THE EFFECT OF POPULATION, HUMAN DEVELOPMENT INDEX, AND GROSS REGIONAL DOMESTIC PRODUCT ON POOR POPULATION

Agnes Lutherani. Ch. P. Lapian\textsuperscript{A}, Een Novritha Walewangko\textsuperscript{B}, Lis Melissa Yapanto\textsuperscript{C}

<table>
<thead>
<tr>
<th>ARTICLE INFO</th>
<th>ABSTRACT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Article history:</td>
<td>Purpose: This study aims to determine the effect of population, Human Development Index and Gross Regional Domestic Product on the number of poor people in Minahasa District</td>
</tr>
<tr>
<td>Received 20 February 2023</td>
<td>Theoretical Framework: The data used in this study uses secondary data sourced from the Central Bureau of Statistics for North Sulawesi Province in 2011-2021. This type of research is quantitative research.</td>
</tr>
<tr>
<td>Accepted 08 May 2023</td>
<td>Design/Methodology/Approach: The analysis technique used in this study is panel data regression analysis.</td>
</tr>
</tbody>
</table>

**Keywords:**
Number of Population; Human Development Index; Gross Regional Domestic Product; Number of Poor Population.

**Findings:** The results showed that population, Human Development Index, and Gross Regional Domestic Product have an effect on the number of poor people. The population number and Human Development Index variables have a positive and significant effect on the number of poor people. The Gross Regional Domestic Product variable has a negative and significant effect on the population.

**Research Practical and Social Implications:** The Gross Regional Domestic Product variable has a negative and significant effect on the population.

**Originality/Value:** Partially the population has a positive and significant effect on the number of poor people in Minahasa, North Minahasa, South Minahasa, Southeast Minahasa in 2012-2021.

Doi: https://doi.org/10.26668/businessreview/2023.v8i5.2221

---

O EFEITO DA POPULAÇÃO, ÍNDICE DE DESENVOLVIMENTO HUMANO E PRODUTO INTERNO BRUTO REGIONAL SOBRE A POPULAÇÃO POBRE.

**Objetivo:** Este estudo visa determinar o efeito da população, Índice de Desenvolvimento Humano e Produto Interno Bruto Regional sobre o número de pessoas pobres no distrito de Minahasa.

**Estrutura Teórica:** Os dados usados neste estudo usam dados secundários provenientes do Escritório Central de Estatísticas da Província de Sulawesi do Norte em 2011-2021. Este tipo de pesquisa é uma pesquisa quantitativa.

**Desenho/Metodologia/Abordagem:** A técnica de análise utilizada neste estudo é a análise de regressão de dados em painel.

**Resultados:** Os resultados mostraram que a população, o Índice de Desenvolvimento Humano e o Produto Interno Bruto Regional têm efeito sobre o número de pobres. As variáveis do número populacional e do Índice de Desenvolvimento Humano têm um efeito positivo e significativo sobre o número de pobres. A variável Produto Interno Bruto Regional tem efeito negativo e significativo sobre a população.

---

\textsuperscript{A} PhD. Assistant Professor. University of Sam Ratulangi Manado. Indonesia. E-mail: agneslapian@unsrat.ac.id Orcid: https://orcid.org/0009-0000-2671-5096

\textsuperscript{B} PhD. Associate Professor. University of Sam Ratulangi Manado. Indonesia. 
E-mail: eenwalewangko@unsrat.ac.id Orcid: https://orcid.org/0009-0002-9122-8539

\textsuperscript{C} PhD. Associate Professor. Universitas Negeri Gorontalo. Indonesia. E-mail: lizrossler@ung.ac.id Orcid: https://orcid.org/0000-0002-5602-8219

---
The Effect of Population, Human Development Index, and Gross Regional Domestic Product on Poor Population

The Effect of Population, Human Development Index, and Gross Regional Domestic Product on Poor Population

Implicações Práticas e Sociais da Pesquisa: A variável Produto Interno Bruto Regional tem um efeito negativo e significativo sobre a população.

Originalidade/Valor: Parcialmente a população tem um efeito positivo e significativo sobre o número de pessoas pobres em Minahasa, Minahasa do Norte, Minahasa do Sul, Sudeste de Minahasa em 2012-2021.

