

## The Influence of Labor Force Participation, Education, and Economic Growth on Poverty in Indonesia: A Provincial-Level Analysis

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### Abstract

This study aimed to analyze the influence of labor force participation rate, education level (measured by School Participation Rate/APS), and economic growth (measured by Adjusted Per Capita Expenditure) on the poverty rate across 38 provinces in Indonesia. Using secondary data from the Central Statistics Agency (BPS) for 2024, a multiple linear regression analysis was conducted. The results indicated that the regression model was significant ( $F = 18.251$ ,  $p = 0.000$ ) and explained 61.7% of the variance in poverty rates ( $R^2 = 0.617$ ). Partially, economic growth had a significant negative effect ( $\beta = -0.521$ ,  $p = 0.000$ ), while labor force participation showed a significant positive effect ( $\beta = 0.241$ ,  $p = 0.046$ ). The education variable showed a negative but not statistically significant effect ( $\beta = -0.215$ ,  $p = 0.098$ ). The findings suggest that economic prosperity is the most crucial factor in reducing poverty at the provincial level, while high labor force participation alone, without being accompanied by quality jobs and adequate wages, does not guarantee poverty reduction. This research provides important insights for policymakers to design holistic poverty reduction strategies that focus not only on job creation but also on improving the quality of employment and equitable economic distribution.

*Keywords: economic growth, labor force, poverty, provincial analysis Indonesia*

### INTRODUCTION

Poverty remains a major issue in Indonesia's economic and social development. Although national economic growth has been relatively stable, its benefits have not been evenly distributed across all segments of society. Data from Statistics Indonesia (BPS) reveal significant disparities in poverty levels among provinces, reflecting inequalities in development progress and social welfare. For example, in 2024, the poverty rate in Bali was only 3.90%, whereas Papua Pegunungan recorded a much higher rate of 31.32%.

According to Todaro and Smith (2020), poverty is influenced by limited access to employment opportunities and the quality of human resources. A high labor force participation rate is often associated with greater income potential and improved welfare (Todaro & Smith, 2020). However, Mankiw (2021) cautions that the number of jobs alone is insufficient if employment is not accompanied by adequate job quality and fair wages. Education plays a crucial role as an investment in human capital that can enhance productivity and individual income (Acemoglu & Restrepo, 2020). Dartanto et al. (2020) find that improvements in

education levels in Indonesia contribute to poverty reduction by increasing employment opportunities and wages.

Economic growth, commonly measured by per capita expenditure, is a key indicator of welfare. The World Bank (2022) emphasizes that inclusive economic growth, supported by equitable income distribution, is essential for effective poverty reduction. Nevertheless, the relationship between labor force participation, education, and economic growth and poverty at the provincial level in Indonesia remains underexplored, particularly using recent and comprehensive data.

This study aims to address this gap by analyzing the simultaneous and partial effects of labor force participation rate, education level measured by the School Participation Rate (SPR), and economic growth measured by adjusted per capita expenditure on poverty rates across all provinces in Indonesia. The urgency of this research lies in the need for evidence-based and context-sensitive policies to reduce regional disparities in poverty. The novelty of this study is reflected in the use of the latest BPS data from 2024 and its focus on provincial-level analysis, enabling more specific and targeted policy recommendations.

## **LITERATURE REVIEW**

Poverty is a complex phenomenon and has long been a central topic in the field of development economics. Todaro and Smith (2020) explain that poverty is not only characterized by low income but also by limited access to basic opportunities such as employment, education, and healthcare services. In the Indonesian context, a study by Suryahadi et al. (2020) demonstrates that although economic growth is essential, factors such as labor quality and the way the benefits of growth are distributed also determine the effectiveness of poverty reduction. Their research shows that periods of high economic growth prior to the Asian financial crisis contributed to poverty reduction; however, the impacts were uneven across regions, leaving persistent disparities among provinces.

The relationship between labor force participation and poverty is viewed differently across the literature. Classical economic theory (Mankiw, 2021) suggests that an increase in labor force participation should be associated with lower poverty levels due to higher output and income. Nevertheless, empirical studies in developing countries, including evidence from Indonesia provided by Dartanto et al. (2020), reveal a more complex relationship. Their findings indicate that increased labor force participation does not necessarily reduce poverty when employment is dominated by informal, low-productivity, or unprotected jobs that are not covered by minimum wage policies. This divergence between theory and empirical evidence highlights the importance of considering job quality, rather than merely job quantity, when analyzing the relationship between employment and poverty.

Education is widely recognized as a crucial instrument for poverty reduction. According to human capital theory, education is an investment that enhances individual productivity, thereby increasing income and the likelihood of escaping poverty (Acemoglu & Restrepo, 2020). However, Suryadarma and Jones (2013) argue that educational challenges in Indonesia extend beyond access and include substantial disparities in quality across regions. Their work illustrates how poor education quality contributes to socioeconomic inequality, as children in disadvantaged regions may attend school but still struggle to acquire the skills demanded by modern labor markets.

