

## RELATIONSHIP BETWEEN HUMAN DEVELOPMENT INDEX AND POVERTY PERCENTAGE IN EAST JAVA IN 2023

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**Abstract.** This research was used to analyze, understand and identify the relationship between the human development index and the percentage of poverty in East Java in 2023, the period of economic recovery after the Covid-19 pandemic. Poverty is a complex problem related to population, economics, social and culture. East Java is the third poorest province on the island of Java, with a poverty rate of 10.35% as of March 2023. Sampang City is the city with the highest poverty rate, namely 21.76%. The simple correlation method is used to analyze the relationship between two variables and also measure the strength and direction of influence of the variables used so that it can be identified how big the relationship between variables is statistically. The variables used are the human development index value for one year (2023) and the poverty percentage variable in 2023. The results of decision making after processing the data, it can be concluded that the HDI results have a relationship with the poverty percentage of East Java in 2023 with a correlation value amounting to 0.810 which is included in the strong correlation category so that the research hypothesis can be accepted. The correlation in the research has a negative direction. Negative correlation means that an increase in the HDI variable is accompanied by a decrease in the percentage of poverty, and vice versa.

**Keywords:** HDI; Poverty percentage; Simple correlation

### I. INTRODUCTION

Poverty is a complete condition and is a shared responsibility, namely the government and society in a country in handling it. In Law No. 24 of 2004, poverty is a socio-economic condition of individuals or groups of people who cannot fulfill basic rights to maintain and develop a dignified life. Economic growth and development are one of the efforts to overcome the problem of poverty, economic growth is included in the concept of economic development (Atalay, 2015).

Economic development and improvement aim to help improve people's living standards so that they are structured, consciously and have continuity to be able to achieve better conditions (Noviatamara et al, 2019). The problem of poverty if left unchecked can affect the social, political and cultural order, the country's economy and so on. Poverty can be caused by dysfunctional social and economic orders. Development is a multidimensional process (Harsono, 2022).

Poverty is often described as a vicious circle because of its mutually reinforcing and difficult to break nature. Poverty triggers interrelated conditions that can make it difficult for people to get out of these conditions. Poverty in a spatial approach emphasizes the analysis of the geographical distribution of poverty and environmental factors that affect the level of welfare of a region. The problem of poverty if analyzed using a spatial approach with the concept of space, location, and inter-regional relationships can provide

characteristics of poverty factors such as uneven geographical distribution, differences in environmental and physical factors, economic polarization, and inter-regional relationships.

Poverty can have a significant negative impact on the HDI (Amelinda & Rachmawati, 2022). The HDI has four criteria, namely literacy rates, health, and average length of schooling which are used to assess growth performance in the education sector and the participation of purchasing power in society in primary needs can be seen from the average large and small income approach in per capita expenditure (Chalid, 2014).

The HDI value is a criterion for driving equitable development in society. The HDI can be used as a tool to indicate disparities in development between regions. The low HDI value is used by the government as a reference in making policies to reduce inequality by paying more attention to disadvantaged areas. According to BPS, the HDI has three indicators, namely healthy age, education or knowledge, and standard of living in society. The three components of the HDI must always be balanced, a high HDI value is always in line with good human resources. Improving the quality of society can be seen from the HDI value (Prihastuti, 2018). The HDI value between regions and spaces can have different values due to differences in spatial location, area differentiation, and differences in regional conditions. Poverty conditions in East Java have a fairly high level of inequality between urban and rural areas, in addition, the poverty rate is also high between rural and urban areas. To see

the comparison of poverty with the HDI in East Java Province for five years, see the table below:

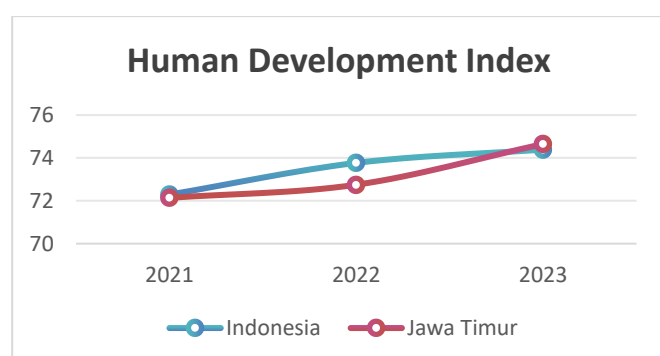
**Table 1. Poverty and Human Development Index of East Java Province 2019-2023**

