

## **Analysis of the Impact of GRDP, Population, and Domestic Tourist Numbers on Local Revenue (PAD) in Bogor Regency and Bandung Regency**

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### ABSTRACT

This study analyzes the effect of Gross Regional Domestic Product, population size, and domestic tourist arrivals on locally-generated revenue in Bogor and Bandung Regencies. Using secondary data from Statistics Indonesia, the Directorate General of Fiscal Balance, and West Java open data for 2015–2024, separate multiple linear regressions were run for each regency. Results show GRDP has a significant positive effect on locally-generated revenue in Bogor, while population and tourist numbers are insignificant. In Bandung, GRDP, population, and domestic tourists all have no significant effect. The findings indicate that economic potential does not automatically increase locally-generated revenue, so local governments should strengthen revenue management to convert existing economic capacity into regional development.

## **INTRODUCTION**

One of the aims of implementing regional autonomy and fiscal decentralization is to lessen financial reliance on the federal government and increase regional independence. The region's capacity to regulate its own local revenue is directly related to its increased regional autonomy. Local decision-makers can allocate income more freely in accordance with local expectations, needs, and development priorities when a area is more successful in generating its own revenue. Revenue stream optimization is essential for boosting regional fiscal strength and, as a result, for implementing regional autonomy (Sahrudin & Syahid, 2025). The revenue of regional governments usually depends on how well the local economy is doing. A region's potential for local income from local taxes, fees, and the management of particular regional government assets increases with its economic activity.

The financial independence of municipal governments is a crucial component of the success of regional autonomy. They are able to fund development initiatives and enhance services for locals thanks to this financial capability, all without depending on funding from the federal government. As a result, the financial autonomy of municipal governments is a necessary condition for the central government to grant autonomy. One of the goals of regional autonomy is to foster citizen engagement and raise the bar for public services. Consequently, a number of administrative responsibilities have been shifted to municipal and district governments (BPK RI, 2020).

All aspects of government, save for foreign policy, defense, security, justice, monetary and fiscal policy, religion, and similar fields, fall under the purview of a region's responsibilities. This wide range of obligations, as one might expect, has ramifications for how areas use their power. One result is that each region must be able to support all of its own governmental and developmental initiatives. Regional revenue must become the main source of funding by lowering reliance on central government resources. A crucial need for a functional administrative structure is a policy of financial parity between the central and regional governments, and this policy is backed by it (Syahrial & Sutoyo, 2014).

The regencies of Bogor and Bandung, which are renowned for their wide variety of spectacular tourist sites, are especially noteworthy. These attractions include cultural, historical, and natural landmarks that draw thousands of tourists every year. Tourism is essential for people in the modern world. Our increasingly hectic daily lives call for amusement and time to unwind with loved ones.

Tourism not only powers the local economy but may also generate revenue for areas via taxes and fees. In addition, Law No. 33 of 2004 governs the allocation of funds between the central and regional governments in accordance with the tenet of "finance follows function." This indicates that the transition of authority to regional governments is accompanied by the movement of funds that were formerly under the jurisdiction of the central government (Ladjin, 2008). Bogor and Bandung Regencies have a lot of potential, and they make a big

contribution to the area's economy when compared to other regencies and cities in West Java Province. The essential role of these two regencies in fostering regional financial autonomy and facilitating development financing is highlighted by this significant contribution. Nonetheless, in order to ensure sustainability and maximize the realization of the region's economic potential, the expansion of these contributions must be monitored on a regular basis.

This research looks at the disparity between the economic prospects of the Bogor and Bandung regencies and their actual spending from locally generated regional revenue. Both areas have big populations, fairly high regional gross domestic products (GRDP), and considerable local tourist figures. However, the economic potential of the regions as a source of income has not been fully realized, as evidenced by the erratic increase in self-generated regional revenue.

In addition, past research on the effects of gross domestic product, population size, and domestic tourism on regional income has produced conflicting findings. The significance of this research for a more accurate understanding is highlighted by regional disparities, varying study lengths, and the changing economic landscape brought about by the COVID-19 epidemic. The goal of this research, then, is to develop an analytical framework for decision-making in order to enhance regional fiscal independence, with a focus on the regencies of Bogor and Bandung.

