International Journal of Business and Applied Economics (IJBAE)
Vol. 4, No. 5, 2025: 2697-2708

The Effect of Open Unemployment Rate, Human Development Index, and Minimum Wage on the Poverty Rate in East Java Province

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A R T I C L E I N F O

Keywords: Open Unemployment Rate, Human Development Index, Minimum Wage, Poverty Rate

Received : 6, August
Revised : 22, August
Accepted: 23, September

A B S T R A C T

This study aims to analyze the impact of the open unemployment rate, Human Development Index, and minimum wage on the poverty rate in East Java Province. A quantitative approach was used with time series data from 2007 to 2023 obtained from the BPS. The analysis was conducted using multiple linear regresion. The findings indicate that the open unemploymen rate a positive or significant impact on poverty levels, while the HDI exerts a negative or significant influence, while the minimum wage does not significantly affect poverty. This findings provide important implication for regional government policies in effectively reducing poverty, particularly through improving human capital and job creation.

DOI: https://doi.org/10.55927/ijbae.v4i5.384
ISSN-E: 2963-6124
https://nblformosapublisher.org/index.php/ijbae

INTRODUCTION

Poverty is a complex problem that affects the economic and social stability of a region. In East Java Province, the poverty has experienced changes over the years despite various government programs aimed at improving welfare. Several factors have been identified as influencing poverty, including the open unemployment rate, the Human Development Index (HDI), or the minimum wage. The open unemploymen rate reflect the proportions of the labor force actively looking for employment but has not yet found employmen. A higher unemployment rate generally indicates fewer income opportunities, which can exacerbate poverty levels. On the other hand, the HDI measures aspects such as education, health, or standard of living; an increase in HDI is expected to reduce poverty through better human capital. The minimum wage is intended to provide a fair standard of living for workers, although its effect on poverty is debated in various study. Previous research has yielded mixed result. Some studies suggest that higher wages can reduce poverty, while others argue that they may increase unemployment, thus indirectly raising poverty levels. This study focuses on East Java Province from 2007 to 2023, aiming to analyze the relationship between the open unemployment rate, HDI, and minimum wage with the poverty rate. The findings are expected to contributes to formulating effective regional development policies.

The following questions are the focus of this research: *Does the open unemployment rate significantly affect the poverty rate in East Java Province? Does the Human Development Index significantly affect the poverty rate in East Java Province? Does the minimum wage significantly affect the poverty rate in East Java Province?* The objective of this study is to determine and analyze the effect of the open unemployment rate, Human Development Index (HDI), and minimum wage on the poverty rate in East Java Province during the 2007–2023 period.

LITERATURE REVIEW

Open Unemployment Rate

The open unemployment rate shows the share of the labor force that is actively looking for work but has not yet found employment. According to Todaro & Smith (2015), unemployment reduces income opportunities, which can increase poverty. High unemployment often leads to decreased purchasing power and reduced economic activity, further exacerbating poverty levels. Rahmawati (2020) found the open unemployment rate positively affect poverty.
H_1: The open unemployment rate has a significant effect on the poverty rate in East Java Province?

Human Development Index (HDI)

HDI is a composite index measuring health, education, or living standards. A higher HDI generally indicates better human capital, which is associated with lower poverty levels (UNDP, 2022). Improvements in education and health enable individuals to access better jobs and income, thereby reducing poverty. Melda Rivana, Irwan Gani (2024) found Human Development Index positive effect on poverty.

H_2: The Human Development Index has a significant effect on the poverty rate in East Java Province

Minimum Wage

The minimum wage is the least payment that employers are permitted by law to give allowed to give their workers. While it aims to ensure a decent standard of living, its impact on poverty is debated. Some studies find that higher wages reduce poverty, while others suggest it may cause job losses, potentially increasing poverty (Card & Krueger, 2015). Putra & Santoso (2021) indicated that the minimum wage has no significant impact on poverty levels.

H_3: The minimum wage has a significant effect on the poverty rate in East Java Province

Based on the theoretical framework and previous study, the conceptual model of this research is illustrated as follows :

