Dynamics of Intergenerational Poverty Transfer: The Impact of Poverty Levels, Education Levels, and Minimum Wages in West Sumatra

Original Article

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Abstract

Intergenerational poverty is a complex issue involving various factors, including education, unemployment, and minimum wages. This study analyzes the impact of education levels, unemployment rates, and minimum wages on poverty rates in West Sumatra using multiple linear regression models. Secondary data from the Central Statistics Agency (BPS) and the Ministry of Finance during the period of 2021-2023 were used to analyze 19 districts/cities in West Sumatra. The results indicate that education levels and minimum wages significantly affect the reduction of poverty rates, while unemployment rates contribute positively to increasing poverty. This study provides policy recommendations to enhance the quality of education and adjust minimum wages to break the intergenerational poverty cycle in the region.

1. Introduction

Intergenerational poverty has become a major focus in development studies in Indonesia, including in West Sumatra. Data shows fluctuations in poverty rates in this province from 2021 to 2023, with decreases and increases influenced by various economic and social factors. Quality education is considered one of the keys to breaking the cycle of poverty; however, its effectiveness depends on local contexts such as job opportunities and labor market conditions (Nurcahyani et al., 2022). The objective of this research is to examine how education levels, unemployment rates, and minimum wages influence the poverty rates in the region of West Sumatra.

The poverty rate in West Sumatra has decreased from 6.63% in 2021 to 5.92% in 2022, but it slightly increased to 5.95% in 2023 and 5.97% in 2024. This decline reflects efforts to alleviate poverty, although these figures remain lower than the national average of 9.54% (Sari et al., 2021). However, from March 2023 to March 2024, West Sumatra experienced an increase in extreme poverty, in contrast to other provinces on the island of Sumatra. This rise was attributed to high unemployment rates and economic instability. Dependence on the vulnerable agricultural sector further exacerbated the situation, resulting in limited access to education and healthcare services. Research indicates that an increase in education does not always correlate with a decrease in poverty. Local contexts, such as job availability, significantly influence the effectiveness of education (Smith, 2022).

However, other studies have shown that better education can enhance employment opportunities and income (Johnson, 2020). Despite regional economic growth, income inequality and high living costs in major cities hinder poverty reduction (Lee, 2023). This study aims to analyze the dynamics of intergenerational poverty transfer in West Sumatra, focusing on the influence of education and economic conditions.

2. Literature Review

Poverty is a multifaceted issue that goes beyond just income, encompassing a person's capacity to meet fundamental needs like nourishment, housing, learning, and healthcare (Sen, 2014). Poverty can be seen as the result of structural injustices in society and is often linked to the marginalization of individuals in decision-making (Chambers, 1997). Intergenerational poverty is when the cycle of poverty continues from one generation to the next, resulting in children from low-income families facing barriers to receiving proper education and job prospects (Corak, 2006).

The Effect of Education: Education is considered key to reducing poverty. Investments in education can increase individual incomes, but their effectiveness depends largely on the local context, including the availability of jobs (Psacharopoulos & Patrinos, 2004). Quality education can provide the skills needed in the labor market and help individuals escape poverty (Johnson, 2020). Effect of Minimum Wage: Low minimum wages can exacerbate poverty conditions. While an increase in the minimum wage can reduce poverty, it can also lead to unemployment if not supported by economic growth (Neumark, 2008). A decent minimum wage can empower workers and help meet their basic needs (Rawls, 1971).

This study's conceptual framework centers on how education, joblessness, and low wages impact the poverty rate in West Sumatra. The factors being examined in this research include the level of education, the rate of unemployment, and the minimum wage. Education level includes quality, accessibility, skills, and employment opportunities, where higher education is expected to reduce poverty by providing the skills needed to compete in the job market. Furthermore, the unemployment rate in the region acts as an important factor that can increase poverty, as high unemployment causes individuals to lose their source of income. Minimum wage is also an important variable, where an effective minimum wage policy is expected to increase the income of low-income workers; however, its impact must be balanced with adequate economic growth so as not to result in an increase in unemployment. The poverty rate is the main focus of this research project, with its definitions and measurements based on poverty line and indicators specific to West Sumatra. This study also considers moderating and control factors, including economic factors such as regional economic growth and labor market stability, as well as social factors that include access to health services and participation in sociopolitical organizations. Thus, this conceptual framework provides a guide to analyze the relationship between education, unemployment, and minimum wage to poverty, and aims to provide deeper insights into the dynamics of poverty and its alleviation in West Sumatra.