## **THEORETICAL REVIEW**

### ***Teori Multiplier Effect***

Each region possesses unique resources from the perspective of the central government. Every area has its own unique strengths that may be used to prioritize needs. Income varies by region as well. Regions with lower incomes often have a higher marginal propensity to consume (MPC). The multiplier effect of government spending can be amplified by using this. The multiplier effect is how changes in expenditures made by the government or the private sector cause greater fluctuations in the country's income. Keynes (1936) argues that government expenditure has the potential to set off a chain reaction that raises the economy's total income.

The multiplier effect operates as follows:

- a. Higher expenditure: Money flows to building firms, construction laborers, and suppliers when the government boosts its spending, such as via infrastructure projects.
- b. Income increases: These payments have increased the financial resources of contractors and suppliers. They are able to buy a wide range of products and services, which in turn boosts the revenue of other companies.
- c. Recurring spending: This occurs when companies and construction employees get extra revenue. This results in higher demand, which in turn leads to greater output and higher earnings. The multiplier impact is produced by the continuation of this process.

The multiplier, the ratio of additional income spent on goods and services, is referred to by Keynes as the marginal propensity to consume (MPC). The multiplier effect in the economy is amplified by a higher MPC, which indicates

that a larger percentage of additional income is used for consumption. However, a crucial component of the MPC is that the majority of this extra income is saved, which reduces the multiplier's impact on boosting economic production. Aggregate demand must rise in order to promote a higher rate of economic growth and reach the ideal level of consumption within the economy's money supply (Ulfa et al., 2025).

According to Keynes's multiplier theory, there is generally a positive correlation between municipal income and regional gross domestic regional product (GRDP). This is based on the idea that more government expenditure causes a chain reaction that raises people's income through the multiplier effect. Residents then reinvest this additional income in the purchase of products and services, which boosts economic activity and contributes to a rise in the region's GRDP. As the municipal tax base expands in tandem with increased economic activity, this rise in GRDP is indicative of regional economic expansion, which in turn has a beneficial effect on consumption propensity. Examples of municipal taxes are those levied on hotels, restaurants, entertainment, and real estate. The multiplier effect strengthens the beneficial link between increases in the tendency to consume and GRDP growth as long as the marginal propensity to consume remains high enough and economic outflows from the area are minimal.

H1: It is suspected that the GRDP variable has a positive effect on Regional Original Income in Bogor Regency and Bandung Regency.

### ***Population Trap Theory***

The demographic foundation for the development of numerous policies is often the population of a region. A number of important factors, including birth rates, mortality, and migration, affect how a population changes over time. The Malthusian theory of population addressed initial worries about the dangers of a fast rising population. In his book "An Essay on the Principles of Population," Thomas Malthus first put forth this idea. Malthus claimed that the capacity to produce enough food might be negatively impacted by rapid population increase (Raharto, 2020).

Thomas Robert Malthus is regarded as one of the earliest minds to address the issue of population. In his book "An Essay on Population," he maintained that food is essential to human existence and that the innate desire to procreate cannot be restrained. Consequently, the rise in population tends to outpace the increase in food supply. According to Malthus' hypothesis, population growth follows a geometric progression, but food production only rises arithmetically. From Malthus's viewpoint, this scenario represents an undesirable imbalance, considering the population boom in cities that is not supported by sufficient food.

Additionally, Malthus's hypothesis highlighted the necessity of maintaining a balance between exponential population expansion and a linear increase in the food supply. This line of reasoning emphasizes the problem of environmental sustainability and resource scarcity. Land, as a component of the natural environment, is restricted in its capacity to produce agricultural goods that can satisfy the demands of an expanding population. Due to increased human pressure, the land's ability to support life tends to deteriorate as the

population grows. As a result, population expansion must be kept within the bounds of ecological sustainability to prevent excessive stress that might cause a variety of environmental calamities, including floods, droughts, crop failures, famine, the spread of disease, and higher mortality rates.

He believes that a number of strategies may be used to keep the population size in proportion to the resources that are available. These mechanisms include preventative measures like raising the marriage age, regulating sexual impulse, and restricting or banning marriage. Positive control mechanisms, such as war, disease outbreaks, natural disasters, and increased crime rates, also have a role to play. The following is a summary of some of Robert Malthus's theories on the subject of overpopulation:

- a. The quantity of organisms (including flora and fauna) would rise quickly if there were no boundaries, soon covering nearly the whole planet.
- b. While food is essential for human survival, its availability is increasing at a rate that is far lower than that of the population, which is growing at a geometric rate. (Bidarti, 2020).

