

---

## **Analysis of the Effect of Gross Regional Domestic Product, Unemployment and Human Development Index on Poverty in East Java Province in 2010-2021**

---

Dicky Anggoro<sup>1</sup>, Arimurti Kriswibowo<sup>2</sup>

### ***Abstract:***

*This research is entitled Analysis of the Effect of regional gross domestic product, unemployment and the human development index on Poverty in East Java Province in 2010-2021. The purpose of this research is to find out whether the independent variables affect the dependent variable. This study uses multiple linear regression methods. The population in this study is from 2010-2021. Then the population in this study amounted to 11 populations. And the sample of this study took from each variable, namely GRDP, Unemployment, HDI and poverty, with a total of 11 samples. This research produces exciting findings, including the gross regional domestic product variable that does not affect poverty, then the unemployment variable that affects poverty, and the variable human development index affects poverty.*

**Keywords:** GRDP; Unemployment; HDI; Poverty

### **1. Introduction**

One of the goals of national development is to increase the rate of economic growth in order to be able to create jobs and organize a better life for all Indonesian people, and in the end, will realize the welfare of the population. In the constitution, Article 27, paragraph 2 concerning the importance of work for every citizen, explains that if all Indonesian citizens are alive when viewed from a humanitarian perspective, the community should have the right to obtain adequate or decent work and life. But in reality not all people have the same opportunity in terms of getting a job. One of the problems caused by the high unemployment rate is poverty. Poverty is a major problem for many countries in the world, especially in developing countries. Girsang (2011) explains that poverty can be exacerbated by several complex and interrelated conditions, including the condition of natural, cultural and structural natural resources, while according to the World Bank (2004) in Annur (2013) one of the causes of poverty is due to lack of income and assets to meet basic needs.

According to Hardinandar in Priseptian & Primandhana (2022) Poverty is a condition in which a person cannot meet basic needs such as food, clothing, and medicine. In the poverty dimension, it is manifested in the form of a low or slow rate of economic growth, high unemployment rate, inadequate housing, and low levels of the Human

---

<sup>1</sup>Universitas Pembangunan Nasional "Veteran" Jawa Timur, Indonesia. [dickyanggoro1215@gmail.com](mailto:dickyanggoro1215@gmail.com)

<sup>2</sup>Universitas Pembangunan Nasional "Veteran" Jawa Timur, Indonesia [arimurti.adne@upnjatim.ac.id](mailto:arimurti.adne@upnjatim.ac.id)

Development Index. According to Telasari (2017) the problem of poverty will have a negative impact that can affect economic development in a country, high poverty will cause the costs incurred to carry out economic development to be greater, so that it will indirectly hamper the pace of economic development.

According to Larasati Prayoga et al (2021) in Priseptian & Primandhana (2022) states that poverty is caused by several factors, including a low minimum, a poor standard of living, and an increase in the unemployment rate every year without additional job opportunities.

Table 1. Percentage of Poverty in Java Island in 2010-2021

Year	Region					
	Yogyakarta	Central Java	East Java	West Java	Banten	Jakarta
2010	16,83 %	16,56 %	<b>15,26 %</b>	11,27 %	7,16 %	3,48 %
2011	16,08 %	16,20 %	<b>13,85 %</b>	10,57 %	6,26 %	3,64 %
2012	15,88 %	14,98 %	<b>13,08 %</b>	9,89 %	5,71 %	3,7 %
2013	15,03 %	14,44 %	<b>12,73 %</b>	9,61 %	5,89 %	3,72 %
2014	14,55 %	13,58 %	<b>12,28 %</b>	9,18 %	5,51 %	4,09 %
2015	13,16 %	13,32 %	<b>12,28 %</b>	9,57 %	5,75 %	3,61 %
2016	13,01 %	13,19 %	<b>11,85 %</b>	8,77 %	5,36 %	3,75 %
2010	12,69 %	12,62 %	<b>11,20 %</b>	7,83 %	5,59 %	3,78 %
2018	11,97 %	11,25 %	<b>10,92 %</b>	7,35 %	5,24 %	3,56 %
2019	11,57 %	10,69 %	<b>10,29 %</b>	6,86 %	5,01 %	3,4 %
2020	12,54 %	11,62 %	<b>11,28 %</b>	8,15 %	6,27 %	4,61 %
2021	11,91 %	11,25 %	<b>10,59 %</b>	7,97 %	6,5 %	4,67 %

Source: Processed Data (2023)

Based on the data above, it can be seen that East Java Province is ranked third in poverty after Central Java Province, with a percentage of 10.59%. East Java is the largest province on the island of Java and has the second largest population after West Java, where a high population will result in various social problems, one of which is poverty.