Number	Years	Poverty (%)	HDI(%)
1	2019	10,20	71,50
2	2020	11,46	71,71
3	2021	10,59	72,14
4	2022	10,49	72,75
5	2023	10,35	74,65

Source: BPS East Java in Figures 2023

If seen from the table, it can be concluded that the poverty rate in East Java is unstable because it has decreased and increased. Efforts by government officials to reduce poverty can be in the form of social assistance and protection of poor households by providing protection for micro-enterprises (UMK) to create employment opportunities (Prayitno, 2021). Government officials can create skilled workers by providing training for the productive age population, this can be used to reduce unemployment rates among the productive age population which has a major impact on contributing to poverty rates.

The poverty rate drastically increased in 2020, this spike was caused by Covid-19 which caused economic growth to be hampered due to restrictions on population mobility. Meanwhile, the HDI value in East Java has always increased, which means that the handling of the HDI by government officials is going well. The HDI can be used as an important benchmark that can ensure that development does not only focus on economic growth, but also creates a prosperous, equal, and competitive society. The achievement of East Java's Human Development Index in 2023 has increased drastically and is above the national average of 74.39. The performance of the government and society is very good so that it can be above the national average. The national average Human Development Index can provide a general picture of the welfare of the people in a country. An increase in the Human Development Index value can indicate an increase or decrease in the performance of equitable development in a region (BPS, 2017). A comparison of East Java's Human Development Index with the national average for three years can be seen in the graph below:



**Figure 1. Comparison of East Java's HDI with the national average**

Based on previous research conducted by Muqorrobini (2017), the results of data processing using the linear regression method showed that the HDI variable had a negative direction and a significant influence on increasing economic development in East Java. The difference between previous research and this research is in the difference in the methods used, the previous research used linear regression by testing the effect of HDI on economic growth and development, but did not use the poverty variable. The regression method is used to test the magnitude of the influence between the independent variable and the dependent variable, while the correlation method is used to see the magnitude of the relationship between the variables studied.

The previous research from Ulumi (2024) conducted a hypothesis test and obtained the results of the HDI value which did not significantly affect economic growth in East Java in 2021. The difference between this research and Ulumi's research (2024) is in the method used and the results obtained are different. In the previous study, using a multiple linear regression method which is different from this study which uses the correlation method to determine how strong the relationship is between the HDI variable and the poverty percentage variable.

## II. RESEARCH METHOD

This paper is included in the type of quantitative research. Quantitative research can be defined as a research method that has an inductive, scientific, and objective nature with data in the form of numbers that are calculated and assessed by statistical analysis. The location of the research study chosen is East Java Province using secondary data sources obtained from BPS. The data to be processed is the percentage of poverty and HDI data for East Java for a period of one year 2023. The data used contains 38 regencies/cities in East Java. The level of poverty can be defined as the percentage of people who are below the poverty line in an area (Franciari, 2012). The calculation of the poverty level can use the formula:

$$\text{Poverty Percentage} = \frac{\text{poverty rate}}{\text{total population}} \times 100\%$$

For the second variable, namely the Human Development Index, it can be calculated using three approaches, namely including healthy age; education or knowledge and decent living or income. The HDI is calculated to determine the level of welfare of the population in a region. To get the value of the human development index, it can be calculated using the formula:

$$HDI = \frac{1}{3} \times (X1 + X2 + X3)$$

The simple correlation method was chosen as the data processing method in this study. The simple correlation method is used to see the relationship between a dependent variable (Y) and an independent variable (X). If the data to be