The founders of this school of thought, Karl Marx and Friedrich Hegel, disagreed with Malthus, notably in his belief that unchecked population increase would result in food shortages. Population pressure in a country, from a Marxist standpoint, is not a threat to food security; rather, it is the consequence of a lack of employment, particularly in capitalist economies. Furthermore, Marxists contend that population restrictions become meaningless as productive capacity expands along with population growth. The United States, Great Britain, France, Australia, and Canada are examples of nations with capitalist economies that tend to support Malthus's theory. In contrast, nations with socialist economies, such as Russia, Eastern European nations, China, North Korea, and Vietnam, are more likely to embrace Marxist theory.

In the 20th century, Malthusian theory experienced a resurgence in popularity. While this group supported Malthus's ideas, they held more extreme views and vehemently advocated population reduction through "preventive measures" namely, the use of contraception. In the 1960s and 1970s, satellite imagery depicted the Earth as a ship with limited food and fuel supplies. Eventually, this ship would run out of resources, leading to disaster. In 1871, Ehrlich published a book titled "The Population Bomb," later renamed "The Population Explosion," in which he discussed the following points:

- a. The current world population is very high.
- b. Food supplies are very limited.
- c. Population growth can damage ecosystems.

Meadow supports this investigation: He discusses the connection between pollution and environmental variables (population size, agricultural output, industry, and natural resources) in his book "The Limits to Growth". However, a catastrophe is still unavoidable; all that humanity can do is wait and regulate its expansion by using good environmental management. The majority of the criticism of Meadow's work comes from sociologists, who argue that he doesn't give enough consideration to social and cultural variables in his analysis.

H2: It is suspected that the population variable has a positive effect on local revenue in Bogor Regency and Bandung Regency

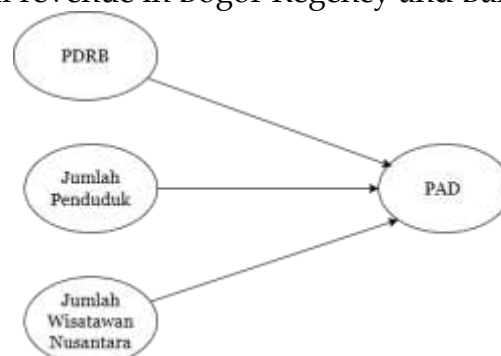
### *Tourism Multiplier Theory*

In several nations, the tourism industry has turned into a promising engine of economic growth and a top development priority. This industry is essential to promoting the Asia-Pacific region, fostering economic development, and generating employment. Tourism is one of the biggest and quickest-growing economic industries in the twenty-first century. The tourism sector comprises a big value chain that works to manage and expand the economic value created by travel. Since this industry contributes to the state budget, the government is dedicated to enhancing and managing Indonesia's tourism potential in order to draw in visitors from both at home and abroad, hence boosting foreign exchange revenue (Rizaludin, 2023).

Tourism development also has the beneficial effect of raising the income of the community. As tourist numbers rise and associated economic sectors expand, local incomes also rise. This supports the tourism multiplier effect idea put forth by (Archer.B.H, 1976) each dollar spent by tourists has a multiplier effect on the local economy. For example, hotels utilize tourist expenditure to buy food from local farmers, who in turn use the funds to buy other products and services. Tourist expenditure can thereby boost the local economy and raise the community's total income.

The multiplier effect in the tourism industry, according to Archer, cannot be adequately expressed by a single mathematical formula or a certain curve. Instead, it should be understood as a mechanism for disseminating economic consequences that includes direct, indirect, and induced consequences. By taking this strategy, we can gain a more complete picture of how tourism generates increased local revenue, including tax and fee income, which is a component of the local basic income. As a result, the strategic role of the tourism industry in enhancing local fiscal independence is explained by Archer's tourism multiplier theory.

H3: It is suspected that the variable Number of Domestic Tourists has a positive effect on local revenue in Bogor Regency and Bandung Regency



**Figure 1. Conceptual Framework**

## **METHODOLOGY**

Quantitative methods are used in this study. Quantitative methods concentrate on utilizing statistical approaches to data analysis and numerical

measurements of research variables to test hypotheses. The goal of this research, which takes a deductive approach, is to test specific hypotheses that have been established in advance. Additionally, quantitative research is rooted in the conventional positivist paradigm, which has empirical and experimental foundations (Siroj et al., 2024).

The province of West Java, specifically the Bandung and Bogor Regencies, was the site of this study. Because Bandung is an administrative center with an economy based on agriculture and creative industries and is geographically close to mountainous regions, and Bogor has the largest population in West Java, the researchers selected these sites. From 2015 to 2024, the study lasted for ten years.

