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ANALYSIS OF AFFECTING FACTORS POVERTY RATE IN THE PROVINCE SUMATERA ISLAND

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ABSTRACT

This study examined the factors influencing poverty levels in the provinces of Sumatra Island with the average length of schooling, open unemployment rate, economic growth, and population density as the independent variables. This study used secondary data from 2007 to 2020. The regression model used was a panel data regression model with three kinds of estimates, namely the common effect model, the fixed-effect model, and the random effect model. To select the appropriate model, it was tested through three tests, including the Chow test, Hausmant test, and LM test. Based on the test results, the model selected in this study was the fixed effect model. The regression tool was Eviews 9. The results showed that the average length of schooling and the open unemployment rate affect the poverty level in the provinces of Sumatra island. Meanwhile, economic growth and population density did not affect the poverty levels in the provinces of Sumatra Island.

Keywords:***Poverty, Average Length of Schooling, Unemployment Rate, Economic Growth, and Population Density.***

1. INTRODUCTION

Sumatra Island in Indonesia is the sixth largest island in the world. There are 10 provinces on the island of Sumatra, namely Aceh, Sumatera Barat, Kepulauan Riau, Jambi, Kepulauan Bangka Belitung, Sumatera Utara, Riau, Bengkulu, Sumatera Selatan dan Lampung. On the island of Sumatra the poorest province for the last few years is Aceh Province with a poverty rate of 15.43% in 2020. The second is Bengkulu Province with a poverty rate of 15.30% in 2020. The third is Sumatra Selatan with a poverty rate of 12.98 % in 2020. The fourth is Lampung Province with a poverty rate of 12.76% in 2020 and the fifth is Sumatra Utara with a poverty rate of 9.14%. Poverty has become a problem that is always faced in every province and district. This is due to the backwardness and backwardness of human resources, causing low productivity levels. Low productivity illustrates the low income / income received so that savings are also low, saving is a component of investment, there is a positive relationship between savings and investment which means that if savings are low then investment is also low which will result in a lack of capital so that job creation does not increase resulting in higher unemployment and followed by a high poverty rate as well.

To reduce poverty, it is not enough to just create jobs, why? Because a company or individual that runs its business must have high productivity, have quality human resources and a fit body or good health in order to be able to manage their business for a long time even during their lives well. Now imagine if a person or company that opens a business or a government that opens employment is then managed by individuals or groups with low levels of productivity and Human Resources, poor body health will result in the business being run not progressing / smoothly, this is due to the level of competitiveness so that the business that is being run does not make a profit, and even worse, it will experience a loss resulting in the business not being able to operate anymore. This must be considered in selecting workers in order to avoid losses in the business being run, which results in low income and low expenditure so that the poverty rate is increasing. The following is the condition of poverty for the last two years

Table.1 Data on poverty rates in the province of Sumatra island (percent)

Province	Year	
	2019	2020
Aceh	15,01	15,43
Bengkulu	14,91	15,30
Sumatera Selatan	12,56	12,98
Lampung	12,30	12,76
Sumatera Utara	8,63	9,14

Source: Badan Pusat Statistik, 2021

According to the Badan Pusat Statistik in 2020 Aceh became the poorest province with a poverty percentage, from 15.01% in 2019 increasing to 15.43% in 2020. Meanwhile Bengkulu became the second poorest province, where the poverty rate in Bengkulu in 2019 was 14.91%. and increased to 15.30% in 2020 the third poorest province is South Sumatra, where in 2019 the poverty rate was 12.56% and increased to 12.98% in 2020, the fourth poor province is Lampung, where in 2019 the the poverty rate is 12.30% and will increase to 12.76% in 2020. The fifth poorest province is North Sumatra, where in 2019 the poverty rate was 8.63% and increased to 9.14% in 2020. Education is an important element in increasing the development, growth and economic welfare of a region, therefore the problem of education should not be underestimated, because the higher the level of education, the higher the level of productivity and quality human resources, resulting in increased per capita income and national income and the community is able to meet the basic needs of a decent life so that it can reduce poverty. It can even buy luxury goods that will add to national income so that economic growth increases.

