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The Effect of Gross Regional Domestic Product on Regional Original Revenue in East Java Province

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Abstract

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This study aims to analyze the influence of Gross Regional Domestic Product (GDP) on Regional Original Revenue in districts in East Java Province. The approach used is quantitative with a simple linear regression method using secondary data from 2021 obtained from the Central Statistics Agency and the Directorate General of Financial Balance. The analysis was carried out with the help of SPSS software to test the significance of the relationship between the two variables. The results showed that Gross Regional Domestic Product had a positive and significant effect on Regional Original Revenue, with a determination coefficient value (R^2) of 0.930, which means that 93% of Regional Original Revenue variations were explained by Gross Regional Domestic Product. The calculated t-value of 18.876 and the significance of 0.000 < 0.05 indicate a strong and significant relationship between the two variables. These findings confirm that regional economic growth, which is reflected in the increase in Gross Regional Domestic Product, plays an important role in strengthening regional fiscal independence through increasing Regional Original Revenue in East Java Province.

1. Introduction

Regional economic development plays a crucial role in achieving fiscal independence and driving national growth. Within Indonesia's decentralized system, a region's capacity to meet its own financial needs largely depends on its Regional Original Revenue (*Pendapatan Asli Daerah*/PAD). PAD reflects a local government's ability to harness economic potential through regional taxes, levies, income from regional assets, and other legitimate sources. Meanwhile, Gross Regional Domestic Product (GRDP) represents the total value of goods and services produced in a region over a certain period and serves as a key indicator of regional economic performance. The relationship between GRDP and PAD has long been a focal point of regional finance studies, as theoretically, an increase in GRDP expands the tax base and enhances PAD revenue (Kartini, 2021).

Conceptually, rising regional economic activity reflected in GRDP growth strengthens fiscal capacity. Growth in sectors such as industry, trade, agriculture, and services triggers a multiplier effect that increases household income and business activity, both of which contribute to local tax and levy revenues. According to public finance theory, regional economic growth and PAD are positively correlated. However, empirical evidence from Indonesia reveals that this relationship varies significantly across regions and time periods.

Several studies confirm a positive linkage between GRDP and PAD. Rahula and Bowo (2021) found that GRDP significantly influences PAD in Central Java, indicating that economic growth directly contributes to local revenue enhancement. Similarly, Putra and Rosliani (2021) in West Sumatra concluded that rising regional

GRDP aligns with increasing PAD at the district and city levels. In Southeast Aceh, Waskito et al. (2019) demonstrated a positive relationship between economic growth and PAD during 2021, noting that government expenditure also plays a supporting role.

Nevertheless, not all findings show a consistent or strong correlation. Sudirman and Susilawati (2019), in his study of Jambi Province, observed that while GRDP does affect PAD, its influence is relatively minor compared to fiscal policies and government spending. Triyanto (2017) found that the relationship between GRDP and PAD in West Kalimantan differs across regions, depending on economic structure and fiscal management efficiency. Meanwhile, Hidayat and Nalle (2017), examining East Java, discovered that GRDP, population, and regional taxes jointly influence PAD, though the degree of GRDP's contribution varies among districts.

These differing outcomes highlight a research gap, particularly in East Java, where districts exhibit diverse economic profiles. Industrial centers such as Gresik, Sidoarjo, and Pasuruan rely heavily on manufacturing and trade, whereas regions like Sumenep, Bondowoso, and Pacitan remain dependent on agriculture. Such structural differences may cause variations in how GRDP influences PAD, depending on each area's economic base, fiscal capacity, and revenue management effectiveness (Sulaeman & Silvia, 2019). Despite its economic importance, few comprehensive studies have analyzed the GRDP–PAD relationship across all districts in East Java up to 2021.

Therefore, examining the influence of GRDP on PAD in East Java's districts is essential. This research aims to provide empirical insights into the extent to which economic growth contributes to regional fiscal autonomy. The findings are expected to assist both provincial and local governments in formulating evidence-based strategies to enhance PAD sustainably. By utilizing recent data up to 2021, this study intends to update and enrich the existing literature while addressing gaps in previous research. The hypothesis underlying this study posits that higher GRDP in a district leads to greater PAD through the expansion of the local tax base and increased economic activity. Understanding this dynamic is critical for promoting fiscal resilience and ensuring that regional economic growth translates effectively into local financial independence.