According to (Siroj et al., 2024) Every item examined in the scope of this study makes up the population. The province of West Java is where this research community is based. The sample comprises a portion of the population and reflects all of the data collected during the study. Bandung Regency and Bogor Regency make up the sample. These two regencies have a large population, thriving tourism industry, and bustling economy. These two regencies share many similarities, but they also diverge in how their regional income (PAD) has grown. This makes them useful for analysis in order to better comprehend the impact of regional gross domestic product (GRDP), population size, and the quantity of domestic tourists on PAD. There are 20 observations overall.

Regression analysis is used in this study to quantify and evaluate the relationships between different variables. Research often distinguishes between independent variables (factors that affect outcomes) and dependent variables (factors that are affected by other factors). Using regression analysis, researchers can quantitatively assess the effect and magnitude of independent factors on the dependent variable.

## RESULTS

### *Multiplr Linier Regression Analysis*

The specifications of the empirical regression analysis model are as follows:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \mu_i \dots\dots\dots(1)$$

Y = Local Revenue

$\alpha$  = Constanta

X1 = GRDP

X2 = Population

X3 = Number of Domestic Tourists

$\beta_1, \beta_2, \beta_3$  = Regression Coefisien

$\mu_i$  = Error caused by random factors

### *Normality Test*

Table 1. Results of the Normality Test Bogor Regency  
**One Kolmogrov - Smirnov**      **Unstandardized**  
**Test**      **Residual**

Asymp. Sig. (2 Tailed)	0,172
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Table 2. Results of the Normality Test Bandung Regency  
**One Kolmogrov - Smirnov Test**      **Unstandardized Residual**  


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Asymp. Sig. (2 Tailed)      0,200

The Kolmogorov-Smirnov test (K-S test) yielded asymptotic significance values (two-sided) of  $0.172 > 0.05$  and  $0.200 > 0.05$  for the administrative regions of Bogor and Bandung, respectively, according to the results of the normality test for these regions. As a result, it may be said that the normality test was successful in both administrative regions, indicating that the data were normally distributed.

**Multikolinierity Test**

Table 3. Results of the Multikolinierity Test Bogor Regency

Variable	Tolerance	Provisons	VIF	Provisions	Provisions
PDRB (X1)	0,768	$\geq 0,100$	1,302	$\leq 10,00$	No Multicollinearity
JP (X2)	0,936	$\geq 0,100$	1,069	$\leq 10,00$	No Multicollinearity
JWN (X3)	0,759	$\geq 0,100$	1,318	$\leq 10,00$	No Multicollinearity

Table 4. Results of the Multikolinierity Test Bandung Regency

Variable	Tolerance	Provisions	VIF	Provisions	Notes
PDRB (X1)	0,578	$\geq 0,100$	1,729	$\leq 10,00$	No Multicollinearity
JP (X2)	0,378	$\geq 0,100$	2,646	$\leq 10,00$	No Multicollinearity
JWN (X3)	0,484	$\geq 0,100$	2,066	$\leq 10,00$	No Multicollinearity

Multicollinearity testing for both Bogor and Bandung Regencies yielded tolerance  $> 0.100$  and VIF  $< 10$  for every variable, which indicates no multicollinearity is present in the regression model.

**Heteroskedasticity Test**

Table 5. Results of the Heteroskedasticity Test Bogor Regency

Variable (Y)	Sig 2 - Tailed (X1)	Sig 2 - Tailed (X2)	Sig 2 - Tailed (X3)	Provisions	Notes
PAD	0,850	0,426	0,507	$> 0,05$	No Heteroskedasticity

Table 6. Results of the Multikolinierity Test Bandung Regency

Variabel (Y)	Sig 2 - Tailed (X1)	Sig 2 - Tailed (X2)	Sig 2 - Tailed (X3)	Provisions	Notes
PAD	0,311	0,071	0,061	> 0,05	No Heteroskedasticity

The heteroscedasticity test is crucial, and the significance values for Bogor Regency and Bandung Regency were found to be greater than 0.05. This result demonstrates that the regression model does not suffer from heteroscedasticity. Consequently, there is no significant association between the residuals and the variables examined in the model.