Palavras-chave: Número de População, Índice de Desenvolvimento Humano, Produto Interno Bruto Regional, Número da População Pobre.

EL EFECTO DE LA POBLACIÓN, EL ÍNDICE DE DESARROLLO HUMANO Y EL PRODUCTO INTERNO BRUTO REGIONAL SOBRE LA POBLACIÓN POBRE.

RESUMEN

Objetivo: Este estudio tiene como objetivo determinar el efecto de la población, el Índice de Desarrollo Humano y el Producto Interno Bruto Regional sobre el número de personas pobres en el distrito de Minahasa.


Diseño/Metodología/Enfoque: La técnica de análisis utilizada en este estudio es el análisis de regresión de datos de panel.

Resultados: Los resultados mostraron que la población, el Índice de Desarrollo Humano y el Producto Interno Bruto Regional tienen efecto sobre el número de pobres. Las variables tamaño de la población e Índice de Desarrollo Humano tienen un efecto positivo y significativo sobre el número de pobres. La variable Producto Interno Bruto Regional tiene un efecto negativo y significativo sobre la población.

Implicaciones Prácticas y Sociales de la Investigación: La variable Producto Interno Bruto Regional tiene un efecto negativo y significativo en la población.

Originalidad/Valor: La población parcial tiene un efecto positivo y significativo en el número de personas pobres en Minahasa, Norte de Minahasa, Sur de Minahasa, Sudeste de Minahasa en 2012-2021.

Palabras clave: Número de Población, Índice de Desarrollo Humano, Producto Interno Bruto Regional, Pobre Número de Población.

INTRODUCTION

Factors that cause poverty are high population growth rates, increased unemployment, low education, unequal income and natural disasters. One of the causes of poverty that is not often discussed is disasters or disease outbreaks. Like the outbreak of the corona virus, better known as the Covid-19 pandemic, which has rocked the world since the end of 2019.

The implementation of various policies in the context of overcoming the spread or efforts to break the chain of transmission of Covid-19 has resulted in many economic activities experiencing contractions and even stopping production. This resulted in an increase in unemployment, a decrease in the level of productivity of individuals and companies, and encouraged the emergence of new poor people who in aggregate increased the number of poor people.

The main problem in addressing poverty in Indonesia is the lack of success in reducing poverty in agriculture and rural areas. The number of poor people in villages is much greater than the poor people in cities. The basis of the rural economy is generally agriculture, so poverty...
reduction in agricultural households is believed to be the key to reducing the national poverty rate.

Minahasa, North Minahasa, South Minahasa and Southeast Minahasa Regencies are regions in North Sulawesi Province which have strategic geographical conditions because they are transit districts that connect provincial and district/city air routes. The districts of Minahasa, North Minahasa, South Minahasa and Southeast Minahasa also have considerable potential in other sectors such as agriculture, mining, industry, trade and tourism. With the condition of the area indirectly there is an economic cycle that helps the people in the Regency

Minahasa Regency, namely 28.88 thousand (people) in 2015. However, from 2014 to 2018 the number of poor people tends to decrease, and will increase again in 2021, namely in Minahasa Regency as many as 26.30 thousand (people), in North Minahasa Regency as many as 14.49 thousand (people) and in South Minahasa Regency as many as 19.77 thousand (people). One of the root causes of poverty is the high population. According to Thomas Robert Malthus, a continuous increase in population is a necessary element to support additional demand, but on the other hand a high increase in population is feared to have an adverse effect on economic growth. According to Todaro, rapid population growth has led to problems of underdevelopment and made development prospects even further away.

In theory, the greater the Gross Regional Domestic Product (GDP), the greater the income received by districts/cities. With the greater the revenue earned by the region, the allocation of spending by the central government will be greater to increase various local potentials in the area for the benefit of public services. (Lin and Liu, 2000; Mardiasmo, 2002; Wong, 2004). The increase in GRDP from year to year is an indicator of improvement in the regional economy, increased community activities, created job opportunities and conversely a decrease in the GRDP number indicates an economic contraction. Based on BPS data for North Sulawesi Province, the highest GRDP is Manado City, then Minahasa Regency, North Minahasa.

