

ANALYSIS OF THE EFFECT OF INFRASTRUCTURE AND THE TOURISM SECTOR ON GROSS REGIONAL DOMESTIC PRODUCT (GRDP) PER CAPITA IN REGENCIES/CITIES OF EAST NUSA TENGGARA PROVINCE DURING 2020–2023



Mesya Hafif Wal'Azra¹

Universitas Muhammadiyah Surakarta, Surakarta, Indonesia

b300220085@student.ums.ac.id

Yuni Prihadi Utomo^{2*}

Universitas Muhammadiyah Surakarta, Surakarta, Indonesia

xprihadime@gmail.com*

Abstract

This study examines the influence of infrastructure development and the tourism industry on regional economic performance in East Nusa Tenggara Province. The research uses panel data from 22 regencies/cities during the 2020–2023 period and applies panel data regression analysis using the *Pooled Least Square* (PLS), *Fixed Effect Model* (FEM), and *Random Effect Model* (REM) approaches. The most appropriate model was selected through the Chow and Hausman tests, which indicate that the *Fixed Effect Model* (FEM) provides the best fit. The results show that regional government expenditure (APBD), the number of banking institutions, and the number of domestic tourists significantly affect GRDP per capita. However, APBD and the number of banks exhibit negative relationships, suggesting that fiscal capacity and financial intermediation have not yet been optimally directed toward productive economic activities. In contrast, domestic tourism has a positive and significant effect, indicating its important role in supporting regional economic performance. Nevertheless, the findings should be interpreted cautiously because the relatively short observation period may only capture short-term fluctuations rather than long-term structural effects, particularly for infrastructure and tourism investments that generally require longer adjustment periods. In addition, the model may still contain limitations related to omitted variable bias because factors such as education, private investment, and infrastructure quality are not included in the analysis. Therefore, local governments are encouraged to improve the effectiveness of public spending, strengthen financial intermediation, and optimize tourism development strategies to support sustainable regional economic growth.

Keywords: Infrastructure, Tourism, GRDP per Capita, Panel Data, FEM.

INTRODUCTION

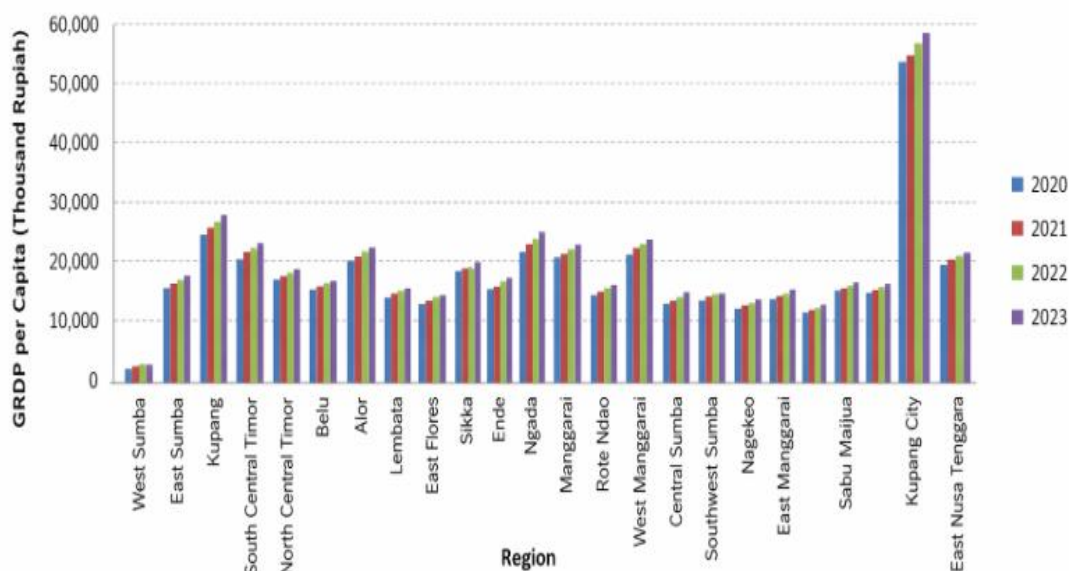
Regional economic growth is closely related to the availability of infrastructure and the development of productive sectors capable of generating multiplier effects across the economy. In developing regions, infrastructure functions not only as a supporting facility but also as a determinant of economic efficiency, accessibility, and investment attractiveness. According to the theory of public infrastructure proposed by David Alan Aschauer (1989, as cited in Mahendra, 2023), public infrastructure investment contributes to economic growth by increasing productivity, reducing transaction costs, and improving connectivity between regions. Better infrastructure enables the mobility of goods, services, labor, and tourists to become more efficient, thereby stimulating regional economic activities. In the context of tourism-based regional development, infrastructure availability becomes an important prerequisite because tourism activities are highly dependent on transportation access, accommodation facilities, and supporting public services.

Meanwhile, Keynesian economic theory emphasizes that government expenditure and productive economic sectors can stimulate aggregate demand and encourage regional economic growth (John Maynard Keynes, 1936, as cited in Hermawan et al., 2024). Tourism is considered one of the strategic sectors capable of generating broad economic impacts because it creates employment opportunities, increases household income, stimulates private investment, and supports the development of interconnected sectors such as transportation, trade, and hospitality services (Ratnadewati et al., 2024). Through its multiplier effect, tourism contributes not only to increasing regional income but also to encouraging infrastructure expansion and improving regional economic performance. Therefore, this study is based on the argument that infrastructure development, fiscal capacity, and tourism activities are interconnected factors that collectively influence regional economic growth.

