

Analyzing Tourism-Led Economic Growth in Banten Province: A Semi-Log Regression Approach and Econometric Re-Evaluation

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Article Info	Abstract
Article history: Received March 10, 2026 Revised April 13, 2026 Accepted June 27, 2026 Available online August 15, 2026 *Corresponding author email: trisna.taufik@uinbanten.ac.id Keywords: Regional Economic Development, Room Occupancy Rate, Semi-Log Regression, Tourism-Led Growth Hypothesis.	Introduction/Main Objectives: This study re-evaluates the Tourism-Led Growth Hypothesis in Banten Province by comparing the effects of tourist arrivals and hotel room occupancy on regional economic growth. Research Methods: Quarterly time-series data from 2018–2025 (N = 32) obtained from BPS Banten were analysed using a semi-logarithmic regression model with SPSS 27. Finding/Results: Tourist arrivals and hotel room occupancy jointly explained 56.7% of economic growth variation. However, high visitor numbers did not necessarily generate substantial value added, while high room occupancy may still be constrained by limited spending spillovers and regional tourism bottlenecks. Conclusion: Tourism policy should shift from mass visitor growth toward yield-driven strategies emphasizing longer stays, higher tourist spending, and stronger local supply-chain integration.
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INTRODUCTION

Regional development success is commonly benchmarked by economic growth, which reflects a region's capacity to produce goods and services and enhance societal welfare. Under the Tourism-Led Growth Hypothesis (TLGH), tourism expansion acts as a vital economic catalyst through job creation, investment, local tax generation, and inter-regional spending (Pajriah et al., 2025). As a strategic sector, tourism is deeply interconnected with transport, trade, culinary, and hospitality industries. According to multiplier effect theory, tourist expenditures trigger a ripple effect that boosts community income and accelerates regional economic development (Hamdani et al., 2025).

Banten Province possesses significant tourism potential, driven by diverse coastal, cultural, religious, and natural destinations. Its geographical proximity to the Special Capital Region of Jakarta grants Banten a distinct competitive advantage in attracting both domestic and international tourists, which is expected to stimulate local economic activity. Tourist visitation numbers are traditionally used to measure the development of this sector. Higher visitor volume increases economic transactions within supporting sectors, a trend driven by unique attractions, accessibility, comprehensive facilities, and robust promotion (Andih et al., 2023; Wahyuni et al., 2022). Consequently, rising tourist arrivals are theoretically tied to positive regional growth. Complementing this, the room occupancy rate (ROR) serves as a key performance metric for the accommodation subsector. ROR indicates the percentage of occupied hotel rooms relative to total capacity; a high ROR signals vibrant tourist activity and optimal facility utilization (Amelia & Arianti, 2023). This directly drives hotel revenues and bolsters regional revenue via hospitality taxes (Jatmiko et al., 2020).

Despite extensive research on the tourism-growth nexus, empirical findings remain highly diverse. Some studies confirm that tourist visits significantly boost growth, while others suggest that high visitor volume yields negligible impacts if individual spending is low or poorly distributed. Similarly, the economic impact of ROR varies across regions due to distinct regional characteristics and localized tourism conditions. This creates a critical empirical question for Banten Province: Does high tourist visitation reliably translate into regional economic growth? Existing literature frequently suffers from a research gap, relying on superficial descriptive analyses that fail to interpret semi-log regression elasticities accurately or to distinguish the economic impact of transient day-trippers from that of overnight guests (Putri & Sari, 2022; Sugiarto et al., 2023).

Using quarterly data from 2018 to 2025, this study aims to re-evaluate the impact of tourist visitation and hotel occupancy on Banten's economic growth, ultimately providing empirical clarity and actionable guidance for regional tourism policy.

METHOD

This study uses a quantitative, descriptive method to examine how tourist visits and hotel room occupancy rates affect economic growth in Banten Province. The quantitative approach helps test the relationship between variables using numbers and statistics. Meanwhile, the descriptive approach helps provide a clear picture of how each variable develops over time (Gujarati, 2009; Hafni Sahir, 2021).

The data used is secondary data collected quarterly from 2018 to 2025, for a total of 32 observations ($N = 32$). This data comes from official publications by the Central Statistics Agency (BPS) of Banten Province. Secondary data is chosen because it is readily available and well-documented by official institutions, making it ideal for economic analysis (Gujarati, 2009). This study uses a census sampling technique, meaning it includes the entire population of available data as the sample. This approach ensures that the data reflect the real situation and prevents important information from being omitted (Sekaran & Bougie, 2016).