According to Rabiatul adwiya, 2020 Indonesian education is getting lower and lower by the day. Based on survey *United Nations Educational, Scientific and Cultural Organization (UNESCO)*, ranks 10 out of 14 countries, As for the quality of teachers, the quality is at level 14 out of 14 developing countries, one of the factors for the low quality of education in Indonesia is the weakness of teachers in exploring the potential of children, educators often impose their will without ever paying attention to the needs the interests and talents of the students (Adawiya & Dina Febriana, 2020). The weakness of our educators, they never explore the problems and potential of students. Education should pay attention to the needs of children, not even demanding something that makes children less comfortable when studying. A good educational process is to provide opportunities for children to be creative. It must be done because basically the child's thinking style cannot be directed (Adawiya & Dina Febriana, 2020). Education is the driving force behind the reduction of poverty in each region. Many think that education is not very important because many think that education does not guarantee jobs, but it should be noted that education can improve the quality of human potential or skills. With the quality of potential or high skills, it can increase the level of productivity and individual mindset in a positive way so that they can open a new work business or establish a business with a different concept. So that it can recruit a lot of workers so that it has an impact on reducing poverty significantly.

Tabel 2. Education data seen from the average length of schooling in the province of the island of Sumatra (years)

Province	Year	
	2019	2020
Aceh	9,18	9,33
Bengkulu	8,73	8,84
Sumatera Selatan	8,18	8,24
Lampung	7,92	8,05
Sumatera Utara	9,45	9,54

Source : Badan Pusat Statistik, 2021

Based on data on the average length of schooling obtained from the Central Statistics Agency, it shows that the average length of schooling for the last two years has increased significantly. The average length of schooling in Aceh in 2019 was 9.18 years and increased to 9.93 years in 2020. The average length of schooling in Bengkulu in 2019 was 8.73 years and increased to 8.84 years in 2020. The average length of schooling in South Sumatra in 2019 was 8.18 years and increased to 8.24 years in 2020. The average length of schooling in Lampung in 2019 was 7.92 years and increased to 8.05 in 2020. The average length of schooling in North Sumatra in 2019 was 9.45 years and increased to 9.54 years in 2020. Unemployment is characterized by the number of people who do not work, the longer people do not work, it will have an impact on all aspects, both social, cultural, economic and even political aspects. Because people who have not worked for a long time or are unemployed will be stressed, especially if people are married and have an obligation to provide for their families. From the social aspect, it will cause jealousy between people who do not work and those who work, causing hatred in a person, so that people who do not work will think of all kinds of ways to bring down their opponents for satisfaction or switch to taking jobs. From the cultural aspect, unemployment causes people's trust to waver. Where something will be justified if money is given, there are many cases that are often heard where someone sells their trust or replaces their trust for money. Na'uzubillah. From the economic aspect, unemployment will reduce the economic growth of a region. Because the unemployed do not have income so that the level of consumption is low and the GDP is also low. Meanwhile, from the political aspect, unemployment results in a low standard of living so that economic and social life will deteriorate and have an impact on political stability. This will trigger protests everywhere and even trigger demonstrations accompanied by demands for improvements by the government.

Table 3. The following is data on the open unemployment rate in the province of the island of Sumatra (percent)

Provinsi	Tahun	
	2019	2020
Aceh	6,17	6,59
Bengkulu	3,26	4,07
Sumatera Selatan	4,53	5,51
Lampung	4,03	4,67
Sumatera Utara	5,39	6,91

Source : Badan Pusat Statistik, 2021

Based on data on the open unemployment rate obtained from BPS, it is explained that open unemployment has increased. Where the open unemployment rate in Aceh in 2019 was 6.17% and increased to 6.59% in 2020. The open unemployment rate in Bengkulu in 2019 was 3.26% and increased to 4.07% in 2020. in Sumatra province The South experienced an increase in the open unemployment rate of 4.53% in 2019 to 5.51% in 2020. The open unemployment rate in Lampung in 2019 was 4.03% and increased to 4.67% in 2020. And the open unemployment rate in North Sumatra in 2019 which was 5.39% and increased to 6.91% in 2020. Simon Kuznets states that economic growth is a condition in which a country is able to increase its production based on technological advances accompanied by ideological adjustments (Literasi, n.d.). According to Wongdesmiwati (2009) in Andri Nurmalita Suryandari's research (2017), found that there is a negative relationship between economic growth and poverty levels. This means that if economic growth increases, poverty will decrease. This relationship demonstrates the importance of accelerating economic growth to reduce poverty levels (Nurmalita, 2017).