A person is said to be poor if he often suffers from malnutrition and poor health, has little literacy or is completely illiterate, lives in a bad environment, is underrepresented politically, and tries to earn minimal income on a small and marginal farm or in a slum area. Todaro, 2011).

The concept of poverty according to the World Bank that poverty is a loss of welfare (deprivation of well being). It is said that if people who are not prosperous can be classified as poor people (there is poverty). In his report before members of the United Nations titled
"Poverty and Human Development'say that: "The case for human development is not only or even primarily an economic one. Less hunger, fewer child deaths, and better changes to primary education are almost universally accepted as important ends in themselves"(Human development is not only prioritized on the economic aspect, but what is more important is to prioritize universal aspects of education for the self-interest of the poor in order to improve their socio-economic life).

The concept of poverty according to BPS (2016) poverty is the inability from an economic, material and physical perspective to meet basic food and non-food needs as measured by expenditure. BPS has its own criteria for defining poverty, namely through two components, the Food Poverty Line (GKM) and the Non-Food Poverty Line (GKMN). The Food Poverty Line is the value of spending on minimum food needs which is equivalent to 2100 kilocalories per capita a day. Meanwhile, the non-food poverty line (GKM) is the minimum requirement for housing, clothing, education and health. It is conceptualized as in Figure 2.1 that GKM can be seen from the fulfillment of drinks and food while GKMN can be measured from the fulfillment of clothing, shelter, health and education.

Low productivity causes people's income to decrease so that the share for savings and investment decreases. Reduced investment results in low capital. Low capital will lead to market imperfections and underdevelopment. It continues to move in a circle so that it has no end and no beginning.

Another economist who discusses poverty is Sharp et al (1996) who put forward the concept of poverty that poverty is seen from an economic perspective, namely the unequal pattern of resource ownership, the quality of human resources and differences in access to capital. One reason is low income. The low income is caused by low productivity, but the low productivity is due to the low quality of human resources. The low quality of human resources is caused by the low level of education. In addition, poverty is also caused by unequal distribution of income. Inequality in the distribution of high income will result in an income gap where there will be people who have high and even very high incomes, but not a few people who have low incomes. This is due to the inequality in the pattern of resource ownership. Viewed from the side of imperfection of resources will result in unequal distribution of income which will eventually lead to poverty. In addition, it states that low capital will have an impact on low productivity. Low productivity will affect income and poverty.

So the poor are residents who have an average per capita expenditure per month below the poverty line. The Poverty Line is the sum of the Food Poverty Line and the Non-Food
The Effect of Population, Human Development Index, and Gross Regional Domestic Product on Poor Population

Poverty Line. Residents who have an average expenditure per capita per month below the poverty line are categorized as poor.

The Food Poverty Line is the value of spending on minimum food needs which is equivalent to 2100 kilo calories per capita per day. Commodity packages for basic food needs are represented by 52 types of commodities (grains, tubers, fish, meat, eggs and milk, vegetables, nuts, fruits, oils and fats, etc.). Meanwhile, the Non-Food Poverty Line is the minimum requirement for housing, clothing, education and health. Commodity packages for basic non-food needs are represented by 51 types of commodities in urban areas and 47 types of commodities in rural areas.

Formula Calculation: \[ GK = GKM + GKNM \] (1)
Where: \( GK \) = Line Poverty, \( GKM \) = Food Poverty Line, \( GKNM \) = Non-Eating Poverty Line

According to Lincolin, uncontrolled population growth will cause various problems and obstacles to the efforts made, because this high population growth will cause a rapid increase in the number of workers, while the ability of the region to create new job opportunities is very limited (Arsyad, 2004; 267). Factors that affect the rate of population growth, there are three dominant factors, namely the birth rate, death rate, and migration rate or population movement (Suparmoko, 2000: 256).

Adioetomo (2010: 15) Confucius' theory discusses the relationship between population size and the level of community welfare. According to him, a population that is too large will depress people's living standards, especially if the population is related to the area of land or agricultural land available to meet the needs of the population. Confucius considered that there was an ideal proportion between land area and population. As a solution to the problem of overpopulation, he suggested that the government relocate residents to areas that were still underpopulated.

