

# Analysis of the Effects of Investment and Unemployment on Economic Growth and Poverty in North Sumatra Province

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## ABSTRACT

This study aims to examine and analyze the effect of investment and unemployment on economic growth and poverty in the District/City of North Sumatra Province. The type of data used in this study is the type of quantitative data while the source of the data used in this study is secondary data. The objects in this study are all districts and cities in North Sumatra Province which consists of 33 District/City. This study uses pooled data that combines time series data and cross sections for 5 years from 2014 to 2018. The data analysis method used in this study is path analysis. The results based on the path analysis method show that directly the investment variable has a positive and significant effect on economic growth and the unemployment variable has a negative and significant effect on economic growth. Investment does not have a significant negative effect on poverty, the unemployment variable has a significant positive effect on poverty and economic growth has a significant negative effect on poverty. While indirectly the investment variable through economic growth influences poverty. Unemployment variables affect poverty through economic growth.

**Keywords:** Investment, Unemployment, Economic Growth, Poverty

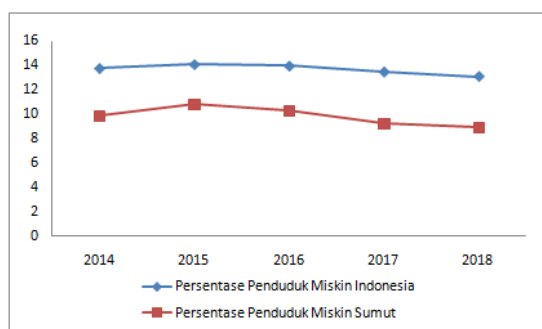
## INTRODUCTION

Poverty and economic growth are important indicators in achieving the success of the country's development. The United Nations (UN) places poverty alleviation programs as the first objective in the Millennium Development Goals

(MDG's) and continues with Sustainable Development Goals (SDG's) for the 2015-2030 period. Poverty alleviation is the biggest global challenge facing the world and is an absolute prerequisite for sustainable development. Poverty is a condition that is experienced by developing countries, and for developed countries that already have a wealth of natural resources and adequate human resources (Astrini, 2013).

Poverty in the broadest sense can be interpreted as limitations imposed by a person, a family, a community, or even a country that causes discomfort in life, threatening the enforcement of rights and justice, threatened bargaining position in the world, and in the longer term can resulting in the loss of generations, as well as the gloomy future of the Nation and State (Budhi, 2013). Poverty is one problem that is the center of attention in any country. Poverty is caused by various factors, namely investment levels that are still below standard, high unemployment rates, and slow economic growth.

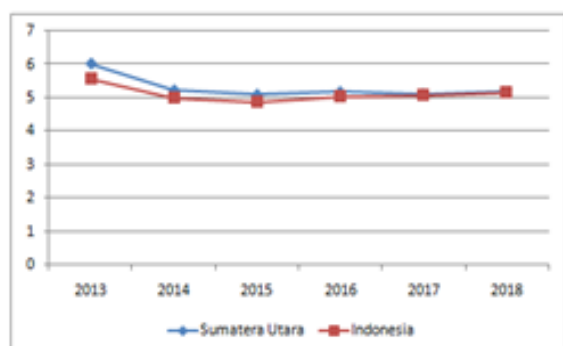
The same problem also became the focus of attention of the government and the people in North Sumatra. Therefore, the province of North Sumatra is one of the provinces that has a relatively large percentage of the poor population because the number reaches around 10.79 percent.



Source: BPS North Sumatra Province

Figure 1. Comparison of Percentage of Poor Population of Indonesia and North Sumatra Province 2014-2018

It can be concluded that the rate of percentage of poverty in North Sumatra Province experiences a downward trend. However, when compared to the percentage of the national poor population, North Sumatra Province is still below it. With an average percentage of poor people of 13.7 percent. The large number of poor people has the potential to create complex social problems, such as declining quality of human resources, the emergence of social inequality and jealousy, disruption of social political stability, increased crime rates and other impacts. If these conditions continue, it can in turn hamper the economic development of the Province of North Sumatra, making it difficult to realize a dignified, prosperous and just North Sumatra Province. The following can be seen data on the economic growth rate of North Sumatra Province in 2013-2018.