Economic growth, commonly measured using indicators such as per capita expenditure, has consistently been shown to have a negative relationship with poverty. The World Bank (2022) emphasizes that inclusive and equitable economic growth is the most effective long-term strategy for poverty reduction. Nevertheless, the report also stresses that growth alone is insufficient, underscoring the importance of income distribution mechanisms, social protection systems, and pro-poor policies. Empirical evidence from Indonesia provided by Yusuf et al. (2014) reinforces this argument, showing that high income inequality can weaken the positive effects of economic growth on poverty, a phenomenon reflected in persistent inter-provincial poverty disparities.

Based on the literature review, a clear research gap can be identified. Most existing studies focus on national-level analyses or examine relationships between variables separately, such as education and poverty or economic growth and poverty. Research that simultaneously analyzes labor force participation, education, and economic growth at the provincial level in Indonesia using recent data remains limited. This study seeks to fill this gap by conducting a comprehensive, data-driven analysis that examines both the joint and individual effects of these factors on poverty across all Indonesian provinces. Such an approach provides a more detailed evidence-based mapping of poverty determinants and supports the formulation of more targeted and context-sensitive policy interventions.

## METHODS

This study adopts a quantitative research approach using multiple linear regression analysis. The research is explanatory in nature, aiming to explain how independent variables influence the dependent variable. The underlying research paradigm is positivism, which emphasizes objective measurement and hypothesis testing through statistical methods.

The population of this study consists of all provinces in Indonesia. Given that the number of provinces is manageable and complete data are available, census sampling is applied, whereby all provinces are included as units of analysis. The final sample comprises 38 provinces, including newly established provinces. Data collection is conducted through documentary research using secondary data published by Statistics Indonesia (BPS) for the year 2024. The data used include four variables: (1) the poverty rate measured by the percentage of poor population (P0) by province, (2) the labor force participation rate, (3) the education level measured by the School Participation Rate (SPR), and (4) adjusted per capita expenditure.

Data analysis consists of descriptive analysis and inferential analysis using multiple linear regression. The regression model employed in this study is specified as follows:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

In this model, Y represents the poverty rate measured by the percentage of the poor population (P0).  $X_1$  denotes the labor force participation rate,  $X_2$  represents the education level measured by the School Participation Rate (SPR), and  $X_3$  refers to adjusted per capita expenditure measured in Indonesian rupiah. The  $\alpha$  represents the constant, while  $\beta_1\beta_2\beta_3$  denote the regression coefficients associated with each independent variable. Data processing and statistical analysis were conducted using SPSS software version 26. Prior to estimating the

regression model, classical assumption tests were performed, including tests for normality, multicollinearity, heteroskedasticity, and autocorrelation, to ensure the reliability and validity of the regression results.

**Table 1. Poverty Rate, Labor Force Participation, Education, and Economic Growth at the Provincial Level in Indonesia**

Province Name	Percentage of Poor Population (P0) by Province and Region (Percent)	Labor Force Participation Rate by Gender	School Participation Rate (APS) by Province and Age Group	[New Method] Adjusted Per Capita Expenditure (Thousand Rupiah/Person/Year)
	2024	2024	2024	2024
Aceh	13.44	130,3	78.39	10.811
Sumatera Utara	7.59	142,79	76.42	11.460
Sumatera Barat	5.70	140,5	80.92	11.718
Riau	6.52	131,85	76.36	11.857
Jambi	7.18	137,21	73.42	11.621
Sumatera Selatan	10.74	141,14	71.44	12.015
Bengkulu	13.04	142,84	77.91	11.733
Lampung	10.66	140,19	72.61	11.258
Kepulauan Bangka Belitung	4.82	136,77	71.40	13.667
Kepulauan Riau	05.08	137,88	77.56	15.573
DKI Jakarta	4.22	130,19	77.64	19.953
Jawa Barat	7.27	135,1	73.27	12.157
Jawa Tengah	10.03	147,48	73.48	12.276
DI Yogyakarta	10.62	149,86	85.77	15.361
Jawa Timur	9.68	147,16	75.59	12.852
Banten	5.77	131,85	73.54	13.097
Bali	3.90	154,26	79.75	14.920
Nusa Tenggara Barat	12.41	154,51	76.01	11.606
Nusa Tenggara Timur	19.25	155,1	75.64	8.534
Kalimantan Barat	6.29	140	72.11	10.321
Kalimantan Tengah	5.22	136,1	71.75	12.303
Kalimantan Selatan	04.07	140,23	73.69	13.399
Kalimantan Timur	5.65	132,82	78.42	13.793
Kalimantan Utara	5.85	138,65	76.29	10.197
Sulawesi Utara	6.98	131,5	73.48	11.998
Sulawesi Tengah	11.41	141,34	74.28	10.536
Sulawesi Selatan	7.92	135,2	75.78	12.275
Sulawesi Tenggara	10.92	145,33	75.98	10.606
Gorontalo	14.22	139,73	74.32	11.539
Sulawesi Barat	10.96	142,41	71.79	10.208
Maluku	15.92	132,87	78.65	9.684
Maluku Utara	6.18	137,38	75.33	9.320

