Research Article

The Effect of Local Government Characteristics on GRDP in Indonesia during the Pandemic Period

Dewi Masithah and Farida Rahmawati*

Department of Development Economics, Faculty of Economics and Business, Universitas Negeri Malang, Indonesia

ORCID
Dewi Masithah: https://orcid.org/0009-0006-6219-2951

Abstract.
This research aims to analyze the influence of local government characteristics, specifically Gross Regional Domestic Product (GRDP), on Indonesia during the pandemic. Economic growth is a key component of the Sustainable Development Goals (SDGs), as outlined in point eight of the 17 SDG goals. The Covid-19 pandemic has significantly impacted local government administration, leading to a decrease in regional income in some regions of Indonesia. This research employs a quantitative approach, utilizing multiple linear regression analysis for the analysis. The results reveal that the variables of area size and the number of Regional Apparatus Organizations (OPD) do not have a significant impact on economic growth in Indonesia. In contrast, the variable of Regional Original Income (PAD) demonstrates a significant influence on Indonesia’s economic growth. Moreover, when considered simultaneously, the area size, the number of OPD, and PAD collectively exert a significant impact on the economic growth in Indonesia during the pandemic. These findings suggest that local governments should allocate greater efforts and resources to foster economic growth, recognizing it as a crucial element for achieving the SDGs in Indonesia.

Keywords: economic growth, local government characteristics, Sustainable Development Goals (SDGs)

1. Introduction

The Sustainable Development Goals (SDGs) are the post-2015 development agenda that was formulated before the ending of an implementation of the Millennium Development Goals (MDGs) supported by the document agreement “The Future We Want” in The United Nations Conference on Sustainable Development in 2012. Then the development goals were agreed to continue at the UN General Assembly in September 2015. SDGs aim to maintain the improvement of economic welfare, social life, community quality of life, development, and governance to maintain the quality of life of the next generation. (United Nations, 2018).
Community welfare is contained in the Sustainable Development Goals, which consist of 17 goals, in the form of tackling climate change, development of industrial facilities, renewal, and the economy, like jobs, affordable and clean energy, clean water and adequate sanitation, gender equality, superior education, no hunger, no poverty, prosperous life and no sickness and minimization of urban inequality and sustainable settlements, responsible consumption and production, land and sea ecosystems, peace, justice, and strong institutions, collaboration to fulfill the ideals (Bappenas, 2017).

The SDGs agenda is one of the world’s programs to achieve common goals in sustainable development that the next generation will feel. One of the goals in the discussion of the SDGs is decent work and economic growth, which is contained in point eight of the 17 SDGs goals. The coordinating ministry for the economy of the Republic of Indonesia in 2022 said that “Locally governments have a big impact to manage the economic growth in a region by implementing various policies to increase economic activity, handling regional inequality and encouraging national economic development and growth”. In addition, a better-quality government can have the effect of the pace of economic development in the Western region. A better-quality government can have a superior impact on economic development in the eastern region (Liu et al., 2018). Indonesia’s economic growth sourced from the Central Bureau of Statistics (BPS) can be seen in the following data.

![Figure 1: Indonesia’s Economic Growth in 2020-2022.](image)

Refers to the table above, it is shown that economic growth in Indonesia has fluctuated. The pandemic has made the situation uncertain from 2020 to the present. The Central Statistics Agency (BPS) declarated that Indonesia’s Gross Domestic Product
GDP experienced a significant decline in the 2nd quarter of 2020 to -5.32%. However, in the 3rd quarter of 2020, it began to experience growth with GDP growth of -3.49%, and it got better in 2021 in the second quarter, which reached 7.07%.

The Covid-19 pandemic has also had an impression locally government administration. Through the jatengprov.go.id page, it is known that during the pandemic, some regions in Indonesia experienced a decrease in regional income. The Ministry of Domestic Finance, via the website kuda.kemendagri.go.id, said that the Covid-19 pandemic, in general, has reduced the Regional Original Income (PAD) which is shown in six provinces in 2021, still experiencing a decrease in PAD, reaching -0.4 to 95%.

The influence of the quality of locally government can be shown through one of the criterion of locally government in the form of PAD and economic growth, which are interconnected. Increased PAD will encourage an increase in funds from locally government and increase the independence of the blood itself. PAD positively or significantly influences economic growth (Rori et al., 2016). However, based on previous data, it appears that in 2021 there will be a decrease in PAD in six provinces in Indonesia, but economic growth in Indonesia will continue to increase and improve.