3. Methods

The study gathered data by utilizing existing data sources, focusing on Poverty as the main factor being studied while considering education and minimum wage as contributing factors. Information was sourced from the Central Bureau of Statistics (BPS) for various districts and cities in West Sumatra Province spanning from 2021 to 2023. To analyze the data, panel data regression was employed, with the equation constructed as follows:

$$TK_{it} = a + \beta_1 TPD_{it} + \beta_2 UM_{it} + e$$

Notes:

TK = Poverty Level
TPD = Education Level
UM = Minimum Wage
a = Constant
$\beta_{1,2,3}$ = Regression Coefficient
i = Year
t = Regency / City in West Sumatra

The study will employ various tests such as the Chow test, Hausman test, and Lagrange Multiplier test to compare different models including Pooled OLS / Common Effect, Fixed Effect, and Random Effect. In addition, traditional assumption tests like multicollinearity and heteroscedasticity tests will also be conducted.

4. Results and Discussion

4.1. Chow Test Results

The researchers used the Chow test to establish which model, the Fixed Effect Model (FEM) or the Common Effect Model (CEM), was more suitable. Table 1 shows that the Prob value is less than 0.05 at 0.0000. Based on the Chow test results, the Fixed Effect Model (FEM) was deemed to be the superior analysis model.

Table 1. Chow Test Result

Effects Test	Statistic	df.	Prob.
Cross-section F	58.448758	(18,36)	0.0000
Cross-section Chi-square	194.292985	18	0.0000

Source: Data Processed, 2024

4.2. Hausman Test Results

The Hausman test helps determine which model, either the Fixed Effect Model (FEM) or the Random Effect Model (REM), is most suitable. Table 2 shows a Prob value of 0.0068, indicating statistical significance. According to the Hausman Test outcome, the preferred analysis model is the FEM.

Table 2. Hausman Test Result

Test Summary	Chi-Sq. Statistic	Chi-Sq. df.	Prob.
Cross-section random	9.972389	2	0.0068

Source: Data Processed, 2024

4.3. Classical Assumption Test

4.3.1. Multicollinearity Test

Table 3. Multicollinearity Test

	TPD	UM
TPD	1.000000	0.569151
UM	0.569151	1.000000

Source: Data Processed, 2024

According to the data in table 3, it is evident that the correlation coefficient for the variables in this research is less than 0.8. This suggests that there is not a significant level of multicollinearity among the variables being studied.

4.3.2. Heteroscedasticity Test

Table 4 displays the results of the test for heteroscedasticity, indicating that the TPD and UM variables have a probability value higher than 0.05. This suggests that the variables examined in the study do not exhibit heteroscedasticity.

Table 4. Heteroscedasticity Test

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.649538	0.347231	1.870624	0.0668
TPD	0.000354	0.004854	0.072856	0.9422
UM	-1.74E-07	9.31E-08	-1.865625	0.0675

Source: Data Processed, 2024

4.4. Estimation Results

4.4.1. FEM Model Estimation Test Results

The results of panel data estimation on the effect of education level and minimum wage on poverty in West Sumatra are:

Table 5. FEM Model Estimation Test Results

Dependent Variable: TK
Method: Panel Least Squares
Date: 12/12/24 Time: 23:22
Sample: 2021 2023
Periods included: 3
Cross-sections included: 19
Total panel (balanced) observations: 57

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	20.25545	2.642371	7.665635	0.0000
TPD	-0.108052	0.038199	-2.828653	0.0065
UM	-1.96E-06	7.63E-07	-2.569696	0.0130
R-squared	0.985252	Mean dependent var		6.126140
Adjusted R-squared	0.362483	S.D. dependent var		2.433038
S.E. of regression	1.942650	Akaike info criterion		4.217180
Sum squared resid	203.7901	Schwarz criterion		4.324709
Log likelihood	-117.1896	Hannan-Quinn criter.		4.258969
F-statistic	16.92042	Durbin-Watson stat		0.244689
Prob(F-statistic)	0.000002			

Source: Data Processed, 2024

The data processing results in Table 5 indicate that the probability value of the F statistics is 0.000002, which is less than 5%, suggesting that education level and minimum wage have a significant combined impact on poverty in West Sumatra Province. The R-squared value of the data analysis is 0.985252, indicating that 98.52% of the growth in West Sumatra Province can be attributed to TPD and UM in this research model. The remaining 1.48% is accounted for by other variables that were not considered in the study.

