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# Factors Affecting Poverty in North Sumatra

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## ABSTRACT

An issue that often becomes the spotlight in a country and becomes a problem in the country's development is poverty. All countries in the world face poverty, both developed and developing countries, including Indonesia; however, each country's issues have different levels. Poverty is a condition in which a person is unable to meet his daily needs. Indonesia is a developing country that has experienced poverty for a long time. This study aims to see the effect of economic growth, the human development index (HDI), education, and unemployment on North Sumatra Province's poverty levels. This research was conducted in North Sumatra Province using secondary data sourced from BPS North Sumatra. The data of this research used poverty level, economic growth rate, human development index, education (net participation rate), and unemployment rate data, with cross-section data of North Sumatra, 2019 and processed using Eviews Version 10. This study indicates that economic growth and education do not have a significant effect on poverty in North Sumatra Province. The human development index and unemployment have a significant negative and positive impact on poverty.

**Keywords:** *Economic Growth, Human Development Index, Education, Unemployment, Poverty.*

## INTRODUCTION

One of the achievements of national development is the reduction of the number of poor people because poverty can be a disease that can disrupt the economy and progress; poverty is also able to become a trap in inhibiting the highest segment of the

country's goals. Therefore it needs to be overcome (Atalay, 2015). The fact that it happens is that economic development as measured by economic growth and large income per person has been successful in Indonesia. However, when compared with ASEAN countries, Indonesia is still under Malaysia and Thailand. This can be seen from economic growth held by Singapore with a GDP per Capita of US\$ 55,235.51, followed by Brunei Darussalam and Malaysia at US\$31,439.92 and US\$11,521.45 respectively, while in fourth and fifth place were Thailand and Indonesia us\$6,125.7 and US\$ 4,130.66 respectively (Tradingeconomics, 2018).

Indonesia's long per capita income makes the problem of poverty still a difficult situation to find a solution. There is a phenomenon of poverty in Indonesia. Through this picture, it can be seen that the poverty condition in Indonesia in 2019 amounted to 24.8 million people, but in 2020

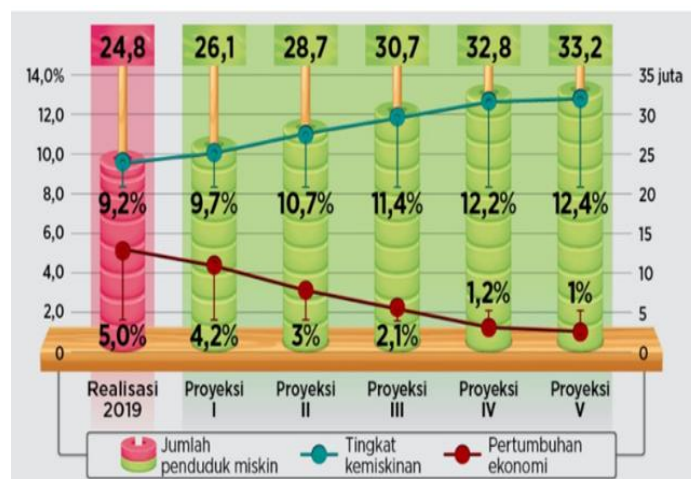
Projections, poverty experienced in line with low economic growth in 2020.

Figure 2. Realization of The Number of Poor People and Projections for 2020 The same fact is also in North Sumatra with a poverty rate of 1,324,980 people or 9.28% or the fifth most impoverished rank from the island Sumatra (BPS, 2018b).

One indicator of welfare in a country is economic growth, so it becomes essential to consider regional economic development in macroeconomic policymaking. Referring to new world economic growth data published by the IMF in 2020, there has

been a significant global downturn. According to the REPORT, the IMF has predicted a wave of recession, followed by a decline in world economic growth. The Government of Indonesia also recorded

Indonesia's growth of only 2.97 percent in the first quarter of 2020, while in 2019, Indonesia's economic growth was less than 5 percent.



Source: (Nainggolan et al., 2020)

Similarly, the economic growth of North Sumatra was based on provincial BPS data, and North Sumatra has an economic growth rate in 2018 of 5.18 lower when compared to some provinces in Indonesia such as South Sumatra, Lampung, and North Maluku, even Papua, and West Papua which have a higher rate than North Sumatra. This means that the slowing growth performance is in line with the relatively high poverty rate compared to other provinces.

Higher economic growth resulted in the region being able to achieve economic welfare, impacting poverty reduction. According to (Barika 2015), the condition of sufficiency is economic growth, effectively reducing poverty. This means that direct economic growth needs to be ensured in all sectors that employ the poor. Economic growth and per capita income are the most important indicators for measuring the success of a region's development (Siregar et al., 2020).