East Nusa Tenggara Province possesses considerable tourism potential supported by natural and cultural attractions such as Komodo National Park, Labuan Bajo, Kelimutu Lake, and Nihiwatu Beach. However, despite these advantages, regional economic development remains uneven across regencies and cities. One of the main constraints is the limited availability and quality of infrastructure, particularly transportation connectivity between islands and tourism destinations. Several regions, including East Flores, East Sumba, and Lembata, still experience limited road access and inadequate transportation facilities, which reduce tourism accessibility and increase logistics costs (BPS East Nusa Tenggara, 2023). This condition indicates that tourism potential alone is insufficient to stimulate regional economic growth without adequate infrastructure support.

During the 2020–2023 period, GRDP per capita across regencies/cities in East Nusa Tenggara generally experienced positive growth, although significant disparities remained between regions. Kupang City and West Manggarai Regency recorded relatively rapid economic growth compared to several other areas. These differences suggest that regional economic performance is closely associated with infrastructure availability, fiscal capacity, and tourism sector development. Figure 1 illustrates the development of GRDP per capita across regencies/cities in East Nusa Tenggara during the 2020–2023 period.

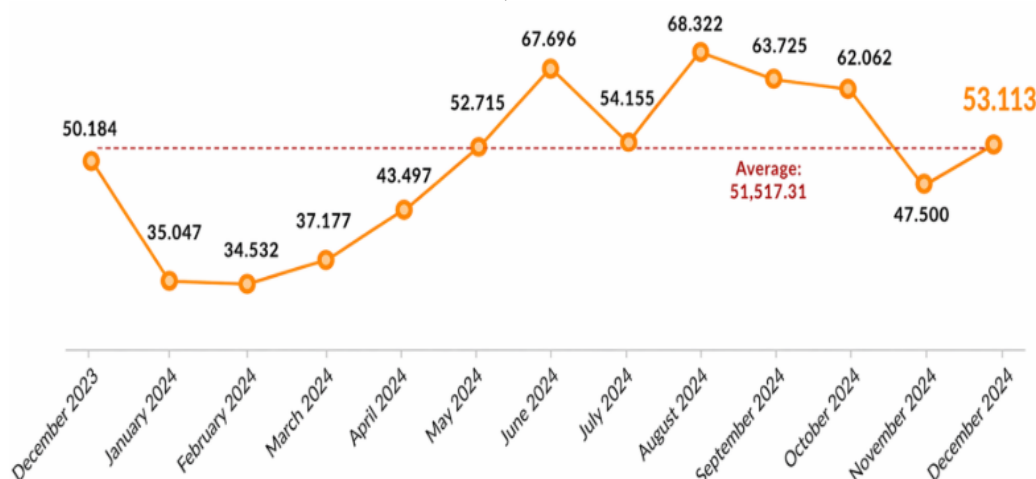
Figure 1
GRDP Per Capita at Current Prices by Regencies/Cities in East Nusa Tenggara Province, 2020–2023



Source: Central Statistics Agency (BPS)

Figure 1 shows that GRDP per capita at current prices across regencies/cities in East Nusa Tenggara generally experienced an upward trend during 2020–2023. In aggregate, provincial GRDP per capita increased from IDR 20,057 thousand in 2020 to IDR 23,078 thousand in 2023, representing growth of approximately 15%. This upward trend indicates that regional economic activities gradually recovered following the economic slowdown during the COVID-19 pandemic period. Kupang recorded the highest GRDP per capita, increasing from IDR 54,374 thousand to IDR 61,129 thousand, reflecting the strong contribution of the service, trade, government administration, and urban tourism sectors. As the provincial capital, Kupang benefits from relatively better infrastructure availability, transportation connectivity, and concentration of economic activities compared to other regions. As a comparison, West Manggarai Regency, despite having a lower GRDP per capita level, still demonstrated positive growth from IDR 13,778 thousand in 2020 to IDR 15,710 thousand in 2023, in line with the expansion of tourism activities surrounding Labuan Bajo and Komodo National Park. The improvement in tourism-related activities contributed to increasing local income, accommodation demand, and supporting service industries. These differences indicate disparities in regional economic capacity, which are influenced by accessibility levels, infrastructure availability, fiscal capacity, and the contribution of key productive sectors. Regions with stronger infrastructure and tourism support tend to experience faster economic growth compared to areas with limited connectivity and public facilities. Figure 2 shows the development of tourism activities in East Nusa Tenggara based on the number of guests in star-rated hotels.

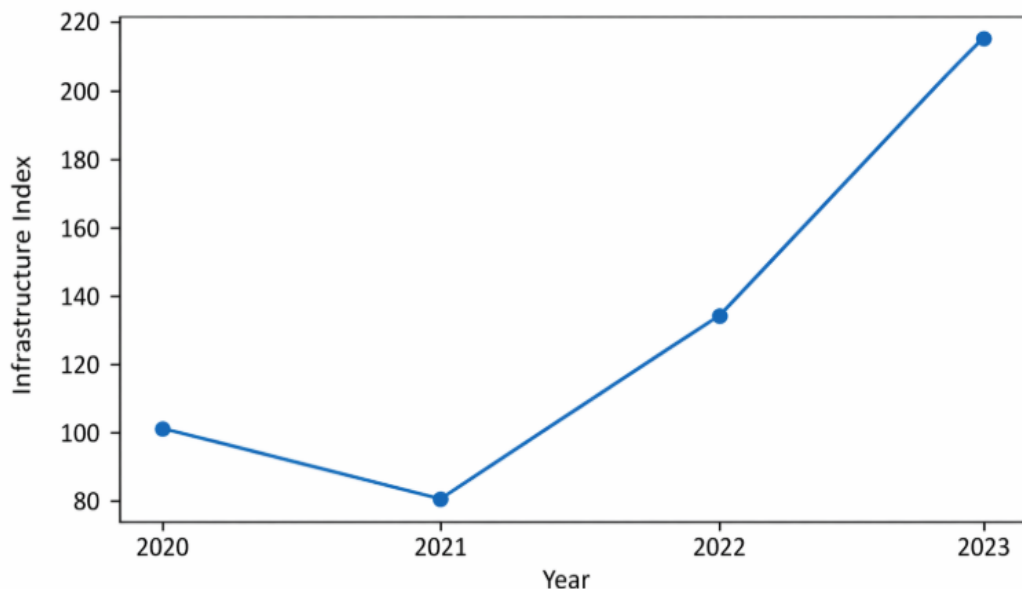
Figure 2
The Development of Tourism Activities in East Nusa Tenggara Based on the Number of Guests in Star-Rated Hotels, November 2023–December 2024



