

Statistical Analysis and Impact of Tourism Industry on Economic Growth of Nepal

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Abstract

This study examines the impact of the tourism industry on economic growth in Nepal, with particular emphasis on whether growth is driven by tourist volume or by value-generating tourism activities. A descriptive and analytical research design was employed using secondary time-series data covering fiscal years 2015/16 to 2024/25, sourced from the Nepal Tourism Board and Nepal Rastra Bank. The study applied descriptive statistics, Pearson correlation, and multiple regression analyses to evaluate the relationship between key tourism indicators, tourist arrivals, average length of stay, tourism royalties, tourism-related employment, and foreign exchange earnings, and economic growth measured by tourism's contribution to GDP. The findings reveal that foreign exchange earnings from tourism exert a positive and statistically significant influence on economic growth. In contrast, tourism employment shows a significant but negative relationship, reflecting challenges related to low labor productivity and seasonality. Tourist arrivals, length of stay, and tourism royalties exhibit statistically insignificant effects on economic growth. The results underscore the importance of prioritizing high-value, revenue-intensive, and sustainable tourism strategies to enhance Nepal's long-term economic growth.

Keywords: *Tourism; Economic Growth; Foreign Exchange Earnings; Employment; Nepal*

Background

Tourist destinations are dependent on tourism as a source of income. Tourism is also an influence on the quality of services and other features of the same locations through the reputation of the site. To be able to attract visitors, the place must have a positive image as it contributes to the generation of revenue and sustenance of employment. But it is tourism which afflicts both the host country and the local eco-logical. Tourism seasonal changes could result in overpopulation and other undesirable externalities such as waste, pollution, and criminality. Moreover, demand can cause an increase in prices in tourist destinations. (Theobald, 2012).

The tourism industry entails the involvement of numerous businesses and commodities, as well as an assortment of commodities and products that are functionally and physically diverse and fulfill related demands. In the tourist industry, package services are developed by integrating numerous products of the industry. The tourist industry integrates some of its products to produce a service package that helps in generating employment, earnings, and foreign exchange. Most of the tourist products are not mobile, and the commodities supplied to the tourists are highly perishable. The costs incurred by the travelers are multiproduct. The funds used by visitors have messages in most sectors of the economy.

The tourist industry provides package services through a combination of multiple product elements in order to earn revenue, jobs, and foreign exchange. The coverage of the facilities that visitors need should be well planned because the goods provided to them are highly perishable. Besides, the expenses incurred by travelers are multi-products. The dollars that are spent by tourists convey messages to various sectors of the economy. The development of tourism has

had a severe influence on the social, economic and physical environment of a country. The quantity and quality of tourism encompasses varied activities that expand and align with other pro-productive activities in the horizontal and vertical directions causing the economic wheel to spin incessantly (Jenkins and Henry, 1982). One of the economic sectors that can grow rapidly and ensure considerable development of the infrastructure in the destinations is tourism. It can leverage on the fact that the country is strong in the service industry and has a multiplier effect to the economy. Tourism sustains other sectors of the economy through its cross sectoral synergies and mutual relations with other business ventures such as agriculture, horticulture, poultry, handicraft, shipping, building etc. Consequently, such associations result in the development of new sources of revenue and employment (Sharma, 2018). The benefits of the visitors coming will be generated in the event that they buy local goods and commodities. Consequently, they would want visitors to buy local products as opposed to imported products (Paudyal, 2012).

Most industrialized and developing nations have considered the emergence of a strong tourism industry as an essential part of their economic development strategy in the long term, depending on the types of services provided and the destinations of the same services, which further contribute to the development of the infrastructure of the country. One of the most rapidly growing industries in the global economy is travel and tourism, which has an annual income of approximately 8.8 trillion USD, employing 319 million people, and receives over 600 million foreign tourists in various regions of the world annually as per research results of WTTC in 2018 (Mahatara, 2019).

Research Objectives:

Many research works have been conducted on the economic impact of the tourism industry in other countries; nonetheless, similar studies have not been

conducted in Nepal. So, the key objective of the study is to examine the impact of the tourism industry on the economic growth in Nepal. The specific objectives of the research are:

- i. To examine the trend of tourism development in Nepal.
- ii. To analyze the contribution of tourism to economic growth in Nepal.
- iii. To examine the impact of tourism on Nepal's economic growth.