The Human Development Index (IPM) 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 United Nations Development Program (UNDP) defines human development as “a process of enlarging people's choice” which means a process to enlarge the choices for humans. The most important choices are to live long and healthy, to be educated, and to have access to the resources needed to live a decent life.

In the concept of human development, development should be analyzed and understood from the human side, not only in terms of economic growth. This is in accordance with the development goals stated in the 1945 Constitution, namely "to promote general welfare and
educate the life of the nation” which indirectly also implies human empowerment. In the human development index there are three composition indicators that are used to measure the size of a country's human development index, namely: 1. Health level is measured by life expectancy at birth (infant mortality rate). 2. The level of education is measured by the number of people who are literate or the level of education that has been achieved or the length of education of a resident. 3. The standard of living is measured by the level of spending per capita per year.

\[ \text{IPM} = \frac{(X1+X2+X3)}{3} \]

where:
- \( X1 \) = Number hope
- \( X2 \) = Level education
- \( X3 \) = decent standard of living

Darshana Darmalinggam (2022) entitled “Proactive measures to eradicate Malaysia's poverty in IR4.0 era: a shared prosperity vision.” This research was conducted in Malaysia. The analytical method used is the general qualitative inquiry method using 11 semi-structured interviews conducted with representatives of Malaysian policy makers, training providers and trainees. The result of the research is that training that includes digital skills in the IR4.0 era is the key to lifting the young generation of B40 to eradicate poverty. Proactive steps are critical to the success of B40 youth training towards poverty alleviation. Muhammad Yusuf, Chinnasamy Malarvizhi, Sreenivasan Jayashree entitled “Does Financial Liberalization Stimulate Economic Growth and Reduce Poverty in Six Sub-Saharan African Countries?” The study applies the recent panel Co-integration and vector error correction mechanism to address the heterogeneity and cross-border interdependence over the period of 1980 to 2010. The results showed that Economic growth is positively related to alleviation and the coefficient of financial liberalization is positively related to economic growth. This implies that financial liberalization leads to economic growth. However, the insignificant coefficient of financial liberalization in the poverty equation indicates that financial liberalization does not have a direct impact on poverty reduction in the six Sub-Saharan African countries.

**RESEARCH METHODS**

The type of data used in this research is secondary data with quantitative descriptive research. Secondary data is data obtained based on available data and which has been compiled and published by certain institutions or agencies. The type of data used is Cross Section And Time series. Data Cross Section 4 Regencies in North Sulawesi Province and data Time Series from 2012 to 2021. The method used in this research is the documentation method, namely by collecting data to produce important writings that have a relationship with the problem to be studied, so that complete data will be obtained (Nirmala, 2021). As for the
documentation carried out in this study, namely, searching and collecting data through website Central Bureau of Statistics for North Sulawesi Province. 

The analytical method used in this research is panel data regression analysis. Panel data is a research method that is collected systematically across section (data collected at one time against many individuals) and time series (data collected from time to time on an individual) (Nachrowi and Hardius, 2006).

The functional form of this regression model is as follows:

\[ JPM = f(JP, HDI, GRDP) \]

So that the variables in this study are applied in a model as follows:

\[ JPM = \alpha + \beta_1JP_{it} + \beta_2IPM_{it} + \beta_3PDR_{Bit} + \epsilon_{it} \]

Information:

- \( JPM \)= Amount Resident Poor (soul)
- \( JP \)= Amount Resident (life)
- \( IPM \)= Index Development Man (percent)
- \( GRDP \)= Product Domestic regional Gross (rupiah)
- \( \alpha \)= Constant
- \( \beta_1 \)-3= Coefficient Partial from variables
- \( \epsilon_{it} \)= Error Term at time t for units cross section

\[ i = 1,2,3 \text{ (data cross section 4 Regencies in Minahasa)} \]
\[ t = 1,2,3,...,11 \text{ (data time series 2011-2021)} \]

3.4.1 Panel Data Regression Estimation.

To estimate model parameters with panel data, there are several techniques that can be used, namely:

DISCUSSION

Based on hypothesis testing the results of research that has been carried out to determine the Effect of Population, Human Development Index, and Gross Regional Domestic Product on the Number of Poor Population in Minahasa District, North Minahasa, South Minahasa, Southeast Minahasa for the 2011-2021 period, by linking it to theories The underlying economics and previous related research will be described as follows: 1. The Effect of Total Population on the Number of Poor People in Minahasa District, North Minahasa, South Minahasa, Southeast Minahasa.

