

ANALYSIS OF THE EFFECT OF ECONOMIC GROWTH, PERCENTAGE OF POOR PEOPLE, AND OPEN UNEMPLOYMENT RATE ON THE HUMAN DEVELOPMENT INDEX IN EAST KALIMANTAN PROVINCE

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ABSTRACT

This study aims to identify the factors that influence the human development index in East Kalimantan province during the period 2015 to 2022. The research findings were evaluated using the Fixed Effects Model (FEM) panel data test conducted with Eviews 13 software. The dataset consists of secondary data collected from 10 districts/cities in East Kalimantan, both time series and cross-sectional data. The research findings show that the economic growth variable has a positive and significant influence on the human development index. In contrast, the poverty rate variable has a negative and significant influence on the human development index. In addition, the open unemployment rate has a negative and significant impact on the Human Development Index in East Kalimantan Province.

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1. INTRODUCTION

Major emphasis is usually placed on human development planning, as improving the quality of human resources is an important benchmark for measuring the achievement of economic progress. The Human Development Index (HDI), as defined by Chalid (2014: 1-2), measures the progress made in human development by focusing on key aspects of quality of life. These aspects include the attainment of a long and vigorous life (which is indicative of the health sector), literacy rates, school enrollment rates, and average duration of education (measuring educational development performance), as well as the purchasing capacity of individuals for essential needs as indicated by average expenditure, average income per person (based on income). The Human Development Index (HDI) consists of these four components.

The Human Development Index (HDI) score of East Kalimantan, one of the provinces in Indonesia, has continued to increase over the years. In 2015, the HDI value was observed at 74.17. The figure shows a consistent increase from year to year until it reaches 76.88 in 2021. However, there was a decline in 2022 until the value dropped to 77.44. Based on BPS Human Development Index statistics, changes in East Kalimantan's HDI value can be caused by various variables, including shifts in economic growth, increases in poverty rates, and increases in open unemployment rates.

The correlation between economic growth and human development arises from the fact that strong economic growth can expand people's economic prospects, raise income levels, and in turn increase the per capita income component of the Human Development Index (HDI). However, when economic growth is not equitable or inclusive, it can lead to social and economic disparities. Therefore, it is imperative to prioritize income equality to ensure economic growth contributes positively to the Human Development Index (HDI). Positive growth signifies an increase in economic activity, while negative growth signifies a decrease. This indicator is crucial for assessing the level of success of a region's development.

At the development stage, developing countries should prioritize achieving substantial economic growth to improve their economies. The reason is because economic growth is directly related to the expansion of goods or services created by society. Thus, the overall welfare of society will increase along with the increase in the production of goods (Mirza, 2012).

The proportion of individuals living in poverty is a very appropriate additional metric for assessing the Human Development Index (HDI). The prevalence of poverty among a large population can give an

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idea of the magnitude of social inequality. High levels of poverty may hinder HDI improvement by limiting people's access to education, healthcare, and economic opportunities.

Lanjouw, as highlighted in Ginting et al (2008), emphasizes the fundamental equivalence between human development and poverty alleviation in Indonesia. Allocating resources to education and health will provide much greater benefits to individuals living in poverty compared to those who are not poor, as poor individuals rely heavily on manual labor as their main livelihood. Structural unemployment refers to a scenario where the labor force has no employment opportunities. Various factors can contribute to high unemployment, including declining economic activity, declining industrial sectors, and technical advances that increase efficiency and make large amounts of labor unnecessary.

Tambunan (2001) asserts that a large population plays an important role in driving economic progress. The labor force consists of individuals of working age who actively participate in employment and contribute to the overall productivity of a region, as measured by the human development index. Therefore, if the human development index shows a favorable state, then a large portion of the labor force will be absorbed into employment, thereby reducing the number of unemployed.

Literature Review

Human Development Index

Tambunan (2003: 167) defines the Human Development Index (HDI) as an index that measures an important part of economic development outcomes, particularly the level of human development. The Human Development Index measures the evaluation of living conditions, literacy, education, and life expectancy. The human development index describes how individuals utilize development outcomes for income, education, health, and other related elements. The Human Development Index (HDI) is measured through the evaluation of three main dimensions: cognitive achievement, a satisfactory level of material well-being, and a period of good health. Indicators are used to represent or signify each dimension. Life expectancy at birth is a metric that measures the duration and standard of one's life. Expected years of schooling and average years of schooling are metrics that measure various aspects of knowledge. A recent evaluation of per capita expenditure provides valuable insights into the standard of living in Indonesia. The Human Development Index (HDI) is a metric for assessing human progress. (BPS, Human Development Index 2018).

