



What is economic growth and human development influence on poverty in West Sumatra

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ABSTRACT

The poverty rate is used as one of the benchmarks for assessing the success of a nation's development. This study aims to determine the effect of economic growth and human development index (HDI) on poverty levels. The data used is secondary data published by the Central Statistics Agency (BPS) of West Sumatra Province from 2010 to 2021 detailed for 19 (nineteen) districts/cities. The number of samples in this study was 228 (two hundred twenty-eight) observations. Data analysis is done by multiple linear analysis of panel data using the help of the Eviews program. The results of the analysis show that the poverty rate is proven to be significantly influenced by economic growth and human development index. Partially, the variable poverty rate is influenced by economic growth in a negative direction, but the effect is not significant. The poverty level variable is also proven to be influenced by the human development index with a significant negative value.

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1. INTRODUCTION

Poverty is the condition of a person or group of people in an area that is not met with minimum needs. A person or group of people with per capita expenditure per month below the poverty line is called poor (Amaluddin et al., 2018). Poverty can be caused by various factors, both individual, family, and community. economic, political, and social.

The poverty rate is used as one of the benchmarks for assessing the success of nation-building. Poverty is an indicator of community welfare (Rohmi et al., 2021); (Estrada & Wenagama, 2020). Poverty can hinder nation-building (Huda, 2020; Prasetyoningrum, 2018). Poverty hinders a person's social and economic activity. Children from poor families may not be able to go to school because they have to work to help their families meet basic needs (Ogwumike & Ozughalu, 2018). Adults from poor families may not be able to work because they lack the necessary skills or training. Parents from poor families may not be able to participate in social activities because they have to focus on providing for their families.

The poverty rate will decrease if economic growth increases. High economic growth will be able to create new jobs (Wirda et al., 2022). High economic growth can also increase the income of the community as a whole (Prasetyoningrum, 2018). High economic growth can increase people's access to education and health (Fadila & Marwan, 2020). It can help the poor to improve their skills and abilities, as well as maintain their health.

Poverty will decrease if in an area human development is increased. Human development is an effort to improve the quality of human life as a whole, including aspects of education, health, income, and decent life (Rohmi et al., 2021). Education can improve a person's skills and abilities. This can make it easier for a person to get a decent job and increase their income. A decent life can provide a sense of security and comfort for a person. This can increase one's motivation to work hard and improve oneself. Therefore, human development is one of the effective strategies to reduce poverty (Huda, 2020).

Poverty rate in West Sumatra. According to data from the Central Statistics Agency (BPS), the poverty rate in West Sumatra in 2023 is 5.95% (340,370 people) or decreased from 2022 to 6.04%. Development in West Sumatra is still uneven. Some regions in West Sumatra are still lagging in terms of economic development, education, and health. The government has provided various education assistance programs for the poor, such as scholarships, tuition assistance, and school supplies assistance. Improved access to healthcare. The government has provided various health assistance programs for the poor, such as the National Health Insurance (JKN), health cost assistance, and medicine assistance.

But in reality, the level of poverty in Indonesia, especially in West Sumatra, is still high. This is caused by several factors, including Structural factors. Structural factors are factors that are permanent and difficult to change, such as geographical conditions, natural resources, and demographic conditions. These factors can lead to poverty in a region. Non-structural factors. Non-structural factors are factors that are temporary and changeable, such as government policies, economic conditions, and natural disasters. These factors can also lead to poverty in a region.

Research on poverty rates with economic growth and development has been widely conducted. However, the results obtained are inconsistent. Therefore, this research needs to be done to get a research model. This research model can be used as a reference for the government and society in developing and implementing poverty alleviation programs. This can help the government and communities to reduce poverty in West Sumatra more effectively and efficiently. So this research aims to analyze; 1) The effect of economic growth on poverty rates in West Sumatra. 2) The effect of the Human Development Index on the poverty rate in West Sumatra. Meanwhile, the expected benefit is that the results of this research can contribute to the formulation of more effective policies for overcoming poverty in West Sumatra.

2. RESEARCH METHOD

The approach used in this article is quantitative descriptive. The data used is secondary data published by the Central Statistics Agency (BPS) of West Sumatra Province from 2010 to 2021 detailed for 19 (nineteen) districts/cities. The form of data consists of data on economic growth, human development index, and poverty rate. Economic growth data is processed from the Gross Regional Domestic Product (GRDP) of West Sumatra Province based on constant prices. Human development index data is processed from life expectancy, average length of schooling, expected length of schooling, and per capita expenditure. Meanwhile, poverty rate data is obtained from the percentage of poor people according to districts/cities in West Sumatra. The number of samples in this study was 228 (two hundred twenty-eight) observations.