Source: Central Statistics Agency (BPS)

Figure 2 shows that tourism development in East Nusa Tenggara during the period from November 2023 to December 2024 experienced fluctuating yet generally positive growth. The total number of guests staying in star-rated hotels remained below the average at the beginning of 2024, reflecting the tourism low season and the relatively lower intensity of travel activities after the year-end holiday period. However, the number gradually increased starting in March and exceeded the annual average during the period from May to October. This increase indicates a recovery and strengthening of tourism activities supported by rising domestic mobility, tourism promotion programs, and improving accessibility to major tourist destinations in the province. The peak of tourism activity occurred in July and August, with the number of hotel guests reaching more than 67 thousand people, indicating a high intensity of tourist visits during the holiday season and increased travel activities. This condition also reflects the growing role of tourism as one of the important drivers of regional economic activities, particularly in supporting the accommodation, transportation, culinary, and trade sectors. Although there was a decline from September to November, the number of guests increased again in December 2024, indicating the continued attractiveness of the region's tourism sector during the year-end holiday period. Overall, this trend suggests that tourism in East Nusa Tenggara is experiencing positive development with strong seasonal characteristics, supported by increasingly optimal utilization of accommodation facilities and the gradual recovery of the tourism industry after the pandemic period. The increasing number of tourist visits also indicates that tourism has become an increasingly important contributor to regional economic growth and local income generation in East Nusa Tenggara. Figure 3 presents the development of infrastructure in East Nusa Tenggara Province during the period 2020–2023.

Figure 3
Infrastructure Development in East Nusa Tenggara, 2020–2023
(Index, 2020 = 100)



Source: Central Statistics Agency (BPS)

Figure 3 shows that the infrastructure index increased significantly after declining during the pandemic period. The recovery was driven by improvements in road infrastructure, transportation facilities, and tourism-supporting infrastructure, alongside the increase in tourist arrivals. This condition indicates that infrastructure development and tourism growth are interconnected and may jointly influence regional economic performance.

Several previous studies found that infrastructure and tourism contribute positively to economic growth. Andi (2020) and Hartati (2020) showed that infrastructure improvement and tourism activities significantly stimulate GRDP growth. Similarly, Sebayang (2023) and Simbala et al. (2024) found that tourism facilities and tourist arrivals significantly affect regional economic performance. However, Manthofi and Aisyah et al. (2024) reported that several infrastructure indicators, such as road length and the number of restaurants, did not significantly affect economic growth. These inconsistent findings indicate that the relationship between infrastructure, tourism, and economic growth may differ across regions depending on local economic characteristics and development conditions.

Based on these issues, this study aims to analyze the influence of infrastructure, tourism activities, and fiscal capacity on GRDP per capita across regencies/cities in East Nusa Tenggara during the 2020–2023 period. This study proposes that infrastructure development improves accessibility and economic productivity, tourism activities stimulate regional income through multiplier effects, and fiscal capacity supports economic expansion through public spending. The novelty of this study lies in its focus on East Nusa Tenggara as an archipelagic region with high connectivity challenges, as well as its integration of infrastructure, tourism, and fiscal variables within a single panel data model to explain regional economic performance.

REVIEW OF LITERATURE

Previous studies generally indicate that tourism development, infrastructure accessibility, and fiscal capacity play important roles in influencing regional economic growth. However, empirical findings remain inconsistent regarding which variables provide the strongest contribution to regional economic performance. Most studies found that tourism-related variables positively affect economic growth, although the magnitude and significance of the effects differ across regions and research periods.

Several studies consistently showed that tourism activities contribute positively to economic performance. Azizurrohman et al. (2021) found that foreign tourist arrivals positively affected economic growth with a coefficient of 0.364, while visa-free policy also showed a positive coefficient of 0.112. Similarly, Pramaningtyas (2022) reported that *International Tourism Expenditure* and tourism investment positively affected GDP, with coefficients of 0.449236 and 0.021316, respectively. Mursalina et al. (2022) also found that tourist arrivals and domestic investment positively affected tourism economic growth, with coefficients of 0.0256 and 0.0108. Supporting these findings, Aulia Zahrotun Nisa and Rifki Khoirudin (2025) showed that hotels, restaurants, tourist attractions, and population positively influenced GRDP, with coefficients of 0.1373487, 0.104226, 0.0039949, and 0.6016676, respectively. These findings indicate that tourism activities generate multiplier effects through accommodation, transportation, trade, and service sectors, thereby supporting regional economic growth.