Source: BPS North Sumatra Province

Figure 2. Development of Indonesia's Economic Growth Rate and North Sumatra Province 2013-2018

Indonesia's growth rate shows a declining trend that also ranges from 4 to 5

percent, which is below the rate of economic growth in North Sumatra. This is due to the information and communication sector giving the largest contribution to North Sumatra's GRDP of around 7 percent.

To revive the economy in the Province of North Sumatra, investment is needed as a source of economic development, modernization, income growth, employment, poverty reduction needs to get serious attention. In fact, investment is an important component in national income and economic growth (Adnan, 2010). In conclusion, investment is an expenditure that will increase the number of means of production in society which will ultimately increase income, so that economic growth increases.

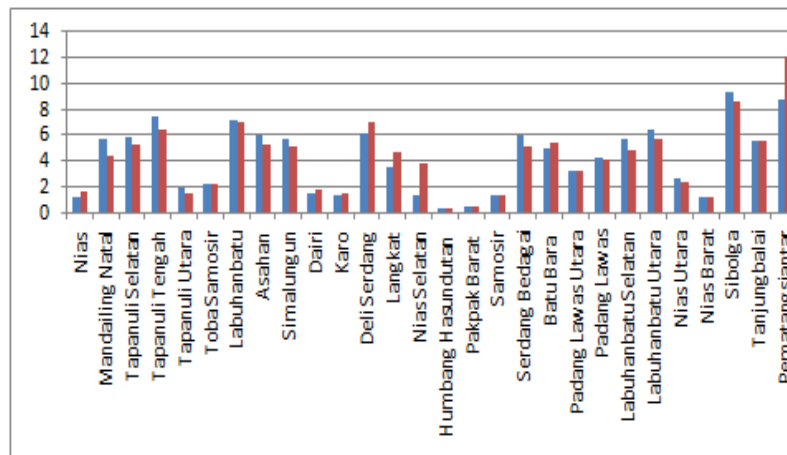
Table 1. Development of Investment in North Sumatra Province in 2013-2017

Tahun	PMDN		PMA	
	Proyek	Nilai Investasi (Juta)	Proyek	Nilai Investasi (Juta)
2013	90	5.068.881,40	165	887.452,00
2014	86	5.231.905,85	201	550.835,10
2015	96	4.287.417,30	204	1.246.096,20
2016	145	4.954.829,29	301	1.057.989,14
2017	187	11.683.639,20	330	1.514.942,90

Source: BPS North Sumatra Province

From Table 1 it can be seen that the growth of domestic investment realization over the past five years grew by an average of 20.02 percent with a total investment of 31,226,673.04 million rupiah. According to Todaro (2004) important development capital besides investment is human resources. With a large enough population and followed by a high level of education and having good skills will be able to drive the rate of economic growth, because of the large population of productive age it will be able to increase the number of available labor force and ultimately will be able to increase production output in an area. However, the number of employment opportunities is not proportional to the number of labor force which results in a lot of unemployment. The following can be seen the condition of the number of

unemployed in District/City in North Sumatra.



Source: BPS North Sumatra Province

Figure 3. Open Unemployment Rate by Regency/City in North Sumatra Province 2017-2018

Figure 3 shows the unemployment rate in several districts or cities in North Sumatra Province which still tends to be high, and experiencing fluctuations.

Investment, economic growth, unemployment and poverty are related to one another. Without high economic growth, it will be difficult for the government to create new jobs and cause an increase in unemployment. The increasing economic growth in a country, the higher the investment of a country, the higher the investment, unemployment will decrease, if the unemployment rate is low it will be directly proportional to poverty reduction (Fosu, 2010).