Province Name	Percentage of Poor Population (P0) by Province and Region (Percent)	Labor Force Participation Rate by Gender	School Participation Rate (APS) by Province and Age Group	[New Method] Adjusted Per Capita Expenditure (Thousand Rupiah/Person/Year)
	2024	2024	2024	2024
Papua Barat	21.38	141,22	74.93	8.805
Papua Barat Daya	17.54	134,36	78.37	8.733
Papua	17.68	135,46	78.16	11.037
Papua Selatan	18.40	142,09	69.85	9.756
Papua Tengah	28.68	144,35	52.17	7.809
Papua Pegunungan	31.32	176,08	56.76	5.707

Source: *Badan Pusat Statistik (BPS), 2024*

## RESULT AND DISCUSSIONS

### 1. Descriptive Statistical Analysis

The following are the descriptive statistics for the variables used in this study:

**Table 2. Descriptive Statistics**

	N	Minimum	Maximum	Mean	Std. Deviation
Percentage of Poor Population (P0)	38	3.90	31.32	10.9082	6.54691
Labor Force Participation Rate	38	130.19	176.08	140.8974	8.76070
School Participation Rate	38	52.17	85.77	74.4534	5.71157
Per Capita Expenditure	38	57.07	19953	11591.97	2463.450
Valid N (listwise)	38				

Source: *Data Badan Pusat Statistik (BPS) tahun 2024, author's own calculations.*

Table 2 shows that poverty rates vary considerably across provinces, with a range of 27.42 percentage points. Labor force participation also exhibits substantial variation, with Papua Pegunungan recording the highest rate at 176.08%, while DKI Jakarta has the lowest rate at 130.19%. Education levels, measured by the School Participation Rate (SPR), also differ markedly among provinces. DI Yogyakarta records the highest SPR at 85.77%, whereas Papua Tengah has the lowest at 52.17%. Economic capacity, measured by adjusted per capita expenditure, likewise shows significant disparities, with DKI Jakarta recording the highest per capita expenditure at IDR 19,953,000 and Papua Pegunungan the lowest at IDR 5,707,000.

## 2. Simultaneous Test (F Test)

**Tabel 3. Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of The Estimate	Durbin-Watson
1	.785 <sup>a</sup>	.617	.583	4.22710	1.731

a. Predictors: (Constant), Per Capita Expenditure; Labor Force Participation Rate; School Participation Rate.

b. Dependent Variable: Percentage of Poor Population (P0)

Source: *Data analysis using SPSS, 2024*

Table 3 shows that the coefficient of determination ( $R^2$ ) is 0.617, indicating that 61.7% of the variation in poverty rates across provinces can be explained by the three independent variables included in the model. The remaining 38.3% of the variation is influenced by factors outside the model.

**Tabel 4. Anova<sup>a</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig
1	Regression	978.371	3	326.124	18.251	.000 <sup>b</sup>
	Residual	607.525	34	17.868		
	Total	1585.896	37			

a. Dependent Variable: Percentage of Poor Population (P0)

b. Predictors: (Constant), Per Capita Expenditure; Labor Force Participation Rate; School Participation Rate.

Source: *Data analysis using SPSS, 2024*

Table 4 reports an F-statistic of 18.251 with a significance level of 0.000, which is below the 0.05 threshold. This indicates that the regression model is statistically significant, meaning that labor force participation, education level, and economic growth simultaneously have a significant effect on poverty rates across provinces in Indonesia. Accordingly, the null hypothesis ( $H_0$ ) is rejected, and the alternative hypothesis ( $H_1$ ) is accepted.

