



THE EFFECT OF HUMAN DEVELOPMENT INDEX (HDI) AND LABOR FORCE PARTICIPATION LEVEL (LFP) ON POVERTY IN WEST ACEH DISTRICT

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Abstract

This study aims to analyze the effect of the Human Development Index (HDI) and the Labor Force Participation Rate (LFP) on poverty in Southwest Aceh Regency. This research method uses multiple linear regression analysis with secondary data from the Central Statistics Agency (BPS) and related agencies in the period 2014-2023. The results of the study indicate that the HDI and LFP have a positive and significant effect on poverty rates, meaning that an increase in the HDI tends to increase poverty rates. This happens because even though the HDI increases, if the quality of education and health services available are not up to standard or are uneven, poverty can remain high. In this context, an increase in the HDI can worsen inequality, if it is not accompanied by equitable development. Then, although an increase in LFP is considered a positive indicator of high economic activity, it could be that a high LFP is actually correlated with high poverty if the types of jobs available do not generate enough income to meet basic needs. Work in the informal sector with low wages and no social security often increases poverty rates among the population even though they are involved in the world of work. These findings indicate the importance of efforts to improve the quality of human resources and create jobs to reduce poverty levels in Aceh Barat Daya District. Recommendations from this study include increasing access to education and health and strengthening employment policies to support inclusive economic growth.

Keywords: *HDI, LFP and Poverty Level*

A. Introduction

Poverty is one of the main problems in regional development, including in Southwest Aceh Regency. Poverty not only reflects the low standard of living of the community, but also has an impact on social, economic, and overall welfare aspects

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Todaro & Smith (2015). According to data from the Central Statistics Agency (2023), the poverty rate in Southwest Aceh Regency is still at a fairly high level when compared to other areas in Aceh Province. This indicates a serious challenge in efforts to eradicate poverty in the area.

One of the indicators that influences the poverty rate is the Human Development Index (HDI), which includes the dimensions of education, health, and community income (BPS, 2023). A low HDI is often directly proportional to a high level of poverty, because people who have limited access to education and health will find it difficult to improve their standard of living (Todaro & Smith, 2020).

In addition, the Labor Force Participation Rate (LFP) also plays an important role. A high LFP reflects the extent to which the working-age population is involved in economic activities (Smith & Doe, 2020; Blanchard & Johnson, 2013). However, in some cases, a high LFP is not always followed by a decrease in poverty rates, especially if the quality of available jobs is still relatively low or inadequate (Wooldridge, 2019).

The study on the influence of the Human Development Index (HDI) and the Labor Force Participation Rate (LFP) on poverty in Aceh Barat Daya Regency has a novel value, especially in the context of a specific region where most previous studies on the relationship between HDI, LFP, and poverty have been conducted at the national or provincial level. This study focuses on Aceh Barat Daya Regency, an area with unique socio-economic characteristics. This specific study contributes to understanding the dynamics of poverty at the district level, which is often overlooked in the literature (Todaro & Smith, 2020). Then this study integrates the simultaneous influence of HDI, which reflects the quality of human resources, and LFP, which reflects the level of economic involvement of the working-age population, on poverty. This approach fills the gap in previous literature that tends to discuss these variables separately (Gujarati & Porter, 2009), and more interestingly this study also considers the post-COVID-19 pandemic impact, which has changed socio-economic dynamics, including unemployment and access to education in this region. This approach is relevant in the modern context, considering that the pandemic has had a significant impact on the HDI and LFP in many areas (Stock & Watson, 2020).

Furthermore, the results of this study are expected to provide more targeted and contextual policy recommendations for Aceh Barat Daya Regency. These recommendations include developing education, increasing access to health, and creating quality jobs, which are in accordance with local needs. This is different from general policies which are often less effective in addressing poverty at the district level (Wooldridge, 2019).

Aceh Barat Daya Regency faces a dual challenge, namely improving the quality of the HDI and encouraging productive LFP so that both can contribute significantly to poverty reduction. Therefore, it is important to understand the extent to which the HDI and LFP influence the poverty rate in this area, so that the policies taken can be more targeted and sustainable.

Poverty is a multidimensional problem that is not only related to low income, but also limited access to education, health, and decent work. In the context of Aceh Barat Daya Regency, two main factors that have the potential to influence poverty rates are the Human Development Index (HDI) and the Labor Force Participation Rate (LFP).