The Nurbse theory in Dio Syahrullah (2014) states that the problem of poverty has no end and is always related to all the elements that cause poverty, this theory is called the vicious circle theory of poverty in which low productivity is the main cause of insufficient income so that the ability to save and low investment. Low investment causes low capital, low capital will result in market imperfections and underdevelopment. It continues to move in circles so that it has no end.

Suryawati (2005) stated that if the population increases and there are no jobs, it will create new poverty, but in theory Adam Smith (1776) in Saragih (2022) says that economic growth is based on an increase in population which has an impact on increasing output and yields. From this theory it can be explained that if the population increases in an area it will increase economic growth. East Java Province is the

province with the second highest population density in Indonesia, when citing Adam Smith's theory, with a significant population that should increase economic growth, but in reality East Java Province is still one of the largest contributors to poor people on the island of Java.

Table 2. Percentage of Unemployment in East Java Province 2010-2021

Year	Unemployment Percentage
2010	4,25 %
2011	5,33 %
2012	4,09 %
2013	4,30 %
2014	4,19 %
2015	4,47 %
2016	4,21 %
2017	4,00 %
2018	3,91 %
2019	3,82 %
2020	5,84 %
2021	5,74 %

Source: Processed Data (2023)

Sukirno (1994) in Franita & Fuady (2016) explains that unemployment is a condition where a person belonging to the labor force wants to get a job but has not been able to get one.. Based on the table above the unemployment rate in East Java Province tends to decrease in the first three years, this is evident from 2010 the open unemployment rate was 4.00%, until 2019 the poverty rate in East Java Province fell to 3.82%, but in the following year, namely in 2020 the poverty rate has increased quite significantly, namely by 5.84% in 2021 the poverty rate in East Java is still at a percentage of 5.74%. This is contrary to the poverty rate in East Java Province in the last five years which has decreased by 0.61%, but the unemployment rate in East Java has increased by 1.74%. Based on these data, the reduction in the poverty rate in East Java Province should have resulted in a decrease in the open unemployment rate. This shows that the reduction in unemployment in East Java has not been successful.

According to Sukirno (2006) in Fahmi (2019), there are four types of unemployment: 1) frictional, 2) structural, 3) technological, and 4) cyclical. Afrida (2003) in Kurniawan (2014) the cause of unemployment is due to an imbalance between labor supply and labor demand. Unemployment is one of the main factors causing poverty, this phenomenon of unemployment has become a problem in various countries and not only in Indonesia, until now the government has played an important role in overcoming the problem of unemployment through two policies, namely fiscal policy and monetary policy. Battaglini & Coate (2019) state that fiscal policy has an important function in reducing unemployment; therefore, to overcome the unemployment problem in East Java Province, the government implements expansionary fiscal policy by increasing government spending or reducing taxes expected to boost economic growth.

Table 3. Gross Regional Domestic Product of East Java Province

<b>Year</b>	<b>GRDP at Constant 2010 Prices (Billion Rupiah)</b>	<b>Percentage of Economic Growth in East Java Province</b>
2010	990.648	6,31 %
2011	1.054.401	6,44 %
2012	1.124.464	6,44 %
2013	1.192.789	6,08 %
2014	1.262.684	5,86 %
2015	1.331.394	5,44 %
2016	1.405.236	5,55 %
2017	1.482.30	5,46 %
2018	1.563.76	5,47 %
2019	1.650.14	5,53 %
2020	1.610.42	-2,33 %
2021	1.669.12	3,57 %

Source: Processed Data (2023)

Putri (2019) explains that the calculation of Gross Regional Domestic Product uses a production approach, namely national product or gross product obtained by adding up the market value of all goods and services produced from various sectors in the economy. Based on the data above, it can be explained that the Gross Regional Domestic Product has increased every year, it can be seen that the gross regional domestic product in 2010 amounted to 1,482.30 trillion Rupiah with an economic growth of 5.46% then the East Java Province GRDP figure continues to increase every year, until 2021 the Java Province GRDP Timur reached 1,669.12 trillion Rupiah but the economic growth rate fell to 3.57%, when seen from these data the GRDP of East Java Province has increased significantly from year to year, but it is very unfortunate that the economic growth rate in the last five years has decreased. It can be concluded that the development in East Java Province is still not successful.

