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The Effect Of The Number Of Msmes, Labor, And Local Original Income On Economic Growth In North Luwu Regency

Wanda Pratiwi[1], I Ketut Patra[2], Jusman[3]
[123]Faculty of Economics and Business, Muhammadiyah University of Palopo, Indonesia
Email: [1]**Wandapratiwi733@gmail.com**,[2]**ketutpatra@umpalopo.ac.id**,[3]**jusman@umpalopo.ac.id**

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Abstract

This study aims to analyze the influence of the number of MSMEs, labor, and Regional Original Income (PAD) on economic growth in North Luwu Regency. The research hypothesis states that these three variables have a significant influence both partially and simultaneously on regional economic growth. The research method uses a quantitative approach with an explanatory nature, based on secondary time series data for the period 2014–2023. The analysis was carried out using multiple linear regression using the Cobb Douglas model using SPSS software version 26. The variables studied include the number of MSMEs, labor, PAD, and ecoomic growth (GRDP at constant prices). The results show that partially, the number of MSMEs, labor, and PAD do not have a significant effect on economic growth. However, simultaneously, the three variables are proven to have a significant effect with a calculated F value of 10.118 and a significance of 0.009. The Adjusted R^2 value of 0.112 indicates that the influence of the three variables is relatively small, while 88.8% of the variation in economic growth is influenced by other factors outside the model. The implications of this research emphasize the need for evidence-based policies to strengthen MSMEs through digitalization and training, improve workforce quality, and allocate regional revenue (PAD) to productive sectors to ensure more inclusive and sustainable regional economic growth.

INTRODUCTION

Regional economic growth is a key indicator of successful regional development. North Luwu Regency has significant potential through the development of Micro, Small, and Medium Enterprises (MSMEs), job creation, and optimization of Regional Original Income (PAD). However, despite the increasing number of MSMEs and the workforce, their contribution to Gross Regional Domestic Product (GRDP) remains suboptimal. This raises questions about whether increasing quantity alone is sufficient to drive economic growth, or whether structural transformation and more productive fiscal policies are needed.

Several recent studies have yielded mixed results. Husen et al. (2024) found that MSMEs had no significant impact on economic growth in Jambi, while Isnawati Abas et al. (2025) in Gorontalo showed a significant influence due to integration with modern markets. Mulyana (2024) emphasized that the number of workers does not automatically increase growth without technical training. Saskia & Yusnida (2022) found that PAD positively impacted GRDP per capita in Sumatra if allocated productively, while Shafwah et al. (2024) emphasizes local revenue (PAD) as the key to sustainable growth. These studies underscore the need for further analysis in the local context of North Luwu.

The research gap lies in the limited empirical studies at the district level, particularly in Eastern Indonesia. Most previous studies have focused on only one or two variables, while the synergy between MSMEs, labor, and PAD has rarely been examined simultaneously. Furthermore, only a few studies integrate empirical results with classical, neoclassical, and endogenous growth theories. This indicates the need for more comprehensive research to explain how these three variables interact to drive regional economic growth.

Based on this gap, this study aims to analyze the influence of the number of MSMEs, labor, and PAD on economic growth in North Luwu Regency, both partially and simultaneously. The research question posed is: Do MSMEs, labor, and PAD have a significant influence on regional economic growth? The novelty of this study lies in combining three key variables into a single Cobb-Douglas model, thus providing theoretical contributions to the development of regional economic literature and practical benefits for local governments in formulating evidence-based development policies.

METHODS

Type of Research

This research uses a quantitative method with an explanatory approach. The main objective of the study is to assess the influence of the number of MSMEs, workforce, and Regional Original Income on economic growth in North Luwu Regency. A multiple linear regression design using the Cobb-Douglas model was chosen because it is appropriate to answer the research question regarding the simultaneous and partial influence of independent variables on the dependent variable.

Population and Sample

The research population includes all annual data related to MSMEs, workforce, Regional Original Income (PAD), and economic growth (GRDP) in North Luwu Regency for the period 2014–2023. The research sample consists of a ten-year time series selected purposively based on the completeness and relevance of the data.