2. Literature Review

The relationship between Gross Regional Domestic Product (GRDP) and Regional Original Revenue (PAD) has been extensively examined within regional economic studies. Theoretically, this relationship is grounded in regional economic growth and public finance theories (Kartini, 2021). Economic growth, reflected through increasing GRDP, indicates higher production capacity, income levels, and economic activities that form the foundation of regional taxes and levies. As the economy's added value rises, people's purchasing power expands, business activities flourish, and the regional tax base broadens leading to higher PAD.

Within Indonesia's fiscal decentralization framework, PAD represents a measure of regional independence. According to Law No. 33 of 2004 on Fiscal Balance between Central and Regional Governments, PAD reflects a region's ability to finance its own needs without excessive reliance on central transfers.

Consequently, regions with higher GRDP levels are expected to generate greater PAD through optimized taxation, levies, and asset management.

Empirical studies largely support this theoretical linkage. Rahula and Bowo (2021) found that GRDP significantly affects PAD in Central Java districts and cities. Similarly, Putra and Rosliani (2021) in West Sumatra confirmed that regional economic growth contributes directly to PAD increases. Waskito et al. (2019) in Southeast Aceh also reported a positive relationship between GRDP and PAD, moderated by government spending policies. However, Sudirman and Susilawati (2019) in Jambi observed that the strength of GRDP's influence depends on the effectiveness of fiscal policy implementation. Meanwhile, Hidayat and Nalle (2017) in East Java found that GRDP positively affects PAD, though its contribution varies across districts due to differences in local economic structures.

While most studies confirm a positive relationship between GRDP and PAD, the magnitude and consistency of this effect remain context-dependent and warrant further comprehensive examination. Based on these theories and empirical evidence, this study proposes the following hypotheses:

H_1: Gross Regional Domestic Product (GDP) has a positive effect on Regional Original Income (PAD) in districts in East Java Province.

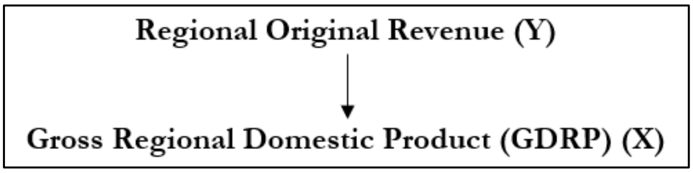

Figure.1 Conceptual Framework

Figure 1 show framework that illustrates that the increase in GDP in each district in East Java, which reflects the progress of local economic activities, will have a direct impact on improving the fiscal capacity of the regions. In other words, the higher the added value produced in the region (economic output), the greater the potential for the region to obtain original income through taxes, levies, and other sources of PAD.

3. Methods

This study employs a quantitative approach to empirically examine the influence of Gross Regional Domestic Product (GRDP) on Regional Original Revenue (PAD) in districts across East Java Province. The quantitative method was chosen because it enables objective measurement of relationships between variables through statistical analysis. The study uses secondary data sourced from official publications of the Central Statistics Agency (*Badan Pusat Statistik*/BPS) of East Java and the Directorate General of Fiscal Balance (*Direktorat Jenderal Perimbangan Keuangan*/DJPK), covering GRDP and PAD data for each district in 2021. This time frame was selected due to data consistency and to represent pre-pandemic economic conditions.

The data consist of combined time series and cross-sectional datasets representing each district's economic profile. GRDP is measured in billion rupiah at constant prices to reflect real economic growth free from inflation effects, while PAD is measured in million rupiah, encompassing revenues from local taxes, levies, returns on regional assets, and other legitimate sources. Prior to regression analysis, descriptive tests were conducted to identify potential outliers that could affect model validity.

Data analysis was performed using the Statistical Package for the Social Sciences (SPSS). The analytical method applied was simple linear regression to determine the extent of GRDP's influence (independent variable) on PAD (dependent variable). The t-test was conducted at a 5% significance level ($\alpha = 0.05$). Decision criteria were: if Sig. < 0.05, the alternative hypothesis (H_1) is accepted, indicating that GRDP has a positive and significant effect on PAD; if Sig. ≥ 0.05, the null hypothesis (H_0) is accepted, indicating no significant influence. The regression results are expected to provide empirical evidence of the direction and strength of the relationship between regional economic growth and fiscal capacity in East Java, offering valuable policy insights for optimizing local economic potential to strengthen fiscal independence.

