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The Influence Of Population, Grdp, And Open Unemployment Rates On Economic Growth In Palopo City

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Abstract

This research aims to determine the influence of population, GRDP, and Open Unemployment Rate on economic growth in Palopo City. In this research, Population, GRDP, and Open Unemployment Rate are independent variables, while economic growth is the dependent variable. This research uses data collection techniques with documentation methods which are carried out by collecting and managing data from the Central Statistics Agency (BPS) of Palopo City in 2023. And using data analysis methods with descriptive analysis methods and multiple linear regression analysis. The results of the t test analysis show that Population Number and Open Unemployment Rate have a negative and significant effect on economic growth in Palopo City, while GRDP has a positive and significant effect on economic growth in Palopo City. Meanwhile, the results of the F test analysis show that Population, GRDP, and Open Unemployment Rate jointly influence Palopo City's economic growth with an impact of 85.3%.

Keywords: Population, GRDP, Unemployment Rate, Economic Growth

1. Introduction

It is generally known that economic growth is an indicator of success in economic development. This is based on the trickle-down effect theory which was first developed by Arthur Lewis (1954) where this theory explains that the progress of society will itself trickle down thereby creating jobs and various economic opportunities which in turn will foster various conditions for creating the distribution of economic growth. which is even. Nevertheless, this theory has emerged as the most important topic in the literature on economic development in developed countries (LDCs) in the 1950s and 1960s [1]. Economic development cannot be separated from economic growth, because these two factors are interdependent [2].

When a country wants to achieve optimal economic growth, the country must implement various strategies in various industries, both long and short sectors. It is very important for a country's economic development to understand the desired level of potential growth. A country's ability to achieve economic performance can be determined by looking at its level of economic growth [3]. Effectiveness in reducing the number of poor people is the main consideration in choosing an economic building plan [4].

Indonesia is a developing country that often faces economic problems. Increasing poverty and economic growth, in this context, is a more complex and serious problem. This may indicate that economic growth has not reached the expected level compared to the faster population growth every year [5]. Indicators of the success or failure of economic development can be seen from real income per capita, according to the rule of the art, the

growth rate of national income in constant prices (after deflation with the price index) [6]. The increase in labor and the enactment of the law of increasing output, which results in a decrease in average product and an increase in output, as well as a decrease in living standards, causes an increase in population in a region [7].

Palopo City, which consists of 9 sub-districts and is located in the Regional Development Unit of South Sulawesi Province, is the only area currently experiencing sustainable economic growth. Although there are still many problems that need to be resolved, Palopo City has implemented a number of important projects in the field of economic development. The economic growth of Palopo City continues to be seen with several potential regional economic developments. This appears to have happened gradually, starting with the growth of economic sectors such as the recreation and education industries. The above developments can be seen from the increase in Palopo City's GRDP from year to year [8].