Research Questions:

This initiative is particularly expected to answer the following research issues:

- iv. What is the trend of tourist arrivals in Nepal?
- v. What is the contribution of the tourism industry to Nepal's Economic growth?
- vi. What is the impact of tourism activities on the economic growth of Nepal?

Literature Review

The significance of tourism in fostering economic growth has been widely explored in relation to the Tourism-Led Growth Hypothesis (TLGH), which postulates that tourism fosters economic development by means of income, employment, and foreign exchange gained. Cross-country analyses reveal that there is a positive correlation between tourism variables and the growth in GDP. In Nepal, previous studies emphasized mainly tourism earnings, expansion of hotels and restaurants, and related sectors like agriculture and banking. Though there are some to support the TLGH, picturing the important role of tourism in economic growth, there are those with ambiguous findings, meaning there is no clear impact. It must be noted, however, that the effects of government expenditure, gross fixed capital formation, trade, and domestic savings are

frequently neglected.

Recent literature exposes that there is a research gap regarding the increase in tourist arrivals and the empirical study of the impact of tourism on GDP, considering various macroeconomic variables. This research paper will bridge the research gap by addressing the relationship between the development of the tourism sector and economic growth in Nepal, considering both conventional and macroeconomic variables. tourists.

Figure 1

Research Conceptual Framework

Independent Variable

- i. Tourist Arrivals
- ii. Length to stay
- iii. Royalties
- iv. Foreign exchange earning
- v. Direct Employment

Dependent

Economic Growth

Source: Bhattarai & Karmacharya, (2022), Dhungana, (2023)

Research Methodology

The research design of this study is descriptive and analytical with a quantitative model, focusing in the macroeconomic environment in Nepal. Secondary data in the form of time series was gathered through official sources such as the Nepal Tourism Board, Economic Survey of Nepal, the Nepal Rastra Bank, and the Ministry of Culture, Tourism and Civil Aviation, concerned with the data relevant to the GDP of the nation, tourist arrivals, and tourism receipts recorded

each year in the dataset as observations. Data analysis includes descriptive techniques to study the characteristics of the data with the objectives of the study, correlation to uncover the relationship suggested by the data, and multiple regression to determine the value of the effect that tourism has on economic growth in the nation as the dependent variable with tourist arrivals and tourism receipts as the independent variables.

Data Analysis and Results

To gauge the relationship between economic growth and the tourist industry, this study is devoted to the systematic review, conjectures, and discussion of the secondary data in the annual report of the industry. The basic steps of the analytical procedure are the implementation of the method, its evaluation, summary and presentation of the results. The data analysis is carried out in particular where the demographic features, descriptive analysis of the survey, and application of different statistical methods to measure the study hypothesis are presented.

