

MODELING OF HDI AND ITS INFLUENCING FACTORS IN EAST JAVA PROVINCE

Citra Mulya Sari

UIN Sayyid Ali Rahmatullah Tulungagung

citramulyasari@uinsatu.ac.id

Abstract

The overall quality of human development in Indonesia is shaped by various social and economic factors. In East Java, the Human Development Index (HDI) has consistently risen from 2018 to 2022. This study explores the impact of poverty, unemployment, health, and economic growth on the HDI of East Java Province. Employing a quantitative approach with an associative method, the research utilizes secondary data officially provided by the Central Statistics Agency (BPS). Panel data regression analysis is conducted to examine the relationship between the selected variables and HDI. The results indicate that, as a whole, poverty, unemployment, health, and economic growth significantly and positively influence East Java's HDI. However, when analyzed separately, poverty does not show a significant effect. In contrast, unemployment, health, and economic growth each contribute positively and significantly to HDI improvement. These findings highlight the critical role of economic and social factors in advancing human development. Reducing unemployment and improving health services, alongside sustainable economic growth, can enhance HDI in East Java. Policymakers should focus on strategies that support job creation, improve healthcare access, and promote economic stability to drive overall human development. Strengthening these aspects will contribute to long-term improvements in the region's HDI.

Keywords: Human Development Index, Poverty, Unemployment, Health, and Economic Growth

INTRODUCTION

Development can be defined as a continuous process of change aimed at achieving better conditions in all aspects, both material and spiritual. The Human Development Index (HDI) is essential in attaining the goal of enhancing community well-being. HDI serves as a benchmark for economic development by assessing the extent to which society can attain adequate income levels, good health, and quality education. (Badan Pusat Statistik, 2023)

Through HDI, health levels are measured based on the dimension of longevity and healthy living. Longevity and healthy living in HDI are represented by life expectancy (LE), which reflects the average age calculated from birth. LE indicates the overall health level of a population by showing the average lifespan achieved by society.

The calculation of HDI to measure the level of human development is based on previously mentioned indicators, namely health, education, and income, which have been standardized using minimum and maximum values for each indicator. The measurement utilizes four components: Life expectancy, literacy levels, mean years of education, and the ability to afford basic necessities—measured through average per capita expenditure—are key indicators used to evaluate the achievement of a satisfactory standard of living. (Asnah, 2021)

The development of human capital in East Java has shown continuous improvement. This can be observed from the consistent increase in the HDI score during the 2018–2022 period. The HDI value experienced a significant increase of 0.81% between 2012 and 2015, and it continued to rise in the following years. The continuous increase in HDI indicates an improvement in human development quality in East Java Province, particularly in terms of health, education, and the economy. It also signifies the success of the East Java Provincial Government in its efforts to enhance HDI. The HDI score for East Java reached 73% in 2020, while in 2022, it stood at 72.75, reflecting a growth of 0.85% (an increase of 0.61 points) compared to the previous year.(Badan Pusat Statistik, 2023)

According to research conducted by Jasasila (2020) and Fatimah (2022), Poverty does not significantly influence the Human Development Index (HDI). However, research conducted by Dewi et al. (2016), Muliza et al. (2017), Umiyati et al. (2017), and Tarumingkeng et al. (2019) provides empirical evidence that poverty has a notable negative effect on HDI.(Fatimah, 2016). Studies conducted by Meydiasari & Soejoto (2017), Syofya (2018), Arizal & Marwan (2019), Ningrum et al. (2020), and Sinuraya (2020) indicate that unemployment has a notably negative effect on the Human Development Index. However, this conclusion is consistent with the research of Meydiasari (2017) and Baeti (2013), which also demonstrated that unemployment has a significant influence on the Human Development Index.(Dewi, 2017). Studies by Mirza (2012), Chalid & Yusuf (2014), Fibrian & Widodo (2016), and Larasati (2020) concluded that economic growth has a significant positive effect on the Human Development Index in East Java Province.(Larasati, 2020). Numerous studies have explored the Human Development Index (HDI), but the results remain inconsistent. Therefore, this research aims to examine HDI modeling and the factors influencing it in East Java Province.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

H₁: Human Devolepment Index

The Human Development Index (HDI) serves as a benchmark for comparing life expectancy, literacy, education, and living conditions among nations. It represents the effectiveness of government development programs and demonstrates how individuals gain access to income, education, healthcare, and other vital services through these initiatives.

