The Influence of the Tourism Sector and Local Revenue on Economic Growth in Bali

Zulfikar Husein and Siti Aisyah[(✉)]

Faculty of Economics and Business, Universitas Muhammadiyah Surakarta, Surakarta, Indonesia
huseinzulfikar40@gmail.com, sa150@ums.ac.id

Abstract. This study aims to determine the effect of the number of foreign tourists, local revenue, and the number of accommodations on economic growth in Bali Province in the 2017–2021 period in nine (9) regencies/cities. The technique used is a quantitative approach with panel data regression technique with a Fixed Effect Model (FEM) using Eviews 10 software. The results show that the number of foreign tourists and local income significantly affect economic growth in Bali Province. It is hoped that policymakers will continue to improve the tourism sector. They need to improve and add transportation and local facilities to make tourists feel at home and want to return to Bali Province and promote the tourism sector to support economic growth in Bali Province.

Keywords: Number of Foreign Tourists · Local Revenue · Accommodation · Economic Growth

1 Introduction

Economic growth is one of the critical indicators for analyzing national development that occurs in a country and is of particular concern to the government and can be said to be a process of increasing the production of goods and services in all economic activities in a country in a certain period. Economic improvement will spur local governments to maximize the empowerment of all potential existing resources. Indonesia is an archipelagic country consisting of 33 provinces, and one of the provinces in Indonesia with a good level of economic development is the Province of Bali. Bali Province is one of the areas with the tourism sector as the main backbone in maximizing regional economic progress. Regional economic growth is measured using Gross Regional Domestic Product, the totality of the total value of goods and services obtained from all economic activities the region carries [2]. The calculation of the economic growth rate of an area using GRDP is based on constant prices. The economic structure in Bali has different characteristics from other provinces in Indonesia. Specifically, the Bali economy is built by relying on its tourism sector[5]. The economic growth of Bali Province through per capita GRDP data of 9 Regencies/Cities in Bali Province in 2017–2021 has fluctuated. The economic growth in Klungkung Regency is relatively low due to [o1] little tourism activity. The reason is that the distance from Denpasar City to Klungkung Regency is around 70 km. Meanwhile, the highest area is in Badung Regency because there are many famous tourist destinations, so tourism activities in Badung Regency are always busy.

Regional Original Income (PAD) consists of revenues derived from local taxes, regional levies, and segregated regional wealth management results. Increasing the tourism sector is one way to increase PAD can also increase the income of local people. Reduce unemployment, create jobs, and is also expected to improve community welfare. According to research by Rudy (2017), tourism development is an important option, especially for an area with great potential in the tourism sector, because of the significant multiplier effect. The formation of employment is aimed at encouraging economic improvement. Investment stimulation is needed so that tourism products can develop, both goods and services, and tourism in an area can continue growing. Tourism development is inseparable from tourist attractions until a type of development is supported by facilities and accessibility providers [9]. However, in 2020–2021 there was an economic crisis caused by a lockdown due to the coronavirus, so foreign tourists could not enter Bali Province.

The number of tourists visiting Bali from 2017 to 2021 experienced a sharp decline from 2019–2021. This issue happened due to the Covid-19 pandemic, while all countries closed their entrances and borders. This condition hurts the Province of Bali, which relies on tourism as the primary sector in its economy because the number of tourists entering the island of Bali reached an all-time low of 0 visitors.

The development of the tourism sector will also help accelerate the process of economic improvement. Tourism is a driver of other sectors, such as the industrial and service sectors. The surge in tourist visits to Bali Province has the potential to have an impact on different sectors. The direct effect of tourist spending generates income for businesses and households, tax revenues, and employment [10]. The initial income received by homes, businesses, and the government is again spent on activities to provide products and services purchased by tourists. This situation is an indirect effect [11]. It means that the direct impact of tourist spending directly results from buying goods and services such as food and accommodation consumption. The indirect effect of tourist spending is the purchase of goods and services by tourists which indirectly affects the sectors of the economy that produce and sell goods and services.