The data that has been collected will be analyzed quantitatively by multiple linear analyses of panel data. Data analysis is carried out with the help of the Eviews program. The best model will be selected after performing the Chow Test, Hausman Test, and Lagrange Test.

3. RESULTS AND DISCUSSIONS

To determine the best estimation method in panel data regression, several stages were carried out, namely the Chow Test, Hausman Test, and Lagrange Test.

Test Chow

The Chow test compares the Common Effect Model (CEM) with the Fixed Effect Model (FEM). The assumption used in the Chow Test is that if the probability value is < 0.05 , then the selection of the right research model is the Fixed Effect Model. However, if the probability value is > 0.05 , then the right model is the Common Effect Model.

Table 1. Chow test results

Redundant Fixed Effects Tests			
Equation: MODEL_FEM			
Test cross-section fixed effects			
Effects Test	Statistic	d.f.	Prob.
Cross-section F	93.263015	(18,207)	0.0000
Cross-section Chi-square	503.732657	18	0.0000

Source: BPS West Sumatra Province, data processed

Table 1. shows the Chow Test Results with a Chi-square Cross-section toddler value smaller than 0.05 so that the right model to choose is the Fixed Effect Model (FEM). Consequently testing continued with the Housman test.

Housman Test

The Hausman test is conducted to compare or select the most appropriate model between the Fixed Effect Model (FEM) and the Random Effect Model (REM). This test is carried out assuming that if the probability value is smaller than 0.05 then the right model is the Fixed Effect Model. Meanwhile, if the probability value is greater than 0.05, the most appropriate model is the Random Effect Model.

Table 2. Housman test results

Correlated Random Effects -			
Hausman Test			
Equation: MODEL_REM			
Test cross-section random effects			
Test Summary	Chi-Sq. Statistic	d.f.	Prob.
Cross-section random	3.648695	2	0.1613

Source: BPS West Sumatra Province, data processed

Table 2. shows that the results of Housman's test have a random probability cross-section of 0.1613 is greater than 0.05. Thus the right model to use for this research is the Random Effect Model (REM).

Panel Regression Test

Panel Regression Test is used to test independent variables against bound variables in the form of combined time and place sequence data. From the results of this study, it can be determined the magnitude of the influence of Economic Growth (X1) and Human Development Index (X2) on the Poverty rate (Y) in West Sumatra Province. Based on panel regression estimation using the Random Effect Model approach, the following results were obtained:

Table 3. Estimation results random effect model

Dependent Variable: Y
 Method: Panel EGLS (Cross-section random effects)
 Sample: 2010 2021
 Periods included: 12
 Cross-sections included: 19
 Total panel (balanced) observations: 228
 Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	42.1851	2.1302	19.8035	0.0000
X1	-0.0017	0.0237	-0.0718	0.9429
X2	-0.4957	0.0287	-17.2797	0.0000
	Effects Specification		S.D.	Rho
	Cross-section random		1.994837	0.8949
	Idiosyncratic random		0.683551	0.1051
Weighted Statistics				
R-squared		0.644366	Mean dependent var	0.7212

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Adjusted R-squared		0.641205	S.D. dependent var	1.1453
S.E. of regression		0.686051	Sum squared resid	105.90
F-statistic		203.8366	Durbin-Watson stat	0.4690
Prob(F-statistic)0.000000				
Unweighted Statistics				
R-squared		0.464135	Mean dependent var	7.3265
Sum squared resid		1022.415	Durbin-Watson stat	0.0486

Source: BPS West Sumatra Province, data processed

Based on Table 3. can be written Regression model as follows:

$$Y = 42.18515 - 0.0016976 X_1 - 0.4956693 X_2$$

These results illustrate that economic growth and human development indices affect poverty levels. Negative numbers 0.0016976 and 0.4956693 on both coefficient variables indicate that the influence of the independent variable on the dependent variable is in the opposite direction. This means that if economic growth increases by 1 percent, the poverty rate will decrease by 0.002 percent. Conversely, if economic growth decreases by 1 percent, the poverty rate will increase by 0.002 percent. Then, if the human development index increases by 1 percent, the poverty rate will decrease by 0.49 percent. Conversely, if the human development index decreases by 1 percent, the poverty rate will increase by 0.49 percent.