A government has characteristics to be a characteristic that can distinguish one region from another. KBBI explains Characteristics have the meaning of everything related to various things with specific characteristics according to certain characteristics. The criterion for locally government is the special identity that exists in locally government and makes it different from others (Mutiarani et al., 2020). The characteristics of locally government, which are the special characteristics of area size that will be used in this study, are the area, the number of OPD, and the Regional Original Income (PAD). This is based on research conducted by Nafila and Dodik (2020), showing that the criterion of locally government can be studied through area size, number of OPD, and Regional Original Income (PAD).

According to the UU 23/2014 of Indonesian Republic about local government chapter 1 paragraph 2 explains that regional government the executor of government tasks jointly with the regional people's representatives council based on the fundamental of autonomically and co-administration with the fundamental of unlimited autonomically in the systematics and fundamentals of the State The Unitary Indonesian Republic as referred to in the 1945 Constitution of the Indonesian Republic. Based on Government Regulation Number 47 of 1997, which is one of the National Spatial Plan, size of the sector is a combination of geography and related aspects which are systematic and the restrictions are based on functional and administrative elements the area. The variable that indicates the need for unified regional facilities and infrastructure is the area, which
can be seen from how much or how little area size needs infrastructure and facilities can be seen from the area of the area (Pamukti et al., 2022).

Functional departments are intended as a reference in an organization that describes functional differentiation; in this case, it can be seen from the structure of the Indonesian government by the SKPD, which is currently called the OPD, which carries out executive functions and coordination with other parts of the government so that good governance is realized (Mutiarani et al. al. 2020).

Refers to the UU 33/2004 about the balance of central and local government finances, PAD is income the applicable local government collects. Economic activity is a series of uses of income to provide output and response to aspects of production owned by the population. It shows how much this effort will have an impact on increasing income for the community within a certain duration. Several things affect economic growth, namely income, spending, and financing (Pamukti et al., 2022).

Increase economic is a function of neoclassical production which assumes that all production inputs can be grouped as a whole into three factors of production, namely capital, labor, and technology. The production function explains the combination of the three economic input factors to produce output, measured through the Gross Domestic Product (GDP), (Leasiwal, 2022).

Gross Regional Domestic Product (GRDP) is a macro indicator for the total gross added value of all economic activities in a region that operates within a certain period. When there is an increase in GRDP, the Regional Original Income (PAD) also increases because it is a measure of community income and one of the regional incomes (Ariyani et al., 2018).

The theory in this study is endogenous growth theory. This theory states that economic development occurs internally in the economy with endogenous and not exogenous advantages.

Government policies can increase the rate of economic growth if they it is suggested to conduct more market competition and trigger innovation in the production process. Similar to neoclassical growth theory, endogenous development is centered on general economic behavior (Romer, Paul M. 1994).

Given these problems, research would like to contribute to analyzing several factors related to the criterion of locally government in Indonesia and achieving economic growth during the pandemic as one of the purposes in the SDGs.
2. Research Methods

This research are approaches a quantitative study that means this research method that uses numbers, starting from the collection process to its interpretation (Fai, 2022). The analysis used is multiple linear regression which is an analysis that studies the correlation between one dependent variable, called the dependent variable, with more than one independent variable, called the independent variable (Gujarati, 1991).

The secondary data used from the publication of the DJP, BAPPENAS, BPS, the Ministry of Finance, and articles that can support this research. Secondary data consists of GRDP as the dependent variable, during the area, number of OPD, and local revenue (PAD) as independent variables. This study used secondary data for 2021 in 34 Indonesian provinces. This research was conducted in Indonesia. This location was chosen because Indonesia experienced economic growth and development fluctuations during the pandemic as one of the countries affected by the co-19 pandemic. The researcher determines the research variable so that information can be obtained and conclusions can be drawn by the researcher (Ayu, 2020). The variables in this study are as follows.

Variables that affect the dependent variable have a positive or negative influence is independent variable. An area, number of OPD, and PAD are independent variables. With a research design. Area size, according to Government Regulation No. 47 of 1997, which constitutes the national spatial plan design, the area, namely the geographical unit as well as related aspects whose systematics and limitations depend on functional and administrative aspects of the area. Number of OPDs, job differentiation based on the degree to which an institute is classified into job divisions. in the composition of the Indonesian government, it is classified into job divisions by Regional Work Units, which is currently called the Regional Apparatus Organization, abbreviated as OPD. OPD performs executive functions and coordinates between and another government entities to realize good governance. The legal fundamental for SKPD is Article 120 of UU 32/2004 concerning Regional Government. Regional Original Income (PAD), refers to UU 33/2004, regarding financial equality between the regional and centrally governments, Local Own Revenue is said to be the gain taken by the regions in line with existing regional regulations and other regulations.

