

DETERMINATION OF POVERTY THROUGH UNEMPLOYMENT IN NORTH SUMATRA

Piter Andrian¹

Universitas Islam Negeri Sumatera Utara, Medan, Indonesia

Pioyt89@gmail.com

Marliyah²

Universitas Islam Negeri Sumatera Utara, Medan, Indonesia

marliyah@uinsu.ac.id

Maryam Batubara³

Universitas Islam Negeri Sumatera Utara, Medan, Indonesia

maryambatubara@uinsu.ac.id

Abstract

This study aims to analyze the effect of the unemployment rate, Gross Regional Domestic Product (GRDP), investment, and The Human Development Index (HDI) which are relevant in influencing poverty in North Sumatra Province. This study uses secondary data in the form of North Sumatra Cross Section data from 2015-2021. The analytical method used in this study is a mixed method with Path Analysis and Descriptive Qualitative approaches. The results showed that GRDP had a significant effect on the poverty rate, Investment had a significant effect on poverty, HDI had a significant effect on poverty, GRDP had a significant effect on unemployment, Investment had a significant effect on unemployment, HDI had a significant effect on unemployment, and unemployment has no significant effect on poverty in North Sumatra. Unemployment does not function as an intervening variable between GRDP and poverty, unemployment functions as an intervening variable between investment and poverty, and unemployment does not function as an intervening variable between HDI and poverty.

Keywords: Unemployment, GRDP, Investment, HDI, and Poverty

INTRODUCTION

Poverty is one of the main economic issues, as with other problems, poverty is also an economic problem whose causes can be identified. Basically, the main human needs or primary needs are clothing, food, and shelter. A situation where a person already has clothes to wear, food and drink to consume, because humans really need to eat, need energy to support their daily activities and to survive, apart from that humans also need boards, namely a place to live for shelter. These three aspects must be fulfilled to achieve prosperity (Sitepu, 2021).

So far, the measurement of the poverty rate is identical to that carried out by measuring the level of a country's Gross Domestic Product (GDP) in a certain year. The higher the value of a country's GDP, the higher the country's productivity level will be accompanied by an increase in people's welfare. Welfare in question is the income per capita of the community which is calculated from the value of GDP divided by the total population in a certain year.

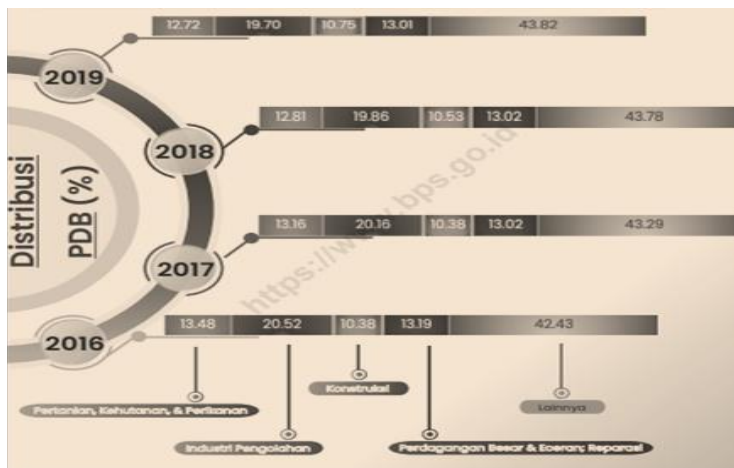


Figure 1
Indonesia Quarterly GDP 2016-2019

Based on Figure 1, it can be seen that the growth rate of Indonesia's gross domestic product has decreased from year to year. As seen from agriculture, forestry and fisheries in 2018 the growth rate was 12.81, while in 2019 it decreased by 0.9 percent to 12.72 (BPS, 2021). When viewed from the growth rate of gross domestic product in Figure 1 above, it can be concluded that the level of welfare in Indonesia has decreased from year to year.

In Indonesia, the description of poverty is a phenomenon and a fact that occurs in the field, the problem of which has not been properly resolved. Therefore, the problem of poverty still needs serious attention because the main objective of Indonesia's development is the development of the Indonesian people as a whole. The Human Development Index (HDI) is very closely related to poverty, where HDI can determine the quality of life and the quality of human resources because good quality human development will maximize production factors (Bakar, 2019). The following are trends in human development in 2011-2021



Figure 2
Graph of Human Development Index (HDI) of Indonesia 2016-2021

The Central Statistics Agency (BPS) noted that the Human Development Index in Indonesia (HDI) was 72.29 points in 2021. This score increased 0.49% compared to the previous year which was 71.94 points. With this score, Indonesia's HDI is in the high category. This is in line with the improvement in economic performance which has a positive effect on real per capita consumption indicators. The increase in HDI in 2021 will occur in all its constituent dimensions. The dimensions of longevity and decent healthy life as measured by life expectancy and birth (UHH) increased 0.13% from 71.47 years to 71.57 years (Mahdi, 2022). If seen from the picture above, the human development index

continues to increase, meanwhile The Central Statistics Agency (BPS) noted that in 2021 the HDI for North Sumatra was at 72.00, up 0.23 points from the previous year's 71.77. The HDI of North Sumatra ranks 15th on a national scale (Ardi, 2022).