Data Collection Techniques and Instruments

Data were collected through documentary studies, namely data gleaned from official publications of the Central Statistics Agency (BPS), the Regional Revenue Agency (Bapenda), regional budget documents, the Regional Financial Information System (SIKD), and statistical reports on MSMEs and employment in North Luwu Regency. The research instrument consisted of a time series data table organized by research variable, ensuring the type of data recorded and its appropriateness for describing the variable measurements.

Data Analysis Technique

Data analysis was conducted using multiple linear regression using SPSS version 26 software. Prior to running the regression, classical assumption tests were performed, including normality tests (Kolmogorov-Smirnov and P-P Plot), multicollinearity tests (VIF and Tolerance),

autocorrelation tests (Durbin-Watson), and heteroscedasticity tests (Glejser). These procedures were systematically sequenced to ensure the model met the BLUE (Best Linear Unbiased Estimator) criteria.

RESULTS AND DISCUSSION

Classical Assumption Test

Normality Test

A normality test is conducted to ensure that the research data follows a normal distribution. The method used is the Kolmogorov-Smirnov Test, where data are considered normal if the significance value is greater than 0.05. Furthermore, using the Normal Probability Plot (P-Plot), data are considered normally distributed if the residual points are spread around the diagonal line or form a straight line pattern. The results of the data normality test analysis can be explained as follows:

Table 1. Results of the Kolmogorov-Smirnov Test for Normality

One-Sample Kolmogorov-Smirnov Test

Sampel	Signifikansi
10	0,741

Source: SPSS 26 processed, 2025

Based on the data analysis, a significance value of 0.741 was obtained, which is greater than 0.05. Therefore, the residual data is normally distributed and meets the normality requirements of the regression model. Therefore, the regression model is suitable for further statistical tests such as the t-test, F-test, and multiple regression.

Multicollinearity Test

In this study, multicollinearity testing was conducted using the Variance Inflation Factor (VIF). Indications of multicollinearity can be identified through the VIF value. According to Ghozali (2016), if the VIF value is in the range of 1 to 10 (or less than 10), it can be concluded that there are no symptoms of multicollinearity. Conversely, if the VIF value exceeds this figure, it indicates the presence of multicollinearity in the regression model.

Table 2. Multicollinearity Test

Coefficients[a]

Variabel	Tolerance	VIF
Ln_X_1	0,545	1,836
Ln_X_2	0,410	2,440
Ln_X_3	0,651	1,537

Source: Processed data, SPSS 26 (2025)

Based on the multicollinearity test results in Table 4.7, the VIF value for the number of MSMEs variable is 1.836, the workforce variable is 2.440, and the Regional Original Income is 1.537. All VIF values are below the tolerance limit of 10, and the tolerance value for each variable (0.545; 0.410; 0.651) is greater than 0.10. This indicates that there are no symptoms of multicollinearity in the regression model.

Autocorrelation Test

The autocorrelation test aims to determine whether there is a relationship or connection between the residual values in the current period (t) and the residuals in the previous period (t-1). In other words, this test is conducted to ensure that the data in the regression model is free from interperiod correlation issues.

Table 3. Autocorrelation Test Results

Model Summary[b]

Variable	Sampel	DW	DU
Model 1	10	1,581	2,00

Source: SPSS 26 processed, 2025

The table above shows that the Durbin-Watson (DW) value of 1.581 lies between the du and 4-du values, i.e., 1.352 < 1.581 < 2.648. Therefore, it can be concluded that there is no autocorrelation in the regression model, thus meeting the assumption of residual independence, and the regression model is suitable for further analysis (Ghozali, 2016).

Multiple Linear Regression Analysis

A multiple linear regression model is a statistical equation that explains the influence of two or more independent variables on a single dependent variable simultaneously.