Nevertheless, several studies also found contrasting results regarding tourism-supporting facilities. Manthofi and Aisyah et al. (2024) found that foreign tourists positively affected GRDP with a coefficient of 2.155601, while investment negatively affected GRDP with a coefficient of -0.146740. In the same study, the number of accommodations, restaurants, and tourist attractions did not significantly affect GRDP. Similarly, Wirawan and El Hasanah (2025) reported that the number of hotels negatively affected Regional Original Revenue (PAD) with a coefficient of -0.590, whereas tourism workers positively affected PAD with a coefficient of 0.711. Cindy and Setiawati (2026) also found that tourist attractions and hotels positively affected labor absorption in the tourism sector, with coefficients of 572.1012 and 244.2659, respectively, while restaurants negatively affected labor absorption with a coefficient of -114.8891. These mixed findings suggest that tourism facilities alone do not automatically improve economic performance unless supported by strong accessibility, adequate infrastructure, and effective economic integration.

Infrastructure development is also widely recognized as an important determinant of economic growth. Silalahi and Agustina (2024) found that government spending on tourism positively affected tourism GRDP with a coefficient of 1.6123, while tourism workforce positively affected tourism GRDP with a coefficient of 0.1036. Meanwhile, inflation negatively affected tourism GRDP with a coefficient of -0.0161. These findings indicate that infrastructure support and productive public expenditure can strengthen regional economic activities when integrated with tourism sector development. However, several studies reported that certain infrastructure indicators did not significantly affect GRDP, indicating that infrastructure effectiveness depends not only on physical availability but also on utilization quality, connectivity, and regional accessibility.

From a theoretical perspective, these findings are consistent with the theory of public infrastructure proposed by David Alan Aschauer, which states that infrastructure improves

productivity and economic efficiency by reducing transportation and distribution costs. This perspective is reinforced by *Endogenous Growth Theory*, which emphasizes that long-term economic growth is driven by internal factors such as investment, infrastructure development, and technological progress. Likewise, *Big Push Theory* explains that simultaneous infrastructure development can reduce transaction costs and create broader economic opportunities, while the *New Economic Geography* approach highlights the role of transportation infrastructure in encouraging economic agglomeration and the emergence of regional growth centers. These theories help explain why infrastructure and tourism may produce different impacts across regions depending on accessibility conditions, investment quality, and regional economic characteristics.

Several previous studies also highlighted the importance of fiscal capacity and supporting socioeconomic factors in determining regional economic performance. Tjahjanto et al. (2023) found that GRDP, Human Development Index (HDI), and Regional Minimum Wage negatively affected unemployment, with coefficients of -0.176838, -0.101769, and -0.083625, respectively. Palupi and Sukartini (2022) also found that education facilities, vocational teachers, and micro-enterprises positively affected HDI, while early marriage rates and small enterprises negatively affected HDI. These findings indicate that regional economic growth is multidimensional and influenced not only by tourism and infrastructure but also by labor quality, human development, and supporting institutional conditions.

Overall, previous studies demonstrate that tourism development, infrastructure accessibility, and fiscal support generally contribute positively to regional economic growth. However, empirical findings remain inconsistent regarding which variables exert the strongest influence and how these relationships vary across regions. Most previous studies also focus on regions with relatively strong infrastructure and economic integration, while limited research specifically examines archipelagic regions such as East Nusa Tenggara, where connectivity challenges and regional disparities remain substantial. Therefore, this study seeks to fill the research gap by analyzing the simultaneous influence of infrastructure, tourism activities, and fiscal capacity on GRDP per capita across regencies/cities in East Nusa Tenggara during the 2020–2023 period using panel data regression analysis.

RESEARCH METHOD

To analyze the relationship among variables, this research utilizes a panel data regression approach formulated within a specific econometric model framework:

$$GRDP_{pit} = \beta_0 + \beta_1 LNR_{it} + \beta_2 NOR_{it} + \beta_3 RGB_{it} + \beta_4 IHG_{it} + \varepsilon_{it}$$

where:

$GRDP_{pc}$	= Gross Regional Domestic Product (GRDP) per capita (IDR)
LNR	= Length of National Roads (km)
NOR	= Number of Restaurants (units)
RGB	= Regional Government Budget (IDR)
IHG	= International Hotel Guests (persons)
ε	= Error term
β_0	= Constant
$\beta_1 \dots \beta_4$	= Regression coefficients of independent variables
i	= i-th regency/city

t = t-th year

This model was developed based on previous studies that employed similar variables. The Length of National Roads (LNR) variable represents transportation infrastructure, while the Number of Restaurants (NOR) and International Hotel Guests (IHG) represent tourism-supporting facilities and tourism activity. Meanwhile, the Regional Government Budget (RGB) is used as a proxy for regional fiscal capacity that supports economic development. The variables were selected because they are closely related to infrastructure expansion, tourism development, and regional economic performance.

This study applies a static linear panel regression model to examine the direct relationship between infrastructure, tourism, fiscal capacity, and GRDP per capita during the observation period. However, the study recognizes that infrastructure and tourism development may also generate lagged effects on economic growth because their impacts generally emerge gradually over time. Due to the relatively short observation period of 2020–2023, dynamic lag structures were not included in the model to maintain estimation efficiency and avoid reducing the degrees of freedom in the panel dataset. Therefore, the estimated results mainly reflect short-term relationships among variables.

Based on theoretical perspectives and findings from previous studies, the hypotheses of this study are formulated as follows: Length of National Roads (LNR), Number of Restaurants (NOR), International Hotel Guests (IHG), and Regional Government Budget (RGB) are expected to positively affect Gross Regional Domestic Product per capita (GRDPpc).

The study employs panel data combining cross-sectional data from 22 regencies/cities in East Nusa Tenggara Province and time-series data covering the 2020–2023 period. All research data were obtained from official publications released by the Central Statistics Agency (BPS).