Based on the results of the study, it was shown that \( H_0 \) was rejected and \( H_1 \) was accepted so that it can be interpreted that the population variable has a significant and significant effect on the number of poor people in Minahasa, North Minahasa, South Minahasa and Southeast Minahasa Regencies. This is proven from the results of hypothesis testing where the regression coefficient value is 1.166106 and the probability value is 0.0000 < 0.05 (5%) stating that partially the population variable has a positive and significant effect on the number of poor people.
people. This shows that if there is an increase of 1% in the average population, then the number of poor people will increase by 1.166106% in Minahasa, North Minahasa, South Minahasa and Southeast Minahasa Regencies. Therefore, the results of this study are in accordance with Adioetomo's theory of Confucius' theory of population used in this study to discuss the relationship between population size and the level of community welfare. According to him, a population that is too large will depress people's living standards, especially if the population is related to the area of land or agricultural land available to meet the needs of the population.

The results of this study are in line with research conducted (Laela Hidayatillah, 2021) entitled "The Effect of Population, Human Development Index and Gross Regional Domestic Product on the Number of Poor People in West Nusa Tenggara Province in 2015-2019". With the result that the population has a positive and significant effect on the number of poor people in West Nusa Tenggara Province.

That way, with an increase in the population in Minahasa, North Minahasa, South Minahasa and Southeast Minahasa Regencies, this can lead to an increase in the number of poor people. We know that the population is so influential and sustainable on the number of poor people. The more population growth in the Minahasa, North Minahasa, South Minahasa and Southeast Minahasa Regencies, the more the population will reduce the standard of living of the people so that the number of poor people will increase.

2. The Effect of the Human Development Index on the Number of Poor Population in Minahasa District, North Minahasa, South Minahasa, Southeast Minahasa.

Based on the results of the study, it was shown that H0 was rejected and H1 was accepted so that it can be interpreted that the Human Development Index variable has a positive and insignificant effect on the number of poor people in Minahasa, North Minahasa, South Minahasa, Southeast Minahasa Regencies. This is evidenced by the results of the hypothesis test, the regression coefficient value of 5.131960 and the probability value of 0.0006 <0.05 states that partially the population variable has a positive and not significant effect on the number of poor people in Minahasa District, North Minahasa, South Minahasa, Southeast Minahasa. This shows that if there is an increase in the Human Development Index by 1%, the number of poor people will increase by 5.131960% in Minahasa District, North Minahasa, South Minahasa, Southeast Minahasa.

The results of this study are in accordance with the theory from BPS (2009), which says that the Human Development Index (IPM) is a measure of development achievement based on a number of basic components of quality of life. The Human Development Index is calculated...
based on data that can describe the four components, namely life expectancy which measures success in the health sector, literacy rates and the average length of schooling which measures success in the education sector, and the purchasing power of the people towards a number of basic needs, seen from the average amount of spending per capita as an income approach that measures success in the field of development for a decent life.

This research is in line with the results of research from (Fatkhul Mufid Cholili, 2014) entitled "Analysis of the Effects of Unemployment, Gross Regional Domestic Product (GRDP), and Human Development Index (IPM) on the Number of Poor Population (Case Study of 33 Provinces in Indonesia). Human Development and partial unemployment have a significant effect on the level of poverty. In his journal said Index Human Development is used to classify whether a country is in the category of developed countries, developing countries or underdeveloped countries. In addition, this index is also a parameter to see the influence of a country's economic policies on the quality of its people. And it is not only used as a benchmark for grouping a country but can also be used as a benchmark for measuring and grouping sub-countries (regions/sections). The Human Development Index is a composite index that is calculated as a simple average of 3 (three) indices, namely: Life Expectancy Index, Education Index and Decent Living Standard Index.

