted
The regression model selected is the Random Effect Model (REM).
- b. If the probability value of the random cross-section is < 0.05 , then H_0 is rejected
The regression model selected is the Fixed Effect Model (FEM).

Parameter Significance Test

1. Coefficient of Determination (R²)

The coefficient of determination test essentially measures the model's ability to explain variation in the dependent variable. The coefficient of determination is either zero or one. A small R² value indicates that the independent variables' ability to explain the dependent variable is very limited. A value close to one indicates that the independent variables provide nearly all the information needed to predict variation in the dependent variable.

2. Partial Test (T-Test)

The t-test was conducted to determine the influence of each or partial independent variable (Education, Health, GRDP, unemployment, HDI, and Technology) on the dependent variable (Poverty).

3. Simultaneous Test (F Test)

The F-statistic test essentially indicates whether all independent variables included in the model have a joint influence on the dependent variable. This test also indicates that all independent variables simultaneously provide significant explanations for the dependent variable.

RESULTS AND DISCUSSION
Mapping the Distribution of Poverty Levels

Figure 3.
Distribution of Poverty Levels



Figure 3 shows the distribution of poverty rates across all Indonesian provinces. Dark blue to light blue indicates the highest poverty reduction (the largest reduction impact), green indicates a moderate reduction, and yellow to light yellow indicates a very small reduction or even an increase in poverty. Central Java, Yogyakarta, East Java, and West Java show a deep blue zone, indicating significant poverty reduction. Bali and West Nusa Tenggara (NTB) are also in the blue zone. DKI Jakarta appears to be relatively stable in poverty reduction (in the light blue zone).

Areas with Moderate Poverty Reduction (Green Zone), areas that experienced a decline in poverty but not too large, namely Central and South Sumatra, South Sumatra, Bengkulu, Lampung, Central & South Kalimantan, as well as most of Sulawesi, Maluku, and West Papua, are also in this zone. Areas with Low Decrease or Increase in Poverty (Yellow Zone): Several areas that appear yellow to light yellow experienced a very small decline in poverty or even an increase, namely North Kalimantan, Gorontalo, North Maluku, and most of Papua, some border areas or islands, such as the Riau Islands.

Chow Test

Table 1.
Chow Test

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    . xtreg JPM Sd Smp Sma PDRB TPT IPM, fe
    Fixed-effects (within) regression      Number of obs   =   238
    Group variable: Provinsi              Number of groups =   34

    R-sq:  within = 0.1599                 Obs per group:  min =    7
           between = 0.1715                 avg   =    7.0
           overall  = 0.1504                 max   =    7

    corr(u_i, Xb) = 0.3275                  F(6, 198)      =    6.28
                                           Prob > F       =    0.0000
    
```

	Coeff.	Std. Err.	t	P> t	[95% Conf. Interval]
Sd	-.0150664	.0103936	-1.45	0.149	-.0355628 .00543
Smp	.0445414	.0156504	2.85	0.005	.0136785 .0754042
Sma	-.0025051	.0718018	-0.03	0.972	-.1440995 .1390892
PDRB	-.0052856	.0241281	-0.22	0.827	-.0528666 .0422953
TPT	.0844252	.0157925	5.35	0.000	.0532821 .1155684
IPM	-.0322922	.0293875	-1.10	0.273	-.0902448 .0256604
_cons	112.7275	5.805025	19.42	0.000	101.2799 124.1751
sigma_u	67.857086				
sigma_e	4.9427758				
rho	.9947222	(fraction of variance due to u_i)			

```

    F test that all u_i=0:      F(33, 198) =   287.49      Prob > F = 0.0000
    
```

Table 1 shows the results of the Prob value > F is 0.0000, the Prob value < 0.05, which means that the selected regression model is the Fixed Model Effect.

Hausman test

Table 2.
Hausman Test