HDI is an indicator that measures human development achievements based on three basic dimensions: long and healthy life (health), knowledge (education), and a decent standard of living (per capita income). A low HDI indicates a low quality of life for the community, which can worsen poverty (Todaro & Smith, 2020). Previous research has shown that increasing the HDI, especially through access to education and health, can significantly reduce poverty rates (Gujarati & Porter, 2009). In Aceh Barat Daya Regency, the HDI still faces challenges, especially in the education and health sectors, which contribute to stagnation in poverty alleviation. Efforts to increase the HDI in this area must focus on equalizing access to basic services for the poor.

According to the results of a study conducted by Franciari & Sugiyanto (2023), it was found that the HDI has a significant influence on poverty rates. This means that the higher the HDI value, the lower the poverty rate in an area. This shows the importance of developing human quality, such as education, health, and a decent standard of living, in efforts to reduce poverty. Then LFP also affects poverty rates, but with a more complex mechanism. High LFP does not necessarily always reduce poverty because the quality and productivity of the workforce are very important. If the available jobs are inadequate or the majority of jobs are only in the informal sector with low wages, the influence of LFP on poverty reduction is limited.

The same study was also conducted nationally by Nazara (2017) and in the Province of North Sumatra by Matondang (2023), M. Nasir (2020) and Husna & Yudhistira (2017) who found that LFP had a negative and significant effect on the poverty rate in North Sumatra Province. However, the high LFP is not always inversely proportional to the poverty rate. This is due to the dominance of work in the informal sector and the low quality of employment, which results in low wages and limited contribution to poverty reduction. Then the HDI has a significant negative effect on poverty. The higher the HDI, which reflects an increase in the quality of education, health, and community income, the lower the poverty rate. This shows that developing human quality can directly improve the economic conditions of the community and reduce poverty rates.

Furthermore, Rahmani (2021) conducted the same study in Medan City, which found that LFP had a significant effect on poverty in Medan City. However, increasing TFP does not always contribute to poverty reduction if the majority of the workforce is in the informal sector or in low-productivity jobs. Therefore, improving the quality and productivity of the workforce is important to ensure the positive impact of LFP on poverty reduction. LFP measures the percentage of the working-age population that is economically active, either working or looking for work. A high LFP can reflect a large workforce potential. However, the quality of available jobs is often a major obstacle to reducing poverty (Wooldridge, 2019). According to Stock and Watson (2020), the relationship between LFP and poverty depends on the quality of the available jobs. If employment only covers the informal sector with low wages, increasing LFP does not necessarily reduce poverty. In Southwest Aceh, the local economic structure dominated by the primary sector, such as agriculture, is one of the factors influencing the effectiveness of LFP in reducing poverty.

The combination of HDI and LFP is an important factor in poverty alleviation. Todaro and Smith's (2020) study emphasized that increasing HDI must be balanced with the provision of quality jobs to ensure sustainable poverty reduction. In Aceh Barat Daya Regency, the synergy between improving the quality of education and skills through HDI with the creation of quality jobs through increasing LFP can be an effective solution to overcome poverty. Unlike previous studies, most of which were conducted before the pandemic, this study considers the post-pandemic impact of COVID-19 on HDI and LFP. The pandemic has exacerbated challenges in the health, education, and labor market sectors, so the relevance of this study is higher in current socio-economic conditions (Stock & Watson, 2020). Then most previous studies only focused on LFP as a quantitative indicator.

This study highlights the importance of job quality, including living wages and sustainability, as an important aspect in reducing poverty, especially in areas dominated by informal sector jobs (Wooldridge, 2019). Furthermore, the results of this study are directed at providing more specific policy recommendations for Aceh Barat Daya Regency, overcoming the limitations of general policies that are often not contextual. This local approach is a new contribution to the literature on poverty alleviation (BPS, 2023).

B. Method

This study was conducted in Southwest Aceh Regency which focused on poverty analysis from the response of the Human Development Index (HDI) and the Labor Force Participation Rate (LFP) in the period 2014-2023.

The data used in this study came from secondary data obtained from the Central Statistics Agency (BPS) of Southwest Aceh Regency. Then to complete and support this research, the author also used library research and internet sources.

The technique used in collecting data for this study was Library Research with data retrieval through written sources (books) and digital (journals). This secondary data was carried out by collecting data directly, namely the author visited relevant agencies such as the Central Statistics Agency (BPS) of Southwest Aceh Regency.

This study conducted an analysis with multiple linear regression because the number of independent variables was more than one (Usman and Akbar, 2015). The equation is as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + e \dots\dots\dots(1)$$

Where Y is the poverty rate, β_0 is a constant, β_1 , β_2 are regression coefficients, X_1 is the Human Development Index, X_2 is the Labor Force Participation Rate and e is the error term. Then transformed into:

$$TKABD = \beta_0 + \beta_1 HDI + \beta_2 LPF + e \dots\dots\dots(2)$$

Where TKABD is the poverty rate of Southwest Aceh, β_0 is a constant, β_1 , β_2 are regression coefficients, HDI is the Human Development Index of Southwest Aceh, LPF is the Labor Force Participation Rate and e is the error term.

