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THE ROLE OF THE TOURISM SECTOR IN THE GROSS REGIONAL DOMESTIC PRODUCT OF BALI PROVINCE

Nathania Maheswari[1], Ni Kadek Ayu Kristianti[2], Josephine Wuri[3]
[1,2,3]Economics Department, Faculty of Business and Economics, Sanata Dharma University, Yogyakarta
[1]anyanathania17@gmail.com, [2]ayukristin1310@gmail.com, [3]josephine@usd.ac.id
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Abstract
Bali is a province whose economy is most dependent on the tourism sector in Indonesia. When the COVID-19 pandemic hit in 2020 to 2021, foreign tourists almost completely stopped visiting, and Bali Province's economy slumped sharply. This condition encourages research to examine the role of the tourism sector in Bali Province's Gross Regional Domestic Product (GRDP) for the period from 2017 to 2025, specifically analysing the influence of the number of foreign tourists and the number of restaurants on Bali Province's GRDP. This study uses a multiple linear regression method with annual data from BPS Bali Province. The results show that foreign tourists have a positive and significant effect on Bali Province's GRDP, and the number of restaurants also has a positive and significant effect on Bali Province's GRDP. Simultaneously, foreign tourists and the number of restaurants have a positive and significant effect on Bali Province's GRDP. This research shows that the tourism sector and the culinary industry are the two main pillars of Bali's economy. The local government is advised to strengthen the tourism ecosystem as a whole, not only in terms of the number of tourist visits but also by strengthening the local culinary industry as a distribution channel for economic benefits for the Balinese people at large.
***Keywords**: GRDP, foreign tourists, restaurants, tourism, Bali Province*

1. Introduction

Gross Regional Domestic Product (GRDP) is the most comprehensive indicator for assessing regional economic performance, representing the accumulation of gross added value generated by all economic sectors in a region for one year (Widiani & Rustariyuni, 2025). The tourism sector has long been recognized as one of the main pillars of Indonesia's economic growth, with a widespread impact on the hospitality industry, transportation, culinary, trade, and the creative economy (Simatupang, 2024). Among all provinces, Bali is the region that relies the most on tourism as the main driver of its economy, supported by the natural beauty, rich Balinese Hindu culture, and the friendliness of the locals (Shanti & Nasikh, 2023; Putra & Astawa, 2022)

Before the pandemic, Bali Province's GRDP grew from Rp144.93 trillion (2017) to Rp162.69 trillion (2019), in line with the increase in foreign tourists from 5.69 million to 6.27 million and the number of restaurants from 2,251 to 2,864 units. When the COVID-19 pandemic hit in 2020, tourist visits plummeted to only 51 people in 2021, and GRDP slumped to Rp143.87 trillion, even lower than the 2017 base year. In the 2022–2025 period, Bali's economy will bounce back with the opening of international flights, with foreign tourists reaching 6.94 million people and the number of restaurants jumping to 10,448 units by 2025, pushing GRDP to reach a record high of IDR 177.99 trillion.

Behind these achievements, Bali's tourism sector still faces problems in the governance of accommodation and culinary business licensing, which risks causing economic leakage and bias in the calculation of GRDP. Previous research has consistently shown the positive influence of the tourism sector on GRDP (Widiani & Rustariyuni, 2025; Simatupang, 2024), but most of them have not integrated the variables of foreign tourists and the number of restaurants simultaneously in one model and have not covered the period before, during, and after the COVID-19 pandemic at the same time. The novelty of this research lies in the use of the latest data for the 2017–2025 period, which covers the three phases. Based on this description, this study aims to analyze the influence of the number of foreign tourists and the number of restaurants, both partially and simultaneously, on the GRDP of Bali Province.

2. Literature Review

GRDP based on Constant Prices measures the total gross value added of all economic sectors of a region after being adjusted for inflation, thus reflecting real economic growth (Calero & Turner, 2020; Wasani & Purwanti, 2022). The Regional Economic Base Theory explains that the base sector or the leading sector of a region, in this case international tourism, brings capital injection from outside the region, which then moves the non-base sectors through a multiplier effect, namely labor absorption, increasing community income, and strengthening local supply chains (Gkouzos & Christofakis, 2018).