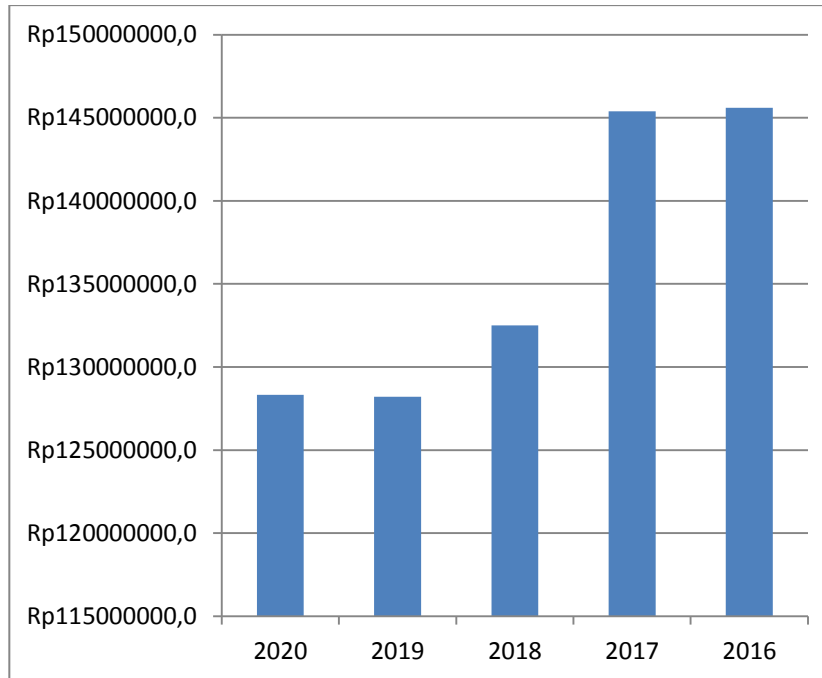


Figure 3
Trends in the Number of Poor Population in North Sumatra
Period March 2016-2021 (Million People)

BPS data shows that the number of poor people in North Sumatra in March 2020 was 1.28 million people. Meanwhile in September 2020 there were 1.36 million people during the pandemic that hit Indonesia. In March 2021, the number of poor people managed to fall to 1.34 million people. Medan is the region that has the highest number of poor people, namely 183.54 thousand people in March 2020 (B. Center for Statistics, 2022). One of the factors thought to influence HDI is poverty (Widyastuti, 2021). The serious impact that can be caused by the existence of poverty must be overcome by every region, especially in the city of Medan, considering that poverty is used as the main indicator of successful development both regionally and nationally (Murdiansyah, 2017). Based on these data that poverty alleviation needs to be maximized, because the problem of poverty is a complex and multidimensional problem. Therefore, efforts to eradicate poverty must be

carried out in an integrated and comprehensive manner, covering various aspects of people's lives, and carried out in an integrated manner.

The Provincial Government of North Sumatra continues to improve and refine various poverty alleviation programs as well as increasing the capacity and income of poor households. Ministry of Social programs that have been implemented in an effort to reduce poverty and improve people's lives, such as the Family Hope Program, Joint Business Groups, Elderly Social Services, and others. Mr. Dzulmi Eldin stated that the assistance received by the underprivileged people could ease their spending on basic food needs. He said, currently there are around 129,613 poor families in Medan, 65,342 have become Beneficiary Families (KPM) from the Ministry of Social Affairs program (Leandha, 2022). Meanwhile, in September 2020 the number of poor people increased by 1.36 million during the pandemic that hit Indonesia (BPS, 2021). If you look at the comparison of the poverty rate described for social assistance to the poverty rate set by the central statistics agency, the figures are different. This results in poverty that has not been included in the budget. The burden of poverty is also strengthened by urbanization, where people are competing to find a living in big cities that promise a better life (Isnaini, 2018).

The unemployment rate in Indonesia has increased since the pandemic hit in early 2020. Data from the Central Statistics Agency said the number of unemployed increased by 2.6 million to 9.77 million people in 2020. The number of unemployed from year to year has increased rapidly, in 2020 the highest number of unemployed was 9.77 million people, this increase was influenced by the Covid 19 pandemic, because during the pandemic many companies laid off employees due to their non-smooth business, as a result of these layoffs increased the number of unemployed (Khairina, 2021).

From CNN Indonesia, some of the job seekers stated that there were many job vacancies available. But it's not easy to get because companies have strict requirements for their prospective employees (C. Indonesia, 2022). Apart from that, the acceptance of prospective civil servants will not be opened in 2022. The absorption of workers in government administration has fallen by 30,000 (Sembiring, 2022). Unemployment caused by the pandemic has had a major impact on poverty in Medan, as can be seen from the open unemployment rate in 2020 which has increased to 10.74% (B. Center for Statistics, 2022).

The following is the number of unemployment developments in North Sumatra.

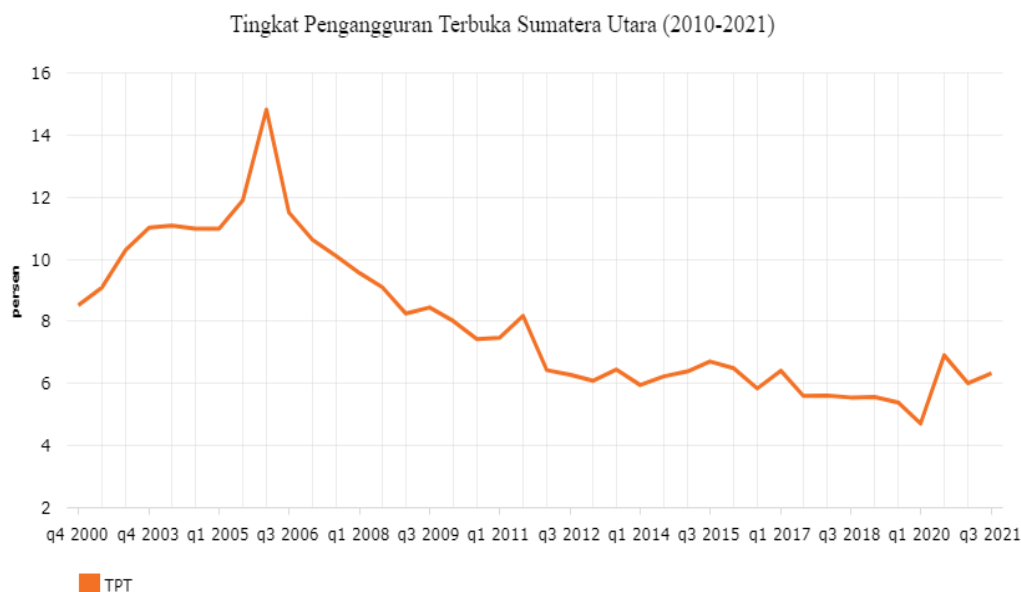


Figure 4
North Sumatra Open Unemployment Rate (2010-2021)

The importance of poverty alleviation is the main issue discussed around the world, which is evidenced in the SDGs by stating no poverty as the first priority point. Poverty as a problem that occurs in various parts of the world is often associated with the issue of income inequality (Saleky, 2017). This is also in line with the statistics which show that the worsening of inequality is in line with the statistics which show a trend of increasing poverty. Yasa and Arka conclude that inequality, as measured by the gini ratio, has a negative correlation with people's welfare (Arca, 2017).