*Autocorrelation Test (Durbin Watson)*

Table 7. Results of the Autocorrelation Test Bogor Regency

R	R - Square	Adjusted R-Square	Std. Error of the Estimate	Durbin Watson
0,948	0,898	0,848	3,005,957	2,517

Table 8. Results of the Autocorrelation Test Bogor Regency

R	R - Square	Adjusted R-Square	Std. Error of the Estimate	Durbin Watson
0,974	0,949	0,924	493,833	2,157

The autocorrelation test of this study produced Durbin-Watson statistics of 2.517 for Bogor Regency and 2.157 for Bandung Regency. Using 10 observations, three independent variables, and a 0.05 significance level, the critical values are  $dL = 0.5253$ ,  $dU = 2.0163$ ,  $4 - dU = 1.9837$ , and  $4 - dL = 3.4747$ . The Durbin-Watson value for Bogor Regency falls between 1.9837 and 3.4747, placing it in the inconclusive region, so the presence of autocorrelation cannot be confirmed or rejected. Similarly, the value for Bandung Regency also lies within 1.9837 and 3.4747, yielding an indeterminate result. Since the Durbin-Watson test did not provide a definitive conclusion, a run test was performed to further examine autocorrelation.

**Autocorrelation Test (Run Test)**

Table 9. Results of the Autocorrelation Test Bogor Regency

<b>Unstandardized Residual</b>	
Test Value <sup>a</sup>	-8.12580
Cases < Test Value	5
Cases >= Test Value	5
Total Cases	10
Number of Runs	6
Z	0,000
Asymp. Sig. (2 - Tailed)	1,000

Table 10. Results of the Autocorrelation Test Bandung Regency

<b>Unstandardized Residual</b>	
Test Value <sup>a</sup>	-0.27566
Cases < Test Value	5
Cases >= Test Value	5
Total Cases	10
Number of Runs	6
Z	0,000
Asymp. Sig. (2 - Tailed)	1,000

The test outcomes above indicate that the asymptotic two-tailed significance value for both areas is 1.000. Because this figure exceeds 0.05, the model equation can be considered free from autocorrelation.

**Regression Analysis**

Table 11. Results of the Regression Analysis Bogor Regency

<b>Model</b>	<b>Unstandardized Coefficients</b>		<b>Standardized Coefficients Beta</b>	<b>t</b>	<b>Sig.</b>
	<b>B</b>	<b>Std. Error</b>			
(Constant)	-254.209	382.904		-0.664	0.531
PDRB (X1)	0,00003691	0,000	0.928	6.287	0.001
JP(X2)	-0,0000007263	0,000	-0.002	-0.011	0.992
JWN(X3)	0,002	0,000	0.040	0.260	0.803

$$PAD = -254.209 + 0,00003691PDRB - 0,0000007263JP + 0,002JWN + \mu \dots (2)$$

For the first regression model, the intercept is -254.209 billion rupiah, indicating that local government revenue would decline by that amount if regional GRDP, population, and domestic tourist numbers remained constant. Regional GRDP exhibits a positive influence with a coefficient of 0.00003691, meaning a 1% rise in GRDP would increase local government revenue by 0.00003691 billion rupiah when other variables are held fixed. Population shows a negative association with a coefficient of -0.0000007263, so a 1% growth in population would reduce local government revenue by 0.0000007263 billion rupiah. In contrast, domestic tourist arrivals have a positive impact with a coefficient of 0.002, suggesting that a 1% increase in tourist numbers would raise local government revenue by 0.002 billion rupiah, assuming GRDP and population do not change.

Table 12. Results of the Regression Analysis Bandung Regency

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	590477.478	515054.34		1.146	0.295
PDRB (X1)	-0.001	0.011	-0.062	-0.133	0.899
JP(X2)	-0.159	0.154	-0.475	-1.027	0.344
JWN(X3)	3.859	5.199	0.259	0.742	0.486

$$PAD = 590477.478 - 0,001PDRB - 0.159JP + 3.859JWN + \mu \dots (3)$$

In the second regression model, the constant is 590,477,478 billion rupiah, implying that regional income would increase by that value if regional GRDP, population, and domestic tourist arrivals were held constant. Regional GRDP carries a negative coefficient of -0.001, thus a 1% increase in GRDP would lower regional income by 0.001 billion rupiah with other factors unchanged. Population also exerts a negative effect with a coefficient of -0.159, indicating that a 1% rise in population would decrease regional income by 0.159 billion rupiah. Conversely, domestic tourist arrivals demonstrate a positive effect with a coefficient of 3.859, meaning a 1% increase in tourist numbers would boost regional income by 3.859 billion rupiah, assuming GRDP and population remain constant.

