The Effect of Education Level and Open Unemployment on Poverty in Banten Province from 2019 to 2023

Denny Suriandhi[1] *, Ferdinando Maikelenden Wonatta[2]

STIE Unisadhuguna, Indonesia

ARTICLE INFORMATION

Jurnal Economic Resources

ISSN: 2620-6196
Vol. 8, No. 2 (2025)

Article history:
Received – September 01, 2025
Revised – September 14, 2025
Accepted – September 17, 2025

Email correspondence
denny.suriandhi@ubs-usg.ac.id

Keywords
Education Level, Open Unemployment, and Poverty.

ABSTRACT

Poverty has always been an interesting issue in every study, especially when it is related to education level and open unemployment. This study aims to analyse the effect of education level and open unemployment on poverty in Banten Province for the period 2019–2023. The data used is secondary quantitative time series data obtained from the Banten Province Central Statistics Agency (BPS) and the Ministry of Education and Culture of the Republic of Indonesia (Kemendikbud) for the period 2019–2023. The regression model used is the multiple linear regression analysis method. Based on the results of the study, the level of education partially (t-test) has a significant effect on poverty, with a t-count value greater than the t-table (3.134 > 271.2), and open unemployment partially (t-test) has a substantial impact on poverty with a t-count value greater than the t-table (2.155 < 271.2). However, simultaneously (F-test), these two variables together have a significant effect on poverty with a calculated F-value greater than the table F-value (55.114 > 3.25).

INTRODUCTION

Poverty is one of the most complex and pressing issues faced by developing countries, including Indonesia. This phenomenon not only reflects social injustice but also becomes a significant obstacle to inclusive and sustainable economic growth. Poverty cannot be viewed solely as a financial problem, but also as a multidimensional issue that encompasses social, political, and cultural aspects (Todaro & Smith, 2020; Sen, 1999). In the Indonesian context, the problem of poverty is often closely related to low levels of education and the high number of workers who are not fully absorbed into the formal labour market (UNDP, 2022).

Education plays a fundamental role in breaking the cycle of poverty. However, low levels of education in Indonesia remain one of the dominant factors exacerbating this condition. Access to quality education is not yet evenly distributed across all regions, particularly in remote areas that continue to face limitations in infrastructure, facilities, and qualified teaching staff (BPS, 2023; UNESCO, 2021). In addition, weak family economic factors also prevent many children from continuing their education. This situation results in limited skills among the workforce, hindering them from obtaining decent and well-paid jobs (World Bank, 2022; OECD, 2020). Thus, low levels of education tend to reinforce the vicious cycle of poverty, with the next generation facing the same economic difficulties as the previous generation.

On the other hand, the high rate of open unemployment also puts severe pressure on poverty alleviation efforts in Indonesia. According to BPS data (2024), although Indonesia's workforce continues to grow every year, the provision of formal employment cannot keep pace with this growth. As a result, many workers end up working in the informal sector, where they receive low wages and minimal social protection (Suryahadi et al., 2021; ILO, 2023). High unemployment and the dominance of informal work

weaken people's purchasing power, widen social gaps, and exacerbate poverty, especially among the productive age group, which should be the pillar of national development (Alderman et al., 2022).

Thus, the problem of poverty in Indonesia cannot be separated from the issues of low-quality education and high unemployment. The two are interrelated and contribute to perpetuating the cycle of poverty. Therefore, integrated strategic policies—such as increasing access to quality education, strengthening workforce skills, and creating formal employment—are essential to reducing poverty and promoting more inclusive economic development.

RESEARCH

This study employs a quantitative approach with an associative research design, aiming to analyze the relationship and influence between independent variables and dependent variables (Sugiyono, 2018). The object of this study is Banten Province, with an observation period of 2019–2023, using annual *time series* data. The variables in this study consist of the dependent variable (Y), namely poverty, measured by the percentage of poor people in Banten Province according to a publication by the Central Statistics Agency (BPS) (BPS, 2024) and the independent variable (X1): Education Level, measured using the average length of schooling (RLS) of the population aged ≥15 years (BPS, 2023). Independent variable (X2): Open Unemployment Rate (TPT), which represents the percentage of the labour force that is not employed relative to the total labour force (BPS, 2024).