Tourists can use accommodation when performing—travel activities in tourist destinations. Housing begins to grow and continues to change in all aspects and gradually. Capacity is considered one of the key elements supporting the tourism and transport industry and other activities [13]. The increase in the number of accommodations in Bali Province is due to the high number of tourist visits that come to Bali Province [14]. Local income and the influence of the tourism sector in Bali in recent years have impacted economic progress in Bali.

Developments strongly influence the economic process in Bali Province in the tourism sector. Therefore, conditions threatening or encouraging tourist activities need to be studied so that the government and the private sector can mitigate risks. This study aims to analyze the effect of regional income and the tourism sector on the economic growth of Bali Province.

2   Method

Quantitative descriptive analysis is used in this research, an analytical research technique using numerical data and statistical translation. In this observation, the material used is secondary data provided by intermediaries or indirectly. The data is sourced from the Central Statistics Agency (BPS) in Bali and the Central Statistics Agency of Indonesia. The data analysis technique used in this research is in the form of panel data and processed through the Fixed Effects Model (FEM) approach using the Eviews 10 application. Panel data from two sets of data, namely time series and cross-section, or in another sense, panel data indicates that there are almost the same cross-sectional units (e.g., business surveys or household surveys). The form of the equation of this research model is as follows:

$$GDRP_{it} = \beta_0 + \beta_1 LogOLGR_{it} + \beta_2 ACCOMM_{it} + \beta_3 LogFT + e_{it} \qquad (1)$$

The analysis technique in this study used panel data regression processed using Eviews 10 software. GDRP is an economic growth variable described in units in rupiah (billion), OLGR is the original regional income with rupiah (billion) units, ACCOMM is accommodation with units of teams, and FT is foreign tourists with units of millions of people. All data used for this study includes regencies/cities throughout Bali in 2017–2021.

2.1   Data Collection Techniques and Sources

In this observation, the data used is secondary data, namely data obtained indirectly or through connectors. The source of this research comes from the Central Statistics Agency (BPS) Bali and the Indonesian Central Statistics Agency in 2017–2021. In this study, economic growth was a dependent variable, while Regional Original Income, Accommodation, and Number of Foreign Tourists were independent variables. The analysis technique in this study uses panel data regression processed through the Eviews 10 program. The data panel is a combination of time series and cross-section data. Cross-section data is intended to see the differences between districts/cities, while the time series data explains changes in the five years, namely 2017–2021.

2.2   Estimation of Model Parameters

The standard Effect Model (CEM) is the most natural approach with panel data models because it only unites 2 data, namely time series and cross data. This technique needs to take into account several dimensions. Therefore, the data used are the same in the same period. This technique can use the ordinary least squares (OLS) approach or the least squares technique to estimate panel data patterns (Mir, 2014). The fixed effect model (FEM) shows that the difference between units can be detected by the difference between their constant values [16]. This FEM technique uses dummy variables to allow changes in time series intercepts and cross series due to eliminated changes (Tabash, 2017). The last is to use the Random effect Model, estimating panel data whose residual variables are thought to have relationships between time and between subjects (Nicholas, 2017).

REM is used to address FEM weaknesses that use dummy variables (Abdul, 2018). In this model, the analysis with the panel data model must match the requirement that the number of cross-sections is greater than the number of research variables.

The scope of this observation is to examine the effect of local original income (OLGR), accommodation (ACCOMM), and also foreign tourists (FT) on economic growth in Bali Province from the period 2017 to 2021, including nine regencies/cities. This research took data obtained and studied by the Central Statistics Agency (BPS) of Indonesia and Bali. This study is quantitative and uses a panel data regression system.

3   Results

3.1   Locally-Generated Revenue Development, Number of Accommodations, Number of Foreign Tourists in Bali

Bali Province's area, calculated through the original income of the monitored area, illustrates the trend every year. I am judging from the growth rate in recent years. Since 2017, revenue in each city in Bali Province has continued to increase. There was a decrease in district/or city revenue from the previous year due to the coronavirus 19.