In order to reduce poverty, most of the possibilities are by increasing the rate of economic growth as much as possible and attracting as much foreign investment as possible. But actually

there is no certainty that poverty will automatically decrease if we only focus on economic growth. Because one of the components of GRDP is household consumption expenditure, it may not be all people who increase consumption, but only the rich who are getting richer. So that economic growth does not negatively affect the poverty level.

Table 4. The following is data on economic growth in the province of the island of Sumatra (percent)

Province	Year	
	2019	2020
Aceh (%)	4,13	-0,37
Bengkulu (%)	4,93	-0,01
Sumatera Selatan(%)	5,69	-0,10
Lampung (%)	5,26	-1,66
Sumatera Utara (%)	5,21	-1,06

Source : Badan Pusat Statistik, 2021

Based on economic growth data obtained from BPS, it shows that economic growth experienced a significant decline during 2019-2020. Economic growth in Aceh province in 2019 grew by 4.13% and decreased to -0.37% in 2020. Economic growth in Bengkulu province in 2019 grew by 4.93% and decreased to -0.01% in 2020. Economic growth in South Sumatra province grew by 5.69% in 2019 and fell to -0.10% in 2020. Economic growth in Lampung Province grew by 5.26% in 2019 and decreased to -1.66% in 2020 Meanwhile, economic growth in South Sumatra Province grew by 5.21% in 2019 and fell to -1.06% in 2020. If economic growth is minus, it means that the total output produced this year is less than the previous year. Population density is the ratio between the total population and the area occupied. The number of residents in the economic development of an area is a fundamental problem, because uncontrolled population growth can result in not achieving economic development goals, namely community welfare and reducing poverty (Didu & Fauzi, 2016). According to Nelson and Leibstein (quoted from Sadono Sukirno, 1983) there is a direct influence between population growth and the level of community welfare. Nelson and Leibstein say that the rapid population growth in developing countries causes the level of welfare to not experience a significant improvement in the long term will experience a decrease in welfare and an increase in the number of poor people.

Population density does not always reduce people's welfare. Population density may even increase the welfare of the community, namely if the population density is accompanied by quality human resources, a high level of productivity, has an entrepreneurial spirit, has a high and creative work spirit, which will increase the welfare of the community, which is marked by an increased rate of economic growth. per capita income will increase, the number of unemployed will decrease and poverty will also decrease.

Table 5. The following is data on population density in the province of the island of Sumatra (people/km^2)

Province	Year	
	2019	2020
Aceh	91	92
Bengkulu	98	100
Sumatera Selatan	92	93
Lampung	239	241
Sumatera Utara	200	202

Source : Badan Pusat Statistik, 2021

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Based on the data on the population density above during 2019-2020 in the provinces of Aceh, Bengkulu, Sumatra Selatan, Lampung and Sumatra Utara obtained from BPS, it shows that population density has increased during 2019-2020. The population density in Aceh province in 2019 was 91 people/km² and increased to 92 people/km² in 2020. The population density in Bengkulu province in 2019 was 98 people/km² and increased to 100 people/km² in 2020. Population density in Sumatra selatan province in 2019 was 92 people/km² and increased to 93 people/km² in 2020. Population density in Lampung Province in 2019 was 239 people/km² and increased to 241 people/km² in 2020. Meanwhile, population density in Sumatra utara in 2019 was 200 people/km² and increased to 202 people/km² in 2020. Based on the background described above, the authors are interested in studying how to "analyze the factors that influence the poverty rate in the province of Sumatra". Furthermore, the second part of this research will discuss the theoretical review, the research method will be discussed in the third part, then in the fourth part the research results and discussion will be discussed. The fifth part will discuss the conclusions and suggestions.

2.LITERATURE REVIEW

2.1.Poverty

According to BPS, to measure poverty BPS uses the concept of the ability to meet basic needs (basic needs approach) (Badan Pusat Statistik, 2021). With this approach, poverty is seen as an inability from an economic point of view to meet the basic needs of food and non-food as measured from the expenditure side, so the poor are residents who have an average monthly per capita expenditure below the poverty line that has been determined by the Central Statistics Agency. (Badan Pusat Statistik, 2021). The concept of poverty in developed countries is very different from the concept of poverty in developing and underdeveloped countries, perhaps a family who does not have a television or refrigerator, someone who cannot pay for health insurance, children who play barefoot, someone who does not have a mobile phone, access to internet and others in European countries can be said to be poor, but not so in less developed countries such as African countries (maipita, 2013). According to Burlian (2020), there are several factors that cause poverty, namely: education that is too low, lazy to work, limited natural resources, limited employment opportunities, limited capital and family burden/number of dependents.