Table 4. Multiple Linear Regression Test Results

Variable	Coefficient	T-test	T-table	Significane
Konstanta	-12,431	-3,555	2,365	0,012
Ln_X_1	3,063	1,684	2,365	0,143
Ln_X_2	0,909	1,441	2,365	0,200
Ln_X_3	0,547	1,666	2,365	0,147

Source: SPSS 26 processed, 2025

The multiple linear regression equation is as follows:

$$\mathbf{LnY= -12.431+ 3.063 + 0.909 + 0.547 + e}$$

The regression equation can be explained as follows:

1. The constant value (β_0) of -12.431 indicates that if the number of MSMEs (X_1), workforce (X_2), and Regional Original Income (X_3) is zero, then the average economic growth (Y) is -12.431%.
2. The coefficient for the number of MSME units (X_1) = 3.063. This coefficient means that every 1% increase in the number of MSME units will increase economic growth by

3.063%. Conversely, if the number of MSMEs decreases by 1%, economic growth will also decrease by 3.063%.

3. The coefficient for the workforce (X_2) = 0.909. This coefficient indicates that every 1% increase in the workforce will increase economic growth by 0.909%. Conversely, a 1% decrease in the workforce will decrease economic growth by 0.909%.
4. PAD coefficient (X_3) = 0.547 This coefficient shows that every 1% increase in PAD will increase economic growth by 0.547%. Conversely, a 1% decrease in PAD will decrease economic growth by 0.547%.

Hypothesis Testing

A. T-Test

A partial t-test was conducted to assess the effect of each independent variable on the dependent variable separately. This test used a 5% significance level, with the criteria for a variable to be considered significant if the calculated t-value > t-table or Sig. < 0.05. With a sample size (n = 10) and independent variables (k = 3), the degrees of freedom (df) obtained were 7. The t-table value at $\alpha = 0.05$ (two-tailed) with df = 7 was 2.365.

1. The number of MSMEs had a calculated t-value of 1.684. When compared with the t-table value of 2.365, it is clear that the calculated t-value is < t-table. Furthermore, the significance value of 0.143 is > 0.05. This confirms that the number of MSMEs does not significantly influence economic growth in North Luwu Regency.
2. The workforce had a calculated t-value of 1.441. Compared to the t-table value of 2.365, the calculated t-value is <t-table. The significance value of 0.200 > 0.05 also indicates that labor does not significantly influence economic growth in North Luwu Regency.
3. Locally Generated Revenue (PAD) has a calculated t-value of 1.666. Compared to the t-table value of 2.365, the calculated t-value is <t-table. The significance value of 0.147 > 0.05 confirms that PAD does not significantly influence economic growth in North Luwu Regency.

B. F-Test

The F-test, or simultaneous test, is used to determine whether the number of MSME units and the MSME workforce together have a significant effect on economic growth.
The hypotheses used are:

H_0 = there is no effect of all independent variables on the dependent variable
H_a = there is an effect of all independent variables on the dependent variable.

Table 5. F-test results

Model	Sum of Squares	df	Mean Square	F	Signifikansi
Regression	0.481	3	0.160	10.118	0.009b
Residual	0.095	6	0.016		
Total	0.576	9			

Source: SPSS 26 processed, 2025

Based on the ANOVA analysis, the calculated F-value was 10.118 with a significance level of 0.009. The F-value at the 5% significance level with df1 = 3 and df2 = 6 was 4.76. Because the calculated F-value (10.118) is greater than the F-value (4.76), and the probability value is 0.009 < 0.05, it can be concluded that the variables of the number of MSMEs and the workforce, as well

as local revenue, simultaneously have a significant effect on economic growth in North Luwu Regency.

Coefficient of Determination (R2)

The coefficient of determination (R^2) test is used to determine the extent to which the independent variables explain the variation in the dependent variable. The R^2 value ranges from 0 to 1. If $R^2 = 0$, the dependent variable is not affected at all by the independent variable. Conversely, if $R^2 = 1$, the dependent variable can be fully explained by the independent variables in the regression model.

Table 6. Results of the Determination Coefficient (R2) Test

Model	R	R Square	Adjusted R Square
1	0,639a	0,408	0,112

SPSS 26 output, processed in 2021

Based on the test results, the Adjusted R Square value of 0.112 (11.2%) indicates that the regression model is only able to explain a small portion of the variation in economic growth. This means that the number of MSMEs, the workforce, and local revenue (PAD) on economic growth is relatively low, while the remaining 88.8% of the variation is influenced by factors outside the model such as government policy, human resource quality, access to capital, technological innovation, and external economic conditions.