This study was conducted with classical assumptions to ensure that the regression model used produces unbiased, consistent, and efficient parameter estimates (Stock & Watson, 2020; Greene, 2018). These assumptions serve as a basis for the results of the regression analysis to be interpreted correctly and relevantly (Wooldridge, 2019). The types of classical assumption tests used are: (1) Normality Test, to test whether in a regression model, the interfering variables have a normal distribution (Muhid, 2014), (2) Heteroscedasticity Test, meaning that there are variables in the regression model that are not the same. Conversely, if the variables in the regression model have the same value (constant) then it is called homoscedasticity. The expected coefficient in the regression model is homoscedasticity (Ghozali, 2016), (3) Multicollinearity Test, meaning that there is a near-perfect linear correlation of more than two independent variables. The multicollinearity test aims to test whether in linear regression there is a high or perfect correlation between independent variables or not Suliyanto (2016), and (4) Autocorrelation Test is a statistical analysis carried out to determine whether there is a correlation between variables in the prediction model with changes in time. Therefore, if the assumption of autocorrelation occurs in a prediction model, then the disturbance values are no longer paired freely, but paired in autocorrelation (Suliyanto, 2016).

Then to answer the research problem, several tests were carried out, including: (1) Correlation Test to determine the relationship between two or more independent variables on the dependent variable simultaneously (Muhid, 2016), (2) Determination Coefficient Test to state the size of the contribution of the independent variable (X) and the dependent variable (Y), the correlation coefficient is the square of the correlation coefficient value (Ghazali, 2016), (3) t-test to determine the partial effect between the independent variables on the dependent variable (Basuki, 2016), and (4) Simultaneous Test (F test) to test whether all independent variables together (simultaneously) have a significant effect on the dependent variable. In other words, the F test is carried out to test the significance of the overall regression model (Stock & Watson, 2020).

C. Results and Discussion

1. Results

Development of Poverty Level, Human Development Index and LPF in Southwest Aceh Regency

Based on the data presented, the development of the poverty rate (Y), Human Development Index (HDI), and Labor Force Participation Rate (LPF) shows a significant trend over time. The poverty rate shows a fairly consistent downward trend, from 17.99% in year 1 to 14.43% in year 10. There was a slight increase in the poverty rate in year 4 (18.31%) before decreasing again in the following years. This could reflect external factors, such as economic disruption or natural disasters, that temporarily affect the conditions of the poor. A significant decline was seen in the period from year 6 to 10, with the poverty rate decreasing by 1.83 percentage points during this period.

The HDI increased from 63.08 in year 1 to 70.47 in year 10, reflecting improvements in the quality of education, health, and living standards of the community. The largest increase occurred between years 5 and 6, where the HDI increased by 1.00 percentage points, indicating an effective human development program during that period. The increasing trend of the HDI is inversely proportional to the decreasing poverty rate, confirming the importance of human development as a factor in poverty alleviation.

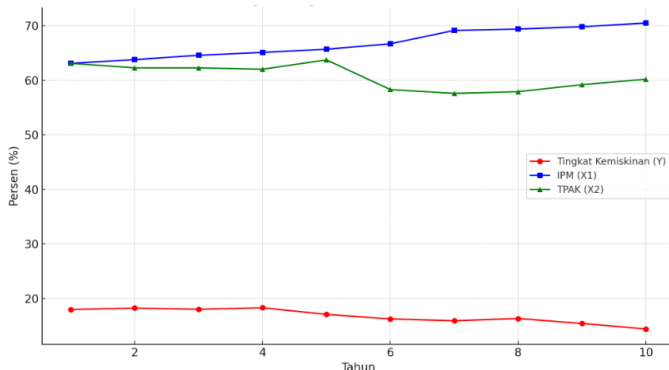


Figure 1. Development of Poverty Levels, Human Development Index and LFP in Southwest Aceh Regency 2014-2023

LFP shows a more fluctuating pattern than HDI. The highest LFP value was at 63.72% in year 5, while the lowest value was 57.58% in year 7. After experiencing a decline from year 5 to year 7, LFP increased again in the following years, reaching 60.18% in year 10. The fluctuation of LFP seems to affect the poverty rate indirectly, where the decline in LFP in years 7 to 8 was not fully followed by an increase in the poverty rate. This may indicate that job quality is more important than the amount of participation in influencing poverty.