5. Conclusion

According to the data in the table, it is evident that higher levels of education, especially in West Sumatra, can help reduce poverty significantly. This suggests that investing in education, particularly at the higher education level, can have a significant impact on poverty alleviation in the region. Higher education provides opportunities for individuals to access in-depth knowledge and specialized skills relevant to the needs of the labor market. With these skills, individuals have a greater chance of securing jobs with decent wages and economic stability, thus helping them to escape poverty. In addition, higher education also increases labor productivity, which not only benefits individuals but also supports overall regional economic growth. The ability of more skilled individuals to contribute to key economic sectors strengthens regional competitiveness and creates more employment opportunities for the rest of society.

Furthermore, higher education plays an important role in narrowing social gaps and improving social mobility. With access to higher education, individuals from low economic backgrounds have the opportunity to improve their lives and escape the cycle of intergenerational poverty. Higher education also has a multiplier effect on the economy, as individuals with better education tend to invest more in productive consumption, such as children's education, health and community development. In addition, higher education supports the strengthening of social capital by raising awareness about the importance of financial planning and engagement in inclusive public policies. Thus, investment in higher education not only benefits individuals but also provides a long-term impact on society and economic development at large.

The variable for minimum wage in West Sumatra has a noteworthy negative impact on poverty, suggesting that a rise in minimum wage could potentially lead to a decrease in the poverty rate in the area. A higher minimum wage policy has a direct impact on increasing the purchasing power of workers, especially those in the low-wage segment. With higher incomes, workers can better fulfil basic needs such as food, education, and health, thus improving their welfare. In addition, an increase in the minimum wage also contributes to reducing income inequality, especially for economically vulnerable groups. This positive effect is seen in the ability of households to allocate additional income to productive needs, such as children's education and skills development, which can help break the cycle of intergenerational poverty.

However, the effectiveness of this policy depends on several important factors. Employer compliance in implementing the minimum wage policy is one of the main determinants of the success of minimum wages in reducing poverty. In the formal sector, when employers comply with this regulation, the positive impact on workers is more obvious. In contrast, in the informal sector, which is often not bound by such policies, the effect can be more limited. In addition, minimum wage increases must also be balanced with employment stability. If an increase in the minimum wage causes labor costs to be too high for firms, especially for small and medium-sized enterprises, there is a risk of reducing the workforce or moving businesses to areas with lower labor costs. Therefore, the minimum wage policy must be designed by

considering the balance between workers' welfare and economic sustainability, so that its effect on poverty reduction can be optimally achieved.

6. References

Chambers, R. (1997). Whose Reality Counts. *Putting the First Last/Intermediate Technology*.

Corak, M. (2006). Do poor children become poor adults? Lessons from a cross-country comparison of generational earnings mobility. In *Dynamics of inequality and poverty* (pp. 143–188). Emerald Group Publishing Limited.

Johnson, K. (2020). Education and poverty reduction: A study in Southeast Asia. *Journal of Economic Perspectives*.

Lee, J. (2023). Urban poverty and economic inequality: A regional analysis. *International Journal of Urban Studies*.

Neumark, D. (2008). *Minimum Wages*. The MIT Press.

Nurcahyani, S. R., Saptono, A., & Pratama, A. (2022). Does Teaching Practice Experience Affect Interest in Becoming a Teacher? The Role of Self-Efficacy as an Intervening Variable. *REVIEW OF MULTIDISCIPLINARY EDUCATION, CULTURE AND PEDAGOGY*, *1*(4), 1–16. https://doi.org/10.55047/romeo.v1i4.333

Psacharopoulos, G., & Patrinos, H. A. (2004). Returns to investment in education: a further update. *Education Economics*, *12*(2), 111–134.

Rawls, J. (1971). Atheory of justice. *Cambridge (Mass.)*.

Sari, D. M., Kurniawati, L., & Taufik, H. (2021). Kemiskinan di Sumatera Barat: Faktor dan solusi. *Jurnal Ekonomi Dan Kebijakan Publik*.

Sen, A. (2014). Development as freedom (1999). *The Globalization and Development Reader: Perspectives on Development and Global Change*, *525*.

Smith, A. (2022). The role of education in poverty alleviation in developing countries. *World Development Journal*.