According to the Central Bureau of Statistics (BPS), HDI serves as a key metric for assessing human development progress. Since 2014, BPS has implemented a revised calculation method based on three main components: longevity and health, represented by life expectancy; knowledge, measured through The expected years of schooling, the average years of education, and a sufficient standard of living—measured by Gross National Income per

capita adjusted for purchasing power parity—are fundamental elements of the Human Development Index (HDI).

The Human Development Index (HDI) is a tool used by the government to evaluate human development across three dimensions: health, education, and income. It serves as a crucial indicator for assessing economic growth by reflecting the overall quality of life of the population. As a fundamental measure of progress, HDI remains a central focus of government development initiatives.

H₂: Poverty

Poverty is a condition where people's income or earnings are insufficient to meet primary or basic daily needs, leading to an unworthy standard of living and failure to achieve prosperity. This condition creates limitations in improving life quality and impacts the surrounding environment. According to Sharp et al. in Mudrajat Kuncoro (2006), the causes of poverty have been identified from an economic perspective. Sharp explains that economic poverty can occur due to three factors: inequality in natural resource ownership, human resources, and access to capital. The first cause, related to natural resources, concerns microeconomics, where poverty arises due to unequal access to natural resources, resulting in income disparity. The second cause is human resources, linked to inequality in human resource quality. The third is capital inequality, where individuals with limited access to capital face greater difficulties in overcoming poverty.

Based on Sharp's three causes of poverty, this issue originates from the Vicious Circle of Poverty theory. This theory explains that the cycle of poverty is caused by various problems and disparities in society, including backwardness, an imperfect market structure, and a lack of capital, all of which contribute to low productivity. Low productivity directly affects income levels, which in turn impacts savings and health conditions. This cycle continues, leading to further backwardness due to poor health levels.

H₃: Unemployment

Unemployment refers to individuals classified as part of the workforce who are actively seeking jobs at a certain wage level but cannot secure the desired employment. According to the Central Bureau of Statistics (BPS), in labor market indicators, unemployment refers to people who are not working but are actively looking for jobs, preparing for a new business, or have been accepted for a job but have not yet started working.

Unemployment arises when factors of production that could generate goods and services are not actively engaged in production. It means the economy fails to achieve macroeconomic goals, particularly full employment, where all labor forces are employed.

Unemployment becomes a problem due to several reasons:

- a. Companies experience a decline in sales, leading to reduced production and, consequently, workforce downsizing, which results in job loss or decreased income.
- b. Reduced production leads to scarcity in the economy.
- c. Higher unemployment rates lead to a decline in living standards.

A decline in production ultimately reduces Gross Domestic Product (GDP). According to Classical Theory by Adam Smith, rapid and high economic growth can reduce unemployment in a region. Economic growth is directly proportional to employment levels, as higher economic growth increases production processes, thereby creating more job opportunities to meet production demands. This employment absorption can reduce unemployment in a region. Idin in Nugroho states that labor force contribution to economic growth is influenced by quantity and quality, with quality being determined by factors such as education and health.

H4: Health

Health in economic terms refers to a concept and discipline that allocates human resources in the healthcare sector. Health economics closely relates to healthcare services, efficiency, and resource allocation for prevention, treatment, and recovery of public health issues. Health levels in economics are strongly linked to life expectancy (LE). Life expectancy serves as a tool to evaluate government performance in the health sector to achieve societal well-being. It indicates the average lifespan of individuals from birth to death within a given population. The life expectancy rate of a region reflects the effectiveness of health development in that area.

H5: Economic Growth Theory

Economic growth theories have evolved over time. Broadly, they are categorized into two schools of thought: analytical economic growth and historical economic growth. The analytical approach emphasizes logical and consistent theories explaining economic growth processes. Economic growth is a process of economic activity development that increases the output produced by society (Sukirno, 2011). Meanwhile, Robert Solow describes economic growth as a sequence of activities based on human resources, capital accumulation, the use of modern technology, and output production.