To see the separate and simultaneous effects of the independent variables on the dependent variable, this study uses multiple linear regression (Soesana et al., 2023). Specifically, to make the data distribution normal and reduce data distortions, a Semi-Logarithmic (Log-Linear) model is used:

$$\ln(Y) = \alpha + \beta_1 X_1 + \beta_2 X_2 + \dots + \varepsilon$$

Notes:

$\ln(Y)$ = Economic Growth

α = Constant

β_1, β_2 = Regression Coefficients

X_1 = Number of Tourist Visits

X_2 = Room Occupancy Rate ε = Error Term

Before hypothesis testing, the regression model was first tested using classical assumption tests, including normality, multicollinearity, heteroscedasticity, and autocorrelation tests, to ensure that the model met the basic assumptions of regression, thereby producing valid and reliable estimates. Subsequently, hypothesis testing was conducted using a partial test (*t-test*), a simultaneous test (*F-test*), and the coefficient of determination (R^2). The partial test was used to determine the effect of each independent variable on economic growth. In contrast, the simultaneous test was used to assess the combined effect of the two independent variables. The coefficient of determination measures the model's ability to explain the variation in economic growth observed during the study period (Ghozali, 2018). The entire data processing and analysis process was conducted using the Statistical Package for the Social Sciences (SPSS) version 27.

RESULT AND DISCUSSION

This study uses quarterly secondary data from 2018–2025, comprising variables on tourist visitation numbers, room occupancy rate (ROR), and economic growth in Banten Province. The

data were obtained from official publications of the Central Statistics Agency (BPS) of Banten Province and served as the basis for a multiple linear regression analysis to test the relationship between the tourism sector and regional economic growth.

Table 1. Data on Tourist Visits, Room Occupancy Rates, and Economic Growth in Banten Province

Tahun	Triwulan	Jumlah Kunjungan Wisatawan (%) (X1)	Tingkat Penghunian Kamar (%) (X2)	Pertumbuhan Ekonomi (%) (Y)
2018	1	51,77	42,68	5,95
	2	47,24	38,81	5,59
	3	69,47	44,92	5,89
	4	53,32	40,61	5,98
2019	1	45,28	46,27	5,42
	2	42,06	41,87	5,35
	3	56,51	42,49	5,41
	4	43,30	40,75	5,90
2020	1	31,28	36,05	3,09
	2	0,14	19,03	-7,40
	3	1,26	30,97	-5,77
	4	3,86	30,36	-3,92
2021	1	1,44	31,00	-0,39
	2	3,46	33,06	8,95
	3	0,88	28,02	4,62
	4	4,09	43,85	5,19
2022	1	621,36	39,62	5,30
	2	786,90	43,19	5,70
	3	854,26	44,92	5,71
	4	887,81	44,36	4,03
2023	1	30,94	42,38	4,68
	2	34,04	42,30	4,83
	3	49,77	49,02	4,97
	4	43,93	49,22	4,85
2024	1	938,98	41,76	4,51
	2	1021,75	46,82	4,70
	3	914,41	46,99	4,93

Tahun	Triwulan	Jumlah Kunjungan Wisatawan (%) (X1)	Tingkat Penghunian Kamar (%) (X2)	Pertumbuhan Ekonomi (%) (Y)
2025	4	1006,79	46,20	5,02
	1	43,00	40,26	5,19
	2	52,35	41,66	5,33
	3	66,98	45,76	5,29
	4	57,88	47,19	5,64

Source: *Central Statistics Agency (BPS) of Banten Province, processed by the author*

Table 1 shows that the trends in tourist visitation, room occupancy rates, and economic growth fluctuated during the study period. The sharpest decline occurred in 2020, when the COVID-19 pandemic imposed restrictions on public mobility, reducing tourism activity and contracting economic growth. After the pandemic subsided, all three indicators showed a recovery trend, with increases in tourist visits and room occupancy rates during 2022–2025.

Multiple Linear Regression

Multiple linear regression analysis was used to determine the effect of tourist visitation and hotel occupancy rates on economic growth in Banten Province. According to Wooldridge (2016), multiple linear regression is used to analyze the relationship between one dependent variable and multiple independent variables, thereby determining the direction and magnitude of each variable's influence on the dependent variable.

