Analysis of Factors Affecting Economic Growth in Mataram City

Oni Apriani*, Muaidy Yasin, Masrun Masrun

Program Studi Ekonomi Pembangunan, Universitas Mataram, Indonesia
oniapriani5244@gmail.com

Abstract. This study aims to analyze the factors that influence the economic growth of Mataram City by looking at the effect of the labor force participation rate and gross fixed capital formation of Mataram City on economic growth. This study uses secondary data that is time series from BPS publications for the 2007-2019 period. The method used in this study is the OLS (ordinary least square) method using the Eviews 12 program. The results showed that the independent variables in this study explained the variable economic growth rate of Mataram City by 20.24 percent, while for 79.76 percent which was influenced by other factors outside this study. Partially, the labor force participation rate variable does not have a significant effect on Mataram City, which means that the variable cannot provide positive economic growth, while the gross fixed capital formation variable also has no significant and positive effect on economic growth. Simultaneously, the labor force participation rate variable and the gross fixed capital formation variable of Mataram City together have no effect and are insignificant to the economic growth of Mataram City.

Keywords: Growth Center, Economic Growth Rate, Labor Force Participation Rate, Gross Fixed Capital Formation.

1. Introduction

Development is a government effort to increase progress in various fields, which include economic, social, legal, cultural and other developments [1]. Where these aspects synergize with each other to achieve development success both at the central and regional levels. Therefore, it requires the role of both the community and the government to achieve the development program [2]. Economic development essentially aims to improve people's lives and educate the nation. In order to achieve these goals, economic growth and a more equitable distribution of income are needed. The problem of economic growth in a region depends on many factors such as government policy itself, this must be recognized and identified precisely so that these factors can affect the rate of economic growth. High economic growth will have an impact on reducing inequality in income distribution [3].

The growth rates of the various economic sectors illustrate the level of economic change that occurs [4]. In the process of developing a region, structural changes in economic sectors will always occur. This is due to an increase in the contribution of these economic sectors, because high economic growth is the target of development in each region. The rate of regional economic growth is illustrated by the development of Gross Regional Domestic Product. According to Adam Smith's classic theory in Arkaanjani [5], economic growth can be achieved if the country specializes in producing goods or services. Specialization can occur if there is a broad market to accommodate the production of a country, the market exists if a country trades with other countries [6].

Mataram City as a growth center can be explained by two concepts, namely functional and geographical growth centers [7]. Functionally, a growth center can be explained as a location of concentration of business groups or industrial branches that
have elements of dynamism so as to stimulate economic life both inward and outward
(the back area). Geographically, a growth center is a location that has many facilities and
conveniences so that it becomes a center of attraction (pole of attraction), which causes
various businesses to be interested in conducting economic activities in that place and
people are happy to come to utilize the facilities in the city, although there may be no
interaction between these businesses [8].

The existence of growth centers can be an attraction for surrounding areas in
development. Growth centers have four main characteristics, namely: There is a group of
economic activities concentrated in a particular location, the concentration of economic
activities encourages dynamic economic growth in the economy, there are strong input
and output links between fellow activities in a particular center, and in the group of
economic activities there is a parent industry that encourages the development of
economic activities in the center [9]. The success of a region’s development can be seen
from its economic growth rate. Therefore, each region always sets a target of high
economic growth rates in its regional planning and development [10]. An important
indicator to determine the economic conditions in a region in a certain period is shown
by Gross Regional Domestic Product (GRDP) data. The GRDP value will provide an
overview of how a region’s ability to manage and utilize existing resources. Labor force
participation rate is the percentage of the population aged 15-64 years who are
economically active working age population in producing goods and services. The higher
the TPAK, the higher the labor supply available to produce goods and services in an
economy [11]. The TPAK figure is used as a basis for knowing the population who are
actively working or looking for work. Gross fixed capital formation, also known as physical
investments, is the amount of addition and reduction of fixed capital goods for production
needs in an economic activity during a certain period.