This study uses secondary data in the form of annual *time series* obtained from official publications of the Central Statistics Agency (BPS) of Banten Province, specifically the Banten in Figures report and the Employment Situation report. Education data was also obtained from the Ministry of Education, Culture, Research, and Technology as a supplement (Kemdikbudristek, 2023). Data collection techniques were carried out through documentation studies, namely by tracing, collecting, and recording data published by relevant agencies in accordance with the research variable indicators. The data obtained was analysed using multiple linear regression, including classical assumption tests consisting of normality, multicollinearity, heteroscedasticity, and autocorrelation tests to ensure that the regression model met the BLUE (*Best Linear Unbiased Estimator)* requirements. The t-test (partial) to determine the effect of each independent variable on poverty, the F-test (simultaneous) to determine the combined effect of education level and open unemployment on poverty, and the coefficient of determination (R^2) to measure the contribution of independent variables in explaining the variation in poverty (Ghozali, 2018).

RESULTS AND DISCUSSION

In this study, secondary data were used. The data was obtained from official publications of the Banten Province Central Statistics Agency (BPS), the Ministry of Education and Culture of the Republic of Indonesia (Kemendikbud RI), and websites. The data analysed was *time series* data from 2019 to 2023. The dependent variable analysed in this study was poverty. The independent variables were education level (TP) and open unemployment (PT).

Table 1. Data Presentation

Year	Education Level (X1)	Open Unemployment (X2)	Poverty (Y)
2019	204,436	489,825	654,47
2020	2,070,566	661,061	775.99
2021	1,576,225	562,310	867.23
2022	2,059,991	523,013	814.03
2023	2,089,753	472,284	826,13

Source: *Jakarta Statistics Agency, Ministry of Education and Culture, and Website (2025)*

Classical Assumption Test

Normality Test

The normality test aims to evaluate whether the independent variable, the dependent variable, or both have a normal distribution in a regression model. The normality test can be performed using the *one-sample Kolmogorov-Smirnov* method*,* where a significance value exceeding 0.05 indicates that the data is

considered to have a normal distribution. Conversely, if the significance value is less than 5% or 0.05, the data is considered not to have a normal distribution (Ghozali, 2016).

Table 2. Normality Test

Unstandardised Residual		
N		**40**
Normal Parameters	Mean	.000000
	Standard Deviation	3585.80251868
Most Extreme Differences	Absolute	.110
	Positive	.100
	Negative	-.110
Test Statistic		.110
Asymptotic Significance (two-tailed)		.200 c,d

a. Test distribution is Normal.
b. Calculated from data.
c. Lilliefors Significance Correction.
d. This is a lower bound of the true significance.

Source: Data processed using SPSS 26 (2025)

The normality test results in Table 2 above, using the *one-sample Kolmogorov-Smirnov* method, show that the residual value of the independent and dependent variables at a sample size (N) of 40 is 0.200. Therefore, it can be concluded that the data in this study are normally distributed.

Multicollinearity Test

Ghozali (2016) explains that multicollinearity testing aims to identify whether there is a correlation between independent variables in a regression model. One of the classic regression models is that there is no multicollinearity, which means that there is a perfect relationship between several independent variables in the regression model. The commonly used testing method is to look at the *Variance Inflation Factor Tolerance (*VIF) value in the regression model. If the VIF value is < 10 and *the Tolerance is > 0*.1, then the regression is free from multicollinearity.

Table 3. Multicollinearity Test
Coefficients

Model	Variable	Collinearity Statistics	
		Tolerance	**VIF**
1	Level of Education	.238	4.198
	Open Unemployment	.238	4,198

Source: Data processed using SPSS 26 (2025)

Based on Table 3, it can be seen that for both independent variables, the tolerance is 0.238> 0.1 and the VIF is 4.198 < 10. Therefore, it can be concluded that there is no multicollinearity between the independent variables.

Heteroscedasticity Test

This test aims to evaluate whether there is inconsistent variation of residuals between one observation and another in a regression model (Ghozali, 2018).

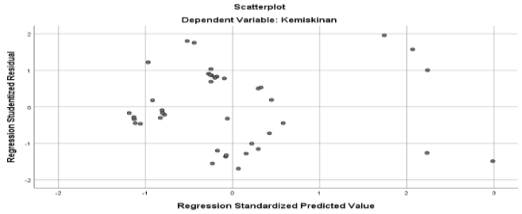

Figure 1. Heteroscedasticity Test

Source: Data processed using SPSS 26 (2025)

Based on the figure above, it can be seen that the points do not form a clear pattern and are scattered above and below the y-axis at 0. Therefore, it can be concluded that there is no heteroscedasticity problem in this regression model.

Autocorrelation Test

According to Ghozali (2016), autocorrelation can arise due to the relationship between sequential observations over time. To achieve a quality regression model, the model must be free from autocorrelation. The basis for decision-making in this test is as follows (Ghozali, 2016): If the Asymp. Sig. (2-tailed) value is less than 5% or 0.05, then Ho is rejected and Ha is accepted. This indicates that the residual data have a non-random (systematic) pattern. If the Asymp. Sig. (2-tailed) value is greater than 5% or 0.05, then Ho is accepted and Ha is rejected. This indicates that the residual data is random.