Economic Growth

Economic growth, as defined by Sukirno (1996) in Prihastuti (2018), refers to a sustained increase in output per capita over a long period. It serves as a key indicator of development success and is often associated with improved social welfare. Todaro (2009) asserts that there are three main constituents responsible for the economic progress of any country. These three constituents are as follows: 1. Capital accumulation refers to the process of acquiring and increasing various forms of investment, such as land, physical equipment, and human resources. 2. An increase in population, which in turn leads to an increase in the labor force. 3. Technological advancement, which includes new techniques or refinements to existing task management methodologies.

Poverty

The concept of poverty as a social phenomenon is different from poverty as an economic problem. Poverty, as a social phenomenon, is related to the view of the poor who do not have the motivation and aspirations to improve their quality of life. Poverty, as an economic phenomenon, is a manifestation that often appears in poor communities, usually related to the problem of insufficient income. According to economic theory, improvements in human capabilities, increases in investment capital, and advances in technological progress have the potential to break the cycle of poverty.

Typically, individuals from poor communities face challenges in managing their businesses and limitations in accessing economic opportunities. The potential is higher because they are relatively underdeveloped compared to neighboring cities. Ginanjar Kartasasmita (1996: 234-235) asserts that income levels serve as an indicator to assess the extent of poverty. Regarding poverty, it can be classified into two different categories: relative poverty and absolute poverty.

Unemployment

Unemployment refers to a situation in which individuals who are part of the labor force do not have a job despite actively seeking employment (M. Nanga, 2001: 253). Unemployment arises because of the gap between the growth of the labor force and the availability of employment. Sukirno (2008) defines unemployment as a situation where people who are actively looking for work are unable to get a job.

According to Simanjutak (2003), unemployment refers to those who are of working age and do not work at all or work less than two days a week before enumeration. These people are actively looking for work.

2. METHOD

This study includes four variables: one dependent variable, the Human Development Index (Y), and three independent variables: economic growth (X1), percentage of poor people (X2), and open unemployment rate (X3). The study focuses on East Kalimantan Province which includes 10 districts and cities from 2015 to 2022. The data used consists of a combination of panel data taken from secondary sources (time series) and cross-sectional data covering 10 districts/cities in East Kalimantan. Data collected from BPS East Kalimantan Province includes information on the Human Development Index, economic growth, population, poverty rate, and reported unemployment rate.

$$Y_{it} = \beta_0 + \beta_1 X1 + \beta_2 X2 + \beta_3 X3 + \varepsilon$$

Information:

Y : Human Development Index (HDI)

β_0 : Constant

X1: Economic Growth

X2: Percentage of Poor Population

X3: Open unemployment rate (TPT)

ε : error term

3. RESULT AND DISCUSSION

Panel Data Selection Test

Panel data regression is a statistical technique that integrates time series data and cross-sectional data as explained by Basuki (2016: 276-277). Various tests, including Chow, Hausman, and Lagrange Multiplier tests, can be conducted to determine the most appropriate panel data management paradigm.

1. Chow Test

The Chow test uses the cross-section F probability value as the decision-making criterion. If the cross-section F probability value exceeds 0.05, then the Common Effect method is chosen as the preferred model. If the probability value of the probability F is below 0.05 then the fixed effect method is chosen as the model.

Table 1 Chow Test

Effects Test	Statistic	d.f.	Prob.
Cross-section F	42.576107	(9,67)	0.0000
Cross-section Chi-square	152.397272	9	0.0000

Judging from Table 1, the FEM model (Fixed Effect Model) was selected because the probability value was $0.0000 < 0.05$ after the data was processed with the Chow test.

2. Hausman Test

The Hausman test is a statistical test used to determine the most appropriate model choice between the Fixed Effect and Random Effect models. If the probability value obtained from random cross-sectional analysis is less than or equal to 0.05, the model chosen is the Fixed Effect (FEM) model. If the random cross-sectional probability value exceeds 0.05, the model chosen is the Random Effect (REM) model.