According to the theory of Robert Malthus (1798) in (Pratama, 2015) states that the population level will affect the level of economic growth where population growth increases geometrically while the increase in food ingredients increases arithmetically. But different from the opinion of Rajagukguk (2013) which states that the economic growth rate is proportional to population size, the model shows that the economic growth rate depends on the population growth rate. This is contrary to the phenomenon in East Java Province, where there are still many disparities in economic development, one of which is in Bangkalan Regency, Sampang Regency and Bojonegoro Regency which still have economic growth below other Regencies/Cities, such as Sidoarjo Regency, Surabaya City and Pasuruan city.

Table 4. Percentage of the Human Development Index for 2010-2021

<b>Year</b>	<b>Percentage of Human Development Index in East Java Province</b>
-------------	--

---

2010	65,36%
2011	66,06%
2012	66,74%
2013	67,55%
2014	68,14%
2015	68,92%
2016	69,74%
2017	70,27%
2018	70,77%
2019	71,50%
2020	71,71%
2021	72,14%

---

Source: Processed Data (2023)

Based on the data above, shows that the human development index in East Java Province from 2010 to 2021 tends to increase. This is proven in 2010 the human development index was 68.14% then in 2011 it was 68.92% until 2021 the index of human development has grown by 72.14%.

Susiyanto (2016) states that the human development index is one of the main measurements included in the basic regional development pattern. This indicates that the human development index is important in regional development management. The function of the human development index and other indicators will be the key to implementing directed planning and development. The concept of human development introduced by the United Nations in Orinbao (2009) has assigned a rating of human development performance on a scale of 0-100, with a very high category with an human development index (HDI) value of more than 80.0, a moderate category with an HDI value of between 70 -80, the third category has a low level with an HDI value between 60-70, and the last is a very low level with an HDI value of less than 60.

Todaro (2003) in Sayifullah & Gandasari (2016) states that human development has an essential role in shaping the capabilities of a country and absorbing a country's ability to build capacity to create sustainable growth and development.

Based on the description above, the purpose of this research is to analyze the Effect of Gross Regional Domestic Product, Unemployment and Human Development Index on Poverty in East Java Province in 2010-2021. In the research of Riska Rosyda Putri (2019) research entitled The Effect of Gross Regional Domestic Product, Total Population, Illiteracy Rate and Unemployment on Poverty in East Java Province in 2013-2017. Relevant to this research is the variable GRDP, Unemployment and Poverty, but there are gaps in previous research, namely in the research year, which is only from 2013-2017 (5 years). This research is a form of renewal of previous research, so in this study, it takes from 2010-2021 (11 years) and adds the human development index variable.

## 2. Theoretical Background

In Prasetyoningrum research (2018) research entitled analysis of the influence of the human development index, economic growth and unemployment on poverty in Indonesia, the HDI results have a significant effect on poverty with a coefficient value of 0.71. and the variable economic growth has no significant effect on poverty with a probability value of 0.23, and unemployment has a significant effect on poverty with a coefficient value of 0.14.

In the research conducted by Andhykha et al., (2018) entitled The Influence of GRDP, Unemployment and HDI on Poverty Levels in Central Java Province. The results of unemployment and GRDP have a significant positive effect on poverty. Still, they are different from the human development index variable, which significantly negatively affects poverty. In contrast, the study's results simultaneously ie all independent variables, have a significant positive effect on the poverty level.

In Wijaksana research (2022) entitled analysis of the effect of gross regional domestic product, the human development index and the open unemployment rate on the poverty rate in Banten Province have partial results between the gross regional domestic product variable and unemployment which does not significantly affect the poverty variable. However, the human development index variable has a partially significant effect on the poverty variable. At the same time, the results of the study simultaneously show that all independent variables have a significant effect on poverty in the province of Banten.