The entry of investment into North Sumatra has a beneficial effect on the population of North Sumatra on reducing the number of poor people through job creation. With the creation of employment opportunities will provide jobs for residents so that the residents of North Sumatra have income. By obtaining income it means that the population can fulfill their living needs so that the poverty level in North Sumatra can also be reduced. Based on the above background, the researcher is interested in conducting a study entitled "Analysis of The Effects of Investment and Unemployment on Economic Growth and Poverty in North Sumatra Province."

## LITERATURE REVIEW

### Economic Growth

Sadono Sukirno argues that economic growth means the development of fiscal production of goods and services that apply in a country, such as the increase and the amount of production of industrial goods, the development of infrastructure, the number of schools, the increase in the production of service sectors and the increase in the production of capital goods. To provide a rough picture of the economic growth achieved by a country, a measure that is always used is the level of real national income growth achieved (Sukirno, 2011:423).

According to Sukirno (2011:429), the factors that determine economic growth are; Land and other natural resources; Number and quality of population and workforce; capital goods and technological level; social systems and community attitudes.

### Poverty

Nurkse in Sukirno (2006:113) states that the existence of backwardness, imperfections, underdevelopment, lack of capital, is a characteristic of the poor which will ultimately lead to low productivity. Low production results in low income received. And low income will have implications for low savings and

investment. Low investment will result in underdevelopment and so the cycle will occur as before. Nurkse's thinking is better known as The Vicious Circle of Poverty Theory, the purpose of this theory is the existence of a series of forces that influence each other, so that it can lead to circumstances, where a person or group or even country, will remain poor and will continue to experience a lot of difficulty in reaching higher levels.

### Investment

According to Tambunan (2001), in the national balance sheet or GDP structure according to its use, investment is defined as the formation of domestic fixed capital. Investment can be distinguished between gross investment (formation of gross domestic fixed capital) and net investment (formation of net domestic fixed capital). Increased investment will increase production capacity which ultimately results in the opening of new jobs, which in the next stage will encourage economic growth (Sutawijaya, 2010).

### Unemployment

Unemployment occurs due to the supply of workers that is greater than the demand for workers in the labor market. What causes excess supply of labor is the existence of a fairly high rate of population growth by automatically increasing the number of workers. The things that cause the low demand for workers are the low absorptive rate of labor in development which means that current economic development still causes relatively small expansion of employment opportunities.

Okun's Law Theory says that when the unemployment rate increases, productivity will decrease and the output obtained by the state will also decrease so that economic growth will decline. The application of the Okun Law to Indonesia can provide an explanation of the relationship between output and the unemployment rate in Indonesia. Increased output or economic growth can be used as a

policy tool in achieving unemployment or economic growth achieved can be used to predict the unemployment rate.

## RESEARCH METHODS

This study is to analyze the effect of investment and unemployment on economic growth and poverty directly or indirectly in District/City in North Sumatra Province. This study uses pooled data that combines time series data and cross sections for 5 years, from 2014 to 2018 in 33 District/City of North Sumatra Province.

The type of data in this study is secondary data. Secondary data is documentation by gathering materials and data relating to the subject matter that researchers quote from books and historical records or reports that have been compiled in archives originating from BPS on Poverty, Economic Growth, Investment and Unemployment as well as some publication data obtained online (download) from the official site.

This research uses the path analysis method. Path analysis is a technique for analyzing cause and effect relationships that occur in multiple regression if the independent variable affects the dependent variable not only directly but also indirectly (Sarwono, 2007). In the path analysis there are two types of variables namely the exogenous variable and the endogenous variable. The exogenous variables in this study are as many as three variables, namely investment ( $X_1$ ), unemployment ( $X_2$ ), while the endogenous variables are economic growth ( $Y_1$ ) and poverty ( $Y_2$ ).