In contrast to Rustariyuni's research results, that the gini ratio has a positive correlation to people's welfare. Inequality in people's income by district/city is reflected in non-food expenditure per capita. The increasing proportion of people's non-food expenditure shows that people's income is getting higher (Prastowo, 2018).

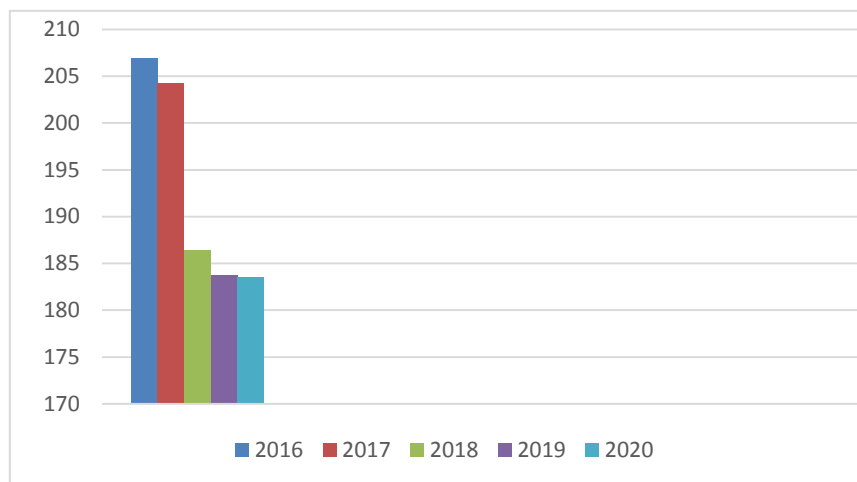


Figure 5
Number of Poor People in North Sumatra
 Source: data processed by the Central Statistics Agency

Based on the table above, it can be seen that in 2019 in North Sumatra has a population of 18,379,000 inhabitants. It can explain that in North Sumatra still has a high poverty rate. High unemployment rates lead to low income which in turn triggers the emergence of poverty (Yacoub, 2017). The higher the number and percentage of poor people in an area, the higher the burden of development will be, which will result in a greater role for the government and a greater allocation of State Budget (APBD funds) for prevention programs.

Poverty alleviation can be through investment (Michael P. and Smith, 2021). Investment realization of domestic investment in North Sumatra from 2019 has decreased to 2021.

Table 1
North Sumatra Capital Investment Realization (Billion Rupiah)

Year	Investment Realization
2019	19 749.0
2020	18 189,5
2021	18 484.5

Source: data processed from BPS

If seen from the realization of investment investment in North Sumatra, which has decreased by 1265.5 billion (BPS, 2021) (B. Center for Statistics, 2022). Investment is important for economic growth where a region uses GRDP for investment. With the high investment invested will increase faster economic growth. Where is PEconomic growth is the increase in a country's gross domestic product (GDP) from time to time. GDP is the total value of goods and services produced in a country in a certain period of time, usually one year. Economic Growth is measured using the percentage of GDP growth from year to year (Isnaini, 2023)

Population is a driver of development because a larger population is actually a potential market that is a source of demand for various kinds of goods and services which will then drive various kinds of economic activity so as to create economies of scale in production that will benefit all parties, reduce production costs and create resources. supply or supply of cheap labor in sufficient quantities so that it will be able to stimulate an increase in people's welfare, which means that poverty will decrease. other than thatAccording to Hartomo and Aziz in Debrina Vita, one of the factors that influence poverty is education. In Medan, the percentage of residents who are still in school has increased from 43.31 in 2020, while in 2021 it has increased to 43.80 (B. Center for Statistics, 2022). Poverty is a problem that must be resolved in Sumatra Province due to several conditions such as a lack of job opportunities causing unemployment, low quality of education, and low income.

REVIEW OF LITERATURE

Poverty Theory

According to Suharto, in understanding poverty, there are two paradigms or grand theories, namely the Neo-liberal and Social Democratic paradigms: a) **Neo-Liberal Paradigm Theory**. Poverty is an individual problem, not a group problem caused by the weaknesses or life choices of the individuals concerned. Poverty will disappear if market forces are expanded as much as possible and economic growth is increased as high as possible; b) **The Social Democratic Paradigm Theory**. Social Democratic Theory Poverty is not an individual problem, but a structural problem. Poverty is caused by injustice and income inequality in society due to the limited access of certain groups to various social

resources. Supporters of Social-Democrats argue that equality is an important prerequisite for gaining independence in freedom (Astuti, 2017).

Poverty Indicator

According to Hartomo and Aziz, individuals who can be categorized as poor have several indicators, including: a) In general, it does not have material and non-material factors of production. Material production factors include land, financial capital, and other things in physical form, while non-material production factors include individual applied competencies in everyday life; b) The possibility is closed for an individual to obtain production assets by himself, the limitations possessed by the individual become an obstacle in fulfilling the requirements in obtaining the expected production assets, so that access to assistance is too difficult to obtain; c) The level of education is low, one's poverty can be obtained from a previously poor family situation so that the possibility of the individual's accessibility to obtain an adequate level of education is also limited; d) The majority of poor individuals live in rural areas, limited employment opportunities in rural areas make it difficult for the individual's economic conditions to develop, bearing in mind that not all residents in rural areas own agricultural land so that other villagers become agricultural labourers, these conditions are the reasons for the majority of rural residents to be trapped in poor conditions (Ferezagias, 2018).

Poverty

According to Mudrajat Kuncoro, poverty is defined as the inability to meet a minimum standard of living, where the measurement of poverty is based on consumption. Based on this consumption, the poverty line consists of two elements, namely: a) Expenses required to purchase minimum nutritional standards and other basic needs; b) the number of other needs varies greatly, reflecting the cost of participating in everyday community life (Machmud, 2016).

Poverty According to Islamic Perspective

In Islam, poverty is seen as a problem that endangers one's soul and faith because it is very close to disbelief. By living in poverty, a person cannot carry out his religious obligations to the fullest, cannot receive a good education, and has access to proper life and health. Therefore, Islam prohibits its followers from leaving offspring in a weak condition,

both in terms of religion, knowledge, and economics (welfare), as Allah says: QS An-Nisa': 9).