### Research Framework

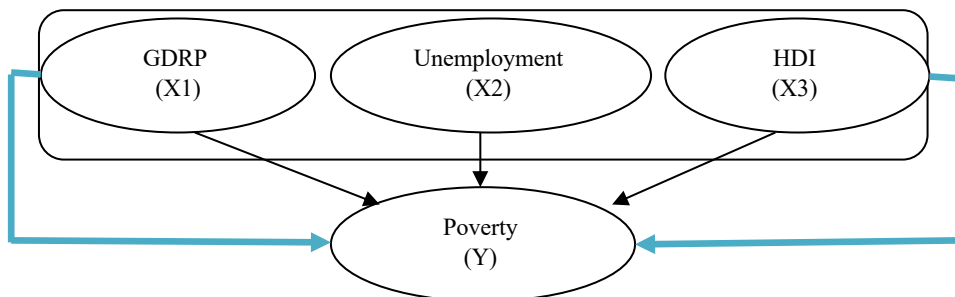
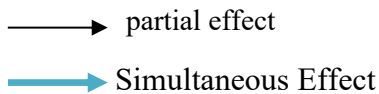


Figure 1. Research Framework

Based on the research framework above, the research framework can be formulated as follows :

1. GRDP (X1) has a partial effect on Poverty (Y)
2. Unemployment (X2) has a partial effect on Poverty (Y)
3. HDI has a partial effect on Poverty (Y)
4. GRDP (X1), Unemployment (X2), HDI (X3) have a simultaneous effect on Poverty (Y)

Description:



## Hypothesis

The hypothesis is a short statement that is still weak and needs to be tested, based on the theoretical basis, previous research and the framework above. The hypotheses in this study are :

1. GRDP (X1) has a partial effect on Poverty (Y)
2. Unemployment (X2) has a partial effect on Poverty (Y)
3. HDI has a partial effect on Poverty (Y)
4. GRDP (X1), Unemployment (X2), HDI (X3) have a simultaneous effect on Poverty (Y)

## 3. Methodology

### Population

The data population taken is the annual report of the East Java Provincial Statistics Agency from 2010-2021 (11 years). So the population in this study amounted to 11 population. .

### Sample

In this study the samples determined by the authors are as follows:

1. Gross Regional Domestic Product (11 sample)
2. Unemployment (11 sample)
3. Human Development Index (11 sample)
4. Poverty (11 sample)

Then the of sample in this study was 11 sample.

### Data Collection Technique

The data collection technique in this study was secondary data. The data was obtained from agencies or official websites so that questionnaires, interviews and other methods were no longer needed. The data used in this study are data from a gross regional domestic product, unemployment, human development index, and poverty in Java Province in 2010-2021.

### Data Analysis Technique

The data analysis technique used in this study is multiple linear regression analysis by going through a statistical process of multiple linear regression tests, residual normality tests, multicollinearity tests, autocorrelation tests, heteroscedasticity tests, simultaneous significance tests, partial significance tests and coefficient of

determination tests, and using Data processing software program Statistical Program for Social Science (SPSS).

#### 4. Empirical Findings/Result

##### Multiple Linier Regression

Table 5. Multiple Linear Regression Test

	Coefficients			F	t	Sig
	Unstandardized Coefficients	Standardized Coefficients	Std. Error			
(Constant)	55.248		5.806	38.894	9.516	.000
GRDP	-1.536E		.000		-.446	.668
HDI	-.645		.081		-7.915	.000
Unemployment	.345		.187		3.844	.038

a. Dependent Variable: Poverty

Source: Processed Data (2023)

It is known that the gross regional domestic product variable has a B value of 1,536 and  $t_{\text{count}} -0.446 < t_{\text{table}} 2,896$ , so the conclusion is that the gross regional domestic product variable does not have a negative effect on poverty in East Java province. It is known that the human development index variable has a B value of -645 and  $t_{\text{count}} -7.915 > t_{\text{table}} 2,896$ , so the conclusion is that the human development index variable has a negative effect on poverty in East Java province. It is known that the unemployment variable has a B value of 0.345 and  $t 3.844 > t_{\text{table}} 2,896$ , so the conclusion is that the unemployment variable has an effect on poverty in East Java province.

##### Residual Normality Test

Table 6. Residual Normality Test

One-Sample Kolmogorov-Smirnov Test						
N	Mean	Std. Deviation	Positive	Negative	Test Statistic	Asymp. Sig. (2-tailed)
12	.000000	.36587803	.173	-.101	.173	.200 <sup>c,d</sup>

Source: Processed Data (2023)

Based on the results in the normality test with the one sample Kolmogorov-Smirnov obtaining an asymp.sig value of  $0.200 > 0.05$ , the conclusion is that all data used is normally distributed.