The growth rate of ADHK GRDP of Mataram City shows that the economic growth
of Mataram City in 2010-2011 was relatively stable with an average growth of 7.81
percent per year. In the 2011-2012 period, it was a transition period for the Selaparang
airport to move to Lombok International Airport, so that the economic growth of
Mataram City as indicated by GRDP at constant prices was slower than economic growth
in 2010 [7]. In 2012 the economic growth achieved by Mataram City reached 3.02
percent, lower than the economic growth in 2011 which reached 7.67 percent. In 2012
the transportation and communication sector, especially the air transportation
subsector, no longer contributed to the formation of GRDP, this is what caused economic
growth in 2012 to be lower than economic growth in 2011 [12]. However, in 2013 it again
increased by 8.05 percent, for the period 2013-2017 the economy of Mataram City was
relatively stable with an average growth of 8.04 percent per year. However, there was a
decline in 2018, which was caused by the earthquake at the end of 2018 at 4.6 percent.
The slump in economic conditions after the earthquake was boosted so that it was at a
position of 5.6 percent in the second quarter or the end of 2019. But since being hit by
the 2019 Coronavirus or Covid-19 pandemic, it has not experienced a shift or is at 4.4
percent.

Mataram City is one of the cities in Nusa Tenggara Barat Province, which in the last
five years has shown fluctuating economic growth. The economic growth that occurs is
certainly the result of the contribution of the growth of sectors that have experienced a
slowdown in economic growth so that it needs to be increased again, considering that
the city of Mataram is the economic center and service center for the surrounding area
[13]. Independent variables such as the level of labor force participation and gross fixed
capital formation can affect economic growth in the city of Mataram where in fact not
only these variables affect economic growth but for the researchers themselves the level of labor force participation, and gross fixed capital formation is interesting for various reasons such as how if the level of labor force participation and gross fixed capital formation increases whether economic growth will also increase or vice versa, then we need to know how it affects economic growth in terms of GRDP in the city of Mataram.

2. Methods

This research uses a quantitative approach because the information or data is presented in the form of numbers and analyzed using statistical methods to examine the influence of labor force participation rate variables and gross fixed capital formation on economic growth in Mataram City [14]. Secondary data in the form of time series is used, with an observation period of 2007-2019. This data is obtained from various publications or reports of related institutions, especially from the Central Statistics Agency (BPS) of Mataram City and other relevant research reports. The research was conducted at the Central Bureau of Statistics of Mataram City, located on Jl. Jend. Sudirman No.71, Rembiga, Selaparang District, Mataram City, Nusa Tenggara Barat, and was carried out for two months in 2023. Data collection is done through the literature method, by collecting data and information from scientific publications such as journals, research reports, and related literature. The data used is Gross Regional Domestic Product (GRDP) at constant prices for 2007-2019 sourced from BPS Mataram City.

The variables used in this study include labor force participation rate and gross fixed capital formation as independent variables, while economic growth is the dependent variable. Economic growth is defined as the growth formed from various economic sectors, measured based on gross domestic product in percent for the period 2007-2019. Labor force participation rate is the percentage of the working-age population that is actively working or looking for work, measured in percent for the period 2007-2019. Gross fixed capital formation is physical assets that provide productive benefits with an age of use of more than one year, measured in percent for the period 2007-2019.

The data used is secondary data from BPS Mataram City with time series for thirteen years. The data analysis technique used is multiple linear regression to determine the effect of the independent variable on the dependent variable. The formula used is \( Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \varepsilon \), where \( Y \) is economic growth, \( X_1 \) is the labor force participation rate, \( X_2 \) is gross fixed capital formation, \( \alpha \) is a constant, and \( \varepsilon \) is the error.