وَلْيَخْشَ الَّذِينَ لَوْ تَرَكَوْا مِنْ خَلْفِهِمْ ذُرِّيَّةً ضِعَافًا خَافُوا عَلَيْهِمْ فَلْيَتَّقُوا اللَّهَ
وَلْيَقُولُوا قَوْلًا سَدِيدًا

“And let fear Allah those who leave behind them weak children, whom they fear for their (well-being). Therefore, let them fear Allah and let them speak the truth.”

According to Ibnu Katsir, weak offspring is synonymous with a condition of lack of wealth, this is reinforced by his explanation of the Prophet's message to Sa'ad Abi Waqash to leave his heirs in a state of adequacy. If examined further, this verse has a very important philosophical message that poverty is an issue that cannot be simply ignored in the current context (Sukmawari, 2018).

Forms and Types of Poverty

Based on the condition of poverty which is seen as a form of multidimensional problems, poverty has 4 forms. The four forms of poverty are (Suryawati, 2004): a) **Absolute Poverty.** Absolute poverty is a condition where the income of a person or group of people is below the poverty line so that it is insufficient to meet the standard needs for food, clothing, health, housing and education needed to improve the quality of life; b) **Relative Poverty.** Relative poverty is defined as a form of poverty that occurs due to the influence of development policies that have not reached all levels of society, causing income inequality or inequality in welfare standards; c) **Cultural Poverty.** Cultural poverty is a form of poverty that occurs as a result of the attitudes and habits of a person or society that generally come from a culture or custom that is relatively unwilling to improve living standards with modern procedures. Habits like this can be in the form of being lazy, wasteful or never thrifty, less creative, and also relatively dependent on other parties; d) **Structural Poverty.** Structural poverty is a form of poverty caused by low access to resources which generally occurs in a socio-cultural or socio-political order that does not support poverty liberation.

Factors Affecting Poverty

Poverty is one of the main economic issues, as with other problems, poverty is also an economic problem whose causes can be identified. According to Hartomo and Aziz in

Debrina Vita, the factors that cause poverty include: a) Education that is too low. The level of education that is not up to standard makes it difficult for an individual to obtain job opportunities because they do not have the abilities and skills needed in the world of work; b) Limited employment opportunities. The fact that the population is increasing is not accompanied by the number of job opportunities that are able to absorb the labor force; c) Limited capital in general, most people experience business capital problems because the conditions are too difficult to fulfill, this makes it difficult for people to develop the entrepreneurial sector; d) Limited natural resources. An area with limited natural potential will find it difficult to develop because exploitation is not able to make the area develop economically. Production activities that occur in these areas do not generate various innovations, in contrast to regions that have rich natural potential so that they are able to provide injections of a more advanced and innovative economy.

Expenses for the family People with a relatively large number of family members will affect the expenditure burden, if it is not balanced with obtaining an amount of income that is sufficient for the needs of all family members, then the possibility that this family will experience is financially deficient (Sukmawari, 2018).

Classical Theory

Classical theory explains the view that unemployment can be prevented through the supply side and price mechanisms in free markets to ensure that demand is created which will absorb all supply. According to the classical view, unemployment occurs because of a temporary mis-allocation of resources because it can then be overcome by the price mechanism (Gilarso. 2019).

Unemployment

Unemployed is not the same as not working or not wanting to work. People who do not want to work cannot be said to be unemployed (Manurung, 2018).

Calculation of Unemployment

The ratio between the number of the unemployed labor force and the total labor force is called the Unemployment Rate. To measure the unemployment rate in a region, it can be obtained from the percentage dividing the number of unemployed by the number of the labor force.
$$\text{Unemployment rate} = \frac{\text{Total Unemployment}}{\text{Total Labor Force}} \times 100\%$$
 (Aziz Septiatin, 2016). The higher the unemployment rate indicates the worse the economy.

Solutions to Overcome Unemployment

There are several programs that can be developed to reduce unemployment as suggested by the world bank, namely creating economic growth, increasing labor flexibility and investment, and increasing employment directly.

Factors Affecting Unemployment

The success of a country's economic development can be seen from several economic indicators, one of which is the unemployment rate. Based on the unemployment rate, it can be seen whether a country's economy is growing or slow and or even experiencing setbacks. There are several factors that affect unemployment as follows: a) GRDP growth; b) Wage rate, and; c) Inflation (Arfan poyoh, 2017).

Unemployment in Islamic Perspective

In an Islamic economic perspective, unemployment is not a suggestion taught in Islam. Islam encourages all its people to work hard and always seek sustenance from the path that Allah has blessed, such as working, farming, trading and reviving dead land.

From this description, it is clear that work orientation in Al-Syaibani's view is to live to gain the pleasure of Allah SWT. On the other hand, work is an effort to activate the wheels of the economy, including the processes of production, consumption and distribution, which have macro implications for increasing a country's economic growth. Thus, work has a very important role in fulfilling the rights of Allah SWT, the right to life, the right of the family, and the right of society (Karim, 2020).

Gross Regional Domestic Product (GRDP)

According to the Central Bureau of Statistics, the Gross Regional Domestic Product (GRDP) is the total gross added value generated by business units in a domestic area. Or it is the sum of the total value of final goods and services produced by all economic activities in a region.(BPS, 2020). GRDP is one of the important indicators of economic growth in a certain region and in a certain period (a year) produced by all economic activities in a country or a region, there are two ways of presenting GRDP, namely on the basis of current prices and on the basis of prices constant (B. Indonesia, 2020).

The Use of GRDP Data

GRDP data is one of the macroeconomic indicators that can show regional economic conditions every year.

Investment

Investment is a commitment to a number of funds or other resources made at this time, with the aim of obtaining a number of benefits in the future (Tendelilin, 2001). The term investment can be related to various kinds of activities. Investing funds in the real sector (land, gold, machinery or buildings) or financial assets (deposits, stocks or bonds), is a common activity.

According to Jogiyanto, investment can be defined as delaying current consumption to be used in efficient production for a certain period of time (Jogiyanto, 2003). Meanwhile, according to Sukirno, investment activities carried out by the community will continuously increase economic activity and employment opportunities, increase national income and increase the level of community prosperity.