## RESULTS AND DISCUSSION

In the first equation (1), we will illustrate how investment and unemployment affect economic growth. The first structural equation forms are as follows:

$$Y_1 = \rho_1 X_1 + \rho_2 X_2 + e_1$$

Table 2. First Structural Equation (Regression)

Model	Coefficients <sup>a</sup>				
	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	13.806	.408		33.874	.000
Investasi	.077	.027	.217	2.807	.006
Pengangguran	-.117	.057	-.160	-2.072	.040

a. Dependent Variable: Pertumbuhan\_Ekonomi

Source: Research Results

From the regression results above, the form of the equation becomes:

$$PE = 0.217INV - 0.160P$$

$$t\text{-sig} = (0.006) \quad (0.040)$$

The interpretation of the results is:

a. Investment coefficient=0.217 and t-sig=0.006. The meaning of the coefficient of 0.217 is that if investment increases by 1 billion rupiah, it will increase economic growth by 0.217 percent.

b. Unemployment coefficient=-0,160 and t-sig=0.040. The coefficient of -0.160 means that if the number of unemployed increases by 1 thousand people it will be followed by a decrease in economic growth of 0.160 percent.

Table 3. First Structural Equation (Coefficient of Determination)

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.901 <sup>a</sup>	.812	.810	.20647

a. Predictors: (Constant), Pengangguran, Investasi

Source: Research Results

The coefficient of determination ( $R^2$ ) test results revealed an R value of 0.812, this shows that together investment and unemployment variables are able to provide an explanation of economic growth variations of 81.2 percent and the remaining 18.8 percent is explained by other variables not included in the estimation model. Meanwhile, for the value of  $e_1$  can be found with the formula  $e_1 = \sqrt{1-0,812}=0.433$ .

In the second equation (2) we will illustrate how investment and unemployment influence poverty through economic growth. The second structural equation is as follows:

$$Y_2 = \rho_3 X_1 + \rho_4 X_2 + \rho_5 Y_1 + e_2$$

Table 4. Second Structural Equation (Regression)

Model	Coefficients <sup>a</sup>				
	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	10.591	1.083		9.732	.000
Investasi	-.039	.026	-.082	-1.480	.141
Pengangguran	.583	.054	.597	10.836	.000
Pertumbuhan_Ekonomi	-.459	.074	-.345	-6.223	.000

a. Dependent Variable: Kemiskinan

Source: Research Results

From the regression results above, the form of the equation becomes:

$$K = -0.082INV + 0.597P - 0.345PE$$

$$t\text{-sig} = (0.141) \quad (0.000) \quad (0.000)$$

The interpretation of the results is:

a. Investment coefficient=-0.082 and t-sig = 0.141. The coefficient of -0.082 means that an increase in investment of 1 billion rupiah will reduce poverty by 0.082 percent.

b. Unemployment coefficient=0.597 and t-sig=0.000. The coefficient of 0.597 means that if unemployment rises by 1 thousand people it will increase the poverty rate by 0.597 percent.

c. Economic growth coefficient=-0.345 and t-sig=0.000. The meaning of the coefficient of -0.345 is that if economic growth increases by 1 billion rupiah, it will reduce poverty by 0.345 percent.

Table 5. Second Structural Equation (Coefficient of Determination)

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.734 <sup>a</sup>	.539	.530	.21936

a. Predictors: (Constant), Pertumbuhan\_Ekonomi, Pengangguran, Investasi

Source: Research Results

The Summary Model is 0.539, it shows that the contribution or contribution of the influence of investment, unemployment, and economic growth to poverty is 53.9 percent while the remaining 46.1 percent is contributed by other variables not included in this study. While  $e_2$  values can be found using the formula  $e_2 = \sqrt{1-0,539} = 0.6789$ .