One of the leading causes of poverty is the quality of human resources. Human development is an indicator that can explain the condition of the population of a region in having the ability to access the results of growth in its territory, which is part of its

rights as a population, meaning that with a healthy society and a good education, increased productivity will encourage an increase in its consumption which ultimately indicated that poverty would decrease.

Based on the UNDP data in 2016, Indonesia's HDI value is 0.689. This value ranks Indonesia 113th out of 188 countries with the development of intermediate-level human beings. During 1990-2015 the increase in HDI by 30.5 percent (UNDP, 2017). In 2019 Indonesia's HDI amounted to 0.707, and when viewed from the comparison of ASEAN countries, Indonesia is still far below Malaysia, Thailand, and the Philippines (Lidwina, 2019).

Based on the calculation of HDI North Sumatra in 2018 of 71.18 with a life expectancy component at the birth of 68.61 years, old school expectations of 13.14 years, the average length of the school of 9.34 years, and per capita expenditure per year per person of Rp10,391,000. from the education side it can be seen that the average population aged 25 years and above only attends up to 9.34 years or the equivalent of finishing junior high school, while the expectation of children aged seven years to be able to attend school until 13.14

years or reach Diploma 1. HDI growth is one way to see the development of human development in a region. HDI in North Sumatra from 2014-2018 experienced an average growth of 0.84% per year. Also, to change, human development status is one indicator of human development progress (BPS, 2018a).

Education is another factor that can reduce poverty. This is intended because, with higher education and the labor market's needs, it will give birth to quality human resources inputted in the development process. Education is indispensable in breaking the chain of poverty traps. Based on BPS data north Sumatra obtained almost in all districts and cities in North Sumatra pure participation rate is still SMTA down, while to continue to college is still a little, there are even some districts/cities that APM PT of 3.6 namely Padang Lawas Regency and 2.57 namely Toba Samosir, Nias by 7.1 and Deli Serdang of 9.48. This is still the main job of how the government encourages the improvement of education to universities.

Then the factor that can also affect poverty is unemployment. Because unemployed people will find it challenging to make ends meet because they have no livelihood, which provides income. The following are the developments in the open unemployment rate.

Based on the phenomenon that has been previously presented, researchers are interested in researching how economic growth factors, human development index, education, and unemployment affect poverty in North Sumatra Province.

This research aims to analyze economic growth, human development index, education, and unemployment in reducing poverty in North Sumatra Province. The benefits of research, namely: become a consideration for North Sumatra's Government in promoting programs that reduce poverty and improve human development in North Sumatra...

## **LITERATURE REVIEW**

### **Economic Growth**

Based on the solow-swan economic growth model explained that population growth, capital ownership, technological improvement and output interact with each other in economic activities and encourage economic growth (Pratama, 2014). Gross regional domestic product (GDP) per capita in a region reflects people's average income ability to meet their needs and fundamental needs. The process of fulfilling the community's basic needs is the first indication of the welfare condition of the aspect of distribution of income of the community evenly in the region. The poverty that occurs is related to income capability and the equalization of people's income in an area (Cholili and Hardjo, 2014).

### **Human Development Index**

HDI is a dimension to see the impact of building areas with a vast format. It displays the quality of society of a region regarding life expectancy, intellectuality, and decent living standards. In the implementation of development programming, HDI also plays a role in sharing the direction in ensuring the priority of policy formulation and determination of development programs. This subject is a directive in sharing calculations that match the usual wisdom set by the creators of knowledge and the decree owner (Sayifullah and Gandasari, 2016).

### **Education**

In breaking the chain of poverty, education is beneficial as the driving force of community transformation. Education can help reduce poverty by improving the workforce's performance through its productivity and social benefits so that education becomes an end goal in development that is important for a nation. Education is the most fundamental development goal. Education has a crucial role in shaping human resources' ability to accept and absorb modern technology and

develop the capacity to create growth and sustainable development.

### Unemployment

Workforce or Human Resources (HR) can be defined as a human being who can provide services or businesses. Working is meant to be the ability of a person to do activities that have economic value, meaning that they can produce products in meeting the needs of the community. In general, the ability to work is measured by age. In other words, people who are of working age are considered capable of working. The working-age population is defined as a working-age population consisting of the labor force and not the labor force. The labor force consists of working people and those who are unemployed and looking for work. The unemployment rate is a percentage of the number of unemployed against the number of the labor force. People looking for work but who do not have a job are called unemployed (Yacoub, 2013).

## MATERIALS & METHODS

This research is theoretical testing research that aims to test the hypotheses proposed by researchers on the influence of economic growth, human development index, education, and unemployment on poverty. The quantitative method's research method, with variables used in this research, is dependent variables, namely poverty level, independent variable, economic growth, human development index, education, and unemployment.