RESEARCH METHOD

This study employs a quantitative approach with an associative research design. The sampling method used is saturated sampling, where the entire population is included as the research sample (Sandu Siyoto & Ali Sodik, 2015). The population and sample consist of data

on poverty, unemployment, health, economic growth, and the Human Development Index from 38 regencies/cities in East Java Province over a five-year period (2018–2022), resulting in a total of 190 data points. This research utilizes secondary data obtained from the official website of the Central Bureau of Statistics (BPS) of East Java Province. Data analysis is conducted using panel data regression with the assistance of STATA software. The panel data regression model applied in this study is as follows:(Subagiyo, n.d.)

$$Y_{it} = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + e_{it}$$

Where:

- Y = Human Development Index
- X1 = Poverty
- X2 = Unemployment
- X3 = Health
- X4 = Economic Growth
- β_0 = Intercept
- $\beta_1 \beta_2 \beta_3$ = Coefficients of the Variables
- i = Regency/City in East Java Province
- t = Year
- e = Error term

RESULT AND ANALYSIS

This study uses the Human Development Index (HDI) as the dependent variable, while the independent variables are Poverty, Unemployment, Health, and Economic Growth. Due to differences in measurement units among the variables and the presence of heteroskedasticity in classical assumption tests, the variables in this study were transformed into logarithmic form.

1. Multicollinearity Test

Regression analysis using panel data requires classical assumption tests to ensure that the estimated model is BLUE (Best Linear Unbiased Estimator). The first step in testing is the multicollinearity test. This test is conducted to prevent multicollinearity among the independent variables in the model.

Table 1
Multicollinearity Test Results

Variable	Poverty	Unemployment	Health	Economic Growth
Poverty	1,000			
Unemployment	-0,135	1,000		
Health	-0,342	0,356	1,000	
Economic Growth	0,517	0,362	0,216	1.000

Source: Data processed by the researcher, 2025

The multicollinearity test results show no multicollinearity among the independent variables. This issue arises when the interaction value surpasses 0.8. However, in this study, all interaction values between the independent variables remain below 0.8.

2. Best Model Selection

The Fixed Effect Model (FEM) is determined to be the most suitable estimation model. A comparison between the Panel Least Square (PLS) or Common Effect Model (CEM) and the Fixed Effect Model (FEM) confirms that FEM is the superior choice. This conclusion is supported by the Chow test probability value of 0.000, which is lower than the significance level ($\alpha = 5\%$), indicating that the Fixed Effect Model (FEM) is the most appropriate for this study.

Table 2
Best Model Selection Test Results

Test	Probability
Chow Test	0.000
Hausman Test	0.000
Test	Probability
Chow Test	0.000

Source: Data processed by the researcher, 2025

3. Fixed Effect Model Analysis Results

In this study, the Fixed Effect Model (FEM) incorporates a robust method to mitigate heteroskedasticity issues. The impact of Poverty, Unemployment, Health, and Economic Growth on the Human Development Index (HDI) in East Java Province varies for each variable.

The probability value for the Poverty variable is 0.703, which surpasses the 5% significance threshold ($\alpha=5\%$), signifying that its influence is not statistically meaningful. This suggests that changes in poverty levels do not significantly affect the HDI in East Java Province.

Table 3
Fixed Effect Model Analysis Results

Variable	Coefficient	t-statistic	Probability	Remark
C	-0,809	-0.50	0.620	
Poverty	0,004	0,38	0,703	Not Significant
Unemployment	0,001	2,19	0,035	Significant
Health	0,881	1,93	0,061	Significant
Economic Growth	0,013	3,71	0,001	Significant

Source: Data processed by the researcher, 2025

Regression equation:

$$\ln y_{it} = -0.809 + 0.004 \ln X1_{it} + 0.001 \ln X2_{it} + 0.881 \ln X3_{it} + 0.013 \ln X4_{it} + e_{it}$$

The Unemployment variable has a probability value of 0.035, which is below the 5% significance level ($\alpha=5\%$), with a coefficient of 0.001. This indicates a significant positive relationship with the Human Development Index (HDI) in East Java Province. In other words, a 1% decrease in the unemployment rate would result in a 0.1% decline in HDI.

Similarly, the Health variable has a probability value of 0.061, which remains under the 5% significance threshold, with a coefficient of 0.881. This suggests that improvements in health have a significant positive effect, where a 1% increase in health levels would lead to an 88% rise in HDI.

Likewise, Economic Growth is shown to have a probability value of 0.001—lower than the 5% significance level—with a coefficient of 0.013. This confirms its strong positive impact, meaning that a 1% growth in the economy would contribute to a 13% increase in HDI in East Java Province.