The number of accommodations, such as hotels, has also significantly increased from 2017 to 2021. Especially areas with many tourist destinations, such as Badung and Karangsem regencies, have the highest number of accommodations compared to other districts. The number of foreign tourists in Bali Province in 2020 experienced a drastic decrease compared to 2019 due to covid 19, and in 2021 it reached 0 due to the *lockdown* in Bali Province.

3.2   Estimation Model Testing

The results of the estimated regression of panel data on econometric models with the Pooled Least Squares (PLS), Fixed Effect Model (FEM), and Random Effect Model (REM) approaches are shown in Table 1.

3.3   Estimated Model Selection Test

The Chow and Hausman tests select the best-estimated model between CEM, FEM, and REM. If in the Chow Test, the chosen model is FEM and in the Hausman Test, the selected model is also FEM, then the best-estimated model is FEM.

A. **Chow Test**

The Chow test determines the estimated model between CEM (PLS) and FEM. The Chow Test states that the estimated model is a Common Effect Model (CEM H_0). The Chow Test says that the estimated model is a Fixed Effect Model (FEM) provided that if the probability value of Prob F > 0.05, then it is not rejected with the conclusion of the selected model Common Effect Model (CEM), while if the probability value of Prob. F < 0.05, then it is dismissed with the decision of the selected model H_A Fixed H_0 Effect Model (FEM H_0). Based on Table 1, we can see that the results of the Chow Test Analysis of the influence of HDI, Population, and

Table 1. Regression Coefficient

Variable	Regression Coefficient		
	Pls	Fem	Brake
C	10650.54	16305.91	16204.39
Log (OLGR)	1.36E-05	−4.43E-07	−3.64E-07
ACCOMM	0.037270	0.030034	0.043160
Log (FT)	−0.011269	0.002107	0.002018
R^2	0.499891	0.995906	0.571340
Adjusted R^2	0.463297	0.994541	0.539975
F − Stat	13.66069	792.7745	18.21563
Prob. F Stat	0.000003	0.000000	0.000000
Model Selection Test			
(1) Chow			
Cross section F(8.33) = 499.767672; Prob F (8,33) = 0.0000			
(2) Hausman			
Cross section random x^2 (3) = 17.463815; Prob F x^2 = 0.0006			

Source: Data Processed, Eviews 10

Wages limited to Economic Growth in Bali Province in 2017-2021 show the value of Prob. F model of 0.000 0 < 0.05 is rejected; thus, we can conclude that the selected model is a Fixed Effect Model H_0 (FEM).

B. **Hausman Test**

The Hausman test is used to determine the estimated model between FEM and REM. the Hausman Test states that the model is a Fixed Effect Model (H_0 FEM). The Hausman Test noted that the estimated model is a Random Effect Model. The calculated model provided that if the probability value of Prob Chi-Sq > 0.05 is not rejected with the conclusion of the selected model Rundom H_A Effect Model H_0 (REM). In contrast, if the probability value of Prob Chi-Sq < 0.05, it is dismissed with the decision of the model chosenH_0 Fixed Effect Model (FEM).

Based on Table 2, we can see that the results of the Hausman Test Analysis of the influence of HDI, Population, and Wages limited to Economic Growth in Bali Province in 2017–2021 showed that the Chi-Sq Prob value of (0.0006) < α (0.05), was rejected. So the best model to use is the H_0 Fixed Effect Model (FEM).

C. **Selected Models**

Table 2. Fixed Effect Model (FEM) Estimation Results

$GDRP_{it} = 16305.91 - 4.43E - 07$ Log $(OLGR)_{it} + 0.030034$ $ACCOMM_{it} + 0.002107$ $\log(FT)_{it}$		
(0.0000)*	(04.4329)	(0.0002)***
$R^2 = 0.571340$; DW = 2.085694; F-statistic = 729.7745; Prob. F = 0.00000		
Description: *Significant at $\alpha = 0.01$; ** Significant at $\alpha = 0.05$; ***Significant at $\alpha = 0.10$		

Table 3. Partial Significance Results (t-test)