Widiani and Rustariyuni (2025) found that tourism indicators have a positive and significant effect on the GRDP of Bali Province. Simatupang (2024) shows that the tourism industry in various provinces of Indonesia produces a large multiplier effect of output and labor. Mukaffi and Tri Haryanto (2022) show that the number of restaurants has a positive effect on the GDP of Banyuwangi Regency, while Apriyanti and Hatmoko (2024) affirm the role of tourism in GDP and labour absorption in Bali Province. However, most studies have not integrated foreign tourist numbers and the number of restaurants simultaneously in a single model, covering the period before, during, and after the COVID-19 pandemic, as was done in this study.

Based on the review of theory and previous research, three research hypotheses were formulated: H1: The number of foreign tourists has a positive effect on the GRDP of Bali Province. H2: The number of restaurants has a positive effect on the GRDP of Bali Province. H3: The number of foreign tourists and the number of restaurants simultaneously have a positive effect on the GRDP of Bali Province.

3. Research Methods

3.1 Design, Data, and Research Variables

This study uses a quantitative approach with an explanatory design to explain the causal relationship between variables through hypothesis testing (Lim, 2025). The data used is secondary, in the form of annual time series data for the Province of Bali for the period 2017–2025 sourced from the Central Statistics Agency (BPS) of Bali Province. The research variables and their operational definitions are presented in Table 1.

Tabel 1. Operational Definition of Research Variables

Variables	Operational Definition	Units	Data Source
PDRB (Y)	Gross Regional Domestic Product is the total value of the real economic output of Bali Province.	Billion Rupiah	BPS Bali Province,
Wisman (X1)	The number of foreign tourists entering Bali Province.	People	BPS Bali Province,
Restoran (X2)	The number of business units providing food and beverages officially registered in Bali Province, in units per year.	Unit	BPS Bali Province,

Source : *Data processed* (2026).

3.2 Data Analysis Techniques

The main analysis technique used is multiple linear regression, with the following model:

$$\mathbf{Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \varepsilon}$$

Description :

- Y = Bali Province GRDP (Billion Rupiah)
- α = Constant (Y value when X_1 and X_2 are zero)
- β_1 = Variable regression coefficient X_1
- β_2 = Variable regression coefficient X_2
- X_1 = Wisman or Foreign tourists (people per year)
- X_2 = Restoran or Restaurants (units per year)
- ε = Error term

The regression coefficients of β_1 and β_2 were estimated using the Ordinary Least Squares (OLS) method, which is by minimizing the sum of squared residuals between the actual value and the predicted value of the dependent variable. The OLS method was chosen because it has the property of BLUE (Best Linear Unbiased Estimator) based on the Gauss-Markov theorem, as long as classical assumptions are fulfilled (Gkouzos & Christofakis, 2018; (Mukaffi & Tri Haryanto, 2022). The classical assumption test is a series of tests to ensure that the linear regression model meets the basic assumptions, so that the results are valid and reliable. This regression analysis includes tests for normality, multicollinearity, autocorrelation, and heteroscedasticity. The advantage of using time series data is that researchers can identify patterns and trends in changes in variables. This can result in estimates and predictions related to future values. Therefore, it is very useful for research analysis.

4. Results and Dicussion

4.1 Overview of Research Variables

During the 2017–2025 period, Bali Province's GRDP showed three contrasting phases: stable growth in the pre-pandemic period (2017–2019), sharp contraction during the COVID-19 pandemic (2020–2021) to a low of Rp143871.68 billion in 2021, and recovery that surpassed the pre-pandemic record in the post-pandemic period (2022–2025) to reach Rp177992.95 billion in 2025 (Figure 1).