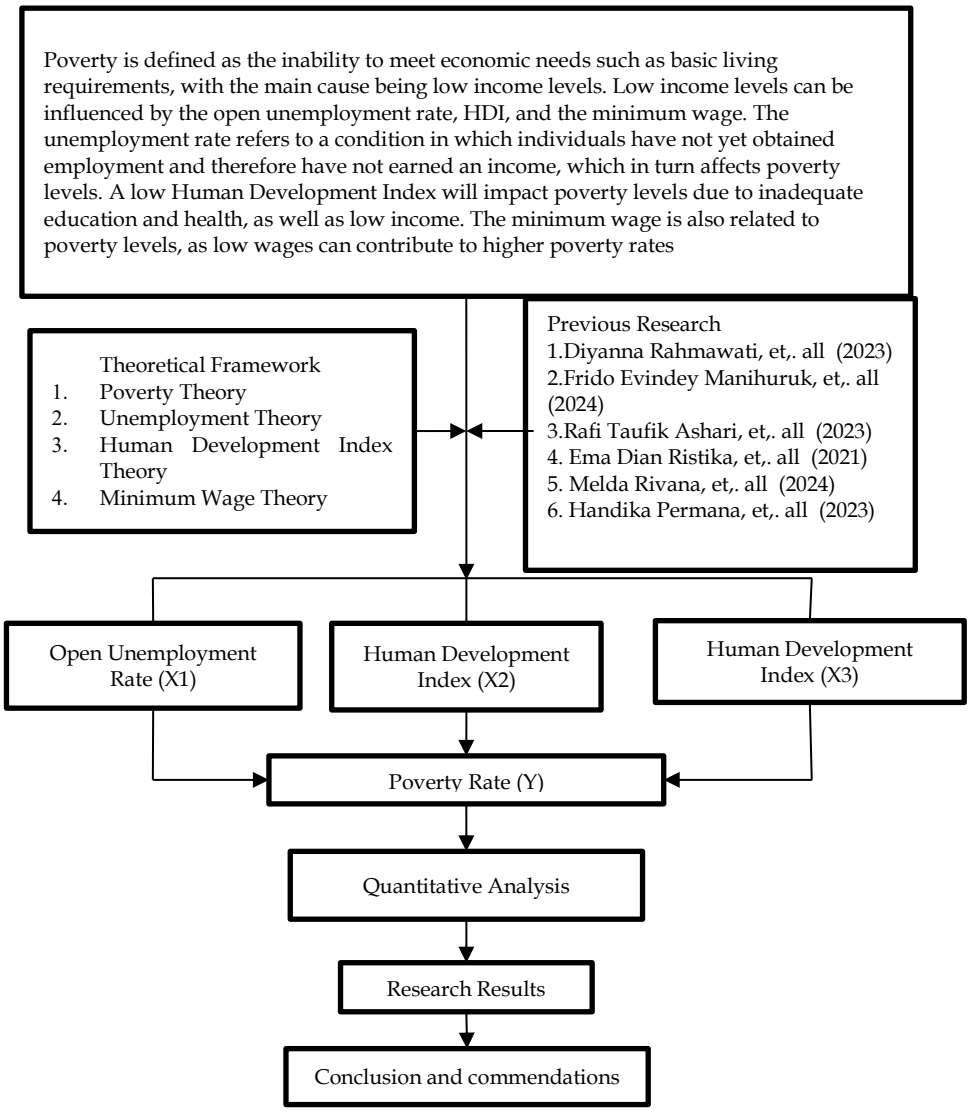

Figure 1. Conceptual Framework

METHODOLOGY

Research Design

This research use a quantitative research approach with an associative type, aiming to determine the relationship between the open unemployment rate, HDI, or minimum wage on the poverty rate in East Java Province. The research employs secondary time series data from 2007 to 2023 obtained from the Central Statistics Agency (BPS).

Variables and Operational Definitions

Open Unemployment Rate (OUR) is the share of the labor force that is looking for work but has not yet secured employment. HDI is A composite index measuring education, health, or living standards, expressed as a percentage. Minimum Wage (MW) is the annual provincial minimum wage in East Java, expressed in Indonesian Rupiah. Poverty Rate is the ratio of individuals living in poverty in East Java Province.

Data Collection

Data were collected from official publications of BPS and related government agencies. All variables were compiled in annual form covering the period 2007–2023.

Data Analysis

The data were analyzed use multiple linear regression to test the effect of OUR, HDI, and MW on the poverty rate. The analysis was conducted using *EViews* software.

Classical Assumption Tests

The regression analysis was preceded by classical assumption tests, including normality, multicollinearity, heteroskedasticity, than autocorrelation tests, to ensure the validity of the estimation results.

RESEARCH RESULT

Descriptive Statistics

The data from 2007 to 2023 show fluctuations in the poverty rate, OUR, HDI, and MW in East Java Province. The average poverty rate during this period was around X%, with the highest rate in YEAR or the lowest in YEAR. OUR averaged Y%, HDI averaged Z%, and MW increased steadily each year following government policy.