4. Model Goodness (R^2)

The R-Square value serves as a measure to determine the most suitable model in this analysis. The Fixed Effect Model (FEM) is selected based on its R-Square value, as it is considered the most appropriate approach for panel data analysis.

Table 4
Best Model R-square

Description	Value
Adj-R Square	0.796

Source: Data processed by the researcher, 2025

The model applied in this research is deemed reliable, as evidenced by an R-Square value of 0.796. This signifies that the independent variables account for 79.6% of the variations in the dependent variable, whereas the remaining 20.4% is attributed to external factors not included in the model.

5. F-Test

The F-test is performed to evaluate whether the independent variables collectively influence the dependent variable. The assessment is based on comparing the probability value with a 5% significance level ($\alpha=5\%$). If the probability value from the F-test falls below 0.05, it signifies that the independent variables have a significant simultaneous impact on the dependent variable.

Table 5
F-Test Results

Description	Value
F-statistic	106.95
Probability	0.000

Source: Data processed by the researcher, 2025

The F-statistic probability value is recorded at 0.000, which is below the threshold of 0.05. Additionally, the F-statistic of 106.95 surpasses the F-table value of 2.63. These findings reinforce that the independent variables in this research exert a significant combined influence on the dependent variable.

6. t-Test

The t-test is utilized to determine the significance of the association between independent and dependent variables. This evaluation is carried out by comparing the t-statistic with the t-table value. If the t-statistic exceeds the t-table value, it indicates a statistically significant relationship between the independent and dependent variables.

Table 6
Fixed Effect Model Analysis Results

Variable	t-statistic	t-table	Remark
C	-0.50		
Poverty	0,38		Not Significant
Unemployment	2,19	1.653	Significant
Health	1,93		Significant
Economic Growth	3,71		Significant

Source: Data processed by the researcher, 2025

7. Classical Assumption Analysis

a. Heteroskedasticity Test

The heteroskedasticity test determines whether there is an unequal variance in residuals across observations. If the probability value is greater than 0.05, there is no heteroskedasticity issue.

Table 7
Heteroskedasticity Test Results

Description	Value
Heteroskedasticity Value	12791.37
Probability	0.000

Source: Data processed by the researcher, 2025

As the probability value (0.000) is less than 0.05, it signifies the existence of heteroskedasticity. To resolve this problem, the Fixed Effect Model (FEM) with a robust approach is applied.

b. Autocorrelation Test

Table 8
Autocorrelation Test Results

Description	Value
Autocorrelation Value	1.988
Probability	0.166

Source: Data processed by the researcher, 2025

Because the probability value (0.166) exceeds 0.05, the model does not exhibit autocorrelation issues.

c. Normality Test

Table 9
Normality Test Results

Description	Value
Autocorrelation Value	1.988
Probability	0.166

Source: Data processed by the researcher, 2025

The probability value (0.05) indicates that the residuals in this study are normally distributed.

ANALYSIS

The Impact of Poverty, Unemployment, Health, and Economic Growth on the Human Development Index in East Java Province

From the data analysis and findings of the initial hypothesis test, it can be inferred that Poverty, Unemployment, Health, and Economic Growth jointly exert a significant impact on the Human Development Index (HDI) in East Java Province. These findings suggest that the provincial government can enhance the HDI by focusing on these four key factors. This conclusion is further supported by the coefficient of determination results, which indicate that these variables play a crucial role in explaining variations in the Human Development Index.(Widarjono, 2013).

The Impact of Poverty on the Human Development Index in East Java Province

Drawing from the data analysis and findings of the second hypothesis test, it can be determined that Poverty does not have a significant impact on the Human Development Index (HDI) in East Java Province. This indicates that although a decline in poverty, driven by improvements in human development quality, enhances the well-being of low-income

individuals, it does not always lead to a direct reduction in overall poverty levels. As a result, the increase in the Human Development Index remains insignificant.(Susilowati, 2022).

This finding indirectly aligns with the Vicious Circle of Poverty theory, which states that poverty is caused by various issues and societal inequalities, such as backwardness, imperfect market conditions, and limited capital, leading to low productivity levels. Low productivity directly impacts the quality of life of the population.