2.2.Average Length of School

According to Musa Al Jundi (2014), low education in society is synonymous with poverty. Therefore, it is important for the community especially the government to improve people's living standards in order to reduce existing poverty by improving the quality of education and to break the existing poverty chain. (Jundi, 2014). The measurement of education in this study uses the average length of schooling. The average length of schooling is the average number of years spent by residents aged 15 years and over to take formal education that has been undertaken (excluding years of repetition). This average length of school indicator is calculated from the variable of the highest education completed and the current level of education.

2.3.Open Unemployment

According to Sadono Sukirno, Unemployment is a state of deficiency experienced by individuals and will not get a job or are looking for work. Quoted from (Yasin, mohammad and Sri Ethicawati. 2007 Ekonomi Pelajaran IPS Terpadu untuk SMP) which are included in the group of open unemployment or job seekers (unemployment/open unemployment) as follows:

a. People who are preparing for business.
b. People who do not look for work because they feel it is impossible to get a job.
c. People who have got a job but haven't started work yet.

This is also related to the time when the census or survey is carried out to enumerate the workforce. For example, someone who actually has a job, but when the enumeration was carried out that person was not working because of illness, leave, waiting for the harvest and a strike.(yasin, 2007)

2.4.Economic growth

According to (Putra, 2018) Economic growth is a long-term economic problem and economic growth is an important phenomenon experienced by the world in recent times. The process of economic growth is known as Modern Economic Growth. Basically, economic growth is defined as a process of output growth per capita in the long term (Putra, 2018). According to Prof. Rahardjo Adisasmita (2014), explaining that there are several indicators that can be used as benchmarks to see the economic growth of a region, namely: income imbalance, changes in economic structure, growth in employment opportunities and gross regional domestic product. According to (Sitindaon, 2013) the factors that influence economic growth are: labor, dependency rates and population growth.

2.5.Population Density

According to Jonny Purba, residents are people whose dimensions are themselves, family members, community members, citizens, and a collection of quantities who reside in a place within the borders of the country at a certain time. Meanwhile, according to Badan Pusat Statistik (Utara, 2021) Residents are all people who are domiciled in the geographical area of the Republic of Indonesia for 6 months or more and or those who are domiciled for less than 6 months but aim to settle down. Population density is the ratio between the total population and the area occupied. This means that the way to calculate population density is by the number of inhabitants (people) in an area divided by the area of the area (km^2).

2.6.Hypothesis

Based on the conceptual framework, the hypotheses in this study are:

H_1: It is assumed that the average length of schooling has a negative and significant effect on the poverty rate in the province of Sumatra.

$H_{2:}$ It is suspected that open unemployment has a positive and significant effect on the poverty rate in the province of Sumatra.

H_3: It is assumed that economic growth has a negative and significant effect on poverty in the province of Sumatra.

$H_{4:}$ It is assumed that population density has a positive and significant effect on the poverty level in the Province of Sumatra Island.

H_5: It is assumed that the average length of schooling, open unemployment, economic growth and population density together affect the poverty rate in the province of Sumatra island.

3.RESEARCH METHODS

3.1.Research Objects and Locations

The objects studied in this study are the average length of schooling, open unemployment, economic growth, population density, and poverty. Where the average length of schooling, open unemployment, economic growth and population density as independent variables and poverty as the dependent variable. This research was conducted in the province of Sumatra Island, namely in the provinces of Aceh, Bengkulu, Sumatera Selatan, Lampung dan Sumatera Utara.

3.2.Data Types and Sources

The type of data used in this study is secondary data in the form of time series data obtained from Badan Pusat Statistik (BPS from 2007-2020) (14 years).

3.3.Data collection technique

The data used in this study is secondary data in the form of time series data, namely during the period 2007-2020, which is 14 years. To obtain data on the Average Length of Schooling, the open unemployment rate, economic growth, population density and poverty used in this study, data was collected using a documentation system.