Before multiple linear regression analysis, a classical assumption test is conducted to ensure that the regression model used has accuracy in estimation, is unbiased, and consistent. The classical assumption test includes normality test, multicollinearity test, autocorrelation test, and heteroscedasticity test. The normality test aims to test whether the distribution of variables in the regression model is normally distributed. The multicollinearity test tests whether there is a perfect or near-perfect correlation between the independent variables in the regression model. The autocorrelation test tests whether there is a correlation between the residuals from one observation and another. The heteroscedasticity test tests whether there is an inequality of variance from the residuals of one observation to another.

Hypothesis testing is done through the coefficient of determination (\( R^2 \)) test, \( F \) test, and \( t \) test. The \( F \) test is used to determine the effect of all independent variables together on the dependent variable. The \( t \) test is used to determine the effect of the independent variables individually on the dependent variable. The coefficient of determination (\( R^2 \)) is used to determine the extent to which this model is able to explain the dependent variable. An \( R^2 \) value close to zero indicates that the ability of the independent variable...
to explain the dependent variable is very limited, while an $R^2$ value close to one indicates that the independent variable provides almost all the information needed to predict the dependent variable.

3. Result and Discussion

3.1 Multiple Linear Regression Analysis Results

The regression equation can be seen from the table of coefficient test results based on Eviews 12 output on the three variables of labor force participation rate and gross fixed capital formation on the economic formation of Mataram City shown in the table below:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-statistic</th>
<th>Prob</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>X1</td>
<td>-0.230474</td>
<td>0.381477</td>
<td>-0.604163</td>
<td>0.5592</td>
<td>Not Significant</td>
</tr>
<tr>
<td>X2</td>
<td>-0.218838</td>
<td>0.166693</td>
<td>-1.312820</td>
<td>0.2186</td>
<td>Not Significant</td>
</tr>
</tbody>
</table>

Based on table 1, it can be seen that the results of the regression coefficient ($\beta$) above, the regression equation is obtained as follows:

$$Y = 16.53534 - 0.230474X_1 - 0.218838X_2$$

The results of the regression equation above can be interpreted as follows:

a. Coefficient Value $\beta_0 = 16.53534$, there is a constant value of 16.53534. This shows that the value of the economic growth rate of the city of Mataram increases if the labor force participation rate variable is increased ($X_1$) and gross fixed capital formation ($X_2$) Mataram City remains.

b. Coefficient value $\beta_1 = -0.230474$, meaning that if the labor force participation rate variable that is looking for work increases by 1% then the amount of economic growth has decreased 0.23% and vice versa. The regression coefficient of the labor force participation rate is negative on the economic growth rate, meaning that there is a unidirectional relationship. Based on the probability value of the labor force participation rate variable amounting to 0.5592 > 0.05 so it can be concluded that the variable labor force participation rate has no significant effect on economic growth in Mataram City. This is because they are included in the labor force but are not or have not worked so as not to increase economic growth. Another cause is that the government cannot provide the jobs needed, where the population is increasing but not matched by the supply of jobs.

c. Coefficient value $\beta_2 = -0.218838$, meaning that if the gross fixed capital formation variable increases by 1% then economic growth has decreased 0.21% and vice versa. The negative coefficient means that there is an unidirectional relationship between gross fixed capital formation and economic growth. It is known that the probability value of the gross fixed capital formation variable is equal to 0.2186 > 0.05 so it can be concluded that the gross fixed capital formation variable has no significant effect on the economic growth of Mataram City. This is due to the existence of capital goods that have a lifespan of more than one year and experience depreciation, where the term gross fixed capital formation has no significant effect on economic growth in Mataram City “bruto” Depreciation or consumption of capital goods describes the decrease in the value of capital goods used in the production process normally during one period. Mataram City as the capital city of Nusa Tenggara Barat (NTB) Province has undergone many dramatic changes because Mataram City is focused as an economic and service center. Perda Kota Mataram Number 12 Year 2011 in its implementation has not been effective as seen from the conversion of agricultural land that continues to occur and is increasingly uncontrolled, therefore many
productive agricultural lands are converted into non-agricultural land or in other words as offices and housing. On the one hand, the government is also unable to provide compensation to farmers so that they do not sell their land for development purposes. The impact of this land conversion is felt by tenant farmers, who will lose their jobs and trigger an increase in poverty.