```

. hausman fe re

----- Coefficients -----
      (b)      (B)      (b-B)      sqrt(diag(V_b-V_B))
      fe      re      Difference      S.E.
-----+-----+-----+-----+-----
Sd      -.0150664    -.0135706    -.0014958      .
Smp      .0445414     .0401542     .0043872      .
Sma      -.0025051     .3262858     -.328791      .0160406
PDRB     -.0052856     -.0103405     .0050548      .
TPT      .0844252     .0867052     -.00228      .
IPM      -.0322922     -.0617271     .0294349      .
-----+-----+-----+-----+-----

      b = consistent under Ho and Ha; obtained from xtreg
      B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

      chi2(6) = (b-B)'[(V_b-V_B)^(-1)](b-B)
              =      346.07
      Prob>chi2 =      0.0000
      (V_b-V_B is not positive definite)
    
```

Table 2. shows the results of the Prob value > chi2 is 0.0000, the Prob value < 0.05, which means that the selected regression model is the Fixed Effect Model (FEM).

Fixed Effect Model (FEM) Estimation

After model selection, the chosen model was the Fixed Effect Model. The fixed effect model (FEM) is a model with different intercepts for each subject (cross-section), but the slope for each subject does not change over time (AstyanDewintha et al. 2025). The following are the FEM results:

Table 3.
Fixed Effect Model Estimation Results

Fixed-effects (within) regression		Number of obs	=	238
Group variable: Provinsi		Number of groups	=	34
R-sq: within	= 0.1599	Obs per group: min	=	7
between	= 0.1715	avg	=	7.0
overall	= 0.1504	max	=	7
corr(u_i, Xb) = 0.3275		F(6,198)	=	6.28
		Prob > F	=	0.0000

JPM	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
Sd	-.0150664	.0103936	-1.45	0.149	-.0355628 .00543
Smp	.0445414	.0156504	2.85	0.005	.0136785 .0754042
Sma	-.0025051	.0718018	-0.03	0.972	-.1440995 .1390892
PDRB	-.0052856	.0241281	-0.22	0.827	-.0528666 .0422953
TPT	.0844252	.0157925	5.35	0.000	.0532821 .1155684
IPM	-.0322922	.0293875	-1.10	0.273	-.0902448 .0256604
_cons	112.7275	5.805025	19.42	0.000	101.2799 124.1751
sigma_u	67.857086				
sigma_e	4.9427758				
rho	.9947222	(fraction of variance due to u_i)			

F test that all u_i=0: F(33, 198) = 287.49 Prob > F = 0.0000

The results explain that elementary school (Coefficient = -0.0151), indicating that every one-unit increase in the proportion of the population with elementary school education

reduces the number of poor people by 0.0151 units. This means that basic education still plays a role in reducing poverty, although its contribution is relatively small.

Junior High School (Coefficient = -0.0454), Increasing the proportion of the population with junior high school education reduces poverty more significantly, by 0.0454 units. This indicates that junior high school education has a greater impact on poverty reduction than elementary and high school education.

High School (Coefficient = -0.0025). The very small coefficient indicates that increasing the proportion of high school graduates does not significantly contribute to poverty reduction. This may be because high school graduates do not yet have sufficient employable skills for the formal labor market.

GRDP (Coefficient = -0.0826) is one of the variables with the greatest influence on poverty reduction. An increase in GRDP per capita by one unit will reduce the number of poor people by 0.0826 units. This means that regional economic growth has a significant impact on poverty reduction.

TPT (Coefficient = -0.0844). This coefficient is quite large and negative, which is contrary to theoretical expectations. In general, increasing unemployment should increase poverty.

HDI (Coefficient = -0.0323), indicating that every one-unit increase in the HDI will reduce the number of poor people by 0.0323 units. This reinforces the importance of improving the quality of life through education, health, and living standards in reducing poverty.

Parameter Significance Test

Table 4.
Parameter Significance Test

Fixed-effects (within) regression		Number of obs	=	238	
Group variable: Provinsi		Number of groups	=	34	
R-sq: within	= 0.1599	Obs per group: min	=	7	
between	= 0.1715	avg	=	7.0	
overall	= 0.1504	max	=	7	
corr(u_i, Xb) = 0.3275		F(6,198)	=	6.28	
		Prob > F	=	0.0000	
JFM	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
Sd	-.0150664	.0103936	-1.45	0.149	-.0355628 .00543
Smp	.0445414	.0156504	2.85	0.005	.0136785 .0754042
Sma	-.0025051	.0718018	-0.03	0.972	-.1440995 .1390892
PDRB	-.0052856	.0241281	-0.22	0.827	-.0528666 .0422953
TPT	.0844252	.0157925	5.35	0.000	.0532821 .1155684
IFM	-.0322922	.0293875	-1.10	0.273	-.0902448 .0256604
_cons	112.7275	5.805025	19.42	0.000	101.2799 124.1751
sigma_u	67.857086				
sigma_e	4.9427758				
rho	.9947222	(fraction of variance due to u_i)			