3.4.Variable Operational Definition

The variables used in this study were the average length of schooling (X1), the open unemployment rate (X2), economic growth (X3), population density (X4), as the independent variable and poverty (Y) as the dependent variable. The following is the definition of the variables in this study:

1. Average Length of Schooling (X1)

The average length of schooling is the average number of years completed in school/formal education by the population aged 15 years and over. The average length of schooling is in years. The data used in this study is the average length of schooling in the provinces of Aceh, Bengkulu, Sumatera Selatan, Lampung and Sumatera Utara obtained from BPS, from 2007 to 2020.

2. Open Unemployment Rate (X2)

Unemployment is a term given to people who are not working or people who are looking for work. Unemployment is caused by the number of workers more than the number of existing jobs.

Open unemployment is seen from people who do not work because they have not started work, have not found work or are looking for work, are still in learning, are lazy to work and cannot work due to physical and spiritual health problems. The open unemployment rate uses percent (%). The data used in this study is data on the open unemployment rate in the provinces of Aceh, Bengkulu, Sumatra Selatan, Lampung and Sumatra Utara obtained from BPS, from 2007 to 2020.

3. Economic Growth (X3)

Economic growth is a fluctuating change in the economy of a country for a better condition in a certain period. Economic growth can be seen from GRDP, calculated using the formula, namely GDP this year minus GDP from the previous year divided by GDP from the previous year and then multiplied by one hundred percent (100%). Economic growth unit is percent (%). The data used in this study is data on economic growth in the provinces of Aceh, Bengkulu, Sumatra Selatan, Lampung and Sumatra Utara obtained from BPS, from 2007 to 2020.

4. Population Density (X4)

The total population is the number of people living or domiciled in an area or area. The population is measured using the number of people. Meanwhile, population density is seen from how many people live in certain areas which are limited by predetermined/agreed boundaries and then compared or divided by the area occupied. The unit population density is people per km2 (person/km2). The data used in this study is population density data in the provinces of Aceh, Bengkulu, Sumatra Selatan, Lampung and Sumatra Utara obtained from BPS, from 2007 to 2020.

5. Poverty (Y)

Poverty is seen from the condition of an individual or family who is unable to meet their standard of living and family needs properly due to work, income, health, climate/weather, pandemic, unwillingness to work and number of dependents. Poverty in this study uses percent (%). The data used in this study is poverty data in the provinces of Aceh, Bengkulu, Sumatra Selatan, Lampung and Sumatra Utara obtained from BPS, from 2007 to 2020.

3.5.Data analysis method

The analytical method used in this study is a panel data regression model to determine how much influence the independent variable has on the dependent variable. The relationship between these variables is expressed in a mathematical model, the multiple regression equation will be used as follows:

$LogTK_{it} = C_1 + C_2 LogRLS_{it+} C_3 TPT_{it} + C_4 PE_{it} + C_5 LogKP_{it}$

Ket :

TK = Poverty(%)

TPT = Open Unemployment(%)

PE = Economic Growth (%)

KP = Population Density (People/km^2)

RLS = Average Length of School

C= constanta

$(C)_{12345}$ =Koefisien Regresi

$_i$ =Observation (5 provinsi)

$_t$ = time (2007-2020)

3.6.Estimation Method

In estimating the panel data regression model, it can be done through three approaches, namely:

1. Commond Effect Model

According to (Agus, 2017) commond Effect Model combining cross section data with time series and using the OLS method to estimate the panel data model.

2. Fixed Effect Model

According to (Gujarati, D. N. & Dawn, 2012) *fixed effect* is a model with a different intercept for each subject (cross section), but the slope of each subject does not change over time.

3. Random Effect Model

According to (Gujarati, D. N. & Dawn, 2012) the random effect model is used to overcome the weakness of the fixed effect model that uses dummy variables.

3.7.Determination of Estimation Method

To choose a model for determining the estimate, there are several tests that can be done, namely:

1. Uji Chow
2. Uji Hausmant
3. Uji Lagrange Multiplier

3.8.Uji Asumsi Klasik

Uji Multikolinieritas

Uji multikolinieritas is a situation where there is a correlation between one independent variable and another independent variable. The multicollinearity test is one of the tests that exist in the classical assumptions whose usefulness is to determine whether the independent variables in this study have a relationship or not (Agus, 2017). To detect the presence or absence of multicollinearity in a regression in the following way:

a If the correlation value < 0.80 then free multicollinearity

b If the correlation value> 0.80 then the occurrence of multicollinearity..