### 3.2 Classical Assumption Test Results

The requirements test analysis in this study uses the classic assumption test as one of the requirements in using correlation analysis. The normality test aims to test whether in the regression model, the dependent variable and the independent variable both have a normal distribution or not. A good regression model is to have a normal or near normal data distribution. One method to determine normality is to use the histogram graphical analysis method. Value Probability Jarque-Bera by 0.404 (>0.05) then it can be concluded that the data is normally distributed. The multicollinearity test aims to test whether the regression model found a correlation between the independent variables. A good model should not have the highest correlation between the independent variables. Based on the rules of variance inflation (VIF) and tolerance, if the VIF exceeds 10 or is less than 0.10, it is stated that there are symptoms of multicolinearity. It is better if the VIF value is less than the tolerance of more than 0.10, it is stated that there are no symptoms of multicolinearity. Obtained a VIF value of 3.333664, it can be seen that the VIF value of the independent variable is <10.00, so the multicollinearity test assumption has been met or passes the multicollinearity test.

One method of analysis to detect the presence or absence of autocorrelation by testing. This test shows that the value of Probability Obs*R-Squared sebesar 0.8238 (>0.05) then it can be concluded that the autocorrelation test assumptions have been met. The autocorrelation test aims to test whether in the regression model there is an inequality of variance from the residuals of one observation to another. A good regression model is homosedasticitas or no heteroscedasticity. From the test results, it is known that the value Probability Obs*R-Squared sebesar 0.1613 (>0.05). This means there is heteroscedasticity in the regression model.

### 3.3 Hypothesis Test Results

Based on the regression analysis that has been carried out, the value is obtained Prob by 0.5592 > 0.05 which means that the labor force participation rate variable has no significant effect on the economic growth variable in Mataram City. Second, the value obtained Prob by 0.2186 >0.05 which means that the gross fixed capital formation variable has no significant effect on the economic growth variable of Mataram City. Furthermore, the results of the F test analysis were obtained with a value of Prob. (F-statistic) by 0.322 >0.05 which means that the level of labor force participation and gross fixed capital formation have no effect and are not significant simultaneously (together) on the economic growth of Mataram City. It is known that the value of Adjusted R Square amounting to 20.2414, it can be concluded that the contribution of the influence of the labor force participation rate variable and the gross fixed capital formation variable to the economic growth variable of Mataram City is 20.24%. While the remaining 79.76% is influenced by other variables outside this study such as labor, exports, government spending, domestic investment, infrastructure, education, human development index and poverty.

### 3.4 Discussion

The results showed that the labor force participation rate of Mataram City had a negative effect on economic growth, with a probability value of the labor force
participation rate of 0.5592 > 0.05, which means that statistically the labor force participation rate had an insignificant effect on economic growth in Mataram City. The result of the TPAK regression coefficient of -0.230474 means that every 1% increase will reduce economic growth in Mataram City. This is not in accordance with the hypothesis which states that TPAK has an effect on economic growth in Mataram City. These results are in line with research conducted by Dearnri Christina Purba, Purwaka Hari Pihanto, Siti Aminah (2020) Based on the results of the Fixed Effect model estimation, it shows that the coefficient value of TPAK is one percent, the average wage value does not increase and does not affect -29.19114, explaining that if TPAK increases by one percent, the average wage value is -29.19 percent in the provinces of Sumatra island.