Table 2 Hausman Test

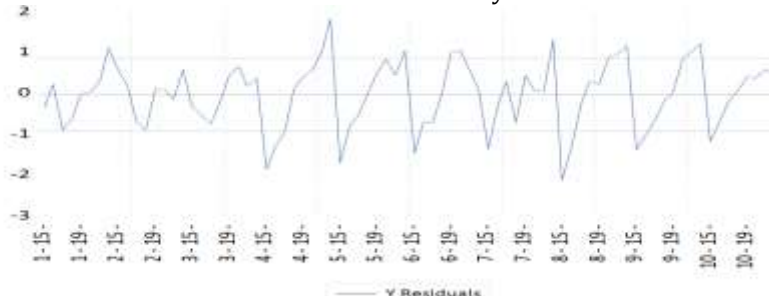
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	46.518737	3	0.0000

Judging from Table 2, the FEM model (Fixed Effect Model) was selected because the probability value was $0.0000 < 0.05$ after the data was processed with the Hausman test.

Classical Assumption Test

Statistical prerequisites for regression analysis involve testing classical assumptions. This is done to verify that the final regression model achieves optimal estimation accuracy and consistency.

Table 3 Heteroscedasticity Test



Observing the residual graph depicted in blue, shows that the graph does not intersect the 500 and -500 boundaries. This indicates that the residual variance remains constant. Thus, no signs of heteroscedasticity were detected or a positive result of the heteroscedasticity test.

Hypothesis Testing

F-statistic Test

The F-statistic test is used to assess the collective impact of the independent variables, namely economic growth (X1), percentage of poor people (X2), and open unemployment rate (X3), on the dependent variable, the human development index (Y).

Table 4 F-statistic Test

R-squared	0.965273
Adjusted R-squared	0.959053
S.E. of regression	0.884008
Sum squared resid	52.35852
Log likelihood	-96.55860
F-statistic	155.1931
Prob(F-statistic)	0.000000

The F statistical value of 155.1931 and the probability value (F Statistic) of 0.0000 < 0.05 indicate that the three independent variables, namely Economic Growth (X1), Poverty Level (X2), and Open Unemployment Rate (X3) have a significant effect simultaneously on the dependent variable, namely the human development index (Y).

Test Coefficient of determination (R2)

The relationship between the Human Development Index (Y) in East Kalimantan Province and the variables Economic growth (X1), Percentage of Poor Population (X2), and Open Unemployment Rate (X3) can be described precisely with an Adjusted R Square value of 0.959053, indicating that these factors account for 95.9053% of the variation in the human development index. The remaining research model that does not include other factors is 4.0947%.

T-Test

Table 5 T-test

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	70.30049	2.224334	31.60519	0.0000
X1	0.064619	0.031796	2.032312	0.0461
X2	-0.730035	0.295695	-2.468880	0.0161
X3	-0.253555	0.067025	-3.782984	0.0003

The t-statistic value of 2.032 and the probability value (significance) of 0.0461 (<0.05) indicate that the economic growth variable (X1) has a significant influence on the human development index variable (Y). Statistical analysis produces a result of -2.468 with a probability value (significance) of 0.0161 (<0.05) which indicates that the variable X2 which represents the percentage of poor people has a significant influence on the variable Y which represents the human development index.

Based on the statistical value of -3.782 and the probability value (significance) of 0.0003 (<0.05), it can be concluded that variable X3 which represents the open unemployment rate has a considerable influence on variable Y which represents the Human Development Index.

Analysis of Fixed Effect (FEM) panel data regression equation

Table 6 Panel Data Regression

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	70.30049	2.224334	31.60519	0.0000
X1	0.064619	0.031796	2.032312	0.0461
X2	-0.730035	0.295695	-2.468880	0.0161
X3	-0.253555	0.067025	-3.782984	0.0003

From the processed data above, the regression equation is obtained:

$$Y = 70.3004868008 + 0.0646188229766 * X1 - 0.730035628274 * X2 - 0.253555475721 * X3 + [CX=F].$$

The constant value obtained is 70.30049. This shows that for every one-unit increase in the average of the independent variables, there is an increase of 70.30049 in the dependent variable. The regression coefficient of the economic growth variable (X1) of 0.068 shows a positive relationship. Thus, it can be concluded that an increase in the economic growth variable (X1) by 1% is equivalent to an increase in the human development index variable (Y) by 0.068, and vice versa.