3.9.Uji Heteroskedastisitas

According to (Agus, 2017) uji heteroskedastisitas used to test whether in the regression model there is an inequality of variance from the residuals of one observation to another observation. To detect whether there is heteroscedasticity, it is as follows::

a If the probability value of Breusch-Pagan LM > 0.05, then there is no heteroscedasticity.

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b If the probability value of Breusch-Pagan LM < 0.05, heteroscedasticity occurs.

3.10.Uji Statistik

Uji Koefisien Determinasi (R^2)

The coefficient of determination (R^2) test is used to measure how big the relationship between the independent variables is to the dependent variable. According to (Ghozali, 2006) the value of the coefficient of determination is 0 and 1. If R2 is getting closer to one, it means the stronger the influence of the independent variable on the dependent variable and if R2 is getting smaller and closer to zero, it means the smaller the influence of the independent variable is on the dependent variable. (Ghozali, 2006).

Koefisien Regresi by Simultan(Uji F)

According to (Ghozali, 2006) Uji F carried out to see the effect of the independent variables together on the dependent variable by looking at the significant value of F. The provisions for the interpretation of the F test are:

a If $F_{hitung}>F_{tabel}$ with an alpha of 5%, it can be concluded that simultaneously the independent variables have a significant influence on the dependent variable

b If $F_{hitung}<F_{tabel}$ with an alpha of 5%, it can be concluded that the independent variable has no effect on the dependent variable (Ghozali, 2006).

Koefisien Regresi by Parsial (Uji t)

uji t conducted to see the effect of the independent variable partially on the dependent variable. The test criteria are::

a If $t_{hitung}>t_{tabel}$ with an alpha of 5%, it can be interpreted that the independent variable has a significant effect on the dependent variable.

b If $t_{hitung}<t_{tabel}$ with alpha 5% it can be interpreted that the independent variable has no effect on the dependent variable (Ghozali, 2006)

4.RESULTS AND DISCUSSION

4.1.Determination of Estimation Techniques

Results Uji Chow

uji chow used to see whether the commond effect model is more appropriate to use than the fixed effect model

Table 6. Results Uji Chow

Effects Test	Statistic	d.f.	Prob.
Cross-section F	51.476470	(4,61)	0.0000
Cross-section Chi-square	103.321556	4	0.0000

Source: data diolah, 2021

Based on table 6 shows the results of the Redundant Fixed Effect Test. The probability value of Chi-Square < 5% is 0.0000 <0.05. it means that the fixed effect model is better to use than the commond effect model based on the results of this test.

Results Hausmant Test

Uji hausmant used to test whether the fixed effect model is more appropriate to use than the random effect model

Table 7. Hausmant Test

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	205.905880	4	0.0000

Source: data diolah, 2021

Based on table 7, the results of the Hausmant Test are obtained, the probability value is smaller than 5%, namely 0.0000 <0.05. This means that the fixed effect model is better to use than the random effect model, so there is no need to continue with the lagrange multiplier test.

4.2.Panel Data Regression Results

Based on the results of the estimation technique test, the model chosen in this study is the fixed effect model. Based on the estimation results of the fixed effect model, the results can be written as follows:

LOGY=6.019054-1.170050LOGX1+0.070179X2 -0.005038X3-0.260985LOGX4

The constant (α) in the above equation is 6.019054. This means that if the average length of schooling, open unemployment, economic growth and population density are constant, then the poverty rate in the province of Sumatra is 6.019054%. The regression coefficient value of the average length of schooling variable (LogX1) is -1.170050. This means that if the LogX1 variable increases by 1%, poverty in the province of the island of Sumatra will decrease by 1.170050%.

The regression coefficient value of the open unemployment variable (X2) is 0.070179. This means that if the X2 variable increases by 1%, poverty in the province of Sumatra Island will increase by 0.070179%. The value of the regression coefficient of the variable Economic Growth (X3) is -0.005038. This means that if the X3 variable increases by 1%, poverty in the province of Sumatra Island will decrease by 0.005038%. The regression coefficient value of the Population Density variable (LogX$) is -0.260985. This means that if the LogX4 variable increases by 1%, poverty in the province of Sumatra Island will decrease by 0.260985%.