##### Multicollinearity Test

Table 6. Multicollinearity Test

Coefficients <sup>a</sup>
---------------------------



	B	Std. Error	Beta	Tolerance	VIF
(Constant)	55.248	5.806			
GRDP	-1.536E-7	.000	-.058	.475	2.105
HDI	-.645	.081	-1.030	.473	2.112
Unemployment	.345	.187	.170	.948	1.055

a. Dependent Variable : Poverty

Source: Processed Data (2023)

Based on the results of the multicollinearity test, it is known that the effects of each variable gross regional domestic product, unemployment and the human development index have a VIF value  $< 10.00$  and a tolerance value  $> 0.10$ , so it can be concluded that the data in this study do not have symptoms of multicollinearity.

### Autocorrelation Test

Table 7. Autocorrelation Test Durbin-Watson

Model Summary <sup>b</sup>					
Model	R	R Square	Adjusted R Square	Std. Error Estimate	Durbin-Watson
1	.967 <sup>a</sup>	.936	.912	.42903	2.027

Source: Processed Data (2023)

Based on the results of the autocorrelation test it is known that the Durbin-Watson value is 2.027, it can be concluded that the variable has no symptoms of autocorrelation.

### Heteroscedasticity Test

Table 8. Heteroscedasticity Test

Coefficients			
Variabel	Correlation Coefficient	N	Sig. (2-tailed)
GRDP	-.084	12	.795
Unemployment	.119	12	.713
HDI	.245	12	.443

Source: Processed Data (2023)

Based on the results of the heteroscedasticity test, it is known that the results of each variable of gross regional domestic product, unemployment and human development index have a sig value  $> 0.05$ , so it can be concluded that the data in the study do not have heteroscedasticity problems.

### Simultaneous Significance Test (F Test)

Table 9. Simultaneous Significance (F Test)

ANOVA					
Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	21.477	3	7.159	38.894	.000 <sup>b</sup>
Residual	1.473	8	.184		
Total	22.950	11			

a. Dependent Variable: Poverty

b. Predictors: (Constant), GRDP, Unemployment, HDI

Source: Processed Data (2023)

Based on the results of the simultaneous significance test is the value of  $F_{count}$  of 38,894 with a significance value of  $F$  of  $0.000 < 0.05$ , it can be concluded that the variables of gross regional domestic product, unemployment and the human development index have an effect on the poverty variable.

### Partial Significance Test (T Test)

Table 10. Partial Significance Test (T Test)

Coefficients <sup>a</sup>					
Model	Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.
	B	Std. Error			
1 (Constant)	55.248	5.806		9.516	.000
GRDP	-1.536E-7	.000	-.058	-.446	.668
HDI	-.645	.081	-1.030	-7.915	.000
Unemployment	.345	.187	.170	3.844	.038

Source: Processed Data (2023)

Based on the results of the partial significance test, the sig value of gross regional domestic product is  $0.668 > 0.05$  and the result value of the unemployment variable is  $0.038 < 0.05$  and finally the result value of the human development index variable is  $0.000 < 0.05$ , it can be concluded that the variable gross regional domestic product partially it does not affect poverty, the unemployment variable partially influences poverty and the human development index variable influences poverty.

### Determination Coefficient Test

Table 11. Determination Coefficient Test

Model Summary <sup>b</sup>				
Model	R	R Square	Adjusted R Square	Std. Error Estimate
1	.967 <sup>a</sup>	.936	.912	.42903

a. Predictors: (Constant), GRDP, Unemployment, HDI

b. Dependent Variable: Poverty

Source: Processed Data (2023)

Based on the test results the coefficient of determination is the value *adjusted R Square* equal to 0.912 (if in the form of a percentage = 91.2%). So it can be concluded that the variables of gross regional domestic product, unemployment and human development index are relevant to poverty by 91.2%, then the remaining 8.8% is influenced by variables outside the study.

## 5. Discussion

The effect of a gross regional domestic product on poverty in East Java province in 2010-2021, the results of the partial analysis explain that the significance value of a

gross regional domestic product is 0.668 greater than 0.05, which means that gross regional domestic product does not affect poverty in East Java. This is different from the theory of Adam Smith (1776) which explains that economic growth rests on an increase in population which has an impact on increasing output and these results explain that population growth and poverty do not affect economic growth.

The effect of unemployment on poverty in the province of East Java in 2010-2021, the results of the partial analysis explain that the significance value of unemployment is 0.038 which is less than 0.05, which means that unemployment has an effect on poverty in East Java. This has similarities with Suryawati's statement (2005) which explains that if the population increases and does not have a job, it will cause poverty.