4. Results

The results of a simple linear regression analysis conducted to determine the influence of Gross Regional Domestic Product (GDP) on Regional Original Income (PAD) in 29 districts in East Java Province in 2021 showed a very strong and significant relationship between the two variables.

Table.1 SPSS Output Linear Regression Test Results

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.964a	.930	.927	84.83175	.930	356.297	1	27	.000
a. Predictors: (Constant), GDP 2021 (ADHB. Billion Rp)									

Based on the table 1 show results of data processing using the IBM SPSS Statistics program at thickness 1, a correlation coefficient value (R) of 0.964 was obtained. This value indicates a very strong relationship between GDP and PAD, because the R value is close to 1. This means that changes in regional GDP will be followed by changes in PAD in the same direction. The higher the GDP of a district, the greater the PAD obtained by the local government.

In addition, the value of the determination coefficient (R Square) of 0.930 indicates that 93% of the variation in PAD can be explained by changes in GDP. While the remaining 7% is explained by other factors outside of this regression model, such as the effectiveness of regional tax collection, levies, regional asset management, and other sources of revenue. The Adjusted R Square value of 0.927 also shows that the regression model used is appropriate and does not experience overestimation even though it only uses one independent variable. This indicates that the regression model formed has an excellent level of accuracy and explanatory ability.

Table.2 SPSS Output Test Results F

ANOVA						
Model		Sum of Squares	df	Mean Square	F	Say.
1	Regression	2564066.829	1	2564066.829	356.297	.000b
	Residual	194303.488	27	7196.425		
	Total	2758370.317	28			
a. Dependent Variable: PAD 2021 (IDR Billion)						
b. Predictors: (Constant), GDP 2021 (ADHB. Billion Rp)						

From the results of the F (Analysis of Variance/ANOVA) test in table 2, an F value of 356.297 was obtained with a significance level of 0.000. Since the significance value is much smaller than the significance limit of 0.05, it can be concluded that this simple linear regression model is statistically significant. This means that simultaneously the GDP variable affects the PAD. The model used is feasible and can be used to explain the relationship between GDP and PAD in districts/cities of East Java Province.

Table.3 SPSS Output Test Results t

Coefficientsa					
Model	Unstandardized Coefficients	Standardized Coefficients	t	Say.	95.0% Confidence Interval for B

		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	94.107	33.305		2.826	.009	25.771	162.443
	2021 GDP (ADHB. Billion Rp)	7.768	.412	.964	18.876	.000	6.924	8.612
a. Dependent Variable: PAD 2021 (IDR Billion)								

Furthermore, based on the table 3 which shows the results of the t-test in table 3 (table of coefficients), it is known that the value of the constant (intercept) is 94.107 with a significance value of 0.009. This shows that when the value of GDP is considered constant or unchanged, the value of PAD will be at 94.107 billion rupiah. Meanwhile, the regression coefficient for the GDP variable was 7.768 with a significance value of 0.000 and a calculated t-value of 18.876. Since the significance value is less than 0.05, it can be concluded that GDP has a significant influence on PAD. The positive regression coefficient shows that the relationship between GDP and PAD is one-way or positive, meaning that an increase in the value of GDP will be followed by an increase in PAD.

This equation can be interpreted as that every increase of 1 billion rupiah in the GDP value of a district will cause an increase in PAD of 7.768 billion rupiah, assuming other factors remain. This coefficient value also indicates the level of regional fiscal elasticity, where regions with high GDP tend to have greater fiscal capacity to increase their PAD.

Statistically, the results of this analysis indicate that the hypothesis proposed in this study is accepted, namely that GDP has a positive and significant effect on PAD. A very small significance value (0.000) indicates that the probability of error in drawing this conclusion is almost zero, so the level of confidence in the results of this test is very high. Thus, it can be concluded that the increase in economic activity in a region as reflected through the size of GDP will have a real impact on the increase in local income.

This result is in line with the economic theory of regional development which states that the higher the economic growth rate of a region, the greater the potential for regional revenue that can be developed by the local government. GDP describes the total added value generated by various economic sectors in a region, such as agriculture, industry, trade, and services. When regional economic activity increases, the potential for revenue from regional taxes, levies, and other sources of PAD will also increase. Therefore, the size of GDP can be an important indicator for local governments in designing strategies to increase PAD.