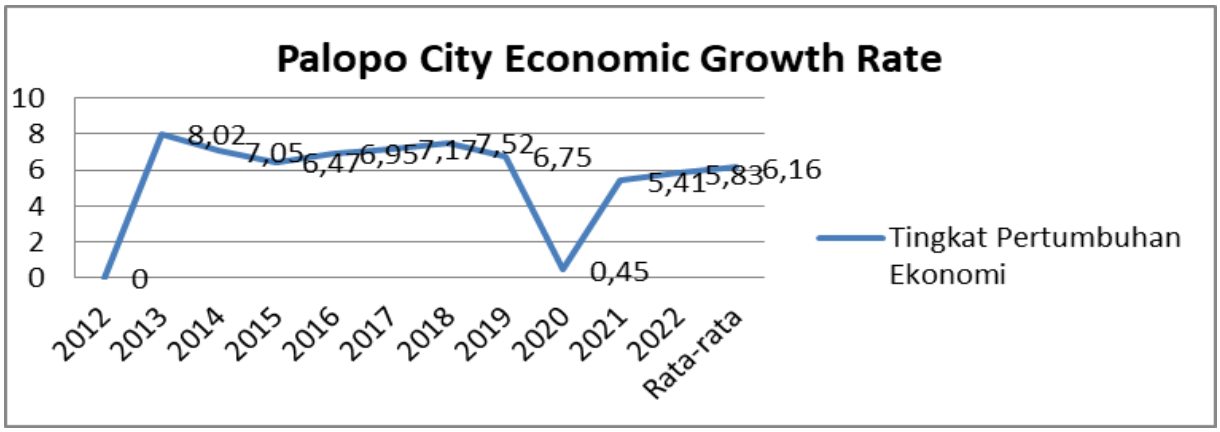

Figure 1. Palopo City Economic Growth Graph 2013-2023

Based on Figure 1 above, it shows that the rate of economic growth in Palopo City in 2013 was 8.02%, then decreased slightly in 2014 to 7.05%, and continued to decline in 2015 to 6.47% and in 2016 to 6.95%, then in 2017 it increased again to 7.17%, in 2018 it increased from the previous year to 7.52%, then in 2019 it decreased again to 6.75%, then in 2020 there was a significant decrease very rapidly to 0.45%, then in 2021 it will increase to 5.41%, and in 2022 it will be 5.81%.

GRDP is the total added value or value of final goods and services produced by all economic units in a region. The GDP growth rate at constant prices shows that a region's economic growth is better. Along with economic growth, the production of goods and services will increase [9]. Every year, the population in each region increases. This is a major problem for the government because the government must be able to overcome the problem of unemployment which increases every year by providing labor for the community [10].

Unemployment in an area is caused by a mismatch between demand and availability of jobs. This situation shows that there is more labor than employment opportunities. Several

examples in certain areas show that ongoing development does not always show an increase in the rate of employment that is faster than the ongoing population increase. Therefore, the problem of poverty becomes more serious from year to year [11].

Governments often use the open unemployment rate (TPT), which is an indicator that shows how effective their policies are in the field of employment. The TPT shows the number of workers who are looking for work, who have a job but have not started it, and who have a job but have not started it. The following is data on population, GRDP and open unemployment rate:

Table 1. Table of Population, GRDP, and Open Unemployment Rate for 2020-2022

Year	Amount Population (People)	GRDP (Million Rupiah)	Open Unemployment Rate (%)
2020	184,681	5472077.18	10.37
2021	187,331	5768275.24	8.83
2022	190,867	6104737.61	8.20

Based on the research background described above, the aim of this research is to determine the influence of population, GRDP, and open unemployment rate on the economic growth of Palopo City. Therefore, the choice of the variables population size, GRDP, and level of open disturbance is the basis for this choice to be the independent variable and population growth to be the dependent variable.

2. Methodology

Types of research

The type of research used in this research is quantitative research, the data used is time series data. This research took place in Palopo City in the period 2013-2022.

Operational Definition

1. According to the Central Statistics Agency (BPS), residents are all people who have resided in the geographic area of Palopo City for 6 months or more and/or those who have resided for less than 6 months but intend to stay. The data used is the population for 2013-2022 (in units of people).
2. Gross Regional Domestic Product (GRDP) is the result of various economic activities that produce final value for a region in various sectors over a certain period of time [12]. The data used is Palopo City GRDP based on 2010 constant prices according to business fields (Millions of people) 2013-2022.
3. The open unemployment rate is the percentage of people who do not have a job compared to the number of people who are employed [13]. The data used is the open unemployment rate for Palopo City for 2013-2022 (in percent).
4. Economic growth is an important part of economic development and has a major impact on local and national policies. Because to analyze the economic development of a country,

economic growth is very important [14]. Growth data is based on Regional Gross Domestic Product (GRDP) based on Constant Prices from 2013 to 2022 (in one percent).