To estimate the panel regression model, this study utilizes *Pooled Least Squares* (PLS), *Fixed Effect Model* (FEM), and *Random Effect Model* (REM). The optimal model was determined using the Chow test and Hausman test, while the Lagrange Multiplier test was additionally applied when necessary. After selecting the optimal model, goodness-of-fit evaluation and hypothesis testing were conducted to analyze the influence of the independent variables on GRDP per capita.

RESULTS AND DISCUSSION

Table 1 presents the estimation results of panel data regression using the *Pooled Least Squares* (PLS), *Fixed Effect Model* (FEM), and *Random Effect Model* (REM) approaches. The table also summarizes the statistical procedures used to determine the most appropriate estimation model.

Table 1
Estimation Results of the Panel Data Regression Econometric Model – Cross Section

Variables	Regression Coefficients		
	PLS	FEM	REM
C	-166.2028	6918.587	2595.121

RGB	0.008326	-0.004602	-0.003207
LNR	0.787905	-0.249138	2.182506
ELEC	0.031291	0.004867	0.020399
WATER	0.000273	-5.20E-05	0.000269
TELE	0.363704	-0.089739	0.092452
BANK	25.37672	-52.44138	-35.44139
HOTELS	-19.84916	10.87087	5.943456
NOR	3.577517	-0.310488	14.15913
DHG	0.020246	0.011024	0.014395
IHG	-0.022242	-0.005889	-0.011738
R ²	0.9440	0.9968	0.7847
Adjusted. R ²	0.9367	0.9951	0.7568
F-statistic	129.9557	577.3857	28.07504
Prob. Statistic F	0.0000	0.0000	0.0000
Model Selection Test			
(1) Chow			
- Cross- Section F(21,56) = 45,1590; Prob. F = 0,0000			
(2) Hausman			
- Cross-Section random $\chi^2(10) = 79,2574$; Prob. $\chi^2 = 0,0000$			

Source: Central Statistics Agency (BPS), estimate.

Based on the Chow test and Hausman test results, the *Fixed Effect Model* (FEM) was selected as the most appropriate model because both tests produced probability values below the 1 percent significance level. This indicates that individual regional characteristics across regencies/cities in East Nusa Tenggara significantly influence GRDP per capita and therefore need to be controlled through regional fixed effects. The complete estimation results of the FEM specification are presented in Table 2 and Table 3.

Table 2
Estimated Fixed Effect Model (FEM)

$GRDP_{it} = 6918,587 - 0,0046 RGB_{it} - 0,2491 LNR_{it} + 0,0048 ELEC_{it} -$			
	$0,0000 WATER_{it}$		
	(0,0068)*	(0,8729)	(0,4292)
			(0,7585)
$- 0,0897 TELE_{it} - 52,4413 BANK_{it} + 10,8708 HOTELS_{it} - 0,3104 NOR_{it}$			
	(0,2847)	(0,0001)*	(0,0898)
			(0,9591)
$+ 0,0111 DHG_{it} - 0,0058 IHG_{it}$			
	(0,0011)*	(0,1458)	
$R^2 = 0,9968$; DW = 2,1856; F. = 577,3857; Prob. F = 0,0000			

Source: Central Statistics Agency (BPS), estimate. Notes: Significant at $\alpha = 0.01$ ** Significant at $\alpha = 0.05$ *** Significant at $\alpha = 0.10$ Numbers in parentheses indicate the probability values of the t-statistics.

Referring to Table 2, the estimation results obtained from the Fixed Effect Model (FEM) indicate that the model is statistically valid, as evidenced by the F-statistic probability value of 0.0000, which is lower than the 1% significance threshold. In addition, the model

generates an R^2 coefficient of 0.99, suggesting that nearly all variations in the dependent variable can be accounted for by the regression model. Even so, this exceptionally high coefficient of determination requires careful interpretation because, out of the ten explanatory variables included in the analysis, only three variables specifically Regional Government Budget (RGB), Number of Banks (BANK), and Domestic Hotel Guests (DHG) demonstrate a statistically significant effect on GRDP per capita at current prices. This is reflected in their empirical t-statistic significance values of 0.0068 (< 0.01) for RGB, 0.0001 (< 0.01) for BANK, and 0.0011 (< 0.01) for DHG.

The variables Regional Government Budget (RGB), Number of Banks (BANK), and Domestic Hotel Guests (DHG) have regression coefficients of -0.0046, -52.4413, and 0.0110, respectively, indicating a linear-linear relationship pattern. The findings indicate that an increase of one unit in RGB is associated with a decline in economic growth of 0.0046 units, while a one-unit rise in the number of banks is estimated to decrease economic growth by 52.4413 units. In contrast, a one-unit increase in domestic hotel guests contributes to an increase in economic growth of 0.0110 units. Likewise, a reduction in each variable by one unit would result in changes of the same magnitude but in the opposite direction. These results suggest that domestic tourism contributes positively to economic growth, whereas fiscal and financial sector variables still need to be managed more effectively in order to generate stronger positive effects on the economy. The regional effects and constants for each district/city estimated in the model are presented in Table 3.