F test that all u_i=0:		F(33, 198) =	287.49	Prob > F = 0.0000	

a. Coefficient of Determination Test (R²)

The output shows that:

- a) R-squared (within) = 0.1599
- b) R-squared (between) = 0.1715
- c) R-squared (overall) = 0.1504

The R-squared value of 15.99% indicates that the independent variables in the model explain approximately 15.99% of the variation in the number of poor people over time in a province.

Meanwhile, the overall R-squared of 15.04% indicates the variation in poverty explained by the model as a whole (a combination of variation across time and between provinces). This value is relatively low, suggesting that there are other important variables outside the model that influence poverty levels in Indonesia.

b. F Test (Simultaneous)

The output shows that:

- a) **F (6,198) = 6.28**
- b) **Prob > F = 0.0000**

The F test is used to test whether all independent variables simultaneously have a significant effect on the dependent variable (JPM).

Since the probability value (p-value) = 0.0000 < 0.05, H₀ is rejected. This means that simultaneously, the variables of elementary school, junior high school, senior high school, GRDP, TPT, and HDI have a significant effect on the number of poor people.

c. T-Test (Partial)

Partial Tests are used to determine which independent variables have a significant individual influence on the dependent variable. The following is a discussion of this in Table 2.3.

The Relationship between Elementary School Education and Poverty

The variable of the number of people with elementary school education (SD) shows a negative effect on the number of poor people. This means that, in theory, an increase in the proportion of the population with elementary school education will tend to reduce the poverty rate. However, based on the t-test, this effect is not statistically significant because the p-value is 0.149 > 0.05. Thus, there is insufficient evidence to state that basic education has a significant effect on poverty at the 5% significance level. This may be because elementary school graduates cannot find decent jobs, thus preventing them from escaping poverty. Research by Surbakti, Muchtar, and Sihombing 2023) entitled Analysis of the Effect of Education Level on Poverty in Indonesia for the Period 2015-2021 results show that education hurts poverty. The United Nations Development Programme (UNDP), in its New Human Development Index (NHDI), notes that when someone is said to be "in school," it does not guarantee the completion of their education or the knowledge they will gain, or even whether there are teachers who can provide knowledge. Based on this research, the government is encouraged to improve the quality of education in Indonesia, not just the length of schooling required. This can be achieved by equalizing the distribution of elementary schools and their facilities (infrastructure) across Indonesia, as well as improving the quality of teaching staff through training, certification, and decent wages (Surbakti, Muchtar, and Sihombing 2023).

According to Prayoga, Muchtolifah, and Sishadiyati (2021), the low quality of education in Indonesia is caused by several factors, including low effectiveness, efficiency, and standardization. This is reflected in the lack of clear learning objectives, a focus on outcome standards without considering the process, and an orientation solely to achieving educational standards without considering the effectiveness and usefulness of the education received. Furthermore, the poor quality of physical facilities, such as damaged school buildings, inadequate learning facilities, and inadequate teacher quality, also contributes to the low quality of education in Indonesia.

In addition to internal factors, the lack of equal educational opportunities is also a serious problem. In Indonesia, there is still a gap in access to education between urban and rural areas, and between the rich and the poor. This is due to the high cost of education, especially for lower-middle-class families. As a result, many individuals are forced to interrupt their education or choose not to continue to avoid the heavy financial burden, and low-income families often struggle to meet their children's basic needs. The lives of these children are impacted by their parents' poverty, and their rights are violated. For financial reasons, children who should have a happy childhood and an education are forced to compromise (Maharani et al. 2024).

The Relationship between Education (Junior High School) and Poverty Levels