Variable	Probability t-statistics	Criterion	Conclusion
Log (OLRG)	0,0000	≤0.01	Significant at $\alpha = 0.01$
ACCOMM	0,4329	>0.01	Insignificant
Log (FT)	0,0002	≤0.10	Significant at $\alpha = 0.01$

3.4 Partial Significance Test (T-Test)

The t-test is carried out to determine whether each independent variable has a natural effect on the dependent variable by assuming that the other variable is constant. For the first econometric model, the partial significance test in this study was H_0 β $_{1,2,3} = 0$ or, Log (OLGR), ACCOMM, and Log (FT) did not affect GDRP. Meanwhile, it states that H_A β 1,2,3 > 0 or Log (OLGR), ACCOMM, and Log (FT) affect GDRP. Not rejected if the t-statistical probability is > α and rejected when the t-statistical possibility is ≤ α. Partial significance test results for econometric models In Table 3.

Figures Based on Table 3, it is seen that the probability of t-statistics for Log (OLGR) is 0.0000 (≤0.01) and Log (FT) 0.0002 (≤0.10), thus rejected or Log (OLGR) and Log (H_0 FT) affects GDRP. At the same time, ACCOMM 0.4329 (>0.10) is therefore accepted, or H_0 ACCOMM does not affect economic growth (GDRP). Similarly, Log (OLGR) and Log (FT) have a significant influence on Economic Growth (GDRP), while the accommodation has no considerable effect on Economic Growth (GDRP).

3.5 Simultaneous Significance Test

A simultaneous significance test (Test F) is performed to determine the significance of the influence of all independent variables on the dependent variables, simulant or together. Test F is, or independent variables together have no real effect on the dependent variables. Declare or independent variables together have a noticeable effect on the dependent variables. is not rejected if the probability of F-statistic is >α and rejected when the probability of F-statistic is ≤α. $H_0\beta_1 = \beta_2 = \beta_3 = 0H_A\beta_1 \neq \beta_2 \neq \beta_3 \neq 0H_0H_0$

Based on Table 2, we can see that the F-statistical probability value of 0.000000 (< 0.01) means it is rejected, so we can conclude that together H_0 LOG (OLGR), ACCOMM, and Log (FT) have a natural effect on Economic Growth (GDRP).

4 Discussion

The coefficient of determination () indicates the predictive or goodness of the estimated model. The first econometric model can be seen in Table 3. we can see that from the estimated model, namely the R^2R^2 Random Effect Model (FEM), it is worth 0.5713. It means that 57.13 percent of changes in Economic Growth (GDRP) in Bali in 2017–2021 are explained by the variation in the variables of local income, accommodation, and foreign tourists. While the rest, which was 42.87 percent, was presented by variations of other variables that it did not include in the model.

Based on the results of the partial significance test on the econometric model, which can be seen in Table 3, it is proven that Regional Native Income and Foreign Tourists have a natural effect on Economic Growth in Bali in 2017–2021.

Regional original income (OLGR) has a regression coefficient of −4.43E-07 with a relationship pattern between economic growth (GDRP) and linear-logarithmic regional actual income so that regional original income increases by 1 rupiah. Economic growth in Bali will increase by 1 rupiah, and if the initial restricted payment decreases by 1 rupiah, then Economic Growth in Bali will decrease by 1 rupiah. The Wage Rate has a regression coefficient of 0.002107 with a pattern of relationship between economic growth (GDRP) and foreign tourists linear-logarithm. So that if foreign tourists increase by one person, Economic Growth will increase by 0.002107/100 = 0.00002107 or 1 rupiah, and if foreign tourists decrease by one person, then Economic Growth in Bali will decrease by 1 rupiah.

The effect of local income on Economic Growth is shown down below. The influence validity test (t-test) results on the econometric model show that local income significantly influenced Economic Growth in Bali in 2017–2021. It is in line with a study conducted by Rori (2016) entitled Analysis of the Effect of Regional Native Income (PAD) on Economic Growth in North Sulawesi Province in 2001–2013, which shows that Regional Native Income has a significant influence on Economic Growth.

