



THE EFFECT OF LABOR AND INVESTMENT ON THE GRDP OF NORTH MALUKU PROVINCE

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Abstract

Unemployment is one of the development issues confronting Indonesia, including North Maluku Province. To determine how much North Maluku Province's economic growth can absorb labor to reduce unemployment, it is necessary to conduct an analysis based on labor growth. The reality is that the high economic growth rate only sometimes guarantees significant employment absorption. A high economic growth rate only sometimes ensures effective employment absorption.

This study aims to determine whether investment and labor have a partial or simultaneous effect on the Gross Regional Domestic Product of the Regency/City in North Maluku Province over the period of 2010-2018. The results of partial hypothesis testing show that the labor variable (X_1) affects North Maluku's GRDP. It is supported by the obtained t value of $2.19 > t$ table of 1.99 and a significant deal of $0.033 < 0.05$. H_a is accepted, and H_0 is rejected, meaning that variable X_1 affects variable Y (GDP) of North Maluku. Besides that, the results of partial hypothesis testing show that the labor variable (X_2) affects North Maluku's GRDP. This is supported by the obtained t value of $4.55 > t$ table 2.17 and the sign value. 0.000, then H_0 is rejected, and H_a is accepted, meaning that the variable X_2 affects Y (GDP) of North Maluku. And finally, the findings of the simultaneous testing of hypotheses show that both X_1 and X_2 impact Y. This conclusion is supported by an adjusted R square value of 0.6965, which translates to 69.65% of the total.

Keywords: Labor, Investment, and GRDP

INTRODUCTION

Regional development is a component of national development, carried out based on the principles of regional autonomy and regulation of national resources. These principles create opportunities for increasing democracy and regional performance in improving people's welfare in a civil society free from collusion, corruption, and nepotism. Regional development is an integral part of national development. Implementing the provincial government as a sub-system of the state is intended to increase the efficiency and effectiveness of the administration of government and community services as autonomous regions, districts/cities act as "motors." In contrast, provincial governments, as coordinators, have the authority and responsibility to organize the interests of society based on the principles of openness, community participation, and accountability to the community.

Regional economic growth is closely related to the increase in the production of goods and services as measured by the amount of Gross Regional Domestic Product (GRDP). Economic growth is increasing regional per capita income in the long term. The goals of regional and national economic development are (1) to create jobs for the community, (2) to achieve national/regional economic stability, and (3) to build an economic base and diverse opportunities (Jamli, 1997:8).

A rapidly developing economy is only the best indicator of a prosperous nation if it is accompanied by expanding employment opportunities to accommodate the new workers who enter the labor force every year. Thus, national and regional economic growth is closely related to expanding employment opportunities because labor productivity is an essential factor for economic growth, apart from being influenced by capital, nature, and technology. Therefore, there needs to be a balance between the population's development and the expansion of employment opportunities so that the currently held jobs can be filled.

The issue of unemployment is one of the challenges to economic growth that Indonesia, including the province of North Maluku, must overcome. It is, therefore, necessary to conduct an analysis based on labor growth to determine the extent to which the expansion of the economy in North Maluku Province can absorb additional labor to bring the unemployment rate down. The reality is that the high economic growth rate only sometimes guarantees significant employment absorption. A high economic growth rate only sometimes ensures effective employment absorption. North Maluku's economic growth rate has consistently increased over the past eight years. As shown in the following data

Table 1. North Maluku GRDP for 2010-2018 (In A Million Rupiah) By District

Regency	2010	2011	2012	2013	2014	2015	2016	2017	2018
West Halmahera	942.5	999.3	1058.3	1119.7	1180.1	1246.3	1310.1	1375.7	1444.8
Central Halmahera	952.2	1002.3	1052.6	1108.3	1087.2	1134.4	1262	1335.2	1428.1
Sula Islands	988.9	1049.1	1114.2	1181.7	1254.1	1327.8	1395.6	1463	1544.5
South Halmahera	2258.8	2399.9	2562.6	2727.9	2908.5	3064.2	3238.6	3758.6	4338.8
North Halmahera	2401.5	2544.3	2696.9	2832.9	3026.6	3220.5	3350.2	3571.9	3658.1
East Halmahera	1555.1	1663.2	1759.4	1862	1682.1	1784.9	1883.2	2018.2	2179.6
Ternate	3540.2	3881.9	4232.6	4557.4	4956.5	5357.3	5785.4	6222.3	6736.3
Tidore Islands	1183.8	1259.9	1339.9	1423.4	1511.2	1603.3	1687.1	1788.4	1896.2

Source: Central Bureau of Statistics for North Maluku (2023)

In Table 1, it can be seen that the GRDP during that period consistently increased. A significant increase has occurred in the last two years; in 2020, North Maluku's GRDP amounted to 28,031.44, rising to 32,739.16 in 2021. One of the main conditions for economic development is investment

criteria, where the investment aims to obtain decent benefits in the future; if investment activities increase, economic activity also increases.