The regression coefficient of the variable "percentage of poor people" (X2) of -0.730 shows a negative relationship. Therefore, it can be concluded that a 1% increase in the proportion of poor people variable (X2) causes a decrease of 0.730 in the human development index variable (Y), and vice versa. The regression coefficient of the open unemployment rate variable (X3) of -0.253 indicates that a 1% increase in the open unemployment rate (X3) causes a decrease in the human development index (Y) by 0.253, and vice versa.

Discussion

The results of the analysis show that the economic growth variable (X1) has a significant and positive influence on the human development index of East Kalimantan province from 2015 to 2022. The coefficient of 0.064619 shows a fairly strong influence. This finding indicates that a 1% increase in economic growth will cause an increase in the human development index in East Kalimantan province by 0.064. The results of this study are in line with the theoretical framework put forward by Professor Kuznet, which states that a significant increase in output per capita is the main feature of modern economic growth (Todaro, 1997). The anticipated increase in output is GDP per capita. This growth is mainly driven by a strong expansion in the manufacturing sector, which in turn causes a shift in spending patterns to align with the increase in demand. As a result, when economic growth increases, the rate of growth of production per person and the shift in consumption patterns will increase, increasing the purchasing power of the high society. Greater purchasing power will have a positive impact on the human development index (HDI) as one measure of HDI is known as the income index. Higher economic growth is positively correlated with an increase in the human development index.

The results of the analysis show that the variable This finding indicates that a 1% increase in the poverty rate alone has resulted in a significant decrease in the human development index of East Kalimantan Province by 0.730. With a probability of 0.0161, which is below the threshold of 0.05, it can be concluded that poverty has a statistically significant effect on the Human Development Index (HDI) in East Kalimantan Province. The calculation results show that poverty in East Kalimantan has a considerable impact on the HDI value. According to the premise and research of Mirza (2012), poverty has a detrimental and large impact on the Human Development Index (HDI) in Central Java. Poverty is identified as one of the contributing factors to poor health, which in turn hinders one's ability to work efficiently, leading to decreased production, decreased income, and potential job loss. As a result, this

leads to the inability of individuals to fulfill their needs due to the absence of a source of income (Napitupulu, 2017).

The results of the analysis show that the variable open unemployment rate (X3) has a negative and significant influence on the human development index in East Kalimantan province from 2015 to 2022. The coefficient of the variable is -0.276902. The finding shows that the open unemployment rate increased by 1%, while the human development index in East Kalimantan Province decreased by 0.276. With a probability of 0.0001 which is less than 0.05, it can be concluded that the unemployment rate has a considerable influence on the Human Development Index (HDI) in East Kalimantan Province. Unemployment is closely related to the quality of human growth. Increased unemployment will result in reduced welfare in the lives of individuals. Unemployment reduces their income. Income is the main determinant in improving human development in this scenario (Feriyanto, 2014). A widespread increase in the unemployment rate can adversely affect a country's Human Development Index (HDI). Rising unemployment rates can be an indicator of economic instability and provide challenges in meeting essential needs such as food, shelter and education. Lack of access to education and healthcare can lead to a decline in the Human Development Index (HDI). However, the actual effect depends on other additional variables and may vary across regions and countries

4. CONCLUSION

The research findings show a clear and significant correlation between changes in economic growth and the Human Development Index (HDI). In particular, countries with strong economic growth tend to see positive and significant increases in various HDI indicators. The poverty rate has a negative and significant effect on the human development index, indicating that poverty leads to poor health, decreased labor productivity, and ultimately the inability to meet basic needs due to lack of income. The variable representing the open unemployment rate has a negative and statistically significant impact on the Human Development Index (HDI), which indicates that high levels of unemployment in a country can hurt various dimensions of the HDI. High levels of unemployment can result in challenges for individuals to meet essential needs such as food, housing, and education. Impacts can include a decrease in average income, limited access to education, and a decline in social welfare. This study specifically examined three independent variables: economic growth, the number of poor people, and the open unemployment rate. In addition, it analyzed one dependent variable, namely the Human Development Index. Given the results obtained, it is recommended for other studies to include additional independent variables, such as capital expenditure variables, education variables, or labor variables. However, it should be noted that this study has limitations because it only covers a period of 8 years, from 2015 to 2022. It is recommended to increase our understanding of the factors that influence the human development index.

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