Sharia Investment

Sharia investment is a sharia-based investment that uses Islamic instruments in its implementation. There are several types of investments based on the duration, risk and process. These things need to be known in order to ensure the accuracy between the reasons and how to make an investment (Isnawan, 2021).

Human Development Index

The Human Development Index (HDI) is a composite index which is also an indicator that can describe the development of human development in a measurable and representative way. HDI was first introduced in 1990 by UNDP. The Human Development Index is commonly used to classify whether a country is a developed, developing or underdeveloped country and also to measure economic policy towards quality of life. According to Amartya Sen, "hunger occurs not because of a lack of food, but because of the uneven development of the distribution of food" (Son, 2019).

Dimensions of the Human Development Index

There are 3 dimensions that make up the human development index, namely: a) Longevity and healthy life; b) Knowledge; c) Decent standard of living (BP Statistics, 2022).

Human Development Index Composite Indicator

The composite indicator of the Human Development Index according to The United Nations Development Program (UNDP) in the Human Development Report every year since 1996 has published the Human Development Index (human development index-HDI).

Relations between Variables

The relationship between Investment and Unemployment Variables is that investment will increase the production capacity of the economy by increasing the capital stock, meaning that investment will affect the supply side. Apart from that, increasing production capacity will require an increasing number of workers (Al ridho, 2023). Furthermore, the relationship between Unemployment and Poverty is When the unemployment rate rises, the poverty rate also rises and when the unemployment rate decreases, the poverty rate also falls. In theory, there has always been a link between unemployment and poverty. Because people who are unemployed do not have income and the effect is definitely poor. Unemployment is often a problem in the economy because with unemployment, people's productivity and income will decrease so that it can cause poverty and other problems (Imsar, 2018). Then, the relationship between the Human Development Index and Poverty, namely the Low Human Development Index will result in low work productivity of the population. Low productivity results in low revenue gain. Thus, with low income causes a high number of poor people.

RESEARCH METHOD

The data used in this study are primary data and secondary data. Primary data was obtained from the results of interviews related to poverty in North Sumatra. While secondary data comes from North Sumatra BPS data and other relevant previous studies. The type of research that will be carried out in this study is to use a mixed method with Path Analysis and Descriptive Qualitative approaches. Research that uses data and figures that have been obtained from data sources and then the findings are described in a systematic, factual and accurate manner regarding the facts and characteristics of an object so as to obtain a clear picture of the research findings.

RESULTS AND DISCUSSION

Phase I analysis ($Y_1 = a + \rho X_1 + \rho X_2 + \rho X_3 + \epsilon_1$)

Normality test

To meet the requirements of the regression model, a normality test was carried out so that researchers could find out whether the data for each variable were normally distributed or not. The normality test used is the one sample Kolmogorov Smirnov test by looking at a variable significance of 0.05. The data significance value must be 0.05 so that it is normally distributed. The results of this study are contained in the table and figure below:

Table 2
Test Results of the One-Sample Kogmogrov-Smienov Test

		Unstandardized Residual
N		170
Normal Parameters ^{a,b}	Mean	,0000000
	Std. Deviation	2,85745312
Most Extreme Differences	Absolute	,149
	Positive	,149
	Negative	-,066
Kolmogorov-Smirnov Y_1		1,519
Asymp. Sig. (2-tailed)		,020

a. Test distribution is Normal.

b. Calculated from data.

The table explains that the Kolmogorov-Smirnov value is 0.20, so the conclusion is that the data is normally distributed with a significance value of >0.05.

Multicollinearity Test

This test can be seen in the coefficient table, namely in the Tolerance column and column VIF (Variance Inlated factors). A variable can be said to have

no relationship if the value tolerance more than 10% (Tolerance > 0.1) and has a VIF value of less of 10 (VIF < 10).

Table 3
Multicollinearity Test Results I

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	-9.778	3.014		-3.244	.001		
GRDP	.001	.088	.001	.012	.990	.957	1.045
INVESTMENT	20.196	6.246	.259	3.234	.001	.788	1.270
HDI	.126	.047	.215	2.679	.008	.782	1.279

a. Dependent Variable: Unemployment

The table shows that the tolerance value for each variable (GRDP = 0.957, Investment = 0.788 and IPM = 0.782) is greater than 10% (0.1) and the VIF value (GRDP = 1.045, Investment = 1.270 and HDI = 1.279) is smaller than 10. So, there is no multicollinearity between the independent variables in this study.

Heteroscedasticity Test

This test can be seen from the points spread randomly and no pattern is formed on the scatterplot graph. In addition, the points also spread above and below the value of 0 on the Y axis. If heteroscedasticity does not occur, the regression model is good. In stage I in namely:

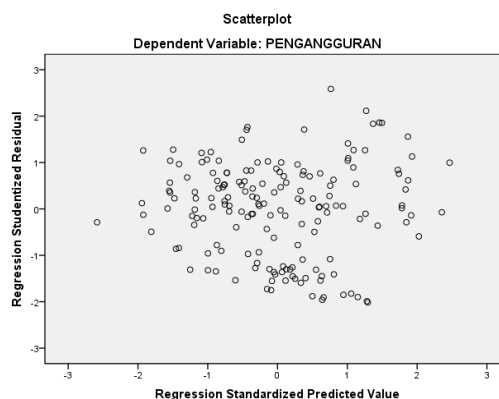


Figure 6
Heteroscedasticity Test Results I

Phase II analysis $Y_2 = a + \rho X_1 + \rho X_2 + \rho X_3 + \rho Y_1 + \epsilon_2$

Normality Test

This test is carried out when the actual analysis has not been carried out, so that it can be seen that the data is normally distributed or not. Data is said to be good if it is normally distributed or close to normal. The following is the normality test on the histogram chart:

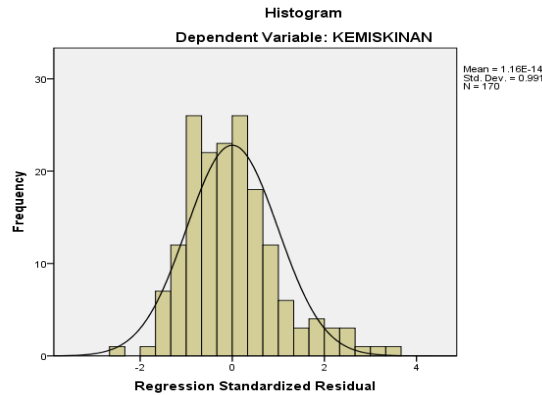


Figure 7
Histogram Normality Test II

Figure 7 explains that the curve has a balanced slope from left to right, the line also resembles a bell. Means, the images are normally distributed. Another method used to test normality is by looking at the normal curve p-plot. The data is normal if the images normal if the images are distributed with the data points in the direction of the diagonal line.