**Coefficient of Determination ( $R^2$ )**

Table 13. Results of the Coefficient of Determination Bogor Regency

<b>R</b>	<b>R Square</b>	<b>Adjusted R Square</b>
0.935	0.874	0.811

The coefficient of determination for Bogor Regency is 0.811, which indicates that regional GRDP, population size, and domestic tourist arrivals jointly account for about 81.1% of the variation in regional income. The remaining 18.9% is attributable to other factors not included in this analysis.

Table 14. Results of the Coefficient of Determination Bandung Regency

<b>R</b>	<b>R Square</b>	<b>Adjusted R Square</b>
0.693	0.481	0.221

For Bandung Regency, the adjusted  $R^2$  is 0.221, meaning that regional GRDP, population, and domestic tourist numbers collectively explain 22.1% of the fluctuations in regional income. The other 77.9% is determined by variables beyond the scope of this research.

**F Test**

Table 15. Results of the F Test Bogor Regency

	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
Regression	46638.630	3	15546.210	13.904	0.004
Residual	6708.440	6	1118.073		
Total	53347.071	9			

In Bogor Regency, the significance value is 0.004, which is below the 0.05 threshold. This result demonstrates that gross regional product, population, and domestic tourist arrivals collectively exert a significant effect on regional income in Bogor Regency.

Table 16. Results of the F Test Bandung Regency

	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
Regression	2653986423.400	3	884662141.133	1.852	0.238
Residual	2865983907.678	6	477663984.613		
Total	5519970331.079	9			

For Bandung Regency, the significance value is 0.238, exceeding 0.05. This suggests that gross regional product, population, and domestic tourist arrivals do not have a significant collective impact on regional income in Bandung Regency.

*t Test*

Table 17. Results of the t Test Bogor Regency

Variabel	t-hitung	t-tabel	Sig.
PDRB (X1)	6.287	2.4469	0.001
JP (X2)	-0.011	2.4469	0.992
JWN (X3)	0.260	2.4469	0.803

Using a t-test with 6 degrees of freedom and  $\alpha/2 = 0.025$ , the critical t-value is 2.4469. Regional gross domestic product recorded a t-statistic of 6.287 and a significance value of 0.001. Since the computed t exceeds the critical value and the p-value is below 0.05, the null hypothesis is rejected in favor of the alternative hypothesis, confirming that regional GRDP significantly affects regional income in Bogor Regency. In contrast, population produced a t-statistic of -0.011 with a significance value of 0.992, while domestic tourist arrivals showed a t-statistic of 0.260 with a significance value of 0.803. Both t-statistics are lower than 2.4469 and their significance values exceed 0.05, so the null hypothesis is retained and the alternative hypothesis is rejected. Hence, neither population nor domestic tourist numbers have a significant influence on regional income in Bogor Regency.

Table 18. Results of the t Test Bandung Regency

Variabel	t-hitung	t-tabel	Sig.
PDRB (X1)	-0.133	2.4469	0.001
JP (X2)	-1.027	2.4469	0.992
JWN (X3)	0.742	2.4469	0.803

The t-test for Bandung Regency, conducted with 6 degrees of freedom and  $\alpha/2 = 0.025$ , produced a critical t-value of 2.4469. Regional gross domestic product showed a t-statistic of -0.133 with a significance value of 0.001. Because the absolute value of the calculated t is lower than the critical value, the null hypothesis is retained and the alternative hypothesis is rejected, indicating that regional GRDP does not significantly influence regional income. Population recorded a t-statistic of -1.027 with a significance value of 0.992, while domestic tourist arrivals had a t-statistic of 0.742 with a significance value of 0.803. Since both t-statistics fall below the critical threshold of 2.4469 and their significance values exceed 0.05, the null hypothesis is accepted for each, meaning that neither population nor domestic tourist numbers have a significant effect on regional income in Bandung Regency.