These data show that an increase in HDI is consistently correlated with a decrease in the poverty rate, reflecting the importance of human development in poverty alleviation. On the other hand, the fluctuating LFP shows that labor force participation alone is not enough to reduce poverty, but must be supported by the quality of available jobs. An integrated development strategy, focusing on increasing HDI and providing quality jobs, is needed to ensure sustainable poverty reduction in the region.

2. Test Results

From the results of the study in the table above, it can be seen that there is an influence between the HDI and the LFP (Labor Force Participation Rate) level on the level of poverty in Southwest Aceh Regency. From the results of the study, the final results were obtained as follows:

a. Multiple Linear Regression Test

Tabel 1
Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	91,200	25,761		3,785	0,004
	HDI	1,233	3,186	0,066	3,387	0,000
	LFP	1,342	0,137	0,045	3,525	0,001

2	R Square	0,966
3	Adjusted R Square	0,912

Source: Regression Results (June 2024)

Based on the results of this study, the final multiple linear regression equation for the estimate is as follows:

$$TKABD = \beta_0 + \beta_1. HDI + \beta_2 LPF + e \dots\dots\dots (3)$$

$$TKABD = 91,200 + 1,233 HDI + 1,342 LPF \dots\dots\dots (4)$$

The linear regression equation above can be explained that the HDI has a positive value of 1.233. It can be interpreted that for every 1 percent increase in the HDI variable, the poverty level variable will increase by 1.233 percent assuming the LPF variable is considered constant. This is in accordance with research conducted by Wiratno (2021) analyzing how the HDI Level Influences Poverty in Central Java, showing that there is a positive influence between poverty and HDI in Central Java. This is because the HDI is a benchmark for the economic progress of a region and this has an impact on the poverty level in the region, meaning that in theory the higher the HDI of a region, the poverty level will decrease.

The LPF results are positive, namely 1.342. It can be interpreted that for every 1 percent increase in the LPF variable, the poverty level variable will increase by 1.342 percent assuming the HDI variable remains constant. This is in accordance with research conducted by Mukhtaruddin (2019) analyzing the Effect of LPF on Poverty in Sulawesi. The results of the study indicate that LPF has a significant effect on poverty. This is done to show that the level of labor force participation has a positive impact on poverty in Banten Province. shows that the high quality of human resources will improve skills, mastery of technology and population productivity so that it can reduce poverty rates in the area.

b. Analysis of Correlation Coefficient and Determination

Based on the results of this test, it can be seen that there is an influence between the IPM and LPF variables on the poverty level in Southwest Aceh Regency with an Adjusted R square determination coefficient of 0.966, which means that 96.6 percent can be explained by the IPM and LPF variables, while the remaining 3.4 percent can be explained by other variables outside the research model.

c. T-test (partial or individual)

The t-test is used to determine whether or not there is an influence between the independent variables of IPM and LPF on the poverty level variable in Southwest Aceh Regency individually with a level of confidence (level of confidence 95%), namely:

Table 2

Partial Test (t-Test)

No	Description	t count	t table
1	HDI	3,387	1,860
2	LPF	3,525	1,860

Source: Regression Results (June 2024)

d. Simultaneity Test (F Test)

To see the relationship between the IPM and LPF variables on the poverty level in Southwest Aceh Regency simultaneously, it can be seen in the following table:

Table 3
Simultaneous Significance Test (F Test)

ANOVA			
	<i>Df</i>	<i>F</i>	<i>Significance F</i>
Regression	2	14,649	.000 ^a
Residual	8		
Total	9		

Source: Regression Results (June 2024)

From the results of the F test in this study, the calculated F value was 14.649 with a significance figure (P value) of 0.000a. With a significance level of 95% ($\alpha = 0.05$). The significance figure (P value) of 0.000a < 0.05. Based on this comparison, H0 is rejected and H1 is accepted, which means that the HDI and LPF variables have a significant effect on the poverty rate in Southwest Aceh Regency.

The results of simultaneous testing obtained the value of F count = 14.649 while F table at F (table = 0.05) = 4.459, thus F count > F table, then the decision rule is the null hypothesis or H0 is rejected and H1 is accepted at the 95% level, meaning that the HDI and LPF variables have an effect on the poverty rate in Southwest Aceh Regency.