Multicollinearity Test

This test can be seen in the coefficient table, namely in the Tolerance column and column VIF (Variance Inlated factors). A variable can be said to have no relationship if the value tolerance more than 10% (Tolerance > 0.1) and has a VIF value of less of 10 (VIF < 10).

Table 4
Multicollinearity Test Results II

Coefficients ^a							
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	std. Error	Betas			tolerance	VIF

1 (Constant)	64,272	3,866		16,623	.000		
GRDP	-.094	.113	-.042	-.825	.411	.957	1045
INVESTMENT	39,575	8012	.278	4,939	.000	.788	1270
HDI	-.910	.060	-.852	-15,098	.000	.782	1,279

a. Dependent Variable: Poverty

The table shows the tolerance value for the variable (GRDP = 0.957, Investment = 0.788 and HDI = 0.782 greater than 10% (0.1) and the VIF value (GRDP = 1.045, Investment = 1.270 and HDI = 1.279) less than 10. So, there is no multicollinearity between independent variables in the study.

Heteroscedasticity Test

The purpose of this test is to test whether in the regression model there is an inequality of variance from the residuals or one other observation.

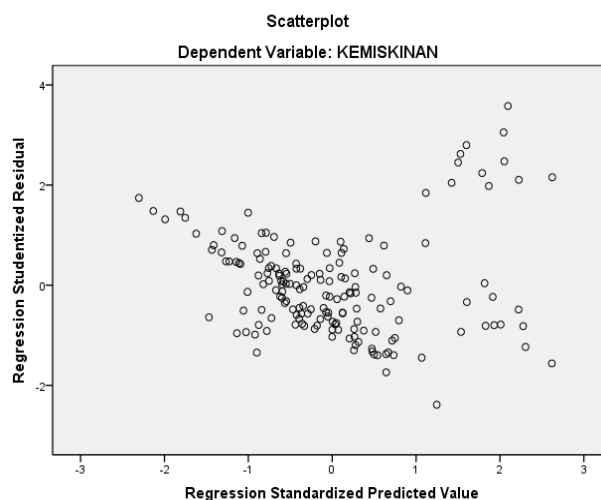


Figure 8
Heteroscedasticity Test Results II

Figure 8 explains that the dots spread randomly and do not form patterns or gather in one place. Then there is no heteroscedasticity and this regression model is good.

Significance Test (t test)

This partial test was carried out in order to determine the effect of each GRDP variable (X1), Investment (X2), HDI (X3), on Unemployment (Y1). The following are the results of the analysis of the t test:

Table 5
Multiple Regression Test Equation I

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	std. Error	Betas		
1	(Constant)	9,778	3.014		-3,244	.001
	GRDP	.990	.088	.153	2.12	.000
	Investment	.201	6,246	.259	3,234	.001
	HDI	.126	.047	.215	2,679	.008

a. Dependent Variable: Unemployment

From table 5, the regression direction coefficient values are listed in the coefficients table. In the unstandardized coefficients column in sub-column B, there is a constants value of 9.778. While the coefficient value of the regression direction is GRDP = 0.990, Investment = 0.201 and HDI = 0.126. Then it can be obtained multiple linear regression equations in stage I with the following formula:

$$Y1 = a + \rho X1 + \rho X2 + \rho X3 + \epsilon$$

$$= 9.778 - 0.990X1 + 0.201X2 + 0.126X3$$

Information:

X1 = GRDP

X2 = Investment

X3 = HDI

Y1 = Unemployment

€ = Error

In this study, the t-test testing criteria used was by looking at the comparison of tcount with ttable. To obtain the t test is determined through the degrees of freedom. Based on the significant arithmetic data of 0.05, a decision is obtained with degrees of freedom $df = n - k = 170 - 5 = 1.654$ (n = total: k = number of variables) then the ttable value is 1.659. When tcount < ttable means Ho is accepted whereas when tcount > ttable means Ho is rejected. The conclusion of the influence on each of these variables is explained as follows:

Effect of GRDP (X1) on Unemployment (Y1)

Hypothesis 1

Ho = GRDP has no effect on unemployment

Ha = GRDP has an effect on unemployment

The results of the t test for the work environment (X1) on unemployment (Y1) show a sig value of 0.000, meaning that the sig value is less than 0.05 ($0.000 < 0.005$). And the tcount value = 2.12 is greater than the ttable 1.645 = ($2.12 > 1.654$). In conclusion, when viewed from a significant and partial perspective, X1 has a significant effect on Y1. Ha is accepted and Ho is rejected. Which means GRDP has a partial effect on unemployment.

Effect of Investment (X2) on Unemployment (Y1)

Hypothesis

Ho = Investment has no effect on unemployment

Ha = Investment has an effect on unemployment

The results of the t test for Investment (X1) against Unemployment (Y1) show a sig value of 0.01, meaning a sig value of 0.05 ($0.001 < 0.05$). And the value of tcount = 0.232 is greater than ttable 1.654 = ($0.323 < 1.654$). In conclusion, when viewed from the significant and partial effect of X2 on Y1. Ho was rejected and Ha was accepted. Which means investment has a significant and partial effect on unemployment.

HDI Influence (X3) to Unemployment (Y1)

Hypothesis

Ho = HDI has no effect on unemployment

H2 = HDI has an effect on unemployment

Results of the t test for HDI on unemployment(Y1) shows a sig value of 0.008, meaning that the sig value is smaller than the value of 0.05 ($0.008 < 0.05$) and the tcount value = 0.267 is smaller than the ttable value of 1.654 = ($0.267 < 1.654$) The conclusion is that when viewed from the significant and partial X3 effect on Y1. Ho was rejected and Ha was accepted. Which means HDI has a significant and partial effect on unemployment.