## **DISCUSSION**

### ***Bogor Regency***

#### ***The Impact of GRDP on Local Revenue***

The t-test outcome reveals that the computed t-statistic of 6.287 surpasses the critical value of 2.4469, with a significance of 0.001 which is below 0.05. As a result, the null hypothesis is rejected and the alternative hypothesis is supported, confirming that regional gross domestic product positively and significantly affects regional income in Bogor Regency. This relationship aligns with Keynesian principles, since strong household consumption, capital inflows into the industrial zones of Cibinong and Sentul, government expenditure that generates multiplier effects, and trade surpluses in goods and services especially from tourism activities in Puncak raise GDRP and thereby expand the local tax base, including land and building acquisition duty, advertisement tax, and hotel and restaurant taxes. The findings also substantiate the economic base theory, which argues that export-oriented base sectors stimulate non-base sectors that subsequently contribute to regional tax revenue. Bogor Regency's advantageous position adjacent to Jakarta, supported by Jagorawi toll road access, rail connectivity, and abundant natural resources in agriculture, forestry, fisheries, and livestock, further reinforces the industrial clusters in Gunung Putri, Cibinong, and Cileungsi. Consequently, the value added across sectors in GRDP directly enhances Bogor Regency's regional income.

#### ***The Impact of Population Size on Local Revenue***

The t-test findings indicate that the computed t-statistic of -0.011 falls below the critical threshold of 2.4469, with a significance value of 0.992 which exceeds 0.05. Consequently, the null hypothesis is retained and the alternative hypothesis is dismissed, showing that population size does not significantly affect regional revenue in Bogor Regency. This outcome corresponds with the Malthusian perspective that a rise in population without sufficient job creation imposes a fiscal load, since government outlays for essential services grow while tax receipts do not increase at the same rate. Bogor Regency's function as a supporting area for Jakarta highlights this situation. Because of daily commuting patterns, many residents are employed and spend in Jakarta, so their tax payments and economic activities are not recorded within Bogor Regency's revenue base. Evidence from 2020 supports this view: although the population contracted by 9.02% during the pandemic, regional locally-generated revenue actually climbed substantially in 2021. This suggests that regional fiscal capacity relies more heavily on local economic activity than on the number of residents. Population expansion tends to drive regional spending up more quickly than revenue, meaning the condition that residents' capacity to pay contributes to fiscal strength is not satisfied.

#### ***The Impact of Domestic Tourist Numbers on Local Revenue***

The t-test outcome shows a calculated t-statistic of 0.260, which is lower than the critical value of 2.4469, and the significance level is 0.803, exceeding 0.05. For that reason, the null hypothesis is retained while the alternative hypothesis

is rejected, indicating that domestic tourist arrivals do not significantly influence regional income in Bogor Regency. In theory, tourists act as invisible exporters who purchase lodging, meals, admission tickets, parking, and souvenirs, creating a multiplier effect through hotel and restaurant taxes as well as regional levies. This process, however, presumes that visitors stay overnight, spend at tax registered businesses, and that the generated tax revenue is transferred to the regional treasury. The condition in Bogor Regency differs because most visits are day trips from Jakarta with no overnight stays, so hotel tax collections remain limited. In addition, numerous tourist sites are managed privately, so their earnings are not fully captured as Locally Generated Revenue. Economic activity surrounding these attractions is also largely informal, with transactions that are seldom documented officially. This pattern became evident in 2020 when tourist numbers fell by 98.94% during the pandemic, yet the drop in Locally Generated Revenue was comparatively modest and rebounded in 2021. Consequently, Bogor Regency's Locally Generated Revenue is not reliant on tourism, since the taxable base derived from visitor spending remains inadequate.

### ***Bandung Regency*** ***The Impact of GRDP on Local Revenue***

The t-test produced a computed t-statistic of -0.133, which falls below the critical threshold of 2.4469 with a significance level of 0.001. Even though the p-value is under 0.05, the absolute t-value does not exceed the critical value, so the null hypothesis is retained and the alternative hypothesis is rejected. This indicates that regional gross domestic product does not exert a significant effect on regional income in Bandung Regency. The link between GDRP and regional income is disrupted because the local economy is largely driven by agriculture and manufacturing, where most tax receipts are allocated to the central government, whereas regional taxation relies on the service sector that still holds a relatively small portion of the economy. Household consumption remains limited, investment tends to generate import leakages, public expenditure is primarily directed toward operational expenses, and manufacturing export earnings accrue to the central government. As a result, key Keynesian assumptions such as a strong marginal propensity to consume, minimal import leakages, and productive government spending are not fulfilled. This finding aligns with the adjusted  $R^2$  of 0.221, implying that 77.9% of the variation in locally-generated revenue is attributable to factors outside the model, including ineffective tax administration and underutilization of the region's primary economic potential.