Investments in North Maluku indeed absorb a large number of workers. You can also see the number of PMA investors, with 646 projects, and PMDN, with 556 investors. Expanding employment opportunities is an essential policy in implementing development because one of the benchmarks for assessing a country's or nation's economic success is the employment opportunities created by economic growth. Job opportunity is a cornered socio-economic aspect. It affects the lowest social productivity. Development policies and programs must be directed at expanding employment opportunities (Tjokromidjojo, 1994). Starting from the background above, the authors are interested in researching the Influence of Labor and Investment on the GRDP of North Maluku.

LITERATURE REVIEWS

Heidy Menajang, 2020. "The Influence of Investment and Labor on Economic Growth in the City of Manado." Faculty of Economics, University of Sam Ratulangi. The data used in this study is annual data from 2000 to 2009. The dependent variable in this study is the Gross Regional Domestic Product, while the independent variables are the level of investment and labor. In line with the problems and hypotheses in this study, this research uses statistical methods using multiple linear regression equations and transforms them into logarithmic form. Based on the F test by looking at the probability of the F value of 89.962 at the α level of 1%, the variable level of investment and labor influence the gross regional domestic product of Manado City. The amount of R^2 , based on the results of this analysis, was obtained at 0.962; this means that the influence of the variable level of investment and labor on the gross regional domestic product of Manado City together is 96.2%. Partially indicated by the t-test, the varying level of investment and work partly did not significantly affect the gross regional domestic product of Manado City.

Vela Norlita, 2019. "The Influence of Investment, Labor, and Infrastructure on Economic Growth in Java Island in 2006-2015" This study aims to determine the effect of investment, labor, and infrastructure on economic growth in Java. This research is quantitative. The data used is secondary data from 6 provinces in Java Island (DKI Jakarta, West Java, Central Java, DI Yogyakarta, East Java, and Banten) for 2006 – 2015 obtained from the Central Bureau of Statistics. Data analysis used panel data with a fixed effect regression model processed with Eviews 8.

The results of the study show: 1) Investment has a positive and significant effect on economic growth. 2) Labor has a positive and significant effect on economic growth. 3) Infrastructure has a positive and significant impact on economic growth. 4) Adjusted R^2 in this study is 0.874386, so the contribution of all independent variables in explaining the dependent variable is 87.43%.

Labor Force and Economic Growth

According to Todaro (2003), population and labor force growth (AK) have traditionally been considered positive factors that spur economic growth. A more significant number of workers means an increase in production levels, while more incredible population growth means a larger domestic market size. Even so, it is still being determined whether it is true that the fast rate of population growth will have a positive or negative impact on economic development. Furthermore, it is said that the positive or negative influence of population growth depends on the ability of the regional financial system to absorb and productively utilize the increase in the workforce.

One of the factors that influence economic growth is labor. According to Samuelson (1996) that a production function of a particular good or service (q) is $q=f(K, L)$ where K is capital and L is labor which shows the maximum amount of an item/service that can be produced using alternative combinations between K and L if one of the inputs is added by one additional unit and the other input is considered constant, it will cause additional output to be produced. The additional production that is made is called the marginal physical product. In addition, if the number of workers is added continuously while other factors of production are held constant,

According to BPS, the population aged ten years and over is divided into the Labor Force (AK) and not AK. The workforce is said to be working if they do work to obtain or help to earn income or profit, and the length of work is at least 1 (one) hour continuously during the past week. At the same time, residents who do not work but are looking for work are called unemployed. The number of the working force illustrates the conditions of available employment. The greater the number of available jobs, the more total production in an area will increase.

Investment And Economic Growth

The economic theory defines investment as expenditures to purchase capital goods and production equipment to replace and significantly add to capital goods in the economy that will be used to produce goods and services in the future.

According to Boediono (1997), investment is spending by the producer (private) sector to purchase goods and services to increase production capacity or future income. The general requirements for economic development in a country, according to Todaro (1981), are capital accumulation, including new collection in the form of land, physical equipment, and human resources; The growth of the workforce and skills accompanies the development of the population.

Private investment in Indonesia has been guaranteed to exist since the issuance of Law No. 1 of 1967 concerning Foreign Investment (PMA) and Law No. 12 of 1970 concerning Domestic Investment (PMDN). Private investment is divided into domestic and foreign investment based on the source and ownership of capital. With the increasing government investment in public goods, it is hoped that it will encourage the growth of the private sector and household growth in allocating existing resources in an area. It will eventually lead to an increase in GRDP.

METHOD

The research method used in this research is quantitative. In contrast, the type of data used is secondary data, which originates from reports from the Central Statistics Agency (BPS) and the Investment Coordinating Board (BKPM). The data studied includes Investment (PMDN and FDI), Labor (workforce), and Gross Regional Domestic Product (GRDP). The type of data used is panel data, a combination of time series and cross-section data (Sriyana, 2014). Time series data, namely time series in 2010-2018, and cross sections, namely eight districts in North Maluku Province.