The Effect of Accommodation on Economic Growth. The influence validity test (t-test) results on the econometric model show that accommodation did not significantly influence Economic Growth in Bali in 2017–2021. It is in line with Windayani's (2017) research entitled The effect of tourist visits, hotel occupancy rates, tourist spending on employment and economic growth in the province of Bali, which shows that accommodation variables do not have a significant effect on Economic Growth in Bali.

The influence of foreign tourists on Economic Growth is shown below. The influence validity test (t-test) results on the econometric model show that the Wage Rate significantly influenced Economic Growth in Bali in 2017–2021. It is in line with research conducted by Yakup (2019) on the Influence of the Tourism Sector on Economic Growth in Indonesia, which shows that the variable bell of foreign tourists regencies/cities on economic growth in Indonesia.

5 Conclusion

Based on the study's results, the variable regional income and the number of foreign tourists significantly affect economic growth in the province of Bali. In contrast, the accommodation variable has no significant effect on economic growth in Bali. Based on

Table 2, we can see that the probability value of the F-statistic is 0.000000 (<0.01), which means H0 is rejected, so we can conclude that together regional income, accommodation, and foreign tourists have a significant effect on economic growth (GDRP).

Local governments need to pay more attention to the efficient allocation of regional income and expenditure because original restricted payment has proven to affect economic growth significantly. It is hoped that policymakers for developing the tourism sector will improve and add local transportation facilities. So that tourists feel comfortable and want to return to the Province of Bali to promote the tourism sector to support economic growth and increase foreign exchange for the country. The limitations of this study are the use of independent variables and the limited research timeframe, so the short and long-term effects have yet to be discovered. Further researchers are advised to be able to use a dynamic model to get a complete picture of the results.

References

1. C. F. Rori, A. Y. Luntungan, And Niode, "Analisis Pengaruh Pendapatan Asli Daerah (Pad) Terhadap Pertumbuhan Ekonomi Di Provinsi Sulawesi Utara Tahun 2001-2013," *J. Berk. Ilm. Efisiensi*, Vol. 16, No. 2, Pp. 243–254, 2016.
2. Habsari, "Analisis Kontribusi Sektor Pariwisata Terhadap Peningkatan Pertumbuhan Ekonomi Di Provinsi Jawa Tengah Periode Tahun 2009–2018," *Ekon. Pembangunan. Uns*, Vol. 5, Pp. 25–45, 2019.
3. Ibrahim Arslan Yusuf Akan, "The Impact Of Tourism On Economic Performance: The Case Of Turkey*," *Int. J. Appl. Econ. Financ.*, Vol. 4, No. 4, Pp. 254–259, 2010, https://doi.org/10.3923/Ijaef.2010.254.259.
4. P. E. Suwandika And I. N. M. Yasa, "Pengaruh Pendapatan Asli Daerah Dan Investasi Terhadap Pertumbuhan Ekonomi Dan Tingkat Pengangguran Di Provinsi Bali," *E-Jurnal Ekon. Pembang. Univ. Udayana*, Vol. 4, No. 7, Pp. 794–810, 2015.
5. A. Wicaksana, "Pengaruh Perkembangan Subkategori Penyediaan Akonomodasi Terhadap Pertumbuhan Ekonomi Daerah Di Indonesia," *J. Adm. Bisnis*, Vol. 32, No. 1, Pp. 135–140, 2016, [Online]. Available: https://medium.com/@arifwicaksanaa/pengertian-use-case-a7e576e1b6bf
6. A. Nisa, "Analisis Pengaruh Pendapatan Asli Daerah, Dana Alokasi Umum, Dan Bagi Hasil Pajak Terhadap Pertumbuhan Ekonomi Kabupaten/Kota Di Provinsi Jawa Timur," *J. Ilmu Ekon.*, Vol. 1, Pp. 2011–2015, 2017.
7. M. Marianus And B. Rudy, "Pengaruh Pendapatan Asli Daerah Dan Dana Perimbangan Terhadap Pertumbuhan Ekonomi Dan Kemiskinan Di Provinsi Nusa Tenggara Timur," *Telaah Bisnis*, Vol. 18, No. 1, Pp. 19–32, 2017.
8. R. Alvina, "Pengaruh Sektor Pariwisata Terhadap Pertumbuhan Ekonomi," *Dr. Diss. Univ. Andalas*, Vol. V, Pp. 11–112, 2019.
9. H. Haryani And A. Asrida, "Pengaruh Output Pertanian Dan Pariwisata Terhadap Pertumbuhan Ekonomi Di Indonesia," *J. Ekon.*, Vol. 15, No. 1, 2021, https://doi.org/10.51179/Eko.V15i1.538.
10. B.Windayani, "Pengaruh Kunjungan Wisatawan, Tingkat Hunian Hotel, Pengeluaran Wisatawan Terhadap Penyerapan Tenaga Kerja Dan Pertumbuhan Ekonomi Di Provinsi Bali," *E-Jurnal Ekon. Pembang. Univ. Udayana*, Vol. 6 (2), Pp. 195–224, 2017.
11. S. Suyatno, "Analisa Economic Base Terhadap Pertumbuhan Ekonomi Daerah Tingkat Ii Wonogiri : Menghadapiimplementasi Uu No. 22/1999 Dan Uu No. 5/1999," *Jurnal Ekonomi Pembangunan: Kajian Masalah Ekonomi Dan Pembangunan*, Vol. 1, No. 2. P. 144, 2007. https://doi.org/10.23917/Jep.V1i2.3899.