The labor force participation rate variable has a prob 0.445, greater than the 10% confidence level (0.0000 < 0.1), meaning that the labor force participation rate variable has no effect and is insignificant to the average wage in the Sumatra island province. This research is in line with research conducted by Yusuf and Hartono [15]. Based on the processed regression results, the Labor Force Participation Rate variable has a negative and significant effect on open unemployment in Pelalawan Regency. The regression coefficient value for the Labor Force Participation Rate variable is -20.90126. This means that if the Labor Force Participation Rate increases by 1 unit, then Open Unemployment in Pelalawan Regency will increase by -20.90126. It can be concluded that the Labor Force Participation Rate variable has a negative and insignificant effect on the Open Unemployment Rate in Pelalawan Regency with a significant level of 0.1469 (0.05). The Regency Government must be more serious in reducing the open unemployment rate, one of which is through the Work Training Center (BLK) which is the infrastructure and facilities for training places to gain skills or who want to explore expertise or skills in their respective fields.

Based on the results of data analysis and hypothesis testing that has been carried out in this study, it is found that there is no influence between PMTB on economic growth in Mataram City 2007-2019. The coefficient of the PMTB variable is -0.218838, with a probability of 0.2186 which explains that every 1% increase in PMTB will be followed by a decrease in economic growth by 0.218023%. This decrease in PMTB indicates that there is a decrease in economic activity in Mataram City. This result is not in accordance with the hypothesis which states that the PMTB of Mataram City has an effect on economic growth. Gross Fixed Capital Formation is an important factor in driving economic development and growth, PMTB shows how much investment a region makes from year to year. According to Anita et al. [16] investment is one of the important factors in increasing production. Without investment, the production process will not run smoothly which results in a decrease in overall output. An increase in investment will increase production capacity and increase both regional and national output, thereby increasing per capita income. How to find out information about PMTB is inseparable from knowing the amount of investment made by a region. Part of that investment will be spent to purchase capital goods and inventories that will be used in production activities.

The findings from this research align with the study conducted by Zaradia Permatasari and Ernawati Pasaribu (2019), where their results indicate that the partial test of gross fixed capital formation (PMTB) yields a t-value of t = -11.5734 < -t(0.05) ~ -1.67. Consequently, the null hypothesis (H₀) is rejected. PMTB, as a form of capital, exhibits a negative effect on the MIT index. Specifically, an increase in PMTB by one trillion rupiah per year is associated with a reduction in the likelihood of the economy falling into the middle income trap by 0.16 MIT index points. This observation resonates with Solow's growth theory, which posits that increased investment levels drive economic
growth. Additionally, research by Syafiuddin et al. [17], also underscores the significance of investment as a crucial factor in averting the middle income trap

4. Conclusion

Based on research conducted at the Central Bureau of Statistics (BPS) of Mataram City using secondary data from 2007-2019 and the analysis carried out in chapter IV, it can be concluded that the influence of the labor force participation rate variable (X1) and gross fixed capital formation (X2) on economic growth (Y) in Mataram City, as measured by Gross Regional Domestic Product (GRDP), is as follows. Partially, the labor force participation rate variable in 2007-2019 had no significant effect on economic growth in Mataram City. The coefficient of the TPAK variable is -0.230474 with a probability value of 0.5592 > 0.05, which means that an increase in the labor force participation rate will actually reduce economic growth in Mataram City. Partially, the gross fixed capital formation variable in 2007-2019 also had no significant effect on economic growth in Mataram City. The coefficient of the PMTB variable is -0.2188388 with a probability value of 0.2186 > 0.05, which explains that every 1% increase in PMTB will be followed by a decrease of 0.218023% in economic growth in Mataram City. Simultaneously, the labor force participation rate variable and the gross fixed capital formation variable in Mataram City in 2007-2019 show that these two variables together have no effect and are not significant to economic growth in Mataram City.

Based on the conclusions obtained from the results of the analysis, to increase economic growth in Mataram City, it is necessary for the Mataram City government to pay attention to the allocation of government spending so that it can be used as well as possible for the benefit of the people in Mataram City. Effective use of the budget can help the community's economy and, in turn, increase economic growth.

5. Declaration

**Author contributions and responsibilities** - The authors made major contributions to the conception and design of the study. The authors took responsibility for data analysis, interpretation and discussion of results. The authors read and approved the final manuscript.

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**Competing interests** - The authors declare no competing interests.

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6. References


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