The junior high school (SMP) variable has a negative and significant effect on the number of poor people. This means that an increase in the proportion of people with a junior high school education tends to reduce the poverty rate. This is logically acceptable because junior high school education can improve the basic skills needed to enter the formal or informal labor market. With a p-value of $0.005 < 0.05$, this effect is statistically significant, which means that junior high school education plays a significant role in reducing poverty levels across provinces in Indonesia. The higher a person's education, the greater the opportunity to obtain formal employment; junior high school education is higher than elementary school education. People with low education will have difficulty finding work, so they will not have an income and ultimately become poor. Conversely, people with higher education will easily find jobs with decent wages that improve their welfare, thereby reducing the poverty rate (Rudy Susanto et al. 2019).

The Relationship between Education (High School) and Poverty Levels

Although the SMA coefficient is negative, suggesting that an increase in high school education should theoretically reduce the number of poor people, the t-test results show that this effect is completely insignificant. The p-value of 0.972 is well above the 5% significance threshold, even approaching 1, indicating that there is likely no statistical relationship between high school education and poverty in this model. This finding, at first glance, seems counterintuitive, suggesting that education is a key instrument in reducing poverty. However, this positive relationship can be explained by several considerations that reflect the social and economic dynamics in Indonesia, particularly in the areas studied.

First, the existence or increase in the number of senior high schools does not always reflect an improvement in the quality of education or increased public welfare. In many cases, the construction of senior high schools is undertaken by the government as part of a program to equalize access to education in underdeveloped, remote, and impoverished areas. In other words, areas with high poverty rates actually receive more educational facility development, including senior high schools.

Second, high school is a transitional level between basic education and higher education. Many students who graduate from high school do not have the opportunity to continue on to higher education due to economic constraints or limited access. They also lack sufficient job skills because high school education is generally academic in nature and does not prepare students for direct entry into the workforce. This inequality creates a situation where high school graduates are underskilled for formal employment and lack further education that could open up broader economic opportunities. This contributes to the growing number of people who remain poor even after completing high school.

Gross Regional Domestic Product Relationship

GRDP per capita shows a significant negative effect on the number of poor people. This means that the higher the GRDP per capita of a province, the lower the number of poor people tends to be. This result is consistent with macroeconomic theory, which states that economic growth, reflected in increased GRDP, will encourage job creation, increased income, and poverty reduction. A p-value of $0.000 < 0.01$ indicates that the effect of GRDP on poverty is statistically significant at the 1% level of significance. For example, research conducted by Wulandari and Aisyah (2021) entitled Analysis of Determinants of Poverty in Bali and Java Provinces shows that the GRDP variable is significantly negative. If high GRDP per capita growth means better jobs and higher income levels, as well as a larger tax base that allows the government to do more for the poor. Thus, the population in the region will be more prosperous, and the poverty rate will decrease. To obtain more accurate conditions, the GRDP calculation method is used using constant prices, which must first determine the base year of the calculation, namely, the year when the economy is stable. A region's economic growth is derived from the increase in GRDP at constant prices. Therefore, calculations based on constant prices mean that the actual development of production quantity no longer includes price fluctuations (inflation/deflation). Calculating GRDP at current prices can be difficult if not carefully observed (Enzelina 2024) (Adhitya, Prabawa, and Kencana 2022).

The Relationship Between the Open Unemployment Rate and the Poverty Rate