GRDP is dependent variable in this research. The eighth goal of the SDGs, namely proper jobs and economic growth, has several targets. One of the targets of this SDGs program is to maintain per capita economic growth by national conditions, particularly at least seven percent of GRDP per year in less developed countries. This target, in
measuring economic growth, can be seen from the regional GRDP level as an aspect that can measure economic growth.

Documentation techniques are used to indirectly obtain data sources through intermediary media obtained and recorded by others. Secondary data was collected from the publication of the DJP, BAPPENAS, BPS, the Ministry of Finance, and articles that can support this research. Based on each province, the data taken consists of GRDP, area, total OPD, and local revenue (PAD).

In this research, the analytical methods used is a multiple linear regressions analysis model using STATA 14 software. The regression model used in this research is as follows.

\[(1) Y = \alpha + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + e\]

Information:
\(Y = \) Economic Growth (PDRB)
\(\alpha = \) constant
\(\beta_1, \beta_3 = \) regression coefficient
\(X_1 = \) Area size
\(X_2 = \) Number of Regional Apparatus Organizations (OPD)
\(X_3 = \) Regional Original Income (PAD)
\(e = \) term error

The F test measures the significance level of the independent variables simultaneously or jointly influencing the dependent variable. Measurements in the F test are carried out by comparing the F count with the F table. If F count < F table, then accept \(H_0\), define that simultaneously the independent variable have no significant impact with the dependent variable. If F count > F table, then reject \(H_0\) and accept \(H_1\), define that simultaneously the independent variables have a significant impact with the dependent variable.

The t-test is used to show the significance of the effect between the independent variables on the dependent variable, partially or individually. Measurements in the t-test are done by comparison the t count with the t table. If t count < t table, then accept \(H_0\), define that partially the independent variable has no significant impact on the dependent variable. If t count > t table, then reject \(H_0\) and accept \(H_1\), define that partially the independent variable has a significant impact with the dependent variable.

Determination Coefficient Test (\(R^2\) Test). The \(R^2\) test used to express how far independent variable can define the dependent variable used in the model. The value of
R², which is almost to 1, means that the effect of the independent variable is getting better at explaining the dependent variable.

Classic assumption test. This test has a function for knowing the feasibility of a regression model. This test was performed before carrying out the regression analysis. In this research, the classical assumption test was carried out: the heteroscedasticity, the multicollinearity, and the normality test. The normality test is performed to see the data distribution used in the model. The data used must be normally distributed so that it can be use in parametric statistical calculations. With an alpha significance level of 5%, for this research, the normality test can be used using the Shapiro-Wilk method, measured if the value significance is > 0.05, then the data used is normally distributed. If the value significance is < 0.05, then the data used is not normally distributed. A multicollinearity test is performed to see a strong relationship or not between the independent variables used in a regression test model. With an alpha significance level of 5%, in this study, multicollinearity measurement that shown from the Variance Inflation Factor (VIF) number and the minimum value. If the VIF value is < 10 and the minimum value is > 0.1, there’s no multicollinearity on the regression model. If the VIF value is > 10 and the tolerance value is < 0.1, then there is multicollinearity in the model. The Heteroscedasticity test was carried out to detect any deviations in the absolute or residual values in a model for each variable in the model. With an alpha significance level of 5%, in this study, the heteroscedasticity test can be using the Breusch-Pagan test with measurement if the probability value is > 0.05, then the model has a heteroscedasticity. If the probability value is <0.05, then the model has a heteroscedasticity.

3. Results and Discussion

Refers to the table, it is shown that constant value is 2.794509. this number shows that when x₁, x₂, and x₃ are 0, then y will increase by 2.794509%.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Beta/Coefficient</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>An area</td>
<td>0.0802074</td>
<td>0.079</td>
</tr>
<tr>
<td>Number of OPDs</td>
<td>0.2078931</td>
<td>0.645</td>
</tr>
<tr>
<td>PAD</td>
<td>0.9832155</td>
<td>0.000</td>
</tr>
<tr>
<td>Constanta</td>
<td>2.794509</td>
<td>0.058</td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>0.9365</td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>163.35</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Source: Processed data
After doing the regression, it can be seen in Table 1. The multiple linear regression equation model is formed as follows.

\[(2)Y = 2.794509 + 0.0802074X₁ + 0.02078931X₂ + 0.9832155X₃ + e\]

The coefficient value of \(x₁\) (area) is 0.0802074, indicating that an increase of 1% in \(x₁\) will impact an increase in \(y\) (GRDP) of 0.0802074%. The coefficient value of \(x₂\) (total OPD) is 0.2078931, indicating that an increase of 1% in \(x₂\) will impact an enhancement in \(y\) (GRDP) of 0.2078931%. The coefficient value of \(x₃\) (PAD) is 0.9832155, indicating that an increase of 1% in \(x₃\) will impact an increase in \(y\) (GRDP) of 0.9832155%. From the test above, it is also known that the Adjusted \(R^2\) value of 0.9365 indicates that the ability of the independent variables (area size, number of OPD, and PAD) to explain the rate of economic growth (GDP) in Indonesia is 93.64%. Other variables in outside models explain the remaining 6.36%.