Multiple Linear Regression Analysis

Multiple linear regression analysis using SPSS was performed to assess the impact of the OUR, HDI, and MW on the Poverty Rate in East Java Province. The findings are as follows :

Table 1. The Results of Multiple Linear Regression Coefficients

Coefficients[a]					
	Model	Unstandardized Coefficients		Standardized Coefficients	Sig
		B	Std. Error	Beta	
1	(Constant)	28.849	14.643		.071
	Open Unemployment Rate (X1)	0.879	.258	.354	.005
	Human Development Index (X2)	-0.209	.207	-.110	.330
	Minimum Wage (X3)	-4.262E-6	.000	-.829	.000

Classical Assumption Tests

Normality Test

The Kolmogorov–Smirnov test was conducted to examine whether the residuals were normally distributed.

Table 2. Results of the Normality Test

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		17
Normal parameters[a,b]	Mean	.0000000
	Std. Deviation	1.04280607
Most Extreme Differences	Absolute	.113
	Positive	.113
	Negative	-.086
Test Statistic		.113
Asymp. Sig. (2-tailed)		.200[d]

Multicollinearity Test

The Variance Inflation Factor or Tolerance values were applied to test for multicollinearity.

Table 3. Results of the Multicollinearity Test

Coefficients[a]			
Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	Tingkat Pengangguran (X1)	.998	1.089
	Indeks Pembangunan Manusia(X2)	.916	1.091
	Upah Minimum (X3)	.918	1.002

Heteroskedasticity Test

The Spearman rank correlation test was used to detect heteroskedasticity.

Table 4. Results of the Heteroskedasticity Test

Correlations			
			Unstandardized Residual
	Open Unemployment Rate	Correlation Coefficient	.022
		Sig. (2-tailed)	.933
		N	17
	Human Development Index	Correlation Coefficient	.022
		Sig. (2-tailed)	.970
		N	17
	Minimum Wage	Correlation Coefficient	-.020
		Sig. (2-tailed)	.940
		N	17
	Unstandarized Residual	Correlation Coefficient	1.000
		Sig. (2-tailed)	.933
		N	17

Autocorrelation Test

The Durbin–Watson (DW) test was used to detect autocorrelation.

Table 5. Results of the Autocorrelation Test

Model Summary[b]					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.927[a]	.860	.827	1.15689	0.686

Model Testing

F-Test (Simultaneous Test)

The F-test was performed to assess whether the independen variables collectively influences the dependen variable.

Table 6. Results of the F-Test

ANOVA[a]						
Model		Sum of Squares	dF	Mean Square	F	Sig.
1	Regression	106.480	3	35.493	26.519	<.000[b]
	Residual	17.399	13	1.338		
	Total	123.879	16			

Coefficient of Determination (R^2)

The coefficient of determination measures how well the independent variables explain the variation in the dependent variable.

Table 7. Results of the Coefficient of Determination

Model Summary[b]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.927[a]	.860	.827	1.156689

T-Test (Partial Test)

The t-test was conducted to determine the partial effect of each independen variable on the dependen variable.

Table 8. Results of the T-Test

Coefficientsa						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Itself.
		B	Std. Error	Beta		
1	(Constant)	28.849	14.643		1.970	.071
	Suspension Rate Open (X1)	.879	.258	.354	3.406	.005
	Human Development Index (X2)	-.209	.207	-.110	-1.012	.330
	Upah Minimum (X3)	-4.2262E-6	.000	-.829	-7.644	.000

DISCUSSION

Effect of Open Unemployment Rate (OUR) on Poverty Rate in East Java Province

The regression analysis shows that during 2007–2023, OUR had a significant and positive effects on the poverty rate, with p-value of 0.005. This indicate that higher unemployment levels tend to increase poverty rates. The empirical evidence in East Java supports classical economic theory, where unemployment and poverty rise simultaneously during crises, due to structural issues in the labor market and uneven job distribution.

Possible contributing factors include age, health, education, skills, and job opportunities. Therefore, poverty reduction policies should be implemented in parallel, including job creation in formal and informal sectors, job skills training, improving education quality, enhancing labor productivity, and encouraging investment. These findings are consistent with macroeconomic theory, which states that unemployment reduces household income, lowers consumption, and worsens welfare, thereby increasing poverty (Todaro & Smith, 2015). Nurkse's "vicious circle of poverty" theory also explains that unemployment leads to low income, which limits investment in education and health, perpetuating high unemployment and poverty.

The results are consistent with Nengsih et al. (2024), who found a significant positive relationship between OUR and poverty. However, some studies report a positive but insignificant effect, possibly due to shorter time spans or different statistical models.