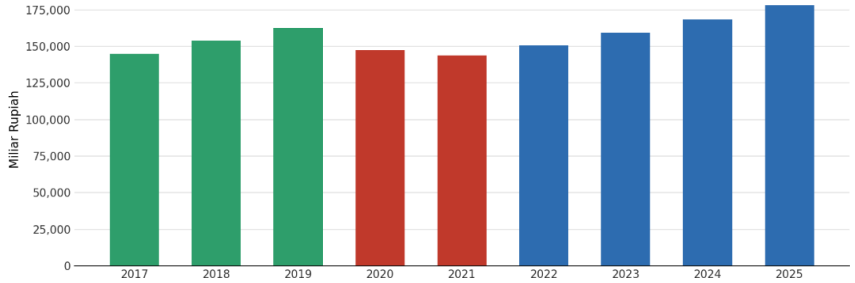


Figure 1. Trend of Bali Province's GDDP in 2017–2025 (Billion Rupiah)

Source: BPS Bali Province (2026)

The same pattern is reflected in the number of foreign tourists (Figure 2), which moved steadily in the range of 5.7–6.3 million people per year before the pandemic, plummeting drastically from 6.27 million people (2019) to only 51 people (2021) due to the closure of international flights, then gradually recovering to reach 6.95 million people by 2025, the highest record in the history of Bali tourism.

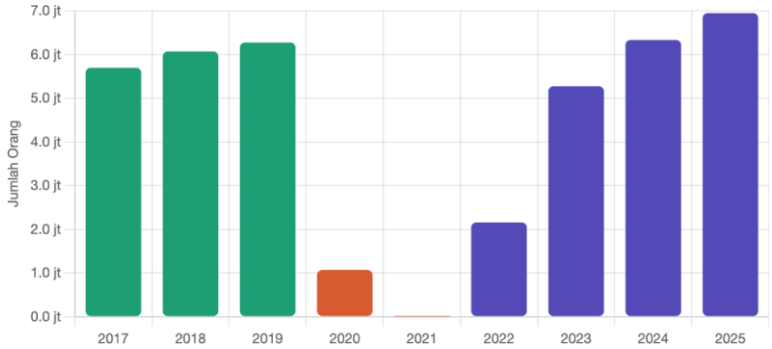


Figure 2. Trend of the Number of Foreign Tourists to Bali Province in 2017–2025 (People)

Source: BPS Bali Province (2026)

In contrast to foreign tourists, the number of restaurants (Figure 3) continued to grow relatively steadily throughout the observation period, even growing during the pandemic as culinary business actors adapted to the domestic market. The number of restaurants increased from 2251 units (2017) to 10448 units (2025), with the sharpest surge occurring in 2023–2025 as tourist flows recovered and investment in the culinary sector increased.

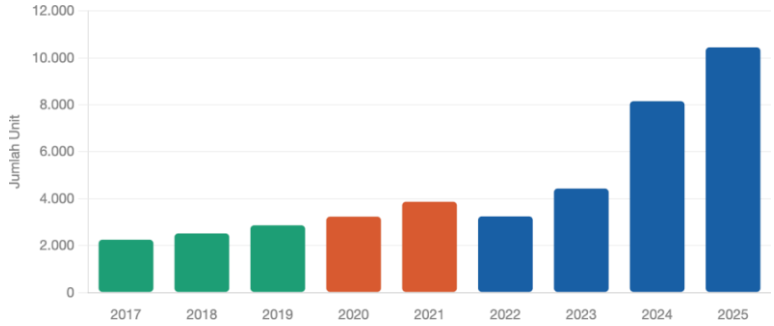


Figure 3. Trend of the Number of Restaurants in Bali Province in 2017–2025 (Units)
Source: BPS Bali Province (2026)

4.2 Descriptive Statistics

Tabel 2. Descriptive Statistical Analysis Results

Variable	N	Minimum	Maksimum	Mean	Std Deviation
PDRB (Miliar Rp)	9	143871.68	177992.95	156614.15	11498.66
Foreign Tourists (People)	9	51	6948754	4424896.11	2609374.47
Number of Redtaurants (Units)	9	2251	10448	4556.44	2826.986

Source : Data processed, 2026.

Bali Province's GRDP has an average of IDR 156614.15 billion with a standard deviation of IDR 11498.66 billion. This relatively moderate standard deviation indicates that despite significant fluctuations due to the pandemic, Bali's GRDP has not been shaken to the extreme, as non-tourism sectors such as agriculture, information, and government services continue to contribute to stabilising regional economic output. The maximum GRDP is IDR 177992.95 billion, achieved in 2025, while the minimum is IDR 143871.68 billion, recorded in 2021.