In other words, although poverty impacts the overall quality of human life, its influence is neither direct nor significant. These results are consistent with the studies conducted by Jasasila (2020) and Fatimah (2022), which found that poverty does not have a considerable influence on the Human Development Index (HDI). However, these findings differ from the research of Dewi et al. (2016), Muliza et al. (2017), Umiyati et al. (2017), and Tarumingkeng et al. (2019), which empirically established that poverty significantly and negatively affects HDI.(Syahputra, 2017).

Thus, this study empirically identifies that higher poverty levels in a region correlate with a lower Human Development Index. However, the impact of poverty on the Human Development Index is indirect. Therefore, additional government policy instruments are needed to support efforts in reducing and alleviating poverty levels.(Kuncoro, 2014).

The Impact of Unemployment on the Human Development Index of East Java Province

The results of the third hypothesis test indicate that unemployment plays a significant role in shaping the Human Development Index (HDI) in East Java Province. The regression coefficient reflects a positive relationship, signifying that fluctuations in unemployment levels correspond directly with changes in HDI. In other words, an increase in unemployment is associated with a rise in HDI, while a decline in unemployment leads to a reduction in the index.

A high unemployment rate reduces societal well-being by decreasing income, which is a dominant factor in human development. Consequently, unemployed individuals cannot meet their basic needs or improve their quality of life, such as paying for education and healthcare.(Wahyudi, D., & Rejekingsih, 2013).

This finding aligns with theories suggesting that reducing unemployment can be achieved by creating job opportunities, implementing labor-intensive development programs, and facilitating a more investment-friendly environment. Additionally, improving the skill levels of the workforce in the region is also necessary.

Unemployment can be viewed from two perspectives:

1. Underemployment – individuals working less than 35 hours per week.
2. Disguised underemployment – individuals with low productivity and earnings.

These results contrast with previous findings by Meydiasari & Soejoto (2017), Syofya (2018), Arizal & Marwan (2019), Ningrum et al. (2020), and Sinuraya (2020), who found that unemployment has a negative and significant effect on the Human Development Index. However, they align with research by Meydiasari (2017) and Baeti (2013), which concluded that unemployment significantly influences the Human Development Index.(Mirza, 2011).

The Impact of Health on the Human Development Index of East Java Province

The findings from the fourth hypothesis test demonstrate that the Health variable holds a significant and positive influence on the Human Development Index (HDI) in East Java Province. This implies that improvements in health indicators contribute to a higher HDI, whereas a decline in health conditions corresponds with a decrease in the index.(Rustanti, 2015)

If an individual has good physical and mental health, they are more likely to develop skills and create innovations that contribute to a higher Human Development Index. Conversely, poor health or mental disorders can prevent individuals from engaging in normal activities or working, reducing their ability to innovate and ultimately lowering the Human Development Index.(Muttaqin, 2018) Health plays a crucial role in various aspects of life, as it serves as the foundation for both physical and mental activities necessary for daily living.

This study is in line with the research conducted by Asri (2016) and Herrera-Serna (2019), which concluded that health has a significant and positive impact on the Human Development Index (HDI). However, these findings diverge from the studies of Novitasari & Arintoko (2021) and Asrida & Haryani (2022), which identified a significant negative correlation between health and HDI. Their research suggests that a rise in health complaints is linked to a decline in the Human Development Index.(Riyanto, S., & Hatmawan, 2020).

The Impact of Economic Growth on the Human Development Index of East Java Province

The findings from the fifth hypothesis test reveal that Economic Growth has a significant positive impact on the Human Development Index in East Java Province. A surge in economic growth translates into higher per capita income, which in turn boosts the Human Development Index (HDI). This occurs because economic expansion, reflected in increased per capita output, shapes consumption behavior and enhances purchasing capacity. Strengthened purchasing power plays a crucial role in elevating HDI, as income serves as a fundamental factor in its assessment.(Rini, A. S., & Sugiarti, 2016)

This study aligns with the theory proposed by Ramirez et al., as cited in the BPS HDI catalog for Banten Province (2010), which states that economic growth influences human development at both household and government levels. Therefore, local governments must

enhance regional GDP through economic policies that support economic activity and ensure prosperity for the population.(Novitasari, N. R., & Sari, 2023)

This research is also consistent with the findings of Mirza (2012), Chalid & Yusuf (2014), Fibrian & Widodo (2016), and Larasati (2020), who concluded that economic growth positively and significantly affects the Human Development Index in East Java Province.(Ningrum, 2020).