Effect of Human Development Index (HDI) on Poverty Rate in East Java Province

The analysis indicates that during 2007–2023, HDI had a negative but insignificant effects on the poverty rate, with a significance value of 0.330. Although HDI increased steadily during this period, poverty levels did not decline significantly.

Theoretically, HDI reflects human development achievements in terms of health, education, and standard of living. An increase in HDI should improve quality of life and reduce poverty. However, this relationship is not always linear, and the lack of significance may be due to uneven distribution of improvements, where gains in education and health are concentrated in certain regions or groups that do not represent the overall poor population.

This supports the structural inequality theory, which suggests that HDI growth can mask poverty if improvements benefit mostly middle-income groups. This contrasts with UNDP's human development theory, which states that increasing HDI should correspond to decreasing poverty because its indicators represent the basic needs to escape poverty.

These findings are consistent with Faadihilah (2023), who found that HDI had an insignificant negative effect on poverty. However, they differ from Permana & Pasaribu (2023), who found a significant negative effect, indicating that higher HDI reduces poverty.

Effect of Minimum Wage (MW) on Poverty Rate in East Java Province

The results reveal that during 2007–2023, MW had a significant negative effect on poverty, with a significance value of 0.000. This suggests that higher minimum wages are associated with lower poverty levels, although the effect is more pronounced in the formal sector, especially in urban labor-intensive industries.

In economic theory, wages are compensation paid by employers for physical and mental contributions of workers (Sukirno, 2005). Minimum wages in Indonesia are determined annually based on the Decent Living Needs (KHL) standard and regulated by Government Regulation No. 78 of 2015 and Law No. 13 of 2003. According to Human Capital theory, increased wages improve individual welfare by enhancing labor productivity, thereby reducing income inequality and poverty.

This finding is supported by Titis et al. (2022), who showed that higher minimum wages significantly reduce poverty, especially in low-wage areas. Similarly, Alfajri (2024) found a significant negative effect, emphasizing that minimum wages must exceed the cost of living to have a meaningful impact on poverty reduction.

Overall, the results align with the study's hypothesis that MW significantly influences poverty levels in East Java during the study period.

CONCLUSIONS AND RECOMMENDATIONS

Conclusion

This study analyzed the effect of the Open Unemployment Rate (OUR), Human Development Index (HDI), and Minimum Wage (MW) on the poverty rate in East Java Province from 2007 to 2023 using multiple linear regression analysis. The findings can be summarized as follows:

1. Open Unemployment Rate (OUR) has a positive or significant effects on the poverty rate. An increase in unemployment directly raises poverty levels, confirming that job creation is crucial for poverty reduction.
2. Human Development Index (HDI) has a negative but statistically insignificant effect on poverty. This indicates that improvements in education, health, and income have not yet produced uniform and measurable impacts on reducing poverty across the province.
3. Minimum Wage (MW) has a negative or significant effect on poverty, showing that wage increases help improve the welfare of formal sector workers and reduce poverty, although the effect may be limited in informal sectors.

These results suggest that poverty reduction efforts should prioritize employment generation and human capital development, while wage policy should be integrated with productivity and job market expansion strategies.

Recommendations

1. The government should implement policies to increase employment opportunities, especially in labor-intensive sectors, to reduce the open unemployment rate or poverty.
2. Programs to improve human resources quality through education and healthcare should be prioritized to support sustainable poverty reduction.
3. Minimum wage policies should be adjusted to meet the regional decent living standards (*KHL*), ensuring they protect workers' welfare without harming employment opportunities.

ADVANCED RESEARCH

Future research could extend the observation period beyond 2007–2023 to capture longer-term economic cycles and structural changes affecting poverty. Expanding the study to include other provinces in Indonesia would allow for comparative analysis and broader generalization of the findings. Additional variables such as inflation rate, economic growth, government spending on social programs, and labor force participation could be incorporated to provide a more comprehensive model. Furthermore, using alternative analytical methods, such as panel data regression or spatial econometric models, may yield deeper insights into regional disparities and the dynamics of poverty reduction.

ACKNOWLEDGMENT

The author expresses the deepest gratitude to Allah SWT for His blesings and guidance during the completion of this research. Appreciation is sincerely given to the academic supervisors for their valuable advice and continuous

support. The author also thanks the Faculty of Economics and Business and the Department of Economics for the academic environment and facilities provided. Gratitude is extended to the Central Bureau of Statistics (BPS) of East Java Province for supplying the necessary data, as well as to colleagues and friends for their constructive input and encouragement. Special thanks go to the author's parents and family for their endless prayers, love, and motivation throughout the research and writing process.

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