Hypothesis testing, which aims to measure the influence of the independent variables (area size, number of OPD, and PAD) with the dependent variable (GRDP) in Indonesia, is described in the bellow of hypothesis measurements. The hypothesis of the effect of area size is \(H₀ = \text{there is no significant impact between area on GRDP in Indonesia in 2021}. \quad H₁ = \text{There is a significant impact between area on GRDP in Indonesia in 2021}.\)

The hypothesis for the effect of the number of OPD is \(H₀ = \text{that is no significant impact between the number of OPD on GRDP in Indonesia in 2021}. \quad H₁ = \text{There is a significant impact between the number of OPD on GRDP in Indonesia in 2021}.\)

The hypothesis for the effect of PAD is \(H₀ = \text{that is no significant impact between PAD on GRDP in Indonesia in 2021}. \quad H₁ = \text{There is a significant influence between PAD on GRDP in Indonesia in 2021}.\)

Hypothesis test results. In the t-test, the area variable (\(x₁\)) shows that the calculated t value obtained is 1.82, that is smaller than the t table value of 2.04227 (1.82 < 2.04227), so accept \(H₀\). It can be define that partially the area variable does not significantly affect GRDP in Indonesia. This means that individually, the area variable has no significant effect on GRDP in Indonesia. In line with research conducted by Sherina and Andy (2022), it shows that the area variable has no significant effect on GRDP in Indonesia. Area size does not play an absolute role in economic growth and depends on a variety of other factors. A region that has a larger area tends to have a variety of natural resources that, if managed wisely, will be an important asset supporting sustainable economic growth. A region with a large area of agricultural land can also become a center of economic growth for other developed and productive regions. A region with a large
area, with adequate natural resources can increase its tourism, thereby encouraging economic growth and creating jobs that help raise the level of a sustainable economy in the region. Also, with a large area, it can also help build facilities and infrastructure to support increased connectivity, attract investors, and expand markets. Of course, it is hoped that this sustainable economic growth will increase productivity without damaging the environment and economic distribution justice.

The variable number of OPD ($x_2$) shows that the calculated t value obtained is 0.47, that is smaller than the t table value of 2.04227 ($0.47 < 2.04227$), so accept Ho. This means that partially the variable number of OPD has no significant impact on GRDP in Indonesia. This is in line with research conducted by Mutiarani and Siswantoro (2020) which found that the number of SKPD (currently referred to as OPD) has no significant effect on SDGs in which there are indicators of economic growth. The number of OPD can have an influence with various notes, such as the appropriate and effective number of OPD can improve the efficiency of public services and support the productivity of various programs that can improve sustainable economic programs. The number of OPD with the right placement of responsibilities can assist the government in managing resources and budgets to support programs and projects that contribute to sustainable economic growth. The right number of OPD and structure can also encourage supervision and recording of local government finances and reduce corruption, helping to promote sustainable economic growth.

The PAD variable ($x_3$) shows that the calculated t value obtained is 19.79, which is greater than the t table value of 2.04227 ($19.79 > 2.04227$), so reject Ho and accept H₁. This means that partially the PAD variable significantly affects GRDP in Indonesia. In accordance with research conducted by Sherina and Andy (2022), the PAD variable has a significant effect on GRDP in Indonesia. As well as in research conducted by Fani et al. (2018) the PAD variable has a significant effect on economic growth in Indonesia. PAD is the main source of income for local governments that comes from local taxes, local levies, regional-owned business results, and others. With sufficient PAD, of course, the government can use PAD as financing for development programs and projects so that it can support sustainable economic growth. With PAD, it can also improve quality public services and develop local economic sectors in the region to stimulate sustainable economic growth. The t-test results on the PAD variable are in line with the theory used, namely endogenous growth theory. This theory explains that economic growth occurs internally in the economy, namely by forces that come from within, and not by external forces. Based on the test results that have been obtained, showing the results individually, that the PAD variable has a significant effect on GRDP in Indonesia.
during the pandemic. Thus, it can be seen that economic growth occurs on the internal encouragement of local governments.