Data analysis technique

The data analysis technique used in this research is descriptive analysis and multiple linear regression analysis with time series data which is used to determine the influence of the independent variables together on the dependent variable. The independent variables are Population, GRDP, and Open Unemployment Rate, while the dependent variable is Economic Growth in Palopo City.

a. Descriptive Analysis

Quantitative descriptive analysis is the data analysis method used in this research. Quantitative descriptive analysis is a data analysis method that uses numbers to draw conclusions and events that can be measured. This method conducts research without analyzing data and making generally accepted conclusions.

b. Multiple Linear Regression Analysis

Linear regression analysis is a linear relationship between two or more independent variables: population, GRDP, and open unemployment rate with the dependent variable economic growth. The multiple linear regression model is written with the following equation:

$$\mathbf{Y= \alpha + \beta 1\ X1 + \beta 2\ X2 + \beta 3\ X3 + \ldots e}$$

Information:

Y = Economic Growth
X1 = Population
X2 = GRDP
X3 = Open Unemployment Rate
α = Constant
β = Slopeor estimate coefficient.

a) F test

One way to carry out an F test is to compare the calculated F with the F table. If the calculated F is greater than the F table, (Ho is rejected, Ha is accepted), then the model is significant or can be seen in the Anova significance column. In this case, if the value of the significance column (%) is greater than alpha (readiness to make mistakes type 1), which is determined by the researcher himself; in social sciences, the value of the significance (%) column is usually greater than alpha 10%, 5%, or 1%.

b) t test

The t test or also known as a partial test, measures the influence of each independent variable on the dependent variable. One way to carry out this test is to compare the t count with the t table or by looking at the significance column for each t count.

c) Coefficient of Determination (R^2)

The coefficient of determination (R2) shows how well the model explains variations in the dependent variable. The coefficient of determination value ranges between zero and one.

The ability of the independent variable to explain variations in the dependent variable is very limited, as indicated by the low R2 value.

3. Result and Discussion

3.1. Result

3.1.1. Descriptive Analysis

a) Total population

Table 2. Population in Palopo City 2013-2023

No	Year	Number of Population (People)
1	2013	160,819
2	2014	164,903
3	2015	168,894
4	2016	172,916
5	2017	176,907
6	2018	180,678
7	2019	184,614
8	2020	184,681
9	2021	187,331
10	2022	190,867

Based on the table above, the results of calculating the population of Palopo City from year to year over a period of 10 years starting from 2013-2022 have increased every year, namely from160,819 people became 190,867 people.

b) GRDP

Table 3. Palopo City GRDP based on 2010 constant prices by business sector (Million rupiah) 2013-2023

No	Year	GRDP (Million Rupiah)
1	2013	3633005.18
2	2014	3889239.03
3	2015	4140871.84
4	2016	4428497.04
5	2017	4745899.89
6	2018	5102987.20
7	2019	5447357.00
8	2020	5472077.18
9	2021	5768275.24
10	2022	6104737.61

Based on the results of Gross Regional Domestic Product (GRDP) calculationson the basis of 2010 constant prices according to business field (Million rupiah), shows that in

general the GRDP in Palopo City continues to increase every year, where in 2013 it was at3633005.18 to reach 6104737.61 in 2022.

c). Open Unemployment Rate

Table 4. Open unemployment rate in Palopo City 2013-2023

No	Year	Open Unemployment Rate(%)
1	2013	9.03
2	2014	8,10
3	2015	12.07
4	2016	14.54
5	2017	10.96
6	2018	11.60
7	2019	9.67
8	2020	10.37
9	2021	8.83
10	2022	8.20

Based on the calculation results of the Open Unemployment Rate (TPT), it shows that the TPT for Palopo City in 2013 was 9.03 percent. In 2014 it decreased to 8.10 percent. Then in 2015-2016 there were consecutive increases of 12.07 percent and 14.54 percent. In 2017 it experienced a rapid decline to 10.60 percent. It rose again in 2018 to 11.60 percent. It decreased again in 2019 to 9.67%. In 2020 it will increase to 10.37 percent. Then in 2021-2022 it decreased again to 8.83 percent and 8.20 percent.