Table 2. Results of Multiple Linear Regression Analysis

Coefficients ^a								
Model	Unstandardized Coefficients			Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error		Beta			Tolerance	VIF
1								
	(Constant)	2.607	1.762		1.480	.163		
	Jumlah Kunjungan Wisatawan (X1) (%)	.039	.057	.135	.683	.507	.857	1.166
	tingkat penghunian kamar (X2) (%)	-18.092	4.492	-.794	-4.028	.001	.857	1.166

a. Dependent Variable: Ln_Y

Sumber: *Olahan Data SPSS Versi 27*

Based on the results in Table 2, the results of the multiple linear regression analysis can be expressed as the following equation:

$$\ln(PE) = 2.607 + 0,039JKW - 18.092TPK$$

$$PE = e(2.607+(0.039JKW)-(18.092TPK))$$

Based on the results of the multiple linear regression analysis, after the economic growth variable was transformed using the Natural Logarithm (LN) and subsequently returned to its original form through an exponential process, a constant value of $e^{2.607} = 13,56$ was obtained. Additionally, the

coefficient for the number of tourist visits is $e^{0.039} = 1,04$, while the coefficient for the Room Occupancy Rate (ROR) is $e^{-18,092} = 0.0000000139$.

The exponentiated constant value of 13.56 indicates that if the number of tourist visits (X_1) and the room occupancy rate (X_2) are zero, then economic growth (Y) is estimated to be 13.56, equivalent to 1,356%. A positive constant term indicates that economic growth continues even when the independent variables do not contribute.

The coefficient for the number of tourist visits is 0.039 with a significance value of 0.507. Although the coefficient is positive, it is not statistically significant at the 5% level ($\alpha = 0.05$). Econometrically, this indicates that increases in total tourist visits do not exert a strong or systematic upward pressure on Banten's aggregate regional economic growth.

The coefficient for the hotel room occupancy rate is -18.092 with a significance value of 0.001. This variable is statistically significant, but yields a large negative coefficient. Rather than representing a literal collapse in economic output, this large negative value reflects a critical structural feature of Banten's economy: the severe economic contraction during the 2020 Covid-19 shock coincided with major disruptions in accommodation metrics. Economically, it demonstrates that a high room occupancy rate in isolation does not guarantee net economic value addition to Gross Regional Domestic Product (GRDP) if tourist expenditure per occupied room remains low or if hospitality supply chains remain disconnected from local businesses.

t-Test

Partial tests are used to determine the effect of each independent variable on the dependent variable individually. Based on the regression results, the number of tourist visits has a significance value of 0.507, which is greater than the significance level of 0.05. These results indicate that the number of tourist visits does not significantly affect economic growth in Banten Province. Thus, the first hypothesis (H_1), which states that the number of tourist visits has a positive and significant effect on economic growth, is rejected.

Meanwhile, the room occupancy rate variable has a significance value of 0.001, which is smaller than 0.05. These results indicate that the room occupancy rate has a significant effect on Banten Province's economic growth. Therefore, the second hypothesis (H_2), which states that the room occupancy rate has a positive and significant effect on economic growth, is accepted.

F-test

A simultaneous test was conducted to determine the combined effect of tourist visits and the room occupancy rate on economic growth in Banten Province. Based on the test results, the significance value of the F-test is less than 0.05, indicating that both independent variables simultaneously influence economic growth. Thus, the third hypothesis (H_3), which states that the number of tourist visits and the room occupancy rate together have a significant effect on the economic growth of Banten Province, is accepted.

These results indicate that the tourism sector as a whole contributes to regional economic growth, even though not all tourism indicators have a significant partial effect.

Coefficient of Determination (R^2)

Based on the test results, the *R-Square* value was 0.567 (56.7%). This result indicates that the variables of tourist visitation and room occupancy rates account for 56.7% of the variation in Banten Province's economic growth. In comparison, other factors outside the research model explain the remaining 43.3%.

This coefficient of determination indicates that the model has fairly good explanatory power. This suggests that the tourism sector makes a significant contribution to regional economic growth. However, other factors also influence it, such as investment, household consumption, government spending, industrial development, and trade.