The effect of the human development index on poverty in East Java province in 2010-2021, the results of the partial regression analysis explain that the significance value of the human development index is 0.000 which is less than 0.05, which means that the human development index has an effect on poverty in East Java. This is similar to Arya Jembawan Wijaksana (2022) statement, which explains that the human development index affects poverty in Banten province.

## 6. Conclusions

Based on the research results as described in the previous chapter, the following conclusions can be drawn: The gross regional domestic product variable does not affect poverty, these results explain that if the gross regional domestic product is higher, poverty will not decrease or increase. The unemployment variable affects poverty, these results explain that if unemployment in an area is higher, it will cause poverty to be higher. The human development index variable affects poverty, these results explain that if the human development index is higher it will cause lower poverty, because human development has an essential role in shaping a country's ability and absorbing a country's ability to build capacity to create sustainable growth and development. Other variables can be added that can be used as further research, such as variables of education level, inflation and income level.

## References:

- Aditya Barry Kurniawan. (2014). Analysis of the Effect of Economic Growth, Minimum Wage, and Investment on the Number of Unemployed in Gresik Regency. *Scientific Journal of FEB Students*.
- Andhykha, R., Handayani, H. R., & Woyanti, N. (2018). Analysis of the Effect of GRDP, Unemployment Rate, and HDI on Poverty Level in Central Java Province. *Media Economics and Management*. 33(2), 113-123.
- Annur, R. A. (2013). Factors Affecting Poverty in Jekulo and Mejobo Subdistricts of Kudus Regency in 2013. *Economics Development Analysis Journal*, 2(4), 409-426.
- Battaglini, M., & Coate, S. (2019). *Fiscal Policy And Unemployment*. Princenton

- University.
- Cembawan Wijaksana, A. (2022). Analysis of the Effect of Gross Regional Product, Human Development Index, and Unemployment Rate on Poverty in Banten Province in 2016-2021. *Journal of Management, Business and Accounting*.
- Dio Syahrullah. (2014). *Analysis of the Effect of GRDP, Education, and Unemployment on Poverty in Banten Province 2009-2012*.
- Fahmi. (2019). The Effect of Education, Unemployment and Economic Growth on Poverty Levels in Indonesia in 2004-2018. Siliwangi University Tasikmalaya.
- Franita, R., & Fuady, A. (2016). Analysis of Unemployment in Indonesia. *Journal of Social Sciences*, 2(3), 88-93.
- Orinbao, A. A. (2009). *Factors Affecting the Human Development Index in West Papua Province in 2006-2009 Atma Jaya University Yogyakarta*.
- Prasetyoningrum, A. K. (2018). Analysis of the Effect of Human Development Index (HDI), Economic Growth, and Unemployment on Poverty in Indonesia. *Journal of Sharia Economics*, 6(2).
- Pratama, Y. C. (2015). Analysis of Factors Affecting Poverty in Indonesia. *Journal of Business and Management*, 4(2), 45-53.
- Priseptian, L., & Primandhana, W. P. (2022). Analysis of Factors Affecting Poverty. *Journal of Economic Forum*, 24 (1).
- Rajagukguk, W. (2013). Population Dynamics and Economic Growth. *Journal of Economics and Business*, 3(1) 1-14
- Riska Rosyda Putri. (2019). The Effect of Gross Regional Domestic Product, Total Population, Illiteracy and Unemployment Rates on Poverty Levels in Regencies/Cities of East Java Province in 2013-2017 Sunan Ampel State Islamic University Surabaya.
- Saragih, F. (2022). Analisis Pertumbuhan Ekonomi Indonesia Pada Masa Covid-19 : Adam Smith. *Journal Economic Education, Business and Accounting (JEEBA)*, 1(1), 24–31.
- Sayifullah, S., & Gandasari, T. R. (2016). The Effect of Human Development Index and Unemployment on Poverty in Banten Province. *Untirta Economic Journal (JEQu)*, 6(2), 236-255.
- Suryawati. (2005). Understanding Poverty Multidimensionally. *Journal of Health Service Management*, 08 (03), 585–597.
- Susiyanto, D. (2016). Human Development Index and its Utilization in Regional Development. *Trimongalah.Wordpress.Com*.
- Telasari, M. I. (2017). Analysis of the Determinants of Poverty in Indonesia.
- .