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The Influence of the Human Development Index and Population on Economic Growth in North Luwu Regency

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Abstrak

Increasing a country's ability to produce goods and services through economic activities is known as economic growth. This research aims to determine the effect of the human growth index and population on economic growth. The research was conducted in North Luwu district and obtained data from the Central Statistics Agency (BPS). Researchers used quantitative descriptive data analysis using multiple linear regression analysis methods. The results of multiple linear regression data estimation show that the human development index variable has a negative and significant effect on the economic growth of North Luwu Regency, the population variable has a negative and significant effect on the economic growth of North Luwu Regency. The development index and population will increase for every 1% economic growth in North Luwu Regency.

Keywords: Human Development Index, Population, Economic Growth

1. Introduction

Economic growth as a process means continuous change, improvement of institutional systems, and efforts to increase per capita income in the long term[1]. When local governments are given autonomy, their economic growth is influential because it gives them the freedom to make their own financial plans and make policies that can influence their progress. With rapid economic growth, local governments are encouraged to develop their economies. They do this by managing existing resources and collaborating with others to create new jobs, which will impact local economic growth. By increasing productivity and per capita income, this economic growth results in increased welfare[2]. The strong link between active community participation and the distribution of green economic transformation highlights the importance of involving various stakeholders in sustainable practices [3]

Indicators of long-term human welfare in a region are used as human development indices. Levels of education, welfare and livability (HDI) were collected. Regions with high HDI indicate good human resources[4]. The current development paradigm is that economic growth is measured by human development, which is measured by the level of quality of human life in each country. The Human Development Index (HDI), which is measured through the quality of education, health and economic levels or purchasing power, is expected to improve the quality of human life. HDI development is closely related to the performance of the education, health and economic systems.

According to data from 2011 to 2013, HDI grew faster than the average in South Sulawesi Province. Palopo City's HDI is even ranked third, behind Makassar and Pare-Pare [5]. This is caused by individual heterogeneity, geographical disparities, and diverse social conditions in society. As a result, income is no longer the main measure for determining the level of development success. The human development approach is a process, not just a goal. UNDP establishes four main components of human development: equity, productivity and empowerment [6].

According to UNDP, one indicator of the creation of development that has the ability to encourage economic growth is human development. The United Nations Development Program (UNDP) created the concept of the Human Development Index (HDI), which measures the quality of human capital in three dimensions. the health dimension, which is measured by life expectancy, the education dimension, which is measured by the level of adult literacy and average years of schooling, and the purchasing power dimension, which is measured by the level of per capita income [7].

From the North Luwu Regency data below, you can see the following table:

Table. 1 Data on Human Development Index (X1), Population (X2), and Economic Growth (Y).

Year	Human Development Index (percent)	Total population (soul)	Economic growth (percent)
	(X1)	(X2)	(Y)
2013	66.4	297.313	7.39
2014	66.9	299.989	8.82
2015	67.44	302.414	6.67
2016	67.81	305.462	7.49
2017	63.35	308.142	7.6
2018	68.79	310.744	8.39
2019	69.46	313.264	7.11
2020	71.53	322.919	-0.59
2021	71.99	325.052	3.9
2022	72.48	327.82	4.54

Data Source: BPS North Luwu Regency 2013-2022

The human development index from 2013 to 2022 experienced fluctuations, the human development index was lowest in 2017, namely 63.35 percent, then increased in 2018 by 68.79 percent, then decreased in 20119 by 69.46 percent, then in 2020 experienced an increase. amounting to 71.53 percent. The development index in North Luwu increased from the previous year, namely 71.99 percent in 2021 and 2022 at 72.48 percent, including the high category. The components are Life Expectancy (UHH), Expected Years of Schooling (HLS), Average Years of Schooling (RLS), and Adjusted income per capita expenditure. In contrast, the population of North Luwu district has increased. The lowest population was in 2013 at 297,313 people and the highest population was in 2022 at 327,820 people.