4.3.Asumsi Klasik Test

Multikolinieritas Test

Multicollinearity test is a situation where there is a correlation between one independent variable and another independent variable.

Table 8. Multikolinieritas Test

	Log(X1)	X2	X3	Log(X4)
Log(X1)	1.000000	0.180834	-0.345997	-0.107867
X2	0.180834	1.000000	-0.374531	-0.095633
X3	-0.345997	-0.374531	1.000000	0.275036
Log(X4)	-0.107867	-0.095633	0.275036	1.000000

Source: data diolah, 2021

Based on the results of table 8 above, the independent variables, namely the LogX1 variable, the X2 variable, the X3 variable and the LogX4 variable, there is no relationship between the independent variables because each variable value is less than 0.80. This means that this research is free from multicollinearity.

Heteroskedastisitas Test

According to (Agus, 2017) uji heteroskedastisitas used to test whether in the regression model there is an inequality of variance from the residuals of one observation to another observation.

Table 9. Heteroskedastisitas Test

Test	Statistic	d.f.	Prob.
Breusch-Pagan LM	15.92495	10	0.1018
Pesaran scaled LM	0.206824		0.8361
Bias-corrected scaled LM	0.014517		0.9884

Pesaran CD	-1.180557		0.2378

Source: data diolah, 2021

Based on table 9 the results of the heteroscedasticity test explain that the value of the Breusch-Pagan LM prob is greater than alpha 0.05 so it can be concluded that this study does not have heteroscedasticity disorders.

Statistik Test

Results Koefisien Determinasi Test (Test R^2)

koefisien determinasi Test (R^2) used to measure how big the relationship between the independent variables to the dependent variable.

Table 10. Results Test R^2

R-squared	0.904322
Adjusted R-squared	0.891774

Source: data diolah, 2021

Based on table 10, the Adjusted R-Squared value in this study is 0.891774, this means that the relationship between the independent variable and the dependent variable in this study is very strong, namely 89.17% while the other 10.83% is influenced by variables outside the study.

Results Koefisien Regresi by Simultan Uji F

Uji F carried out to see the effect of the independent variables together on the dependent variable by looking at the significant value of F.

Table 11. Results Test F

F Statistik	F Tabel	Prob	alpha	Ket
72.06965	2.51	0.0000	0.05	Signifikan

Source: data diolah, 2021

Based on table 11, it is obtained that the value of Fcount = 72.06965 while the value of Ftable is obtained by 2.51 from an alpha of 0.05. So that it can be seen that the value of Fcount>Ftable is 72.06965>2.51, it can be interpreted that simultaneously the independent variables have a significant effect on the dependent variable.

Results Test Koefisien Regresi by Parsial (Uji-t)

Uji t carried out to see the effect of the independent variable partially on the dependent variable by looking at the significant value of t.

Table 12. Results Test t

Variabel Bebas	T statistik	T Tabel	alpha	Prob
X1	-2.077829	1.66864	0,05	0.0419
X2	5.742946	1.66864	0,05	0.0000
X3	-0.867455	-	-	0.3891
X4	-1.554218	-	-	0.1253

Source: data diolah, 2021

Based on table 12, the t-count X1 (Average Length of School) is 2.077829 which is greater than 1.66864. This means that the average length of schooling variable (X1) has a negative and significant effect on poverty in the province of Sumatra Island. Or it can be seen from the probability value which is smaller than alpha 0.05. The t_{hitung} value of the open unemployment rate (X2) is 5.742946, which is greater than 1.66864. This means that the open unemployment rate has a positive and significant effect on poverty in the province of Sumatra Island. Or it can be seen from the probability value which is smaller than alpha 0.05.

For variables x3 and x4 the probability value is high so it is not suitable to use alpha 1%, 5% and 10%. The probability value of economic growth (X3) is 0.3891 which is greater than alpha 5%. This means that economic growth has no significant effect on poverty in the province of Sumatra Island. The probability value of population density (X4) is 0.1253 which is greater than alpha 5%. This means that population density has no significant effect on poverty in the province of Sumatra Island.