### 3. Partial Test (t-Test)

**Tabel 5. Coefficients<sup>a</sup>**

Model		Unstandar dized B	Coefficient s Std. Error	Standardized Coefficients Beta	t	Sig.	Collinearity Tolerance	Statistics VIF
1	(Constant)	19.995	17.949		1.114	.273		
	Labor Force Participation Rate	.180	.087	.241	2.069	.046	.833	1.200
	School Participation Rate	-.247	.145	-.215	-1.700	.098	.704	1.421
	Per Capita Expenditure	-.001	.000	-.521	-4.116	.000	.702	1.424

a. Dependent variable: Percentage of Poor Population (P0)

Source: *Data analysis using SPSS, 2024*

Table 5 presents the results of the t-tests for each independent variable:

- The labor force participation rate records a t-value of 2.069 with a significance level of 0.046 ( $p < 0.05$ ). The coefficient is positive (0.180), indicating that labor force participation has a positive and statistically significant effect on poverty rates. Accordingly, the null hypothesis ( $H_{01}$ ) is rejected, and the alternative hypothesis ( $H_{11}$ ) is accepted. This result is noteworthy as it contradicts the initial expectation of a negative relationship.
- The School Participation Rate (SPR) yields a t-value of  $-1.700$  with a significance level of 0.098 ( $p > 0.05$ ). Although the coefficient is negative ( $-0.247$ ), its effect is not statistically significant. Therefore, the null hypothesis ( $H_{02}$ ) is accepted, and the alternative hypothesis ( $H_{12}$ ) is rejected.
- Adjusted per capita expenditure records a t-value of  $-4.116$  with a significance level of 0.000 ( $p < 0.05$ ). The coefficient is negative ( $-0.001$ ), indicating that economic growth has a negative and statistically significant effect on poverty rates. Consequently, the null hypothesis ( $H_{03}$ ) is rejected, and the alternative hypothesis ( $H_{13}$ ) is accepted.

## DISCUSSIONS

The findings of this study provide several important insights. First, economic growth, measured by adjusted per capita expenditure, exhibits the largest and strongest negative effect on poverty levels (Beta =  $-0.521$ ). This result is consistent with studies by the World Bank (2022) and Suryahadi et al. (2020), which emphasize that economic prosperity is a primary driver of poverty reduction. Provinces with higher per capita expenditure tend to have lower poverty rates, indicating that stronger economic development enables households to better meet their basic needs.

Second, a positive and statistically significant relationship is found between labor force participation and poverty. This direction of the relationship contradicts the initial hypothesis and several prior theoretical expectations (Mankiw, 2021). This outcome can be explained by the characteristics of employment in provinces with high poverty levels. For example, Papua Pegunungan records an exceptionally high labor force participation rate (176.08%) while also experiencing the highest poverty rate (31.32%). This suggests that high labor force participation does not necessarily reduce poverty when employment is concentrated in informal sectors, low-productivity agriculture, or jobs that provide insufficient income. This finding supports the argument by Todaro and Smith (2020) that job quality is more critical than job quantity in poverty alleviation.

Third, the education variable, measured by the School Participation Rate (SPR), shows a negative but statistically insignificant relationship with poverty. Although the direction of the coefficient aligns with human capital theory (Acemoglu & Restrepo, 2020), the lack of statistical significance may be attributable to several factors. One possible explanation is the presence of a time lag between increased school participation and its impact on poverty reduction. Additionally, variations in education quality and its relevance to labor market demands across provinces may limit the effectiveness of education in reducing poverty.

The regression model explains 61.7% of the variation in poverty rates, indicating that other important factors influencing poverty are not captured in this model. These potential factors include income inequality, infrastructure quality, social protection coverage, and geographic conditions. Incorporating these variables in future research could provide a more comprehensive understanding of the determinants of poverty in Indonesia.

## CONCLUSION

This study demonstrates that labor force participation, education level measured by the School Participation Rate (SPR), and economic growth measured by adjusted per capita expenditure jointly influence poverty rates across provinces in Indonesia. Partially, economic growth has a negative effect on poverty, indicating that provinces with higher per capita expenditure tend to experience lower poverty levels. Labor force participation has a positive and statistically significant effect, suggesting that high labor force participation alone without the support of quality employment opportunities and adequate wages does not guarantee poverty reduction and may even be associated with higher poverty levels in certain contexts. Meanwhile, the education variable (SPR) shows a negative but statistically insignificant effect on poverty.

The policy implications of these findings are as follows. First, poverty reduction strategies should focus on improving the quality of economic growth and ensuring its equitable distribution across provinces. Second, employment creation policies should prioritize job quality, fair wages, and social protection rather than merely increasing the number of jobs. Third, investments in education should be accompanied by improvements in education quality and its alignment with labor market needs. Fourth, poverty alleviation programs should be tailored to the specific characteristics and challenges of each province.

This study has several limitations. The use of cross-sectional data restricts the ability to draw strong causal inferences, and the analysis does not include other potentially important variables such as income inequality, infrastructure quality, and social factors. Future research is recommended to employ longitudinal data to analyze changes over time, incorporate

additional variables such as the Gini index and infrastructure indices, and conduct qualitative studies to better understand the mechanisms underlying the relationships identified in this quantitative analysis.

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