Discussion

The Influence of the Number of MSMEs

The results show that the number of MSMEs does not have a significant partial effect on economic growth in North Luwu Regency ($t(7) = 1.684$; $p = 0.143$). This occurs because the increase in the quantity of MSMEs has not been accompanied by improvements in production quality, innovation, and access to capital. Many MSMEs still operate traditionally, resulting in a relatively small contribution to GRDP. This finding aligns with Husen et al. (2024) in Jambi, who also found no significant effect on MSMEs, but differs from Isnawati Abas et al. (2025) in Gorontalo, who found a significant effect on MSMEs due to their integration with modern markets. This confirms that the role of MSMEs is highly dependent on quality and local context.

The Influence of the Workforce

The labor force variable also did not have a significant partial effect on economic growth ($t(7) = 1.441$; $p = 0.200$). An increase in the workforce does not automatically increase productivity without the addition of skills, technology, and

training. This phenomenon aligns with the Solow–Swan model, which emphasizes diminishing returns, and the Romer–Lucas endogenous theory, which emphasizes the importance of human resource quality. This finding is consistent with Mulyana (2024) and Sari & Hidayat (2023), who assert that workforce quality is a greater determinant of growth than mere quantity.

Influence of Regional Original Income (PAD)

PAD in this study also did not have a significant partial effect on economic growth ($t(7) = 1.666$; $p = 0.147$). This occurs because the majority of PAD is still used for routine spending, not productive investment. From a Keynesian perspective, PAD should function as a fiscal instrument to increase aggregate demand through productive spending. Meanwhile, neoclassical theory views PAD as the accumulation of fiscal capital that can improve local economic efficiency. This finding is consistent with Saskia & Yusnida (2022) and Shafwah et al. (2024), who emphasize the importance of allocating PAD to productive sectors.

Simultaneous Influence of MSMEs, Labor, and Regional Original Revenue

Simultaneously, MSMEs, labor, and Regional Original Revenue significantly influenced economic growth ($F(3,6) = 10.118$; $p = 0.009$). This indicates synergy between the variables: MSMEs require labor for production, labor requires fiscal support for training, and Regional Original Revenue serves as a source of financing to strengthen the business ecosystem. This finding aligns with endogenous growth theory, which emphasizes the role of human capital, innovation, and fiscal policy as drivers of sustainable growth. The case of MSME digitalization in Masamba (Syamsuri et al., 2024) demonstrates that the combination of these three factors can increase labor absorption and strengthen regional competitiveness.

CONCLUSION

This study shows that, partially, the number of MSMEs, the workforce, and Locally Generated Revenue (PAD) do not significantly influence the economic growth of North Luwu Regency. This confirms that increasing the quantity of MSMEs and the workforce, as well as increasing PAD, does not automatically drive economic growth without being accompanied by production quality, workforce skills, and productive fiscal allocation. However, all three variables simultaneously proved to have a significant influence, underscoring the importance of synergy between MSMEs, the workforce, and PAD in creating sustainable economic growth.

The limitations of this study lie in the relatively limited use of secondary time series data (2014–2023) and the scope of variables, which only involve MSMEs, the workforce, and PAD.

Other factors such as human resource quality, access to capital, technological innovation, and government policies have not been included in the model, so the results cannot be broadly generalized. Nevertheless, this study has advanced scientific knowledge by combining three key variables into a single Cobb-Douglas model, providing theoretical contributions to the regional economics literature and practical benefits for evidence-based policy formulation.

Recommendations

Based on the research findings, local governments need to strengthen the MSME sector through digitalization programs, access to capital, and business management training to significantly increase its contribution to GRDP. The workforce needs to be directed towards improving skills and productivity through vocational education and technology-based training. Regionally generated revenue (PAD) should be allocated more to productive sectors, such as economic infrastructure, education, and support for MSME innovation, so that it can function as a fiscal instrument that drives growth.

For further research, it is recommended that the scope of variables be expanded to include factors such as human resource quality, access to bank credit, private investment, and local government policies. Furthermore, the use of panel data across districts or provinces can provide a more comprehensive picture of the dynamics of economic growth in Eastern Indonesia.

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