Table 3
Regional Effects and Regional Constants

No	Regencies/Cities	Regional Effects	Regional Constants
1	West Sumba	-3,448.54	3,470.05
2	East Sumba	1,836.86	8,755.45
3	Kupang Regency	3,771.56	10,690.15
4	South Central Timor	4,760.36	11,678.95
5	North Central Timor	-822.10	6,096.49
6	Belu	61.13	6,979.72
7	Alor	-1,687.25	5,231.34
8	Lembata	-3,388.48	3,530.11
9	East Flores	819.58	7,738.17
10	Sikka	520.88	7,439.47
11	Ende	1,796.20	8,714.79
12	Ngada	-1,873.53	5,045.06
13	Manggarai	76.45	6,995.04
14	Rote Ndao	-2,510.22	4,408.37
15	West Manggarai	-3,751.21	3,167.38
16	Central Sumba	-4,966.87	1,951.72
17	Southwest Sumba	-1,130.11	5,788.48
18	Nagekeo	-3,273.31	3,645.28
19	East Manggarai	-1,782.85	5,135.74
20	Sabu Raijua	-4,730.82	2,187.77

21	Malaka	-3,070.23	3,848.36
22	Kupang	22,792.47	29,711.06

Source: Central Statistics Agency (BPS), estimate data

Based on Table 3, the highest regional constant value is found in Kupang at 29,711.06, while the lowest is recorded in Central Sumba Regency at 1,951.72. The high regional constant in Kupang City indicates that the region has the highest baseline level of GRDP per capita compared to other regions, reflecting its advantage as the economic, governmental, and trade center of East Nusa Tenggara. Kupang City has relatively more advanced infrastructure, more diverse economic activities, and a higher concentration of service and trade sectors, enabling it to consistently generate greater economic output.

In contrast, the low regional constant in Central Sumba Regency indicates that the baseline level of GRDP per capita in the region remains relatively low, reflecting limited economic activity, inadequate infrastructure, and the dominance of primary sectors with relatively low productivity. This condition highlights economic disparities across regions in East Nusa Tenggara Province, where urban areas possess stronger structural advantages compared to regions that still rely heavily on traditional economic activities.

Economic Interpretation

The estimation results of the *Fixed Effect Model* (FEM) indicate that GRDP per capita across regencies/cities in East Nusa Tenggara during the 2020–2023 period was influenced by several infrastructure, fiscal, and tourism variables, although not all variables showed statistically significant effects. Simultaneously, the model demonstrates a very high coefficient of determination ($R^2 = 0.9968$), indicating that most variations in GRDP per capita can be explained by the variables included in the model. However, this high explanatory power should be interpreted cautiously because the model incorporates several infrastructure-related variables that may contain overlapping information, potentially increasing redundancy among explanatory variables rather than fully reflecting actual predictive strength. Moreover, only a few variables specifically Regional Government Budget (RGB), Number of Banks (BANK), and Domestic Hotel Guests (DHG) were found to significantly affect GRDP per capita in the partial test.

The Regional Government Budget (RGB) variable shows a negative effect on GRDP per capita, indicating that increases in regional government expenditure have not yet optimally stimulated productive economic activities. Economically, this finding suggests that regional spending in East Nusa Tenggara is still largely concentrated on routine and operational expenditures, such as administrative costs and employee salaries, which generally produce relatively weak multiplier effects. Although government spending theoretically functions as a stimulus for economic growth, its effectiveness depends heavily on the quality and allocation of expenditure. When public spending is not directed toward productive sectors such as infrastructure investment, business development, or employment creation, the resulting economic impact becomes limited. Therefore, the negative coefficient does not necessarily imply that government expenditure is harmful to growth, but rather indicates that fiscal allocation in the region may still be inefficient in generating broader economic expansion.

The BANK variable also exhibits a negative and significant relationship with GRDP per capita. In principle, the banking sector is expected to strengthen regional economic

growth through financial intermediation by channeling funds into productive investment activities. However, the findings suggest that the increasing number of banks in East Nusa Tenggara has not been accompanied by effective credit distribution toward productive sectors. This condition indicates that banking activities remain more concentrated on consumer financing rather than investment financing for agriculture, tourism, manufacturing, or small business development. The relatively large negative coefficient also reflects that the expansion of banking institutions alone is insufficient to stimulate economic growth without stronger integration with the real sector economy. Consequently, the banking sector has not yet functioned optimally as a driver of regional production capacity and economic productivity.

In contrast, the Domestic Hotel Guests (DHG) variable positively affects GRDP per capita, indicating that domestic tourism has become one of the important contributors to regional economic growth in East Nusa Tenggara. Although the coefficient magnitude is relatively small, the economic interpretation remains meaningful because domestic tourist visits directly stimulate demand in accommodation, transportation, trade, culinary, and other service sectors. Increased domestic mobility after the pandemic period also contributed to stronger economic circulation within local communities. This finding suggests that domestic tourism provides more stable and immediate economic benefits compared to international tourism, particularly in regions where domestic tourist flows dominate overall tourism activity.

Meanwhile, infrastructure variables including Length of National Roads (LNR), Electricity (ELEC), Water (WATER), and Telecommunications (TELE) do not significantly affect GRDP per capita. Theoretically, infrastructure is expected to improve productivity, accessibility, and economic efficiency. However, the insignificant results indicate that infrastructure development in East Nusa Tenggara may still face challenges related to uneven distribution, limited quality, and suboptimal utilization. In archipelagic regions such as East Nusa Tenggara, infrastructure effectiveness depends not only on physical availability but also on connectivity integration between regions and productive sectors. Therefore, the existence of infrastructure alone is insufficient to immediately generate higher economic growth if it is not supported by strong economic activities and effective utilization.

Similarly, the tourism-supporting variables Number of Hotels (HOTELS), Number of Restaurants (NOR), and International Hotel Guests (IHG) do not significantly affect GRDP per capita. This finding indicates that increasing tourism facilities does not automatically stimulate economic growth unless accompanied by high utilization rates and strong tourist demand. In particular, the insignificant effect of international hotel guests suggests that the contribution of foreign tourism to the regional economy remains relatively limited during the study period. This condition may be associated with limited international accessibility, uneven tourism infrastructure quality, and the lingering impact of global mobility restrictions during the post-pandemic recovery period. Overall, these findings imply that regional economic growth in East Nusa Tenggara is influenced not only by infrastructure availability and tourism facilities, but also by how effectively these sectors are integrated into broader productive economic activities.