3.1.2 Results of Multiple Regression Analysis

Multiple regression analysis aims to determine whether or not there is an influence of two or more independent variables (X) on the dependent variable (Y). In this study there are three independent variables, namely population, GRDP, and open unemployment rate and the dependent variable, namely economic growth.

Based on the multiple linear regression test in the table above, it is known that constant (α) is36,538while the population value is-4,148,GRDP value of1,465and the value of the open unemployment rate is -0.520 so that the regression equation can be written:

Table 4. Multiple Regression Test Results

Model		Unstandardized Coefficients		Standardized Coefficients	Q	Sig.
		B	Std. Error	Beta		
1	(Constant)	36,538	5,512		6,629	,001
	Total population	-4.148	,792	-1,742	-5,235	,002
	GRDP	1,465	,435	1,271	3,369	,015
	Open Unemployment Rate	-.520	,189	-.772	-2,758	.033

$$Y = \alpha + \beta1X1 + \beta2X2 + \beta3X3 + e$$
$$Y = 36,538 - 4,148X1 + 1,465X2 - 0.520X3 + ... e$$

1. The constant value (a) is obtained at36,538meaning that if the variables X1, X2, and36,538 expressed in percent.
2. Markβ1obtained amounted to-4,148. This means that the coefficient X1 is negative, which means that for every 1% increase in population, economic growth decreases by4,148%, assuming variables X2 and X3 remain constant.
3. Markβ2obtained amounted to1,465. This means that the coefficient X2 is positive, which means that for every 1% increase in GRDP, economic growth increases by1,465% assuming variables X1 and X3 remain constant.
4. Markβ3as big as-0.520.It means thatcoefficient X3 is worthnegativewhich means that everyincrease1% open unemployment rate means economic growth will experiencedeclineof 0.520%, assuming variables X1 and X2 are fixed.

a. t test

The t test is used to determine whether the variables of population, GRDP, and open unemployment rate influence economic growth. Therefore, it can be presented as follows:

Table 5. t Test Results

Model		Unstandardized Coefficients		Standardized Coefficients	Q	Sig.
		B	Std. Error	Beta		
1	(Constant)	36,538	5,512		6,629	,001
	Total population	-4.148	,792	-1,742	-5,235	,002
	GRDP	1,465	,435	1,271	3,369	,015
	Open Unemployment Rate	-.520	,189	-.772	-2,758	.033

1. Is knowncalculated t value-5,235> t table 2.447The significant value for population on economic growth is 0.002< 0.05. So H1 is accepted, meaning that population size has a significant influence on economic growth.
2. Knowncalculated t value3,369> t table 2.447 andThe significant value for GDP on economic growth is 0.015< 0.05. So H2 is accepted, meaning that GRDP has a positive and significant effect on economic growth.
3. Is knowncalculated t value-2,758> t table 2.447 andThe significant value for the open unemployment rate on growth is 0.033< 0.05. So H3 is accepted, meaning that the level of open unemployment has a significant and significant effect on economic growth.

b. F test

This test is carried out to determine the influence of all independent variables together or simultaneously on the variabledependentusing the F test with a significance rate of 5%. If the significant value of the F test is smaller than 5% then there is an influence between all

independent variables on the dependent variable. The results of the F test can be seen in the following table:

Table 6. F Test Results

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	14,192	3	4,731	11,564	.007b
Residual	2,455	6	,409		
Total	16,647	9			

The F table value is 11.564> F count 4.35 and a significant level of 0.007 < 0.05 calculated from the results of the F test table for the variables population size, GRDP and open unemployment rate. Therefore, it is concluded that the dependent variable economic growth is influenced simultaneously by the independent variables.

c. **Coefficient of Determination Test (R2)**

Table 7. Test Coefficient of Determination

	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.923a	,853	,779	.63961

It can be seen above that the R square value is 0.853 or 85.3%. This means that the population, GRDP and open unemployment rate have an impact of 85.3% on economic growth, while other factors outside this research have an impact of 14.7%.