### ***The Impact of Population Size on Local Revenue***

The t-test outcome indicates a calculated t-statistic of -1.027, which is lower than the critical value of 2.4469, and the p-value is 0.992, exceeding 0.05. Hence, the null hypothesis is retained and the alternative hypothesis is dismissed, meaning population size does not significantly influence regional income in Bandung Regency. This finding is in line with Malthusian theory, which argues that population expansion without corresponding productivity gains becomes a fiscal liability. In Bandung Regency, annual population growth of 0.86% to 1.84%

is not matched by growth in the formal employment sector or sufficient per capita income, thereby restricting contributions to the local tax base. A large portion of residents reside in rural areas and are employed as agricultural laborers or factory workers earning a minimum wage of 3.6 million rupiah, and 60% of the territory comprises mountainous terrain and farmland. Consequently, regional expenditure on education, healthcare, and infrastructure rises while tax revenue remains largely unchanged. The regression coefficient of -0.159 reinforces that population increases add to fiscal burdens rather than income, since the requirements for “ability to pay” namely engagement in the formal workforce and a low dependency ratio are not yet fulfilled.

### ***The Impact of Domestic Tourist Numbers on Local Revenue***

The t-test results reveal a computed t-statistic of 0.803, which is below the critical threshold of 2.4469, and the p-value of 0.803 exceeds 0.05. As a result, the null hypothesis is accepted and the alternative hypothesis is rejected, showing that domestic tourist numbers do not significantly affect regional income in Bandung Regency. In principle, tourism is expected to create multiplier effects through spending on hotels, restaurants, and related services, assuming limited leakages, a value chain that relies on local inputs, and adequate visitor length of stay. Yet the actual conditions in Bandung Regency differ, since most visits are day trips without overnight accommodation, leading to negligible hotel tax receipts. Many prominent attractions like Kawah Putih, Ranca Upas, and Tangkuban Perahu are operated by regional tourism agencies or private firms, so their earnings are not fully channeled into local government revenue. Local linkages remain weak because hotels and restaurants depend heavily on supplies from outside the region and on commuter employees, which obstructs the development of indirect and induced multiplier effects. Regional budget records from 2015 to 2024 indicate that hotel taxes, restaurant taxes, and tourism levies together accounted for only 4.1% to 6.3% of total locally-generated revenue. In 2023, tourist arrivals dropped by 73.19%, yet locally-generated revenue declined by merely 2.1%, demonstrating that locally-generated revenue is not contingent on tourism. Therefore, owing to structural constraints and breaks in the multiplier chain, Archer’s multiplier effect framework does not hold in Bandung Regency.

## **CONCLUSIONS AND RECOMMENDATIONS**

Gross Regional Domestic Product significantly influences regional income in Bogor Regency, with a calculated t-statistic of 6.287 that exceeds the critical value of 2.4469 and a significance level of 0.001. This effect stems from the Keynesian multiplier mechanism operating via household consumption, investment, and public expenditure, which subsequently impacts the local tax base. Conversely, in Bandung Regency, regional GRDP is not significant, as the computed t-statistic of 0.133 falls below the critical threshold of 2.4469. Contributing factors include modest consumption patterns, substantial emigration, and limited multiplier effects. Population does not affect regional income in either area, reflected by a t-statistic of -0.011 with a significance of 0.992 for Bogor and -1.027 with a significance of 0.992 for Bandung. This aligns with

Malthusian theory suggesting that a population characterized by low productivity and weak purchasing power imposes a fiscal load. Domestic tourist arrivals are likewise insignificant, showing a t-statistic of 0.260 and significance of 0.803 in Bogor and 0.742 with significance of 0.803 in Bandung, since Archer's multiplier effect is not realized due to the prevalence of day-trip visits, considerable leakages, fragile local linkages, and revenue from attractions that is not fully captured by regional government funds.

### FURTHER STUDY

For the regional governments of Bogor and Bandung, it is suggested to enhance tax performance by aligning the tax base with gross regional domestic product. Bogor Regency should improve tax collection efficiency and consolidate data from the Land and Building Acquisition Duty authority within the real estate and hospitality segments located in industrial zones and Sentul. Bandung Regency should advance agricultural processing and creative industries, while reopening revenue-sharing negotiations with Perhutani and state-owned enterprises to reduce income leakages from tourism. Future research should incorporate tax compliance, actual capital expenditure, or the scale of economic leakages as moderating variables, expand the observation window to 15–20 years, employ quarterly data to detect lagged impacts of GRDP, and distinguish between tourists who stay overnight and those on day trips to evaluate Archer's theory more precisely.

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