North Luwu Regency is one of the regions in South Sulawesi Province, Indonesia. Like other regions in Indonesia, North Luwu also faces various economic challenges that need to be overcome to achieve sustainable economic growth. Economic growth is an important indicator of societal welfare. Economic growth in North Luwu is driven by an increase in goods and services produced in the economy. To find out the real level of economic growth in a region, it can be seen from the GDP growth at constant prices. Real Economic Growth can be seen from the GDP value at Constant Prices, which is positive, indicating that there is an increase in the economy in North Luwu, or vice versa, if it is negative, it will indicate that the economy in North Luwu is declining.

The results of research [8] show that the population variable has no negative effect on economic growth and the large influence of the population variable on economic growth. Meanwhile, research results [9] show that the HDI variable has a positive influence on economic growth.

Research purposes.

The aim of this research is:

1. To determine the effect of the human development index (HDI) on economic growth in North Luwu district.

2. To determine the effect of population on economic growth in North Luwu district.

3. To determine the effect of the human development index (HDI) and population on economic growth in North Luwu district.

2. Methodology

The type of research applied in this research is quantitative research.

Data Types and Sources (Additional Types and Time Series)

The type of data used is secondary data and time series obtained through data publications issued by the North Luwu Central Statistics Agency (BPS) in 2013-2022 on the basis of 2010 constant prices

Data analysis method

To solve the problem the author carried out data analysis using quantitative methods, namely a method of analyzing data obtained in the form of numbers and will then be discussed and analyzed using statistical tools, namely the SPSS Statistics 2022 program in the form of the Multiple Regression method (RLS). The analysis used is multiple linear regression analysis, which is an analysis used to determine the close relationship between the independent variable (Free) and the dependent variable (Bound).

The regression equation is:

Y = α + b1X1 + b2X2 + e

Where:

Y = Economic Growth

α = Constant

X1= Human development index

X2= Population

b1, b2= Regression coefficients

e = Standard error

Test the significance of the regression coefficient

Partial test (t)

The t test is to test the influence of each independent variable individually on the dependent variable. Testing is carried out by one-way testing with a hypothesis;

Hα = β > 0, meaning that there is a significant influence between the independent variables (human development index sector and population sector) on the dependent variable (economic growth).

Ho = βi = 0, meaning that there is no significant influence between the independent variables (human development index sector and population sector on the dependent variable (economic growth)

Significance level = 0.05

Test criteria:

If t count > t table, then Ho is rejected and Ha is accepted

If t count < t table, then Ho is accepted and Ha is rejected

Simultaneous test (f)

The f test is a test to see how the independent variables influence the dependent variable together. Testing is carried out by one-way testing with a hypothesis;

Hα = βi > 0, meaning that there is a significant influence between the independent variable (human development index sector and population sector) on the dependent variable (economic growth).

Ho = βi = 0, meaning that there is no significant influence between the independent variables (human development index sector and population sector) on the dependent variable (economic ‘’growth).

Significance level = 0.05

Test criteria:

If F count > F table, then Ho is rejected and Ha is accepted

If F count < F table, then Ho is accepted and Ha is rejected

3. Coefficient of Determination

The coefficient of determination (R2) from multiple regression results shows how much the dependent variable can be explained by the independent variables. The coefficient of determination is 0 to 1. The closer it is to zero, the smaller the influence of all independent variables on the value of the dependent variable (in other words, the smaller the model's ability to explain changes in the value of the dependent variable). Meanwhile, if the coefficient of determination is close to 1, it can be said that the model is stronger in explaining variations in the independent variable on the dependent variable.

3. Result and Discussion

Multiple Linear Regression Analysis

Testing the influence of HDI and population on economic growth. The test was carried out to see how the HDI and population directly influence economic growth. The test was carried out with SPSS version 22. According to the SPSS processed results, the linear regression analysis results report is as follows.

3.1. Result

Table.2 Multiple Linear Regression

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	-3605.898	124.642		-28.930	.000
HDI	-5.994E-13	.000	-.327	-5.586	.001
Total_population	-3.431E-13	.000	-.710	-12.131	.000

Source: 2024 SPSS data processing results.