The findings of this study are consistent with the results of previous studies that show a positive relationship between GDP and PAD. For example, research conducted by Sukmana (2019) and Arianti and Kusuma (2020) found that economic growth reflected in increasing GDP contributes significantly to the increase in PAD in various regions in Indonesia. The results of this study also strengthen the view that regional economic development has an important role in increasing the fiscal independence of local governments, because the ability of regions to generate their own income will increase along with their economic growth.

Overall, the results of the analysis show that GDP is the main factor that affects the level of PAD in districts/cities in East Java Province. Areas with high GDP values, such as Sidoarjo, Gresik, and Malang Regencies, tend to have high PAD. On the other hand, areas with low GDP such as Sampang and Pacitan Regencies have relatively small PAD. Therefore, regional economic development policies that are directed to increase economic added value in various productive sectors will have a positive impact on improving regional fiscal capabilities and the financial independence of local governments. Thus, it can be concluded that the increase in GDP has a positive and significant effect on the Regional Original Revenue (PAD) of districts/cities in East Java Province in 2021.

5. Discussion

The results of the simple linear regression analysis show that Gross Regional Domestic Product (GRDP) has a positive and significant effect on Regional Original Revenue (PAD) in the districts of East Java Province in 2021. The coefficient of determination (R^2) of 0.930 indicates that 93% of the variation in PAD is explained by GRDP, while the remaining 7% is influenced by other factors such as tax policies, levy management, asset utilization, and local fiscal capacity. The calculated t-value of 18.876 with a significance level of $0.000 < 0.05$ confirms that GRDP has a statistically significant positive impact on PAD, supporting the research hypothesis (H_1). These findings reinforce public finance and fiscal decentralization theory, suggesting that economic growth reflected by increasing GRDP enhances the region's ability to generate its own revenues. Economic expansion encourages greater production, trade, and consumption, which in turn broaden the regional tax base and increase revenues from local taxes and levies.

This study's results are consistent with previous research, such as Rahula and Bowo (2021) in Central Java and Putra and Rosliani (2021) in West Sumatra, both of which identified a positive correlation between GRDP and PAD. Similarly, Waskito et al. (2019) in Aceh found that economic growth significantly drives PAD, though its effectiveness depends on fiscal policy implementation. However, this study contributes new insights by emphasizing East Java's diverse economic structure. Districts like Gresik, Sidoarjo, and Pasuruan dominated by manufacturing and trade, show a strong GRDP-to-PAD link, while agricultural-based regions such as Sumenep, Bondowoso, and Pacitan exhibit weaker effects. Thus, the magnitude of GRDP's influence on PAD largely depends on regional economic composition and fiscal management capacity.

Practically, these findings highlight that economic growth must be supported by effective local fiscal policies. High GRDP growth does not automatically translate into higher PAD without efficient tax collection and revenue optimization (Hariandja, 2020). Therefore, local governments should strengthen tax administration systems, expand tax bases, and improve financial transparency. Investment in infrastructure and human capital is also essential to maximize the multiplier effect of growth on PAD. In conclusion, GRDP growth serves as a key driver of regional fiscal independence in East Java. Sustained economic development, coupled with adaptive and innovative fiscal management, will enable regions to finance development more independently and reduce reliance on central government transfers.

6. Conclusion

Based on the results of the analysis and discussion that has been carried out, it can be concluded that the Gross Regional Domestic Product (GDP) has a positive and significant effect on Regional Original Income (PAD) in the districts of East Java Province in 2021. A determination coefficient value (R^2) of 0.930 indicates that 93% of PAD variations can be explained by GDP, while the remaining 7% is influenced by other factors outside the model, such as regional fiscal policies, tax administration efficiency, and regional asset management. The t-value calculated as 18.876 with a significance level of 0.000 strengthens the evidence that regional economic growth reflected in the increase in GDP makes a real contribution to the increase in PAD. These results are consistent with public finance theory and previous research results that state that regional economic growth plays an important role in increasing the fiscal capacity of local governments. In other words, the higher the GDP of a district, the greater the ability of the region to increase its original revenue through taxes and levies.

In practical terms, these findings show that local governments need to focus on economic development strategies that encourage productive sectors so that GDP growth has a direct impact on increasing PAD. However, economic growth must be followed by strengthening fiscal policies, increasing the effectiveness of tax collection, and sustainable management of regional resources. Thus, the increase in GDP not only reflects economic growth, but also becomes an important instrument to achieve regional fiscal independence and sustainable economic development in East Java Province.

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