processed uses a ratio or interval scale, then the data analysis that will be selected is the Product Moment or Person Correlation (Sihombing, 2019). The correlation test using the data to be processed requires the help of the SPSS 26 application. The person correlation type is chosen to measure the linear correlation between two normally distributed quantitative variables. After determining the type of correlation selected, the next step is to carry out a significance test to determine how much the correlation found is statistically significant. The next stage is to calculate the correlation coefficient value ( $r$ ) to determine the level of correlation in the low, medium or strong category. The correlation coefficient can be negative or positive. A positive coefficient means that an increase in the X variable will always be followed by the Y variable value which also increases, and if the X variable value decreases, the Y variable will also decrease. Meanwhile, a negative correlation means that there is an increase in the X variable, then the Y variable experiences a decrease in value, and vice versa. The level of the correlation coefficient can be identified using table 2 below, namely:

Table 2. Correlation Level

Number	Large Coefficient	Category
1	0,80 - 1	Very strong
2	0,60 - 0,79	Strong
3	0,40 - 0,59	Strong enough
4	0,20 - 0,39	Low
5	0,00 - 0,19	Very low

Source:: Anindita (2017)

### III. RESULTS AND DISCUSSION

#### 1. The State of Poverty in East Java in 2023

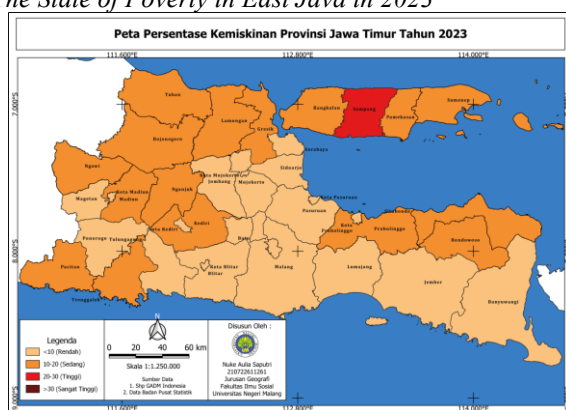


Figure 2. Map of Poverty Percentage in East Java Province 2023

If we look at the map of poverty percentage in East Java in 2023, it can be understood that there are still many districts/cities in East Java whose poverty percentage values are included in the moderate category. Poverty in urban and rural areas shows different dynamics. The disparity between poverty in urban and rural areas is the main focus that must be considered by the central government. The percentage of poverty in urban areas fell from 7.78% in September 2022 to

7.50% in March 2023. This is in contrast to the percentage of poverty in rural areas, which increased from 13.90% to 13.98% in the same period.

The highest poverty rate in 2023 was in Sampang Regency in Madura with a poverty rate of 21.76%. Madura Island has a fairly high average poverty percentage, this is due to the location of Madura Island which is not connected to the main island, namely Java Island, which makes the accommodation process more difficult to reach. Madura Island can be said to be in an isolated condition because it is far from the provincial capital which is the center of industrialization. The location surrounded by the ocean causes Madura Island to soar in urbanization and migration rates. If this continues to be allowed, it will result in a shortage of workers.

Poverty that occurs in a complex manner will cause a tendency towards the inability of poverty in society to escape the cycle of poverty (Edna Safitri et al., 2022). 2023 can be said to be a period of recovery from the Covid-19 pandemic. Poverty is a problem that must continue to be considered because the quality of life of the population in an area can be defined as the relationship between welfare problems and poverty (Pratiwi et al., 2018). East Java Province has succeeded in reducing the percentage of poor people as of March 2023 to 10.35 percent, a decrease of 0.14 percent as of March 2022. Poverty in East Java is also caused by the high unemployment rate or TPT. In 2023, the TPT value of East Java showed a decrease of 0.48% from the previous year. However, the TPT value in East Java is increasingly high, contributed by graduates of Vocational High Schools, which is 8.70%. Unemployment can cause poverty because they cannot meet their own basic needs. Income wages are important for improving welfare in society. The government must manage and regulate income or wages in society and set a minimum wage in each region. Wages that experience a decrease in value will have an impact on increasing poverty levels in society (Ningrum, 2017). Government policy has regulated the distribution of wages in Law Number 78 of 2015 concerning Wages, province minimum wages, district/city minimum wages, province sectoral minimum wages, and district/city sectoral minimum wages are the several categories of minimum wages.