Based on the results of the SPSS statistics 22 calculation in Table 2, the following multiple linear regression equation is obtained:

Y = α + b1X1 + b2X2 + e

Y= -3605.898 - 5.994E - 3.431E-13 + e

The interpretation of the multiple linear regression equation above is:

1. From the multiple linear results above, a constant value of -3605.898 is obtained. This constant value shows that the value of economic growth is 3605.898 percent if the human development index and population are zero.
2. The regression coefficient of the human development index variable is -5.994E-13, meaning that if the human development index increases by one percent, economic growth will increase by 5.994E-13 percent, assuming the population does not change (fixed).
3. The regression coefficient for the population variable is -3.431E-13, meaning that if the population increases by one percent, economic growth will increase by 3.431E-13 percent, assuming the human development index does not change (fixed).

Test the significance of the regression coefficient

Table.3 Persial Test (T)

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	-3605.898	124.642		-28.930	.000
HDI	-5.994E-13	.000	-.327	-5.586	.001
Total_population	-3.431E-13	.000	-.710	-12.131	.000

Source: 2024 SPSS data processing results.

1. The human development index variable has a value of tcount < ttable (-5.586 < 2.364) with a variable significant level value of 0.001 < 0.05, so it can be stated that statistically the human development index variable has a significant effect on economic growth.
2. The population variable has a value of tcount < ttable (-12,131 < 2,364) with a variable significant level value of 0.000 < 0.05, so it can be stated that statistically the population variable has a significant effect on economic growth.

Table.4 Simultaneous Test (F)

ANOVA[a]

Model		Sumof Squares	Df	Mean Square	F	Sig.
1	Regression	151341.793	2	75670.896	451.398	.000[b]
	Residual	1173.458	7	167.637		

Total	152515.251	9

Source: 2024 SPSS data processing results.

The results of the analysis show that the significant value is 0.000 < 0.05 and the Fcount value is 451.398 > Ftable 4.737. So it can be stated that the human development index variables and population simultaneously have a significant effect on economic growth.

Coefficient of Determination (R2)

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.996[a]	.992	.990	12.94747

Source: 2024 SPSS data processing results.

It can be seen that the adjusted R2 value is 0.990. This shows that 99.0% of economic growth is influenced by the human development index variables and population. Meanwhile, the remaining 1% is influenced by factors that can influence economic growth.

3.2. Discussion

The influence of the human development index on economic growth

Based on the description of the table above, the human development index variable (X1) shows a statistical t value of -5,586, which is smaller than the t table of 2,364. The significant value of the HDI variable is 0.001 <0.05, which means that the HDI variable has a negative and significant effect on economic development in North Luwu Regency. This means that when the quality of the Human Development Index increases, the economic growth of North Luwu Regency will decrease. The research results are in accordance with [10] research entitled "The influence of the human development index (HDI) on the economic growth of East Java province" showing the results that the human development index variable has a negative and significant effect on economic growth.

The influence of population on economic growth

Based on the description of the table above, the population variable (X2) shows a t statistical value of -12,131, which is smaller than the t table of 2,364. The significant value of the population variable is 0.000 <0.05, which means that the population has a negative and significant effect on economic growth in North Luwu Regency. This means that any increase in population can hinder economic growth in North Luwu Regency. The research results are in accordance with [2] research entitled "The influence of population, labor and inflation on economic growth in Banyuwangi Regency." Showing the results that the population variable on economic growth has a negative and significant effect on economic growth.

The human development index and population together influence economic growth

According to the results obtained from the F test, the statistical F value is 0.000 < 0.05, meaning that simultaneously the human development index variables and population size have been carried out simultaneously, there is an influence on economic growth in North Luwu Regency.

4. Conclusion

Based on the results of research regarding the influence of the human development index and population on economic growth in North Luwu Regency, the following conclusions were obtained:

1. The Human Development Index variable has a negative and significant effect on economic growth in North Luwu Regency.
2. The variable population size has a negative and significant effect on economic growth in North Luwu Regency.
3. The variables human development index and population together have a negative and significant influence on economic growth in North Luwu Regency.
4.

5. SUGGESTION

The author advises local governments regarding the research carried out, including:

1. It is hoped that local governments will provide complete data so that researchers can easily access it via the available websites.
2. Ask the government to increase the Human Development Index again in the coming years to meet or compete with the current HDI in the South Sulawesi region.

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