The number of foreign tourist visits in Bali Province averages 4424896 people per year, with a standard deviation of 2609374 people. This standard deviation is due to extreme fluctuations in visits during the pandemic; the maximum number of foreign tourist visits is 6948754 people recorded in 2025, while the minimum is 51 people recorded in 2021.

The variable number of restaurants has an average of 4556.44 units with a standard deviation of 2826985 units. The sizable standard deviation values reflect uneven growth throughout the observation period, with the most significant spikes concentrated in 2024 to 2025. The maximum number of restaurants is 10448 units recorded in 2025, while the minimum is 2251 units recorded in 2017.

4.3 Classic Assumption Test

The results of the Kolmogorov-Smirnov test show an Asymp. Sig. (2-tailed) of 0.200 (> 0.05), so the residual model is normally distributed. The multicollinearity test showed a Tolerance value of 0.852 (> 0.10) and a VIF of 1.173 (< 10) for both independent variables, indicating that the model was free of multicollinearity. The Glejser test showed that the significance values of Tourists (0.267) and Restaurants (0.140) were both greater than 0.05, so the model was homoskedastic. The Run Test produced a significance value of 0.968 (> 0.05), indicating no autocorrelation. Thus, all classical assumptions are fulfilled, and the regression model is worthy of further interpretation.

4.4 Regression Results and Hyporhesis Testing

Table 3. Results of Multiple Linear Regression Analysis

Variable	B	Std. Error	Beta	t hit	Sig.
(Constant)	135451.363	3614.078	-	37.479	0.000
Foreign Tourists (People)	0.002	0.001	0.458	2.960	0.025
Number of Restaurants (Units)	2.686	0.629	0.660	4.271	0.005

Source: *Data Processed*, 2026.

The regression equation is

PDRB = 135.451,363 + 0,002 Wisman + 2,686 Restoran + ε

Where PDRB is Gross Regional Domestic Product, Wisman is the number of foreign tourists, Restoran is the number of Restaurants, and ε is the error term. The interpretation of the equation is as follows. First, the constant value is 135451.363, which means that when the number of foreign tourists and the number of restaurants are zero, the GRDP of Bali Province is Rp135451.363 billion. Second, the regression coefficient of the foreign tourists variable (β_1) of 0.002 shows that each additional foreign tourist will increase the GRDP of Bali Province by Rp0.002 billion, assuming a constant restaurant variable (ceteris paribus). Third, the variable regression coefficient of the number of restaurants (β_2) of 2.686 shows that each addition of one new restaurant unit will increase the GRDP of Bali Province by IDR 2.686 billion, assuming a constant tourist variable (ceteris paribus).

4.5 Discussion

The positive influence of foreign tourists on GRDP is in line with the Economic Base Theory, where international tourism plays a role as a base sector that injects foreign exchange into the local economy. The strongest empirical evidence appears in the 2020–2021 period, when border closures due to the COVID-19 pandemic caused tourist visits to plummet and were followed by a sharp contraction in GRDP. These findings strengthen the results of Iswardhani et al. (2025), Widiani and Rustariyuni (2025), and Shanti and Nasikh (2023).

The positive influence of the number of restaurants on GRDP reflects the characteristics of the culinary industry as a labour-intensive sector with strong backward supply chain linkages, absorbing local labour and increasing demand for raw materials from Balinese farmers and fishermen. These findings are consistent with Putra and Astawa (2022) and Apriyanti and Hatmoko (2024). Simultaneously, foreign tourists represent the demand side, while restaurants represent the supply side in Bali's tourism ecosystem; the synergy of the two optimizes the multiplier effect of tourism, as affirmed by Simatupang (2024) and Tantra and Murthi (2025).

5. Conclusion

The number of foreign tourists and the number of restaurants, both partially and simultaneously, have a positive and significant effect on the GRDP of Bali Province during the period 2017–2025. These findings confirm that the tourism sector and the culinary industry are the two main pillars of Bali's economic drive that complement each other through the multiplier effect mechanism. Local governments are advised to strengthen the tourism ecosystem as a whole, including the governance of accommodation and culinary business licensing. In contrast, culinary business actors are advised to improve service standards and strengthen local supply chain partnerships. Future research is suggested to add other variables such as the length of stay of tourists, hotel occupancy rates, and tourism investment realisation, as well as expand the analysis

unit to the district/city level.

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