12. I. Mafruhah, N. S. Mulyani, N. Istiqomah, And D. Ismoyowati, "Development Of Ecotourism Based On Community Empowerment (A Case Study Of Kebumen Regency)," *J. Ekon. Pembang. Kaji. Masal. Ekon. Dan Pembang.*, Vol. 19, No. 2, Pp. 196–206, 2019, https://doi.org/10.23917/Jep.V19i2.6996.

13. N. Sari, G. Djuanda, And S. Sarwani, "Pengaruh Dana Perimbangan, Dana Sisa Lebih Perhitungan Anggaran (Silpa) Dan Pendapatan Asli Daerah Terhadap Belanja Modal Dan Dampaknya Pada Pertumbuhan Ekonomi," *J. Ris. Manaj. Dan Bisnis Fak. Ekon. Uniat*, Vol. 3, No. 1, Pp. 91–100, 2018, https://doi.org/10.36226/Jrmb.V3i1.92.

14. A. Mukhtar, "Pengaruh Pendapatan Asli Daerah (Pad), Dana Perimbangan Dan Investasi Terhadap Pertumbuhan Ekonomi Di Kota Makassar Tahun 2003-2012," *J. Econ.*, Vol. 3, Pp. 1–11, 2015.

15. H. A. Mir, "Impact Of Tourism Industry On Economic Development Of Jammu And Kashmir," Vol. 5, No. 6, Pp. 592–598, 2014.

16. A. Suciyanti, "Pengaruh Sektor Pariwisata Terhadap Pertumbuhan Ekonomi Di 9 Negara Asean Pada Tahun 2010–2018 Skripsi," 2021.

17. M. I. Tabash, "The Role Of Tourism Sector In Economic Growth: An Empirical Evidence From Palestine," *Int. J. Econ. Finance. Issues*, Vol. 7, No. 2, Pp. 103–108, 2017.

18. Y. Gwenhure And N. M. Odhiambo, "Tourism And Economic Growth: A Review Of International Literature," *Tourism*, Vol. 65, No. 1, Pp. 33–44, 2017.

19. S. Suhel And A. Bashir, "The Role Of Tourism toward economic growth in the local economy," *Econ. J. Emerg. Mark.*, vol. 10, no. 1, pp. 32–39, 2018, https://doi.org/10.20885/ejem.vol10.iss1.art4.

20. A. P. YAKUP, "Pengaruh Sektor Pariwisata Terhadap Pertumbuhan Ekonomi Di Indonesia," *Univ. AirlanggaSurabaya*, 2019.