The path coefficient is obtained from the t test results by looking at the value of standardized coefficients beta (Ghozali,

2003). The path coefficient is symbolized by ( $\rho$ ) where the value is obtained from the t-test. There are two indicators of model validity in the path analysis, namely the total determinant coefficient and the Triming Theory. The total determinant coefficient is the total diversity of data that can be explained by the model measured by:

$$PE = 0,217INV - 0,160P \dots\dots\dots(1)$$

$$K = -0,082INV + 0,597P - 0,345PE \dots\dots\dots(2)$$

To check the validity of the model using the total determination coefficient, the results are as follows:

$$R^2m = 1 - (Pe_1)^2 - (Pe_2)^2$$

$$R^2m = 1 - (0,4336)^2 - (0,6789)^2$$

$$R^2m = 0,913$$

Information:

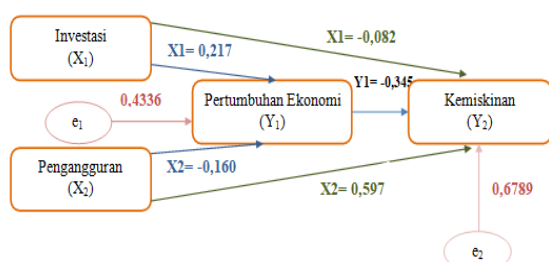
$R^2m$  : The coefficient of total determination

$e_1, e_2$  : Standard estimated error value

Based on the calculation of the total determination coefficient, it is found that the diversity of data that can be explained by the model is 91.3 percent or in other words the information contained in the data is 91.3 percent can be explained by the model, while the remaining 8.7 percent is explained by other variables not in the model.

Then after calculating the validity of the model in the path analysis, then to be able to find out the magnitude of the direct effect, indirect effect and the total effect of the relationship between the exogenous variables and their endogenous variables. The influence can be described schematically as follows.

Figure 4. Results of Analysis on the Path Relations of Investment, Unemployment, Economic Growth and Poverty



a.Direct Effect

- The influence of investment variable ( $X_1$ ) on economic growth ( $Y_1$ ) of 0.217. The influence of the unemployment variable ( $X_2$ ) on economic growth ( $Y_1$ ) of -0.160.

- The influence of investment variable ( $X_1$ ) on Poverty ( $Y_2$ ) is -0.082.

- The influence of unemployment ( $X_2$ ) on poverty ( $Y_2$ ) is 0.597.

- The influence of the variable economic growth ( $Y_1$ ) on Poverty ( $Y_2$ ) of -0.345.

b.Indirect Effect

- The influence of the investment variable ( $X_1$ ) through the economic growth variable ( $Y_1$ ) on the poverty variable ( $Y_2$ ) is=(0.217 x -0.345)=-0.0748.

- The influence of the unemployment variable ( $X_2$ ) through the variable economic growth ( $Y_1$ ) on Poverty ( $Y_2$ ) is=(-0.160 x -0.345)=0.0552.

c.Total Effect

- The influence of the investment variable ( $X_1$ ) through the economic growth variable ( $Y_1$ ) on the poverty variable ( $Y_2$ ) is=(0.217 + 0.082)=0.299.

- The influence of the unemployment variable ( $X_2$ ) through the variable economic growth ( $Y_1$ ) on poverty ( $Y_2$ ) is=(-0.160 + 0.597)=0.437.

Table 6. Summary of Path coefficients and the Significance of Relationships Between Variables

Regresi	Koef. Reg. Standar	Standard Error	T hitung	P. Value	Keterangan
$X_1 \rightarrow Y_1$	0,217	0,027	2,807	0,006	Signifikan
$X_2 \rightarrow Y_1$	-0,160	0,057	-2,072	0,040	Signifikan
$X_1 \rightarrow Y_2$	-0,082	0,026	-1,480	0,141	Tidak Signifikan
$X_2 \rightarrow Y_2$	0,597	0,054	10,836	0,000	Signifikan
$Y_1 \rightarrow Y_2$	-0,345	0,074	-6,223	0,000	Signifikan