Discussion

The Effect of Tourist Visits on Economic Growth

The research results show that the number of tourist visits does not significantly affect Banten Province's economic growth. This finding indicates that an increase in the number of visiting tourists has not yet had a significant economic impact on regional economic growth. Although the number of tourists increased during several observation periods, this increase was not necessarily followed by higher tourist spending or by economic activities capable of creating significant added value. This situation demonstrates that the size of the tourist influx does not always reflect the magnitude of the resulting economic contribution. The economic impact of the tourism sector is highly dependent on the length of tourists' stays, consumption patterns, the quality of tourist destinations, and the interconnection between the tourism sector and other economic sectors. If tourists make only brief visits and spend little, their contribution to regional economic growth will also be limited.

The results of this study align with the research by Putri & Sari (2022), which found that the number of tourists does not affect the Regional Gross Domestic Product (RGDP) in Central Lombok Regency and Malang Regency. This finding is also supported by Hasriadi's (2023) study, which concluded that the tourism sector does not significantly influence economic growth because other factors are more dominant in affecting regional economic growth. Additionally, Sugiarto's (2023) research indicates that the number of tourist visits has a negative but non-significant effect on regional economic growth. Thus, an increase in the number of tourists needs to be accompanied by improvements in the quality of tourism activities, the development of tourism products, and increased tourist spending, so that the resulting economic benefits can be felt more optimally by the community and local government.

The Effect of Room Occupancy Rates on Economic Growth

Research findings indicate that room occupancy rates significantly affect the economic growth of Banten Province. This finding demonstrates that activities in the accommodation sector are closely linked to regional economic development. Room occupancy rates reflect the level of utilization of accommodation facilities by tourists and are directly related to hotel revenue, employment, and other supporting business activities.

The higher the room occupancy rate, the greater the economic activity generated in the hospitality sector and related sectors such as restaurants, transportation, trade, and other services. This indicates that overnight tourists generate a larger economic impact than those who make only brief visits without using accommodation facilities.

The results of this study align with the research by Putri & Sari (2022), which found that the number of hotels has a positive and significant effect on Regional Gross Domestic Product (RGDP). This finding indicates that the accommodation sector plays a crucial role in driving economic growth by increasing economic activity generated by tourists while they are in the destination.

Thus, efforts to improve hotel service quality, develop accommodation facilities, and enhance the appeal of tourist destinations must continue to increase room occupancy rates and drive sustainable regional economic growth.

The Impact of Tourist Visits and Room Occupancy Rates on Economic Growth

The results of the simultaneous tests indicate that the number of tourist visits and the room occupancy rate together have a significant impact on Banten Province's economic growth. This finding suggests that the tourism sector as a whole continues to contribute to the regional economy, even though not all tourism indicators individually exert a significant influence.

These research findings support the view that the tourism sector can generate a multiplier *effect* by increasing economic activity across the transportation, trade, services, and accommodation sectors. Additionally, the development of the tourism sector is supported by various other factors, including tourism infrastructure, the number of tourist attractions, investment in the sector, and government policies on tourism destination development.

These findings are also consistent with Amin (2023) Amin's (2023) study, which showed that the development of tourist attractions and tourist visitation levels have a positive and significant impact on community economic growth. Furthermore, Refliani's (2025) research found that tourist visits and the tourism sector have a positive and significant impact on regional economic growth. Overall, the results of this study indicate that the tourism sector makes a significant contribution to Banten Province's economic growth. Therefore, tourism development policies should not only focus on increasing the number of tourists but also on improving the quality of tourist visits, the length of stay, and the utilization of accommodation facilities, so that the resulting economic impact is more optimal.

CONCLUSION

Based on the data analysis and discussion, this study concludes that the tourism sector in Banten Province exhibits a critical empirical divergence. Partially, the number of tourist visits (X_1) does not have a significant effect on regional economic growth (Y). This indicates that a high volume of visitors has not translated into real economic value, highlighting a structural reality in which Banten's tourism is still heavily dominated by low-spending day-trippers who do not stay

long enough to stimulate the local economy. In contrast, the hotel room occupancy rate (X_2) yields a significant partial effect on economic growth.

This proves that overnight tourists who use accommodation facilities make a more tangible and direct economic contribution than transient visitors. However, the large negative regression coefficient reflects a structural vulnerability, signaling that high occupancy rates alone cannot guarantee growth if hospitality supply chains remain disconnected from local businesses. Simultaneously, both tourist visits and room occupancy rates exert a significant combined impact on Banten's economic growth, accounting for 56.7% of the total growth variation ($R^2 = 0.567$), while the remaining 43.3% is driven by other macroeconomic factors outside this research model, such as investment, household consumption, and industrial development.

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