However, this research is not in line with the results of research from (By Prima Sukmaraga, 2011) with the title "Analysis of the Influence of the Human Development Index, GRDP Per Capita, and the Number of Unemployed Against the Number of Poor People in Central Java Province". With the research results, the variable Human Development Index (IPM) has a negative and significant effect on the number of poor people in Central Java Province. Regional development is carried out in an integrated and sustainable manner according to the priorities and needs of each region with the roots and targets of national development that have been determined through long-term and short-term development. Therefore, one of the main indicators of the success of national development is the rate of decline in the number of poor people.

3. The Effect of Gross Regional Domestic Product on the Number of Poor People in Minahasa District, North Minahasa, South Minahasa, Southeast Minahasa.

The results of the study show that H0 is rejected and H1 is accepted so that it can be interpreted that the Gross Regional Domestic Product has a significant negative effect on the number of poor people. This is evidenced by the results of the hypothesis test, the coefficient value is negative 1.000949 and the probability is 0.0000 <0.05, which means that the Gross
Regional Domestic Product has a negative and significant effect on the number of poor people in Minahasa District, North Minahasa, South Minahasa, Southeast Minahasa. This means that if there is an increase in Gross Regional Domestic Product of 1%, it will reduce the percentage of poor people by 1.000949% in Minahasa District, North Minahasa, South Minahasa, Southeast Minahasa.

This research is in line with research (Endar Wati, 2018) entitled "The Effect of the Human Development Index (IPM) and Gross Regional Domestic Product (GRDP) on Poverty" which explains that there is a negative and significant effect of Gross Regional Domestic Product on poverty in 35 districts/cities of Central Java Province in 2012-2016. Endar believes that apart from the human capital factor or the quality of human resources, there are other factors that affect the poverty rate, namely growth economy. One of the indicators used to see the economic growth of a region is the regional gross domestic product (GRDP).

The results of this study are also in line with research from (Laela Hidayatillah, 2021) with the title "Analysis of the Influence of Population, Development Index Humans and Gross Regional Domestic Product Against the Number of Poor Population in West Nusa Tenggara Province in 2015-2019." According to Sadono Sukirno who argues that economic development is not solely measured based on the growth of the Gross Regional Domestic Product (GDP) as a whole, but must pay attention to the extent to which distribution of income has spread to layers of society and who has enjoyed the results.

The gross regional domestic product has a negative and significant effect. It can be explained that when the gross regional domestic product is increased, it can reduce the number of poor people. In line with when the economy develops in a region either a country or a particular area that is smaller, there is more income to spend and have a good distribution of income among the region, it can reduce poverty. So that if the GRDP is high it will reduce the poverty rate, because with a high GRDP development can be optimized, so that people's welfare is achieved. The theoretical basis of the regression results also follows Kuznet's hypothesis in Siswanti (2009) which states that at the beginning of the development process, the poverty rate tends to increase, and at the end of the day the number of poor people gradually decreased. Gross Regional Domestic Product is an indicator to see the level of development and structure of the economy in a region.
CONCLUSION
This study aims to find out how the influence of population size, human development index, and gross regional domestic product has on the number of poor people in Minahasa, North Minahasa, South Minahasa, Southeast Minahasa districts in 2012-2021. Based on the discussion of research results, which are supported by the opinions of experts, previous research and quantitative analysis can be concluded as follows:

1. Partially the population has a positive and significant effect on the number of poor people in Minahasa, North Minahasa, South Minahasa, Southeast Minahasa in 2012-2021.
2. Partially the Human Development Index has a positive effect on the number of poor people in Minahasa, North Minahasa, South Minahasa, Southeast Minahasa in 2012-2021.
3. Partially Gross Regional Domestic Product has a negative and significant effect on the number of poor people in Minahasa District, North Minahasa, South Minahasa, Southeast Minahasa in 2012-2021.
4. Simultaneously population, Human Development Index, and Gross Regional Domestic Product has an effect on the number of poor people in Minahasa, North Minahasa, South Minahasa, Southeast Minahasa Regencies in

REFERENCES