3.2.Discussion

The Influence of Population on Economic Growth in Palopo City

Based on the regression results, it was found that the variable4,148%. This shows that the higher the population, the lower the economic growth.

This research is in line with research conducted by Budi Research(2021)entitled "The Influence of Population on Economic Growth in Tangerang Regency in 2019-2020". This research shows that there is a negative relationship between population size and economic growth in Tangerang Regency. The study found that an increase in population without being accompanied by an increase in the quality of economic growth had a significant impact on the economy, including an increase in the unemployment rate. The correlation analysis used in this research is Pearson correlation which is usually used to measure linear relationships between variables. This research collects secondary data regarding population and economic growth in Tangerang Regency from 2019 to 2021. However, it is not in line with research by Arianto et al (2015).

Influence of GRDP on Economic Growth in Palopo City

Based onThe regression results show that variable X2, namely GRDP, has a positive value, which means that for every 1% increase in GRDP, economic growth increases by 1.465%. This shows that the higher the GRDP, the greater the economic growth.

This research is in line with research [9] "The Influence of Regional Gross Domestic Product (GRDP) on Economic Growth and Open Unemployment Rates in DKI Jakarta Province". The results of the analysis show that GRDP at constant prices has a positive and significant effect on the economic growth of DKI Jakarta Province. This shows that an increase in GRDP at constant prices can contribute positively to economic growth in the area.

The Influence of the Unemployment Rate on Economic Growth in Palopo City

Based on the regression results, it was found that variableX3, namely the open unemployment rate, is negative, which means that for every 1% increase in the open unemployment rate, economic growth decreases by 0.520%. This shows that the higher the level of open unemployment, the lower the economic growth will be.

This research is in line with research [13] , which analyzes the factors that influence the level of economic growth in Indonesia. According to the analysis that has been carried out, the unemployment rate and labor force participation significantly influence Indonesia's economic growth. while the human development index, poverty level and inequality. Indonesia's economic growth rate is not significantly influenced by income. However, this is not in line with research [14].

4. Conclusion

From this research, it can be concluded that demographic and economic factors have a significant impact on economic growth in Palopo City. The growth of the population, as an indicator of a large market potential, plays a crucial role in driving economic activities in the city. With the increasing population, local businesses have greater opportunities to expand and innovate. Furthermore, the increasing Gross Regional Domestic Product (GRDP) reflects a healthy economy, indicating growth in key sectors that positively contribute to the income of the community and local businesses. Policy management that supports the development of potential sectors can be a strategic step to ensure sustainable economic growth.

However, high unemployment rates pose a challenge that needs to be addressed. High unemployment rates may indicate an imbalance between economic growth and job availability. Therefore, effective employment policies, such as skills training and the creation of new job opportunities, are necessary to tackle this issue. Implementing these measures can contribute to achieving inclusive and sustainable economic growth in Palopo City

Based on the research findings, it can be concluded that the population size and open unemployment rate have a significant negative impact on the economic growth of Palopo City. Therefore, the author suggests that the government takes serious action to improve the quality of human resources. The substantial increase in population, coupled with low quality, can burden economic growth, particularly by escalating unemployment rates due to the community's inability to meet their needs. The government needs to consider factors such as labor absorption and education as a foundation for enhancing the quality of human resources

and reducing unemployment. Nevertheless, the research also indicates that the Gross Regional Domestic Product (GRDP) has a significant positive impact on the economic growth of Palopo City. Consequently, the government is advised to maintain or enhance labor absorption and the quality of human resources in managing natural resources, as this can empirically amplify economic growth in the city

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