Source: Research Results

Effect of Investment on Economic Growth

The standardized coefficient beta value is 0.217 and the probability value of significance is 0.000 < 0.05, which means that investment ( $X_1$ ) has a positive and significant effect on economic growth ( $Y_2$ ). This means that every 1 billion rupiah

increase in investment will have an effect on increasing economic growth by 0.217 percent in districts and cities in North Sumatra Province. The results of this study are consistent with the results of the study put forward by Yetty Agustini (2017), investment has a positive and significant influence on economic growth. The greater investment received by a region will be followed by economic growth. The same study conducted by Deddy Rustiono (2008) states that investment has a positive and significant impact on the development of GRDP. It is known that a country's economic growth rate means that the greater the share of income that can be saved, so that the investment created will be even greater.

### **Effect of Unemployment on Economic Growth**

Standardized coefficient beta value of -0.160 and the value of the probability of significance of  $0.040 < 0.05$ , meaning that unemployment ( $X_2$ ) has a negative and significant effect on economic growth. The negative relationship between economic growth and the number of unemployed is due to the increased economic growth in the Province of North Sumatra providing employment opportunities and labor-oriented oriented, so that economic growth can reduce the number of unemployed. The results of this study are consistent with the results of the study put forward by Arius Jonaidi (2012), that the estimation results show that the unemployment rate is negatively correlated to economic growth.

This is consistent with the concept of studying the relationship between unemployment and gross domestic products known as the Okun Law. Okun's Law explains that unemployment has a negative relationship with Real Gross Domestic Products. When the unemployment rate increases, productivity will decrease and the output obtained by the state will also decrease so that economic growth will decline.

### **Effect of Investment on Poverty**

Standardized coefficient beta value of -0.039 and the value of the probability of significance of  $0.141 > 0.05$ , meaning that Investment ( $X_1$ ) has a negative and not significant effect on poverty ( $Y_2$ ). This has the meaning that with ever increasing investment invested in District/City in North Sumatra, it will result in a decrease in the number of poor people. The decrease in poverty levels in District/City in North Sumatra Province is due to investment, both domestically and abroad. Investment is the mobilization of resources to create or increase production capacity/income in the future. If all quality labor is actively involved in the economy, it will increase output of goods and services, which in turn will drive economic growth.

According to Harrod-Domar, that investment is the main key in the economic growth of a region. The more economic growth in an area, the higher the investment in a region, the higher the investment, unemployment will decrease, if the unemployment rate is low, it will be directly proportional to the level of poverty (Fosu, 2010).

### **Effect of Unemployment on Poverty**

Standardized coefficient beta value of 0.597 and a significance value of  $0.00 < 0.05$  this means that Unemployment ( $X_2$ ) has a positive and significant effect on poverty ( $Y_2$ ). There is a very close relationship between high unemployment and poverty. Some people who do not have permanent jobs or are only part-time are always among the very poor community groups (Arsyad, 1977). According to Sukirno (2010:50), one important factor that determines the prosperity of a society is the level of income. Community income reaches a maximum if full employment levels are realized.

The results of this study are in accordance with the results of research proposed by Fitri Amalia (2012) which states that unemployment increases so poverty also increases. In his research

explained that unemployment is partially significant effect on poverty.

### **Effect of Economic Growth on Poverty**

Standardized coefficient beta value of -0.345 and a significance value of  $0.000 < 0.05$  this means that economic growth ( $Y_1$ ) has a negative and significant effect on poverty ( $Y_2$ ). That is, if economic growth increases it will reduce the level of poverty in the District/City in North Sumatra Province. Osmani (2004) states that policies to reduce poverty must prioritize both higher economic growth rates and high poverty elasticities on economic growth. The results of this study are in accordance with research conducted by Dian Retnowati (2015) also conducted the same research that regional economic growth has a negative influence on poverty levels. Furthermore, research conducted by Yetty Agustini (2017) increases in economic growth can significantly reduce the number of poor people.