This research was conducted in North Sumatra Province, which administratively covers 33 regencies/cities. The data used is secondary data sourced from BPS North Sumatra Province using cross section data with 33 regencies/cities in the North Sumatra Provincial Report.

The analysis technique performed is multiple regression analysis, which statistically tests each variable by using Eviews 10. The expected result is how much

influence each variable is bound to the free variable.

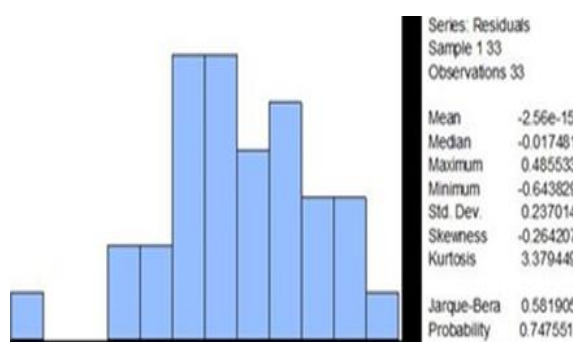
The hypothesis test is a simultaneous test (Test F), a test used to see the influence of all free variables together (simultaneously) on bound variables. Proof of this hypothesis is done by comparing F's significant level value with  $\alpha = 0.05$  or 95 percent, and Partial Test (Test t). This test aims to find out the influence of each free variable on bound variables. This test is done using t-statistics and prob-value tests.

## RESULT AND DISCUSSIONS

### Result

#### Classic Assumption Test

##### a. Normality



source: data processed with Eviews 10, 2020

Based on the Normality Test results, JB Probability Value is obtained by 0.7475 >  $\alpha$  (0.05), which usually means distributed data.

##### b. Multicollinearity

Variance Inflation Factors  
Date: 12/21/20 Time: 23:26  
Sample: 133  
Included observations: 33

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	10.91437	5610.105	NA
LNx1	0.332344	465.7887	1.049756
LNx2	0.603478	5616.227	1.351866
LNx3	0.011072	35.74524	1.617900
LNx4	0.000442	6.230459	1.632009

Source: data processed with Eviews 10, 2020

Based on the Centered Variance Inflation Factor (VIF) value, no VIF value of all independent variables has a VIF value of more than 10. Referencing these results, it can be concluded that there is no multi-

covariate between independent variables in the regression model.

**c. Heterokedastisity**

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.668248	Prob. F(4,28)	0.6194
Obs*R-squared	2.875779	Prob. Chi-Square(4)	0.5788
Scaled explained SS	2.463146	Prob. Chi-Square(4)	0.6512

Test Equation:  
 Dependent Variable: RESID^2  
 Method: Least Squares  
 Date: 12/21/20 Time: 23:24  
 Sample: 1 33  
 Included observations: 33

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.104709	1.136400	0.092141	0.9272
LNX1	0.146171	0.198301	0.737116	0.4672
LNX2	-0.092767	0.267216	-0.347162	0.7311
LNX3	0.043720	0.036195	1.207920	0.2372
LNX4	-0.000824	0.007229	-0.113977	0.9101

R-squared	0.087145	Mean dependent var	0.054474
Adjusted R-squared	-0.043263	S.D. dependent var	0.085331
S.E. of regression	0.087157	Akaike info criterion	-1.903482
Sum squared resid	0.212698	Schwarz criterion	-1.676738
Log likelihood	36.40745	Hannan-Quinn criter.	-1.827190
F-statistic	0.668248	Durbin-Watson stat	1.555470
Prob(F-statistic)	0.619419		

source: data processed with Eviews 10, 2020

Based on the table above shows that none of the independent variables are statistically significant dependent absolute values. This is seen from the Probability of

Chi-Square greater than  $\alpha$  0.05. So the regression model does not contain the presence of heterosexedastiness.

**d. Autocorrelation**

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	2.282714	Prob. F(2,26)	0.1221
Obs*R-squared	4.929089	Prob. Chi-Square(2)	0.0850

Test Equation:  
 Dependent Variable: RESID  
 Method: Least Squares  
 Date: 12/21/20 Time: 23:27  
 Sample: 1 33  
 Included observations: 33  
 Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.971610	3.269842	0.297143	0.7687
LNX1	-0.008842	0.566458	-0.015609	0.9877
LNX2	-0.229673	0.756094	-0.303762	0.7637
LNX3	0.032372	0.119023	0.271976	0.7878
LNX4	-0.013027	0.021865	-0.595768	0.5565
RESID(-1)	-0.314468	0.223377	-1.407789	0.1710
RESID(-2)	0.189704	0.234797	0.807948	0.4265

R-squared	0.149366	Mean dependent var	-2.56E-15
Adjusted R-squared	-0.046934	S.D. dependent var	0.237014
S.E. of regression	0.242513	Akaike info criterion	0.190306
Sum squared resid	1.529123	Schwarz criterion	0.507747
Log likelihood	3.859945	Hannan-Quinn criter.	0.297116
F-statistic	0.760905	Durbin-Watson stat	1.973128
Prob(F-statistic)	0.608997		

source: data processed with Eviews 10, 2020

Based on the processed data above obtained Prob value. Chi-Square of 0.0850 (>0.05) so that it can be concluded the residual value of the spread is randomly

accepted. Thus it can be supposed that there is no autocorrelation in the regression equation.