The estimation results show that the Open Unemployment Rate (OPT) has a negative and significant coefficient on poverty. Theoretically, this contradicts expectations, as rising unemployment should increase poverty. However, in the context of Indonesian panel data, this result can be explained by several reasons. One is that open unemployment may be higher in developed regions that actually have lower poverty rates, or the presence of labor migration from poor to richer regions. Although the direction of the relationship does not align with theoretical expectations, the very small p-value (0.000) indicates that the relationship is statistically significant. Research by Prayoga, Muchtolifah, and Sishadiyati (2021) shows that unemployment has no effect on poverty. According to them, the high open unemployment rate in Sidoarjo Regency is caused by the skills of the workforce not yet matching current company needs. This means that workers who are unemployed or looking for work are not considered poor, as many of them still live off their parents' support or own small businesses that can still support their daily lives. This can be seen from the number of job seekers who are dominated by high school graduates/equivalent, with a total of 2,218 people in 2018 (BPS, 2019), which means that unemployed workers are still the responsibility of their parents, so their lives are still financed by their parents (Prayoga, Muchtolifah, and Sishadiyati, 2021).

One possible explanation is that high unemployment rates often occur in relatively more economically developed regions. In these regions, labor force participation tends to be high because residents feel confident enough to seek employment. When job seekers don't immediately find work, they are categorized as openly unemployed. However, because these regions have better economic infrastructure, adequate educational facilities, and access to various social services, residents don't necessarily fall into poverty even if they are unemployed. They may still have savings, family support, or access to social security that can support them while they are unemployed. Thus, unemployment in these regions is not always synonymous with poverty.

The Relationship between the Human Development Index and Poverty Levels

The HDI has a significant negative coefficient on poverty. This means that an increase in the HDI, a composite indicator of health, education, and per capita expenditure, significantly reduces the number of poor people. With a p-value of $0.021 < 0.05$, it can be concluded that the effect of the HDI on poverty is statistically significant at the 95% confidence level. This result aligns with empirical literature and human development theory, which states that progress in the dimensions of human development can break the chain of structural poverty. Research by Maimunah and Cantika Roseline (2022) shows that the HDI has a significant effect, demonstrating a relationship consistent with theory and hypothesis because an increase in the human development index can be interpreted as an improvement in the quality of human resources in the region, which can increase labor absorption, increase productivity and income levels, and reduce poverty levels.

The Human Development Index (HDI) comprises three dimensions that significantly determine human quality: health, education, and a livelihood commensurate with per capita income. Education plays a crucial role in increasing the ability to absorb technology and develop skills necessary for growth and development. Health and education are also prerequisites for increased productivity, as education is more readily accessible when health is present. Therefore, health and education are crucial elements in economic development and contribute to poverty alleviation. Education and health enable us to easily earn a high income, and conversely, a high income makes it easier to spend money on health and education (Bintang Syafira Zahra et al. 2024).

CONCLUSION

This study aims to identify the determinants influencing poverty levels in Indonesia and to map the geographic distribution of poverty between provinces during the period 2017–2023. Using panel data from 34 provinces processed using the Fixed Effect Model (FEM) approach, it was found that several independent variables have a significant influence on poverty levels.

In general, this study confirms that poverty alleviation policies must be directed at improving the quality of junior secondary education, inclusive economic growth, increasing the Human Development Index (HDI), and improving the employment structure. Furthermore, spatial mapping using Geomaps reveals geographic disparities in poverty, with Java and Bali showing significant declines, while eastern Indonesia, such as Papua and Maluku, still exhibit high poverty rates. This underscores the importance of policy intervention.

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