### **Effects of Investment through Economic Growth on Poverty**

Research shows that there is an influence of Investment through economic growth on poverty. One important variable that drives economic growth is investment. According to Harrod-Domar, to be able to grow, investment is a net addition to the capital stock (Todaro & Smith, 2011). Investment is one of the keywords in every talk about the economic concept. The discourse of economic growth, the creation of new jobs and poverty alleviation ultimately places investment as the main driver considering that the economy which is driven by consumption is recognized as very fragile. (Didi Nuryadin, 2005).

Investment is a crucial factor for the continuity of the process of economic development (sustainable development), or long-term economic growth. Economic development involves production activities (goods and services) in all sectors of the economy. With the existence of production activities, employment opportunities are

created and people's income rises, which in turn creates or increases demand in the market. The market develops and also means that the volume of production activities, employment opportunities and income in the country increases, and so on, creating economic growth (Tambunan, 2001:127).

### **Effect of Unemployment through Economic Growth on Poverty**

Research shows that there is an effect of unemployment through economic growth on poverty. According to the theory of economic growth depends on the increased supply of factors of production (population, labor, and capital accumulation) and the level of technological progress. The view of this theory is based on the assumption underlying the classical analysis, namely that the economy will continue to experience full employment, and the capacity of capital equipment will remain fully used at all times. In other words, the extent to which the economy will develop depends on the growth of the population, capital accumulation and technological progress (Arsyad, 1999:61). According to the theory, that one factor causing an increase in the rate of economic growth is the availability of labor, so the number of unemployed can be reduced. With a quality workforce, it will increase economic growth in an area. Thus, with job opportunities, unemployment can be reduced so that people who are initially poor can get income in the form of wages/salaries as labor.

## **CONCLUSION AND SUGGESTION**

### **Conclusion**

Based on the results of the data analysis described in the previous chapter, the following conclusions can be drawn:

1. The results of the path analysis test, directly the investment variable has a positive and significant effect on the economic growth of North Sumatra Province.



2.The results of the path analysis test, directly the unemployment variable has a negative and significant effect on the economic growth of North Sumatra Province.

3.The results of the path analysis test, directly the investment variable has a negative and not significant effect on poverty of North Sumatra Province.

4.The results of the path analysis test, directly the unemployment variable has a positive and significant effect on poverty of North Sumatra Province.

5.The results of the path analysis test, directly the economic growth variable has a negative and significant effect on poverty of North Sumatra Province.

6.The test results show that there is a negative effect of investment on poverty through economic growth of North Sumatra Province.

7.The results of the rainfall show that there is a positive effect of unemployment on poverty through the economic growth of North Sumatra Province..

### Suggestion

Based on the results of these conclusions, it is recommended:

1.The Government of North Sumatra Province must increase investment every year, because an increase in investment can significantly reduce poverty.

2.The North Sumatra Provincial Government should attract investors to invest as much as possible but also must pay attention to the quality of the investment itself which includes the type of sector targeted and the risks due to the investment. So there is no accumulation of investment in certain sectors.

3.To reduce the number of unemployed short-term and medium-term periods the District/City government in North Sumatra must design a labor-intensive work program through capital expenditure budgeting, which can provide jobs for the surrounding residents, so that this policy will reduce unemployment.

4.Economic growth must still be driven by the rate of growth. It is important to note the quality of economic growth in the province of North Sumatra because high economic growth should have a significant effect in reducing poverty.

5.Development carried out by the government must prioritize sectors that can support economic growth and reduce the number of poor people such as the education, health and other facilities. The government needs to add new programs and think of a long-term plan to reduce poverty in North Sumatra, so that the number of poor people will decrease.

6.The government should pay attention to efforts to alleviate poverty by focusing more on expanding employment opportunities through equal employment promotion.

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