## 1. Multiple Regression Analysis

Dependent Variable: LNY  
Method: Least Squares  
Date: 12/21/20 Time: 23:21  
Sample: 1 33  
Included observations: 33

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	20.86208	3.303690	6.314781	0.0000
LN <sub>X1</sub>	-0.200193	0.576493	-0.347260	0.7310
LN <sub>X2</sub>	-4.237998	0.776838	-5.455444	0.0000
LN <sub>X3</sub>	-0.156234	0.105224	-1.484775	0.1488
LN <sub>X4</sub>	0.042473	0.021016	2.021003	0.0502

R-squared	0.595830	Mean dependent var	2.309697
Adjusted R-squared	0.538091	S.D. dependent var	0.372814
S.E. of regression	0.253379	Akaike info criterion	0.230887
Sum squared resid	1.797627	Schwarz criterion	0.467611
Log likelihood	1.190890	Hannan-Quinn criter.	0.307160
F-statistic	10.31943	Durbin-Watson stat	2.642165
Prob(F-statistic)	0.000029		

source: data processed with Eviews 10, 2020

### a. Simultaneous Test (F-Statistical Test)

Based on processed data throughout free variables, namely economic growth, human development index, education, and unemployment, significantly affect poverty in North Sumatra Province.

### b. Partial Test (T-Statistical Test)

Processed results, obtained two free variables have a prob-value value of  $< 0.05$ , namely the human development index and the number of unemployment means that the two free variables each have a significant effect on poverty. Economic and educational growth has no significant impact on North Sumatra's poverty because the prob-value  $> 0.05$ .

## DISCUSSION

Economic growth has a negative relationship but has no significant effect on poverty in 33 regencies/cities of North Sumatra Province. This means that a 1 percent increase in economic growth will reduce the poverty rate by 0.20 percent, but this result is not significant. This is apparently in line with what the government has said; namely, the government has noted that the economy is growing on average 5.64 percent throughout the decade. It turns

out that it has weakened in reducing the number of poor people (Setyowati, 2017). It also shows that the lack of impact of high economic growth in poverty reduction in North Sumatra Province. Economic growth in North Sumatra Province is not enjoyed by all residents in 33 districts/ cities. Economic growth that is not high but not appreciated by the whole community will give rise to development inequality.

The human development index (HDI) has a significant negative effect on poverty. The HDI coefficient is -0.706, meaning a 1 percent increase in HDI will reduce the number of poor people by 4.2379 percent and vice versa. The influence of HDI is also following research by Ningrum (Ningrum, 2017), which shows the decrease in the number of poor people when HDI increases, it is intended that the increase in the work productivity of the population results in increased income, which in the end the rise in income will cause the community to be able to meet its needs and get out of the shackles of poverty.

Based on the regression results, education with a coefficient of 0.1562 has no significant effect on poverty. This is because education, as measured by pure participation rates, is still relatively low for

universities, which is still high in elementary and junior high school groups. Residents in North Sumatra Province even mostly choose to go to school until elementary and junior high school, resulting in limited employment offered to them (tend to be rough jobs) due to lack of skills.

Lastly, the unemployment variable with a coefficient of 0.0424 has a significant effect on poverty in North Sumatra. This is in line with previous explanations, due to many low-educated productive labor forces, resulting in fewer job offers. As a result, the number of unemployed workers is increasing. The increasing number of unemployed will increase the number of poor people because of their inability to meet their basic needs.

## CONCLUSION

Based on the results of the discussions that have been described previously, the conclusions that can be taken are as follows:

1. Economic growth has a negative relationship but does not significantly affect poverty in 33 regencies/cities of North Sumatra Province. This indicates that the lack of impact of high economic growth in poverty reduction in North Sumatra Province. Economic growth in North Sumatra Province is not enjoyed by all residents in 33 districts/cities.
2. HDI has a negative and significant effect on poverty, where the decrease in poverty when HDI rises results in a rise in the population's work productivity that raises incomes. The increase in revenue will cause the community to meet its needs and reduce the level of poverty.
3. Education has no significant effect on poverty. This is because the education measured by the pure participation rate is still relatively low for universities, which is still high in elementary and junior high school groups.
4. Unemployment has a significant effect on poverty in North Sumatra. This is in line with previous explanations, due to

many low-educated productive labor forces, resulting in fewer job offers.

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