RESULTS AND DISCUSSION

MODEL TEST

*Chow test

F test that all $u_i=0$: $F(7, 62) = 105.64$ Prob > F = 0.0000

The Prob value is 0.0000 <0.05, so the FEM model is selected

*Hausman test

corr(u_i, X) = 0 (assumed) Prob > chi2 = 0.0000

-----+-----
y | Coef. Std. Err. z P>|z| [95% Conf. interval]

x1 | .4827468 .2237428 2.16 0.031 .044219 .9212746

x2 | .0000355 7.60e-06 4.67 0.000 .0000206 .0000504

_cons | 2712.008 975.4943 2.78 0.005 800.0743 4623.942

The Prob value is 0.0000 <0.05, so the FEM model is selected

CLASSIC ASSUMPTION TEST

The selected model is FEM. Therefore, the classical assumption test must be carried out. The classic assumption tests used are multicollinearity and heteroscedasticity (Basuki & Yuliadi, 2014: 184) (Napitupulu et al., 2021:120).

*Multicollinearity Test

| x1 x2

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x1 | 1.0000

x2 | 0.6266 1.0000

correlation coefficients x1 and x2 0.06266 <0.85, it can be concluded that multicollinearity is free or passes the multicollinearity test (Napitupulu et al., 2021: 141)

***Heteroscedasticity Test**

Ho: Constant variance

Variables: fitted values of y

chi2(1) = 74.93

Prob > chi2 = 0.0000

Prob value 0.0000 < 0.05, then HO is rejected.

Panel Data Regression Equation

y | Coef.

x1 | .4095111 .

x2 | .000029

_cons | 2937,238

$$Y = 2937.238 - 4095111X_1 - 0.00029X_2$$

A constant value of 2937,238 means that without the variables X1 and X2, the variable Y will increase by 293723.8%. The beta coefficient value of variable X1 is -4095111; if the other variables are constant and variable X1 has risen by 1%, variable Y will decrease by -409511100%. Vice versa, if the variable value is stable and X1 has reduced by 1%, then variable Y will increase by 409511100%. The beta coefficient value of variable X2 is -0.00029; if the other variables are constant and variable X1 has risen by 1%, variable Y will decrease by 0.029%. Vice versa, if the value of other variables is cash and variable X2 has reduced by 1%, then variable Y will increase by 0.029%.

Hypothesis Test Results

1. Test Results t

y | Coef. Std. Err. t P>|t|

x1 | .4095111 .187257 2.19 0.033

x2 | .000029 6.39e-06 4.55 0.000

_cons | 2937.238 274.6829 10.69 0.000

The influence of the independent variables on the dependent variable partially is as follows:

- a. The test results on variable X1 obtained a t count of 2.19 > t table of 1.99 and a significant value of 0.033 < 0.05, then Ha was accepted, and Ho was rejected, meaning that variable X1 affected variable Y (GDP) of North Maluku.

- b. The t-test results on variable X2 obtained a t count of 4.55 > t table of 2.17 and the sign value. 0.000, then Ho is rejected, and Ha is accepted, meaning that the variable X2 affects Y (GDP) of North Maluku.

2. F test

Number of obs = 72

Number of groups = 8

Obs per group: min = 9

avg = 9.0

max = 9

F(2, 62) = 17.97

Prob > F = 0.0000

The calculated F value is 17.97 > the F table value is 2.17, and the sign value is 0.0000 < 0.05, meaning that Ho is rejected and Ha is accepted, meaning that the variables X₁ and X₂ affect Y (GDP) of North Maluku.

3. Determinant Coefficient Test (R²)

Number of obs = 72

F(2,62) = 17.97

R-squared = 0.6965

Adj R-squared = 0.6877

Root MSE = 3377.2

Prob > F = 0.0000

The adjusted R square value is 0.6965 or 69.65%. The coefficient of determination shows that the independent variables of X₁ and X₂ can explain the Y variable by 69.65%. In contrast, the remaining 30.35 is explained by other variables not included in this research model.

CONCLUSION

Based on the description in the discussion, the scientific paper entitled *The Influence of Labor and Investment on the GRDP of North Maluku Province*, the researcher can draw the following conclusions: First, the results of partial hypothesis testing show that the labor variable (X₁) affects North Maluku's GRDP. It is supported by the obtained t value of 2.19 > t table of 1.99 and a significant deal of 0.033 < 0.05. Ha is accepted, and Ho is rejected, meaning that variable X₁ affects variable Y (GDP) of North Maluku.

Second, the results of partial hypothesis testing show that the labor variable (X₂) affects North Maluku's GRDP. This is supported by the obtained t value of 4.55 > t table 2.17 and the sign value. 0.000, then Ho is rejected, and Ha is accepted, meaning that variable X₂ affects Y (GDP) of North Maluku.

And finally, the results of simultaneous hypothesis testing show that X_1 and X_2 affect Y ; this conclusion is supported by an adjusted R square value of 0.6965 or 69.65%. The coefficient of determination indicates that the independent variables of X_1 and X_2 can explain the Y variable by 69.65%. In contrast, the remaining 30.35 is explained by other variables not included in this research model.

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