CONCLUSION

This study concludes that regional economic performance in East Nusa Tenggara during 2020–2023 was more strongly driven by the effectiveness of domestic tourism activity than by the mere availability of infrastructure and fiscal resources. The findings indicate that domestic hotel guests contributed positively to GRDP per capita because tourist mobility directly stimulated accommodation, transportation, trade, and local service sectors. Meanwhile, the negative effects of the Regional Government Budget (RGB) and the number of banks suggest that fiscal capacity and financial institutions have not been optimally transformed into productive economic activities. This implies that regional development in East Nusa Tenggara is not only determined by the size of public spending or the presence of financial institutions, but also by how effectively these resources are allocated toward productive sectors. The insignificant effects of most infrastructure variables further indicate that infrastructure development still faces limitations in quality, distribution, and utilization, especially in an archipelagic region with high connectivity challenges. Therefore, local governments need to improve the productivity of regional budget allocation, strengthen banking intermediation for the real sector, and develop domestic tourism as a strategic driver of regional growth. However, these findings should be interpreted cautiously because the study only covers the 2020–2023 period, which may mainly reflect short-term post-pandemic dynamics. In addition, potential endogeneity, omitted variables such as education, private investment, and infrastructure quality, as well as measurement limitations in proxies such as the number of banks and hotel guests, may affect the robustness of the results. Future studies are recommended to use a longer observation period and broader variables to obtain more comprehensive conclusions.

REFERENCES

- Andi. (2020). Analisis Pengaruh Pembangunan Infrastruktur Pelayanan Dasar, Jalan Provinsi, Air Bersih, Hotel, Penginapan dan Restoran Terhadap Produk Domestik Regional Bruto. *Jurnal Riset Ekonomi Dan Bisnis*, 16(1), 100–110.
- Aprilia. (2021). Analisis Pengaruh Pengangguran dan Kemiskinan Terhadap Pertumbuhan Ekonomi Di Sulawesi Utara. *Jurnal Berkala Ilmiah Efisiensi*, 21(05), 63–74.
- Azizurrohman, M., Hartarto, R. B., & Lin, Y. (2021). The Role of Foreign Tourists in Economic Growth: Evidence from Indonesia. *Jurnal Ekonomi & Pembangunan*, 22(2), 313–322. <https://doi.org/10.18196/jesp.v22i2.11591>
- Baihawafi, M., & Sebayang, F. A. (2023). Pengaruh Upah Minimum, Indeks Pembangunan Manusia dan Laju Pertumbuhan Ekonomi terhadap Pengangguran Terbuka. *Jurnal Riset Ilmu Ekonomi Dan Bisnis*, 39–44. <https://journals.unisba.ac.id/index.php/JRIEB/article/view/1911>
- Bala, U., Ibrahim, A., & Bala Hadith, N. (2020). Impact of Population Growth, Poverty and Unemployment on Economic Growth. *Asian Business Research Journal*, 5, 48–54. <https://doi.org/10.20448/journal.518.2020.5.48.54>
- Calmfors, L., & Holmlund, B. (2000). Unemployment and economic growth: a partial survey. *Swedish Economic Policy Review*, 7, 107–153.
- Hermawan, W., Heriyaldi, H., & Tjahjawardita, A. (2024). The Influence of Financial Inclusion and Internet Access on the Income of Poor Households. *Jurnal Ekonomi*