Determination Test (R2)

This test was conducted to see how much the ability of the independent variables (PDRB, Investment, HDI) to explain the intervening variable (Unemployment). If the determinant coefficient ranges from zero, then the relationship is weak. However, if the

number is close to 1, then the relationship between these variables is stated to be very strong. The following are the results that describe the value of the coefficient of determination.

Significance Test (t test)

This partial test was conducted in order to determine the effect of each GRDP (X1), Investment (X2), HDI (X3) and Unemployment (Y1) variables on Poverty (Y2). The following are the results of the analysis of the t path:

Table 6
Multiple Regression Test Equation II

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	std. Error	Betas		
1	(Constant)	65,299	3,986		16,383	.000
	GRDP	.094	.113	-.042	-.826	.001
	Investment	37,453	8,258	.263	4,536	.000
	HDI	.924	.062	-.864	-15,001	.000
	Unemployment	.105	.100	.357	1,055	.293

a. Dependent Variable: Poverty

From the coefficient table, in the unstandardized coefficients column in sub column B, there is a constant value of 65.299. While the coefficient value of the regression direction is GRDP = 0.094, Investment = 0.37453, and HDI is 0.924 and Unemployment is 0.105, then a multiple linear regression equation can be obtained in stage II with the following formula:

$$Y2 = a + bX1 + bX2 + bX3 + bY1 + \epsilon$$

$$= 65.299 + 0.094 X1 + 0.37453 X2 + 0.924 X3 + 0.105 Y1$$

In this research, the t-testing criteria used is by looking at the comparison between tcount and ttable. to obtain the t test is determined through the degrees of freedom. Based on the significant t count of 0.05, it is obtained.

Decision with degrees of freedom $df = n - k = 170 - 5 = 165$, (n = total: k number of variables) then the value of ttable is 1.654. When tcount > ttable means Ho is accepted while Whentcount > ttable means Ho is rejected.

Table 7
Determination Test Results (R2) II

Summary models				
Model	R	R Square	Adjusted R Square	std. Error of the Estimate
1	.768a	.590	.580	3.23066

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

The table shows the correlation value or symbolized by the letter R of 0.768 and the percentage or coefficient of determination (R Square) between the influence of the independent variables (GDP, Investment, HDI and Unemployment) and the dependent variable (Poverty) of 0.590 or 59.0%. It means that the effect of GRDP, Investment, HDI and Unemployment on Poverty in North Sumatra, namely 59.0, the remaining 41% is influenced by other variables.

Anova Test (F-Test)

This test is used to show the simultaneous effect of the independent variables (GRDP, investment, HDI and unemployment) on the dependent variable (poverty). The Ftable value for the number of respondents is 170 at an alpha level of 5% and k (sum of all variables) = 5, then the value of $N1 = k - 1 = 4$, $N2 = n - k = 170 - 4 = 166$. The following results:

Table 8
ANOVA Test Results II

ANOVA ^b						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2474.781	4	618.695	59.278	.000 ^a
	Residual	1722.135	165	10.437		
	Total	4196.916	169			

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

b. Dependent Variable: Poverty

Direct Effect (DE)

The effect of GRDP on unemployment is 0.153 or 15.3%

The effect of investment on unemployment is 0.259 or 25.9%

The effect of HDI on unemployment is 0.215 or 21.5%

The effect of unemployment on poverty is 0.357 or 35.7%

The effect of GRDP on Poverty is 0.263 or 26.3%

The Effect of Investment on Poverty is -0.42 or 4.2%

The effect of HDI on Poverty is -0.864 or 86.4%

Indirect Effect (IE)

Calculation of the Indirect Effect (IE) using the formula: a) The effect of GRDP on Unemployment through Poverty is $0.153 \times 0.357 = 0.054$ or 54%; b) The Effect of Investment on Unemployment through Poverty is $0.259 \times 0.357 = 0.092$ or 92%; c) The effect of HDI on Unemployment through Poverty is $0.215 \times 0.357 = 0.076$ or 76%.

Total Impact

This effect is obtained from the sum of the direct and indirect influences. The total effect is: 1) The effect of the GRDP variable on unemployment is the direct effect of GRDP on unemployment, and the effect of GRDP and through poverty is $0.263 + 0.357 = 0.62$ or 62%; 2) The effect of the variable Investment on Unemployment is the direct effect of Investment on Unemployment, and the effect of Investment and through Poverty is $-0.042 + 0.092 = -0.134$ or 13.4%; 3) The effect of the HDI variable on unemployment is the direct effect of HDI on unemployment, and the effect of HDI and through poverty = $-0.864 + 0.076 = 0.863$ or 86.3%.

Based on these calculations, it can be seen that $z_{count} < t_{table}$ ($-0.4139044 < 1.654$). This means that there is no significant or real indirect effect of the HDI variable (X3) on Employee Poverty (Y2) through Unemployment (Y1) as an intervening variable in North Sumatra at a confidence level of 95% or an error rate of 5%.

The Effect of GRDP on Unemployment in North Sumatra

The results of this study found that GRDP has an effect on unemployment. The significance value (0.000) obtained is smaller than the standard error in this study. And the t_{count} value of 2.12 is greater than the t_{table} 1.645 ($2.12 > 1.654$). The conclusion is that H_a is accepted and H_0 is rejected.

GRDP coefficient value of -0.990. This means that when the Gross Regional Domestic Product increases, the Open Unemployment Rate will decrease by 0.990 in units of thousand rupiahs assuming *ceteris paribus*. This shows that the higher the Gross Regional Domestic Product, the Open Unemployment Rate will decrease, and when the

Gross Regional Domestic Product decreases, the Open Unemployment Rate will increase. The Gross Regional Domestic Product which has a negative and significant effect on the Open Unemployment Rate is in accordance with Okun's Law. That is, an increase in output/GDP by 1% will cause unemployment to decrease by 1%, or when there is an increase in the unemployment rate by 1% it will cause a decrease in the GRDP by 2%.