3. Discussion

a. Analysis of the Influence of HDI on Poverty Levels

Based on the results of the study, the HDI (Human Development Index) variable has a positive and significant relationship ($0.05 > 0.000$) or $t_{count} > t_{table}$ or $3.387 > 1.860$). This is in accordance with the research conducted by Wiratno (2021) analyzing how the Influence of HDI Level on Poverty in Central Java, shows that there is a positive influence between poverty and HDI in Central Java. The results of this positive influence are natural because HDI as a measure of human quality of life through the dimensions of health, education, and standard of living, is usually considered an indicator of development progress. However, several studies show that even though the HDI increases, if the quality of education and health services available are not up to standard or are uneven, poverty can remain high. In this context, increasing HDI can worsen inequality, if it is not

accompanied by equitable development. As stated by Todaro & Smith (2020), it proves that even though a high HDI is not followed by increased accessibility and quality of work, it can create unrealistic expectations for the population to escape poverty. This could worsen socio-economic disparities and ultimately increase structural poverty.

b. Analysis of the Influence of LPF on Poverty Levels

Based on the results of the study above, the LPF variable has a positive relationship with poverty in Southwest Aceh Regency with a calculated value $t_{table} > (3.525 > 1.860)$. This is in accordance with the research conducted by Athaillah (2023), the results of the study showed that the LPF variable had a positive and significant effect on poverty in all regencies/cities in Aceh Province. Then the study by Mukhtaruddin (2019) analyzed the Effect of LPF on Poverty in Sulawesi, the results showed that LPF had a positive and significant effect on the poverty rate. This positive effect is natural (contrary to theory) because LPF measures the percentage of the working age population who actively participate in economic activities, either working or looking for work. Although an increase in LPF is considered a positive indicator of high economic activity, it is possible that high LPF is actually correlated with high poverty if the types of jobs available do not generate enough income to meet basic needs. Work in the informal sector, with low wages and no social security, often increases poverty even though they are involved in the workforce.

Several studies have shown that despite high LPF, people working in the informal sector or with low skills often remain in poverty. This happens because they do not have access to jobs with decent wages, and there is no increase in skills or productivity (Wooldridge, 2019).

D. Conclusion

Based on the research results, it is proven that the HDI and LPF have a positive and significant effect on the poverty rate in Southwest Aceh Regency. Then the results of simultaneous testing prove that the HDI and LPF have an overall or joint effect on poverty in Southwest Aceh Regency. The results of this positive influence are different from the theory, this occurs because even though the high HDI is not followed by an increase in accessibility and quality of work, it can create unrealistic expectations for residents to escape poverty. This can worsen socio-economic disparities and ultimately increase structural poverty. Then even though the LPF is high, residents who work in the informal sector or with low skills often remain in poverty. This happens because they do not have access to jobs with decent wages, and there is no increase in skills or productivity.

Although the Human Development Index in Aceh Barat Daya Regency has increased, access to quality education is still a challenge. Therefore, it is important for local governments to improve the quality of education, especially in rural areas that still have limited access. Then focus on improving educational infrastructure, including facilities and quality teaching staff. Providing scholarships for children from poor families so they can continue their higher education. Focus on skills training that is in accordance with the needs of the local labor market, to increase the competitiveness of the workforce in the formal sector.

Although the LPF shows high labor force participation, most of the jobs available in the informal sector with low wages hinder poverty reduction. The government needs to improve the quality of employment, especially by reducing dependence on the informal sector and creating more quality jobs with decent wages. There needs to be a training program and job skills certification that can increase labor productivity. The creation of local entrepreneurship that supports the region's leading sectors, such as agriculture, tourism, and the creative industry, can be a long-term solution to improving people's welfare. An increasing Human Development Index is not always followed by poverty reduction if social and economic inequality is not minimized. Therefore, empowering the poor needs to be a major focus in development policies. Empowering communities through local economic programs, such as cooperatives, skills training, and microfinance for small and medium enterprises (SMEs). Improving the quality of access to health services to reduce the burden of health that often leads to poverty. Conducting deeper analysis of existing social inequalities, both by region and socioeconomic status, to identify groups most vulnerable to poverty.

Development policies that only prioritize increasing the HDI without considering the distribution of development results can worsen social inequality and increase poverty. Formulate more inclusive development policies, by considering the gap in the distribution of HDI and LPF in various regions in Aceh Barat Daya Regency. Prioritize policies that encourage equitable development between regions, especially regions that have been left behind in terms of infrastructure and basic services. Strengthen cooperation between the public and private sectors to create an ecosystem that supports poverty reduction, such as through targeted Corporate Social Responsibility (CSR) programs.

It is important to monitor and evaluate the effectiveness of the development policies implemented. Conduct routine surveys and research on poverty, HDI, and LPF to determine progress and obstacles in achieving development targets. Compile more specific local poverty and welfare indices to see the impact of policies at the household and community levels directly. Evaluate the social and economic impacts of development

policies that have been implemented, in order to determine the most effective policies in reducing poverty in Aceh Barat Daya Regency.

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