Hypothesis testing

T-Statistics Test

T-statistical testing is performed to determine the effect of the independent variable on the dependent variable partially. The toddler value of the economic growth variable is 0.9429 (greater than alpha 5% or 0.050) which means that the economic growth variable does not have a significant effect on the poverty variable at the error level of 5%. Then the toddler value of the human development index is 0.000 (smaller than alpha 5% or 0.050) which means that the human development index has a significant effect on the variable Poverty at the error level of 5%.

F-Statistics Test

F-Statistics testing was conducted to empirically prove how the effect of economic growth and the human development index together on poverty levels in West Sumatra Province. The prob value (F-statistic) in Table 3.3 is 0.0000 below 0.05, meaning that it is proven that significantly the poverty rate in West Sumatra is influenced by economic growth and the human development index.

Determination Test

The R-squared value in Table 3.3 is 0.644366, meaning that the independent variables, namely economic growth and human development index, together contribute 65 percent to the poverty level variable. The other 35 percent were influenced by other variables outside the model.

Discussion

The effect of economic growth on poverty rates in West Sumatra

An economic growth coefficient of negative 0.0016976 means that economic growth negatively affects the poverty rate in West Sumatra. This means that if economic growth increases by 1 percent, the poverty rate will be reduced by 0.002 percent. Conversely, if economic growth decreases by 1 percent, the poverty rate will increase by 0.002 percent. However, because the probability of the economic growth variable sig value is 0.9429 (greater than alpha 5% or 0.050), the economic growth variable does not have a significant effect on the poverty level variable. The results of this study are in line with the research conducted (Shaleh et al., 2021); (Hasan, 2021); (Irawan, 2022); (Driver et al., 2023). However, other research results also show that the poverty rate is influenced by negative and significant economic growth (Yurina & Mislal, 2023); (Suripto & Subayil, 2020); (Aini & Islamy, 2021); (Alma'ruf & Rahman, 2022). Then there are also other research results showing that economic growth does not have a significant effect on reducing

poverty rates (Prasetyoningrum, 2018). There are even other research results that show that economic growth has a significant positive effect on reducing poverty rates (Estrada & Wenagama, 2020). Then there are also other research results showing that economic growth has a positive insignificant effect on reducing poverty rates (Resmarani & Sishadiyati, 2023).

The effect of the human development index on the poverty rate in West Sumatra

The coefficient by the human development index of negative 0.4956693 means that the human development index negatively affects the poverty rate in West Sumatra. This means that if the human development index increases by 1 percent, the poverty rate will decrease by 0.50 percent. Conversely, if the human development index decreases by 1 percent, the poverty rate will increase by 0.50 percent. The t-value of the human development index variable sig value is 0.000 (smaller than alpha 5% or 0.050) then the human development index variable has a significant effect on the poverty level variable.

The results of this study are in line with the research conducted (Rohmi et al., 2021); (Huda, 2020); (Prasetyoningrum, 2018); (Mukhtar et al., 2019); (Aini & Islamy, 2021); (Resmarani & Sishadiyati, 2023); (Hasan, 2021); (Jamaliah & Elyta, 2022); (Alma'ruf & Rahman, 2022); (Irawan, 2022). However, the results of other studies also show that partially the human development index and economic growth have a negative and insignificant effect on the poverty rate (Shaleh et al., 2021). Then there are also other research results showing that there is an insignificant influence of HDI on poverty levels (Leonita & Sari, 2019); (Driver et al., 2023). There are even research results that state that the human development index does not have a significant effect on poverty (Nurjannah et al., 2022). Then some prove that the human development index partially has a positive and significant effect on poverty (Dharmmayukti et al., 2021); (Estrada & Wenagama, 2020). Then there is also what proves that the human development index has a partial positive and insignificant effect on poverty in Aceh Province (Yurina & Mislal, 2023).

4. CONCLUSION

Based on the discussion that has been done, the following conclusions can be stated: Partial economic growth has a negative influence on reducing poverty in West Sumatra. However, the effect is not significant. This means that the influence of economic growth variables in reducing poverty rates is still small.

The human development index has a significant effect in reducing poverty rates in West Sumatra. This means that the human development index is an important and meaningful variable in influencing the poverty rate in West Sumatra.

Economic growth and human development index have proven to simultaneously have a significant effect in reducing poverty rates in West Sumatra. This means that economic growth variables and human development indices together have a significant influence on changes in poverty levels in West Sumatra.

The implication and contribution of this research is that it is expected that the results of this research will be a strong consideration for policymakers in formulating more effective programs for poverty alleviation in West Sumatra. The results of this study are also expected to be a reference in similar research in the future.

Further research is needed so that more concrete answers are obtained about the insignificance of the influence of economic growth variables on poverty levels in West Sumatra.

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