4.4.Discussion

The Effect of Average Length of School on Poverty

Judging from the results of the partial coefficient test that the average length of schooling has a negative and significant effect on poverty in the province of the island of Sumatra. These results are in line with the research of Muhammad Dimas Adinugraha, 2016 which in his research found that the average length of schooling had a negative and significant effect on the number of poor people in districts/cities in the province of DIY (Adinugraha, 2016). However, it is inversely proportional to the research of Hafiz Nabawi, 2020 which in his research found that the level of education had no effect on poverty in Malang City in 2011-2018. (Nabawi, 2020).

The Effect of Open Unemployment on Poverty

Judging from the results of the partial coefficient test that open unemployment has a positive and significant effect on poverty in the province of the island of Sumatra. This result is in line with the research by Shinta Setya Ningrum, 2017 which in his research found that open unemployment had a positive and significant effect on the number of poor people in Indonesia in 2011-2015.(Ningrum, 2017). However, it is inversely proportional to the research of Dawami Buchori Amins, 2017 which in his research found that the unemployment rate had no effect on poverty in Kabupaten Berau (Amins, 2017).

The Effect of Economic Growth on Poverty

Judging from the results of the partial coefficient test that economic growth has a negative and insignificant effect on poverty in the province of the island of Sumatra. This is because when economic growth increases, it occurs because the rich are getting richer and the poor are getting poorer. So that the increase in GRDP that occurs as a result of an increase in savings, consumption and taxes issued by the rich getting richer will increase the rate of economic growth but not be followed by a reduction in poverty. This can be seen from the data in this study, where economic growth for 14 years experienced ups and downs while the poverty rate experienced a significant decline until 2019. However, in 2020 poverty experienced an increase due to the impact of covid-19. So it can be concluded that economic growth has no effect on poverty.

The results of this study are in line with the research of Yulianita Ratna Dwihapsari, 2017 which in her research found that economic growth had no effect on poverty in Indonesia. (Dwihapsari, 2017). However, it is inversely proportional to the research of Suprito and Lalu Subayil, 2020, which in their research found that the variable rate of economic growth had an effect on poverty in the province D.I.Yogyakarta (Suripto & Subayil, 2020).

The Effect of Population Density on Poverty

Judging from the results of the partial coefficient test that population density has a negative and insignificant effect on poverty in the province of the island of Sumatra. This is due to an increase in the number of people who are not accompanied by quality human resources, high productivity levels and brilliant knowledge which will result in people lacking the expertise and skills to work, making it difficult to get jobs that match their expertise. The community is also unable to compete with the existing foreign workers. In addition, the higher population density also results in high levels of dependence, non-productive residents depend on productive people for their lives. resulting in an increase in poverty. However, if the increase in population is accompanied by quality Human Resources, high productivity levels and brilliant knowledge will reduce the number of poverty.

These results are in line with research Eka Agustina, DKK 2018 who in his research found that the population variable had no effect on poverty in Aceh province (Agustina et al., 2018). However, it is inversely proportional to the research of Novri Silastri, 2017 which in his research found that the population had an effect on poverty in Kuantan Singingi Regency. (Silastri, 2017).

5.CONCLUSION AND SUGGESTIONS

5.1.CONCLUSION

Based on the results of the analysis of the discussion in this study, it can be concluded as follows:

1. Individually, the average length of schooling has a negative and significant effect on the poverty level in the province of Sumatra.
2. Individually, open unemployment has a positive and significant effect on the level of poverty in the province of the island of Sumatra.
3. Individually, economic growth has no significant effect on the level of poverty in the province of the island of Sumatra.
4. Individually, population density has no significant effect on the level of poverty in the province of the island of Sumatra.
5. Simultaneously the variables of average length of schooling, open unemployment rate, economic growth and population density have a significant effect on the poverty level in the province of Sumatra island.

5.2.SUGGESTIONS

Based on the conclusions that have been described above, the researchers provide several suggestions, namely::

1. Poverty can reflect the welfare of society. Therefore, the government needs special attention to improve education and economic growth with various policies and assistance as well as to control population density and unemployment.
2. The fluctuating economic growth resulted in poverty not decreasing significantly. Therefore, the government needs special attention in making policies to increase economic growth, such as efforts to build infrastructure for each city and village as well as efforts to increase skills and productivity.
3. For further research, it is hoped that researchers can add other variables outside of this research and increase the amount of data so that research can increase its repertoire.

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