Table 4. Autocorrelation Test

Test Value[a]	-606.54917
Cases < Test Value	20
Cases ≥ Test Value	20
Total Cases	40
Number of Runs	16
Z	-1.442
Asymptotic Significance (two-tailed)	.149

Source: *Data processed using SPSS 26 (2025)*

Based on Table 4, it can be seen that the Asymp. Sig. (2-tailed) The value is greater than 0.05, with a significance value of 0.149, which is greater than 0.05. Therefore, it can be concluded that there is no autocorrelation in the regression method.

Multiple Linear Regression Analysis

Multiple linear regression analysis was conducted to determine the direction and extent of the influence of independent variables on dependent variables (Ghozali, 2018). *Standardised Coefficients* were used for *path analysis.* Since this study did not use *path analysis*, the regression equation used was the *Unstandardised Coefficients.*

Table 5. Multiple Linear Regression Analysis Coefficients

Model	Variable	Unstandardised Coefficients		Standardised Coefficients		Sig.
		B	Std. Error	Beta	t	
1	(Constant)	-271.277	1152.856		-0.235	0.815
	Level of Education	0.027	0.009	0.529	3.134	0.003
	Open unemployment	0.055	0.026	0.364	2.155	0.038

Source: Data processed using SPSS 26 (2025)

To determine the value of the multiple linear regression equation, it can be explained as follows:

$$Y = 271.277 + 0.027X1 + 0.055X2 + e$$

Where:

a = Constant = 271.277
X1 = Provincial Minimum Wage
b1 = 0.027
X2 = Open Unemployment Rate
b2 = 0.055

Interpretation of results:

1. The constant value a shows a value of 271,277, meaning that if there is no change in the independent variables (values of X1 and X2 = 0), then the value of the dependent variable (value of Y) is 271,277.
2. The regression coefficient value for the Education Level variable (X1) is 0.027, which is positive, meaning that if the Education Level increases by 1 rupiah, poverty will increase by 0.027.
3. The regression coefficient value of the Open Unemployment variable (X2) is 0.055, which is positive, so that if open unemployment increases by one unit, poverty will increase by 0.055.

Coefficient of Determination

Table 6. Coefficient of Determination

Model Summary

Model	R	R-Squared	Adjusted R-Square	Standard Error of the Estimate	Durbin-Watson
1	.865[a]	.749	.735	3681.441	1,501

a. Predictors: (Constant), Open Unemployment, Education Level
b. Dependent Variable: Poverty
Source: *Data processed using SPSS 26 (2025)*

Based on the results of the coefficient of determination test above, an *R-Square* (R2) value of 0.749 was obtained. This means that the independent variables (level of education and open unemployment) in this study influence the dependent variable (poverty) by 74.9%. In comparison, the remaining 25.1% is explained by variables other than the independent variables in this study.

Statistical Test

T Test (Partial Test)

The t-test was conducted to test the research hypothesis regarding the partial influence of each independent variable on the dependent variable (Sudjiono, 2010). The validity and falsity of the hypothesis were determined using the following criteria. Suppose the sig value is < 0.05 or the t value is > t table. In that case, there is an effect of variable X on variable Y. If the sig value is > 0.05 or the t value is < t table, then there is no effect of variable X on variable Y.

Table 7. T-test (Partial Test)

Coefficients

Model	Variable	Unstandardised Coefficients		Standardised Coefficients		Sig.
		B	Std. Error	Beta	t	
1	(Constant)	-271.277	1152.856		-0.235	0.815
	Level of Education	0.027	0.009	0.529	3.134	0.003
	Open unemployment	0.055	0.026	0.364	2.155	0.038

Source: Data processed using SPSS 26 (2025)

Based on the t-value (partial), the following can be explained:

1. The Effect of Education Level on Poverty
   The Education Level variable (X1) has a coefficient of 0.027 with a significance value of 0.003 (< 0.05), indicating that Education Level has a positive and significant effect on Poverty in Banten Province for the period 2019–2023. This finding indicates a paradoxical phenomenon in which an increase in the average length of schooling does not directly reduce poverty. This is possible due to the mismatch between graduates' skills and labour market needs (skill mismatch), as well as the limited formal employment opportunities that can absorb educated workers (World Bank, 2022; Todaro & Smith, 2020). In other words, higher education does not guarantee improved welfare if relevant competencies and labour absorption do not accompany it.
2. The Effect of Open Unemployment on Poverty
   The Open Unemployment Rate variable (X2) has a coefficient of 0.055 with a significance value of 0.038 < 0.05, which means it has a positive and significant effect on poverty. This indicates that

every increase in open unemployment will increase the number of poor people in Banten Province. This result is in line with economic development theory, which states that high unemployment exacerbates poverty due to a reduction in household income sources (Suryahadi et al., 2021; Sukirno, 2016).