This research is in line with the research of M. Arizal and Marwan with the results showing that the Gross Regional Domestic Product has a significant and negative effect on the Open Unemployment Rate in West Sumatra Province in 2010-2017 (Marwan, 2019). Furthermore, Rahmah and Murginato, the results of their research show that GRDP has a negative and significant effect on the Open Unemployment Rate in Surabaya (Murgianto, 2016).

The Effect of Investment on Unemployment in North Sumatra

The results of this study found that investment has an effect on unemployment. A significance value of 0.01 means a sig value of 0.05 ($0.001 < 0.05$). And the value of $t_{count} = 3.234$ is greater than $t_{table} 1.654 = (3.234 > 1.654)$. In conclusion, when viewed from the significant and partial effect of X_2 on Y_1 . H_0 was rejected and H_a was accepted which means the investment variable has a significant and positive effect on the Unemployment Rate in North Sumatra Province.

The results of the research are in line with the research conducted by Lailatul Qomariyah, et al., suggesting that the investment variable has a significant and positive effect on the unemployment rate in East Java Province (Lailatul Qomariyah, 2022). Kurniawan also stated that the investment variable affected the unemployment rate in Gresik Regency (Kurniawan, 2014).

The Effect of HDI on Unemployment in North Sumatra

Results of the t test for HDI on unemployment shows a sig value of 0.008, meaning that the sig value is smaller than the value of 0.05 ($0.008 < 0.05$) and the $t_{count} = 2.679$ is greater than the t_{table} value of $1.654 = (2.679 > 1.654)$ which means the investment variable has a significant and positive effect on the Unemployment Rate in North Sumatra Province.

This research is in line with Lailatul Qomariyah's research which shows that the Human Development Index has a positive effect on the unemployment rate in East Java

Province (Lailatul Qamariyah, 2022). However, the results of this study are not in line with Putra who stated that the Human Development Index partially has a negative effect on the open unemployment rate in West Kalimantan Province (Putra, 2020).

The Effect of Unemployment on Poverty in North Sumatra

Based on the results of the study, unemployment has a significant and positive effect on poverty in North Sumatra. The coefficient value is 0.105 which means that if the unemployment rate increases by 1 it will increase poverty by 0.105 assuming other variables are held constant. Thus, the greater the unemployment rate, the greater the poverty rate in Indonesia.

The Effect of GRDP on Poverty in North Sumatra

The results of this study state that the Gross Regional Domestic Product (GDP) has a negative and significant effect on the Poverty Level in the districts/cities of the province of North Sumatra. The regression results have a coefficient value of -0.094 meaning that when GRDP increases by 1 percent it will reduce the poverty rate by 0.094 percent. This indicates a negative correlation between GRDP and poverty levels. The probability value of 0.001 means that it is smaller than α 0.05 ($0.001 < 0.05$) indicating that GRDP has a significant effect on the poverty rate.

The Effect of Investment on Poverty in North Sumatra

The results of the study show that investment does not have a significant effect on poverty in North Sumatra, indicating that increased investment is not enough to reduce poverty. This result is inconsistent with Sukirno's theory, which suggests that investment activities can spur economic activity, employment opportunities, national income and social welfare (Sukirno, 2005). The insignificant difference between investment and poverty indicates that investment is more directed at increasing economic growth rather than poverty alleviation. In addition, investment is more focused on sectors with low labor absorption (S. Mustamine, 2015).

The Effect of HDI on Poverty in North Sumatra

Based on the results of the study, it shows that the Human Development Index has a negative and significant effect on the poverty rate in North Sumatra Province. That is, the higher the value of the Human Development Index tends to be followed by a decrease in the number of poverty levels. The significance of the influence of the human development

index on the poverty rate in North Sumatra Province means that when there is an increase in human resources in an area it will affect the quality of existing human resources in the related area which in turn will also affect the productivity of these human resources.

The results of this study are in line with Desi Yulianti's research which states that the human development index has a negative and significant effect on poverty levels (Yulianti, 2016) and this is also in line with Ari Prasetyoningrum's research that the indirect effect between HDI and the unemployment rate is significant, then the unemployment rate on poverty is also significant, so it is concluded that unemployment can mediate between HDI and poverty. HDI can reduce the poverty rate through unemployment by 0.031. The value of the indirect path coefficient is smaller than the value of the direct path coefficient in reducing poverty.

The Effect of GRDP on Poverty through Unemployment in North Sumatra

Based on the results of this study, it is known that GRDP does not significantly influence poverty through unemployment. This indicates that unemployment is not a good intervening variable as an intermediate variable between GRDP and poverty. Judging from the relationship, GRDP is negative for poverty because the growth of GRDP is still higher than population growth.

The Effect of Investment on Poverty through Unemployment in North Sumatra

In this study, it was found that investment has an effect on poverty in North Sumatra through the unemployment variable. This shows that unemployment is a mediating variable in the effect of investment on poverty levels. When investment increases, the inequality of income distribution will increase.

The Influence of HDI on Poverty through Unemployment

Based on the results of this study, it is known that the HDI does not significantly influence poverty through unemployment, because the unemployment variable does not mediate the influence between HDI and the poverty rate. This means that the poverty rate is influenced by the Human Development Index. Because an increase in HDI will describe the quality of human resources needed by a producer to meet their production needs.

CONCLUSION

Based on the results of the analysis of the data processed with the help of the SPSS version 20.0 program and the discussion described by the researchers, it was concluded that: a) GRDP has a partially significant effect on unemployment with a significance value of $0.000 < 0.005$; b) Investment has a partially significant effect on unemployment with a significance value of $0.001 < 0.05$; b) The Human Development Index has a partially significant effect on unemployment with a significance value of $0.008 < 0.05$; b) Unemployment has no significant effect partially on poverty with a significance value of $0.293 > 0.05$; c) GRDP has a partially significant effect on poverty with a significance value of $0.001 < 0.05$; d) Investment has a partially significant effect on poverty with a significance value of $0.000 < 0.05$; e) The Human Development Index has a partially significant effect on poverty with a significance value of $0.000 < 0.005$; f) GRDP has no significant effect partially on poverty through unemployment with a significance value of $0.6764178 < 1.654$; g) Investment has a partially significant effect on poverty through unemployment with a significance value of $1.6923408 > 1.654$; h) The Human Development Index has no significant effect on poverty through unemployment with a significance value of $0.4139044 < 1.65$.

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