In the F test, the F value in the F test is 163.35, this point is more than than the F table value, namely 2.92 (163.35 > 2.92), so so reject Ho and accept H₁, which means that simultaneously the variable area, number of OPD, and PAD have a significantly effect on GRDP in Indonesia during the pandemic. The results of this study are in line with previous research in Nafila and Dodik’s (2020) research on all indicators of SDGs goals as dependent variables, showing that simultaneously area, SKPD, and PAD affect the level of achievement of SDGs in Indonesia. When the dependent variable is focused on one of the indicators of the SDGs achievement goals in Indonesia in the form of economic growth, it shows that the area, number of SKPD and PAD simultaneously have a significant effect on GRDP in Indonesia in the pandemic era. This shows that, despite the covid-19 pandemic which has made Indonesia’s economy uncertain and social restrictions in Indonesia, the characteristics of local government still have a significant influence on GRDP.

Classic assumption test, the normality test was conducted with an alpha significance scale of 5%. The significance of this Shapiro-Wilk model can be seen through its probability value. Ho is accepted if the p-value > 0.05, and H₁ is rejected. If the p-value <0.05, then Ho is rejected, and H₁ is accepted.

| Variable       | Prob>|z|  |
|----------------|-----|--:|
| GRDP           | 0.11083 |    |
| An area        | 0.05834 |    |
| Number of OPDs | 0.33649 |    |
| PAD            | 0.20995 |    |

Source: Processed data

Refers to the table above, it is known that the prob > z value of the GRDP(y) variable is 0.11083. So, the value of 0.11083> 0.05 means that the data is normally distributed. Then the prob value > z of the area variable (x₁) is 0.05834. So, the value of 0.05834 > 0.05 means that the data is normally distributed. prob > z from the variable number of OPD(x₂) of 0.33649. so the value of 0.33649 > 0.05 means the data is normally distributed. prob > z from the variable PAD(x₃) of 0.20995. so that it can be seen that the value of 0.20995> 0.05 means that the data is normally distributed.
The heteroscedasticity test can be carried out using the Breusch-pagan method in processing research data. A regression is said to have no heteroscedasticity if the value (Prob > chi2) > 0.05.

**Table 3: The Result of Heteroscedasticity Test.**

<table>
<thead>
<tr>
<th>Chi2(1)</th>
<th>Prob&gt;chi2</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.74</td>
<td>0.3883</td>
<td>No Heteroscedasticity</td>
</tr>
</tbody>
</table>

Source: Processed data

One of the heteroscedasticity tests can be carried out using the Breusch-pagan method in processing research data. A regression is considered with no heteroscedasticity if the value (Prob > chi2) > 0.05. Based on the data that has been processed, the Prob>chi2 value is 0.3883. value 0.3883 > 0.05, then there's no multicollinearity on the regression model.

In the Multicollinearity test, it is said to be free of multicollinearity if the number (1/VIF) > 0.10 and has a VIF value <10.

**Table 4: The Result of Multicollinearity Test.**

<table>
<thead>
<tr>
<th>Variable</th>
<th>VIF</th>
<th>1/VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>An Area</td>
<td>1.29</td>
<td>0.777915</td>
</tr>
<tr>
<td>Number of OPDs</td>
<td>1.25</td>
<td>0.798125</td>
</tr>
<tr>
<td>PAD</td>
<td>1.14</td>
<td>0.878864</td>
</tr>
<tr>
<td>VIF Means</td>
<td></td>
<td>1.23</td>
</tr>
</tbody>
</table>

Source: Processed data

Refers to the multicollinearity test in Table 4 above shown the number (1/VIF) of 0.777915 in the x₁ variable, 0.798125 in the x₂ variable, and 0.878864 in the x₃ variable and the VIF number is 1.29 in the x₁ variable, 1.25 in the x₂ variable, and 1.14 in the x₃ variable. So, there is no multicollinearity on the regression model.

4. Conclusions

Refers to the results of this research on the impact of locally government characteristics on GRDP in Indonesia during the pandemic, it examines the characteristics of locally government in the form of area, several Regional Apparatus Organizations (OPD), and Regional Original Income (PAD) as independent variables and uses the F test, t, and R² test. That have a conclusive that partially, the area variable has no significant impact on GRDP in Indonesia, the number of OPD variables has no significant impact on GRDP.
in Indonesia, and the PAD variable has a significant impact on GRDP in Indonesia. So, only the PAD variable significantly influences GRDP in Indonesia during the pandemic.

This research has several limitations in the form of a sample limited to provinces in Indonesia in 2021. Future research is expected to extend the period and research on other indicators of the SDGs for each goal.

**References**