#### 2. Data Processing Results Using The Correlation Test Method

Table 3. Results of Correlation Test Analysis

		Poverty in East Java (Percent)	Poverty in East Java (Percent)
Poverty in East Java (Percent) Pearson correlation		1) 1	2) -.810**
HDI	Sig (2-tailed)		.000
	N	3) 38	4) 38
	Pearson correlation	-.810**	1
	Sig (2-tailed)	.000	
		5) 38	6) 38
		N	

According to the results of the Pearson correlation analysis in the table, a significance figure of  $0.000 < 0.050$  was obtained, meaning that they are interrelated (correlated). If the Sig results show a figure smaller than 0.050, it can be concluded that there is a correlation or relationship between the HDI value and the percentage of poverty significantly. If we pay attention to the degree of correlation that has been processed, the results obtained have a value of 0.810, which means that it has a strong correlation so that the research hypothesis can be accepted. The results of the correlation test have a negative correlation relationship, meaning that the higher the HDI value, the percentage of poverty will also decrease. Likewise, the opposite is true if the HDI value is lower, the percentage of poverty will increase in value. The results of data processing that get high values show a strong relationship between the HDI and the percentage of poverty, as evidenced by the East Java HDI in 2023 reaching a value of 73.38 and the percentage of poverty in East Java in 2023 around 10.35. While the value of the East Java HDI in the previous year in 2022 was around 72.75 and the percentage of poverty reached 10.35. When viewed in 2022, it can be concluded that the low HDI value will affect the increase in the poverty percentage. The increase in the HDI value in 2023 is in line with the decrease in the poverty percentage. The decrease and increase in the HDI figure and the poverty percentage occur in opposite directions or have a negative direction. A negative relationship is interpreted as a relationship that runs in an unbalanced manner between variables (Sihombing, 2019).

This study demonstrates that the decline in East Javan poverty is adversely correlated with the rise in the human development index. Only the HDI variable has a relationship with the number of people living in poverty, which is in contradiction to the results of earlier studies, such as that conducted by Ratu Gandasari (2016), which found that the HDI value variable has a positive and substantial effect on poverty.

This study produces the same final results as the previous study written by Kotambunan et. al. (2016) which has the final result that the HDI value has a negative and significant correlation with poverty. A strong correlation can indicate an increase in the HDI which contributes to poverty reduction. A high HDI value can reflect a better quality of life for the community, including aspects of education, health, and people's purchasing power. These three factors play an important role in reducing poverty. On the other hand, low HDI values can be an indicator that people experience limitations in access to education, health services, and the economy, which can worsen poverty levels.

Based on research by Umiyati et al. (2017) stated in the results of his writing that poverty can have a negative influence and have a significant influence on the HDI variable. The negative influence is often said to be the opposite influence between variables. The analysis obtained is that if there is an increase in the poverty variable that occurs in a region, it indicates a decrease in the HDI value in that region. Research conducted by Umiyati et al. (2017) used the multiple

regression method, which was then analyzed using a descriptive approach.

The influence that occurs on the poverty variable and HDI occurs indirectly, caused by dysfunctional government systems. For this reason, measuring the quality of HDI and poverty is very important to be used in determining central government policies in dealing with inequality that occurs in isolated areas that are difficult to reach or receive access to basic services. The need for the three main pillars of life support such as clothing, food and shelter must be met fairly by all people.

#### IV. CONCLUSION

The HDI value has a very strong correlation with the poverty percentage value. This means that one variable has a strong relationship with another variable. The HDI variable has a negative correlation with the poverty percentage value, meaning that if there is an increase in the HDI value, the poverty percentage value will also decrease and if there is a decrease in the HDI value, the poverty percentage value will also increase. The problem of poverty must be the main focus to be addressed by the government and the entire community. With the analysis in the form of research that examines poverty, it is hoped that the government will use it as a reference for making a poverty handling plan.

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