- Pembangunan: Kajian Masalah Ekonomi Dan Pembangunan*, 25(1), 84–104. <https://doi.org/10.23917/jep.v25i1.23517>
- Husein, Z., & Aisyah, S. (2024). The Influence of the Tourism Sector and Local Revenue on Economic Growth in Bali. *ICOEBS 2022*, 247, 982–990. https://doi.org/10.2991/978-94-6463-204-0_80
- Indrawati, I., Sarfiah, S. N., & Destianingsih, R. (2020). Analisis Pengaruh Pertumbuhan Ekonomi, Ketimpangan Distribusi Pendapatan, dan Indeks Pembangunan Manusia terhadap Tingkat Kemiskinan Provinsi Papua Tahun 2014-2019. *Directory Journal of Eceonomic*, 2(4), 1068–1080.
- Khairunnida, H., & Utomo, Y. P. (2024). Analisis Faktor-Faktor Yang Mempengaruhi Pdrb Di Provinsi Analysis of Factors Affecting Grdp in Yogyakarta Special Region. *Menara Ekonomi*, X(1), 31–40.
- Kusuma, A. N., & Zakiyyah, N. A. A. (2024). Faktor-Faktor yang Memengaruhi Kemiskinan di 38 Kabupaten / Kota Jawa Timur [Universitas Ahmad Dahlan]. In *Kapalamada: Jurnal Multidisipliner* (Vol. 2). https://doi.org/10.22236/kapalamada_volX/isXppXX-XX
- Mahendra. (2023). Analisis Pengaruh Dana Alokasi Umum, Belanja Modal, dan Produk Domestik Regional Bruto Terhadap Pendapatan Asli Daerah Kabupaten/Kota Di Provinsi Bali. *Jurnal Ilmiah Mahasiswa FEB Universitas Briwijaya*, 9(2), 229–240.
- Manthofi, A., & Aisyah, S. (2024). Pengaruh Sektor Pariwisata Terhadap Pertumbuhan Ekonomi Di Provinsi Nusa Tenggara Timur. *COSTING: Journal of Economic, Business and Accounting*, 7(4).
- Mursalina, M., Syaparuddin, S., & Hardiani, H. (2022). The impact of the Covid-19 pandemic on economic growth in the tourism sector with tourist arrivals and investment as mediating variables in Indonesia. *International Journal of Quantitative Research and Modeling*, 3(1), 18–28. <https://doi.org/10.46336/ijqrm.v3i1.261>
- Nani Hartati. (2020). Pengaruh Inflasi Dan Tingkat Pengangguran Terhadap Pertumbuhan Ekonomi Di Indonesia Periode 2010 – 2016. *Jurnal Ekonomi Syariah Pelita Bangsa*, 05(01).
- Nisa, A. Z., & Rifki Khoirudin. (2025). The Effect of the Tourism Sector on Regency and City Gross Regional Domestic Product in Central Java Province. *BALANCE : Economic, Business, Management, and Accounting Journal*, 22(2), 238–247. <https://doi.org/10.30651/blc.v22i2.25084>
- Pramaningtyas, S., Toto Gunarto, Arivina Ratih, & I Wayan Suparta. (2022). The Effect Of Total International Tourism Expenditure And Total Investment In The Tourism Sector On Gdp Of Asean Countries. *International Journal of Economics, Business and Accounting Research (IJEBA)*, 2022(3), 1361–1372.
- Prameswari, C., & Setiawati, R. I. (2026). Determinant Analysis of the Tourism Sector's Influence on Labor Absorption in East Java. *Indonesian Interdisciplinary Journal of Sharia Economics (IIJSE)*, 9(1), 2371-2379. <https://doi.org/10.31538/ijse.v9i1.7408>
- Priambodo, A. (2020). poverty level data in Purbalingga Regency 2010-2019, economic growth data in Purbalingga Regency 2010-2019 and Human Development Index data in Purbalingga Regency. *Perwira International Journal of Economics & Business (PIJEB)*, July, 29–36. <https://ejournal.unperba.ac.id/index.php/pijeb>
- Rahman, F. (2023). Pengaruh Usaha Kecil Menengah Dan Sektor Pariwisata Terhadap

- Produk Domestik Regional Bruto (Pdrb) Di Kabupaten Probolinggo. *Jurnal Ekonomi Kreatif Dan Manajemen Bisnis Digital*, 1(2), 379–392. <https://doi.org/10.55047/jekombital.v1i2.355>
- Ratnadewati, A., Samudro, B. R., Widiastuti, N., & Popoola, O. M. J. (2024). Uneven Development Principles in Geo-Map Perspective: How Does Infrastructure Play a Role in Crushing the Poverty in the Special Region of Yogyakarta? *Jurnal Ekonomi Pembangunan: Kajian Masalah Ekonomi Dan Pembangunan*, 25(1), 135–152. <https://doi.org/10.23917/jep.v25i1.23641>
- Sabrina, E. W., & Huda, S. (2023). Analisis Pengaruh Sektor Pariwisata Terhadap Produk Domestik Regional Bruto. *Equilibria Pendidikan : Jurnal Ilmiah Pendidikan Ekonomi*, 8(1), 12–21. <https://doi.org/10.26877/ep.v8i1.16408>.
- Simbala, M., Walewangko, E. N., & Niod, A. O. (2024). Pengaruh Upah Minimum Provinsi, Pertumbuhan Ekonomi Dan Indeks Pembangunan Manusia Terhadap Jumlah Pengangguran Di Bolaang Mongondow Raya. *Jurnal Berkala Ilmiah Efisiensi*, 24(3), 5–24.
- Silalahi, R. J., Agustina, N., & Info, A. (2024). ANALYSIS OF TOURISM PERFORMANCE IN. *Jurnal Kepariwisata Indonesia*, 18(2), 197–212. <https://doi.org/10.47608/jki.v18i22024.197>
- Sinha, J. K. (2022). Impact of Unemployment and Inflation on the Economic Growth of India. *Journal of Development Economics and Finance*, 3(2), 397–417. <https://doi.org/10.47509/jdef.2022.v03i02.09>.
- Suriani, M. M. R. (2022). Impact of Covid-19 Pandemic on Economic Growth of the Tourism Sector in Indonesia. *International Journal of Quantitative Research and Modeling*, 3(1), 18–28.
- Syawkani wahid, F., Alwi, M., & Fadlli, M. D. (2025). Analisis Pengaruh Pembangunan Infrastruktur Terhadap Produk Domestik Regional Bruto Kabupaten Lombok Barat Tahun 2010 - 2023. *Jurnal Konstanta*, 4(1), 198–216. <https://doi.org/10.29303/konstanta.v4i1.1897>.
- Tjahjanto, H., Tuhana, T., Mafruhah, I., Istiqomah, N., & Ismoyowati, D. (2023). High Unemployment, Disrupted Economic Growth and Sustainable Development Goals: Analyzing Unemployment Reduction. *Economics and Sociology*, 16(1), 106–120. <https://doi.org/10.14254/2071-789X.2023/16-1/7>.
- Tyas, D. P. P., & Ni Made Sukartini. (2022). Determinants of the Human Development Index (HDI) in Indonesia, 2014 - 2021. *Media Trend Berkala Kajian Ekonomi Dan Studi Pembangunan*, 17(2), 481–495.
- Wirawan, H. A., & Hasanah, L. lak N. El. (2025). Tourism sector and regional own-source revenue: A panel data analysis of six provinces in Java Island, Indonesia. *Journal of Economics Research and Policy Studies*, 5(2), 355–366.