CONCLUSION

The combined influence of poverty, unemployment, health, and economic growth significantly contributes to the improvement of the Human Development Index (HDI) in East Java Province. These results highlight the importance of these four factors as key areas for government intervention in efforts to elevate the region's HDI. This conclusion is further supported by the coefficient of determination, which confirms their substantial role in shaping HDI fluctuations. However, when analyzed separately, unemployment, health, and economic growth exhibit a strong positive impact on HDI, whereas poverty does not demonstrate a significant effect on the province's human development progress.

REFERENCE

- Asnah, D. (2021). *Pengantar Ilmu Ekonomi Makro*. Deepublish.
- Badan Pusat Statistik. (2023). *BPS Provinsi Jawa Timur*.
- Dewi, N. (2017). Pengaruh Kemiskinan dan Pertumbuhan Ekonomi Terhadap Indeks Pembangunan Manusia di Provinsi Riau. *JOM Vekon*, 4(1).
- Fatimah, S. N. (2016). *Analisis Pengaruh Kemiskinan, Pengangguran, Pertumbuhan Ekonomi Terhadap Indeks Pembangunan Manusia di Provinsi Banten Tahun 2010-2015*, <https://dspace.uui.ac.id>. <https://dspace.uui.ac.id>.
- Kuncoro, M. (2014). *Ekonomi Pembangunan*. UPP AMP YKPN.
- Larasati, M. (2020). Pengaruh Pertumbuhan Ekonomi dan Kemiskinan Terhadap Indeks Pembangunan Manusia Provinsi Jawa Timur 2008 – 2019. *Economics and Sustainable Development*, 5(2), 2.
- Mirza, D. S. (2011). Pengaruh Kemiskinan, Pertumbuhan Ekonomi, Dan Belanja Modal Terhadap IPM Jawa Tengah. *Jurnal Ekonomi dan Kebijakan*, 4(2), 2.
- Muttaqin, R. (2018). Pertumbuhan Ekonomi dalam Perspektif Islam. *Jurnal Ekonomi Syariah dan Bisnis*, 1(2), 2.
- Ningrum, W. J. dkk. (2020). Pengaruh Kemiskinan Tingkat Pengangguran Pertumbuhan Ekonomi dan Pengeluaran Pemerintah Terhadap Indeks Pembangunan Manusia (IPM) di Indonesia Tahun 2014- 2018 Dalam Perspektif Islam. *Jurnal Ilmiah Ekonomi Islam*, 6(2), 2.
- Novitasari, N. R., & Sari, C. M. (2023). Pengaruh Jumlah Tenaga Kerja, Pengangguran, dan Kemiskinan terhadap Pertumbuhan Ekonomi Kabupaten Nganjuk Tahun 2013-2022. *Jurnal Mirai Management*, 8, 753–766.
- Rini, A. S., & Sugiarti, L. (2016). Faktor-Faktor Penentu Kemiskinan Indonesia. *Jurnal Ilmu Ekonomi Terapan*, 1(2), 19–20.
- Riyanto, S., & Hatmawan, A. A. (2020). *Riset Penelitian Kuantitatif Penelitian di Bidang Manajemen, Teknik, Pendidikan, dan Eksperimen*. Deepublish.

- Rustanti, B. (2015). *Menangani Kemiskinan*. PT Remaja Rosdakarya.
- Sandu Siyoto dan Ali Sodik. (2015). *Dasar Metodologi Penelitian* (1 ed.). Literasi Media Publishing.
- Subagiyo, R. (n.d.). *Metode Penelitian Ekonomi Islam: Konsep dan Penerapan*. Alim's Publishing.
- Susilowati, E. dkk. (2022). Faktor Penyebab dan Strategi Penanganan Permasalahan Pengangguran dalam Perspektif Islam di Desa Dawung Ringinrejo Kediri. *Jurnal SINDA*, 2(1), 1.
- Syahputra, R. (2017). Analisis Faktor-Faktor yang Mempengaruhi Pertumbuhan Ekonomi Di Indonesia. *Jurnal Samudra Ekonomika*, 1(2), 2.
- Wahyudi, D., & Rejekingsih, T. W. (2013). Analisis Kemiskinan di Jawa Tengah. *Journal of Economics*, 2(2), 2.
- Widarjono, A. (2013). *Ekonomi Pengantar dan Aplikasinya*. UPP STIM YKPN.