F Test (Simultaneous Test)

The F test aims to determine whether the independent variables jointly (simultaneously) influence the dependent variable. If the sig value is < 0.05 or the calculated f value is > f table, then the independent variables jointly influence the dependent variable. If the sig value is > 0.05 or the calculated f value is < f table, then the independent variables do not jointly influence the dependent variable.

Table 8. F Test (Simultaneous Test)

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	260293512.890	2	130,146,756.445	13,291	.010[b]
	Residual	48,962,086.985	5	9,792,417.397		
	Total	309,255,599.875	7			

a. Dependent Variable: Poverty

b. Predictors: (Constant), Open Unemployment Rate, Provincial Minimum Wage

Based on the F test results, it can be concluded that Education Level and Open Unemployment Rate simultaneously have a significant effect on Poverty in Banten Province. The combination of these two variables explains the variation in poverty levels during the research period. This means that poverty alleviation policies cannot be implemented by increasing education or reducing unemployment separately, but must be carried out in an integrated manner.

Academically, these results support the development theory, which states that poverty is multidimensional and influenced by structural factors such as education and employment opportunities (Todaro & Smith, 2020). Practically, these findings emphasise the need for policies that synchronise education with labour market needs. Vocational education programmes, industry-based training, and the creation of productive jobs need to be promoted so that improvements in education can truly reduce poverty rates. Furthermore, poverty alleviation strategies in Banten Province cannot focus solely on providing social assistance, but must also be directed towards improving the quality of human resources and creating decent employment opportunities (World Bank, 2022; BPS, 2024). Thus, development policies will be more effective in sustainably reducing poverty rates.

CONCLUSION

Based on the results of the research and discussion, it can be concluded that the level of education has a significant positive effect on poverty in Banten Province for the period 2019–2023. This indicates the need to improve the quality of education so that it is more relevant to the needs of the labour market. Next, the Open Unemployment Rate has a significant positive effect on Poverty, so that efforts to create productive jobs are key to reducing poverty rates.

The level of education and the open unemployment rate simultaneously have a significant effect on poverty in Banten Province. The combination of these two variables explains the variation in poverty rates during the research period. This means that poverty alleviation policies cannot be implemented by increasing education or reducing unemployment separately, but must be carried out in an integrated manner.

REFERENCE

Alderman, H., Behrman, J., & Glewwe, P. (2022). *The Economics of Poverty Traps and Persistent Inequality*. World Bank Publications.

Central Statistics Agency (BPS). (2023). *Indonesian Education Statistics*. Jakarta: BPS.

Central Statistics Agency (BPS). (2024). *Indonesian Employment Situation February 2024*. Jakarta: BPS.

Ghozali, I. (2018). *Application of Multivariate Analysis with IBM SPSS 25 Program*. Semarang: Diponegoro University Publishing Agency.

Gujarati, D. N., & Porter, D. C. (2009). *Basic Econometrics* (5th ed.). New York: McGraw-Hill.

ILO. (2023). *World Employment and Social Outlook: Trends 2023*. Geneva: International Labour Organisation

Ministry of Education, Culture, Research, and Technology. (2023). *Higher Education Statistics 2023.* Jakarta: Kemdikbudristek.

OECD. (2020). *Education at a Glance 2020: OECD Indicators. Paris*: OECD Publishing.

Sen, A. (1999). *Development as Freedom*. Oxford University Press

Sugiyono. (2018). *Quantitative, Qualitative, and R&D Research Methods*. Bandung: Alfabeta.

Sukirno, S. (2016). *Macroeconomics: An Introduction*. Jakarta: Raja Grafindo Persada

Suryahadi, A., Al Izzati, R., & Suryadarma, D. (2021). Estimating the Impact of COVID-19 on Poverty in Indonesia. *Bulletin of Indonesian Economic Studies*, 57(2), 1–31.

Todaro, M. P., & Smith, S. C. (2020). *Economic Development* (13th ed.). Pearson.

UNDP. (2022). Human Development Report 2022: Uncertain Times, Unsettled Lives. New York: United Nations Development Programme.

UNESCO. (2021). *Global Education Monitoring Report 2021/22*. Paris: UNESCO Publishing.

World Bank. (2022). *Indonesia Economic Prospects: Financial Deepening for Stronger Growth and Sustainable Recovery*. Washington, DC: The World Bank.