Figure 2

Status of the Tourist Arrivals in Nepal

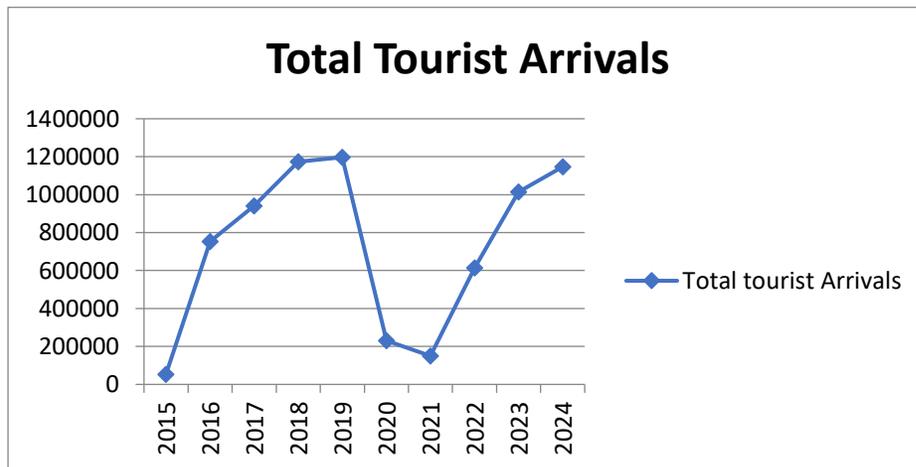
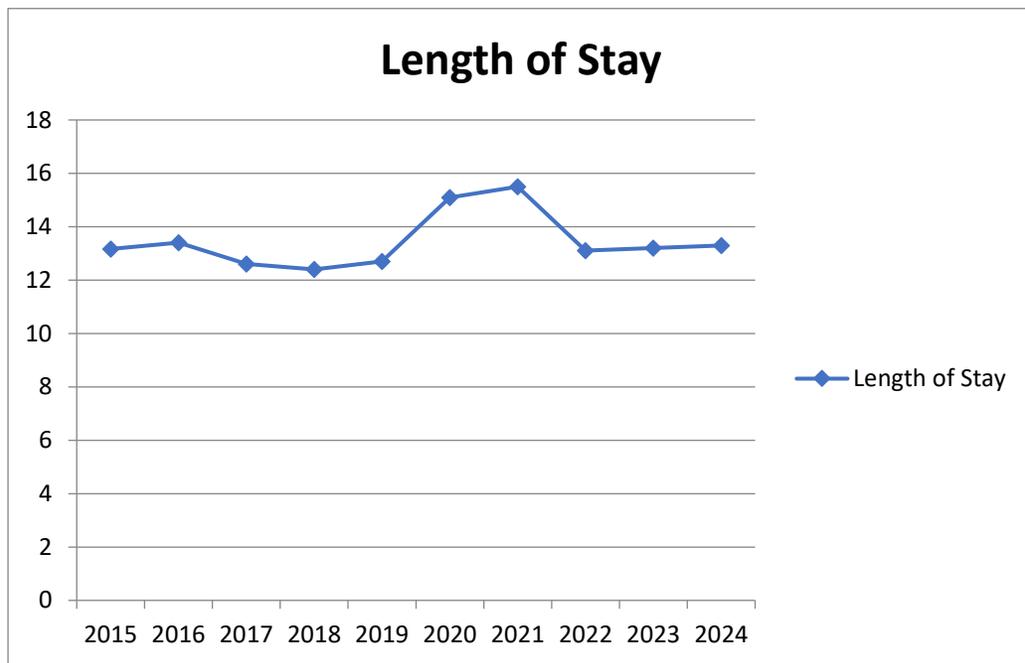


Figure shows that the statistics show tourist arrivals in Nepal from 2015–2024. Tourist numbers increased steadily until 2019, peaked at about 1.2 million, then dropped sharply due to COVID-19. Although arrivals later recovered partially, they remained below pre-pandemic levels, with fewer tourists arriving by air than by land.

Figure 3

Status of Average Length of Tourist’s Stay in Nepal



The figures demonstrate that the average length of stay of visitors varies between 12.4 and 15.5 days. The mean duration of stay was the lowest in 2018 and the greatest in 2021.

Figure 4

Status of Royalties from the tourism industry

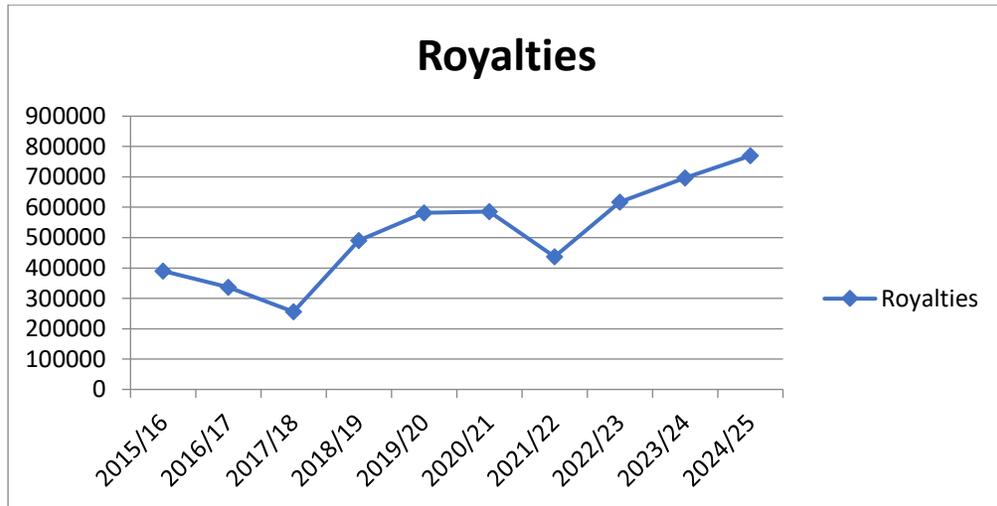
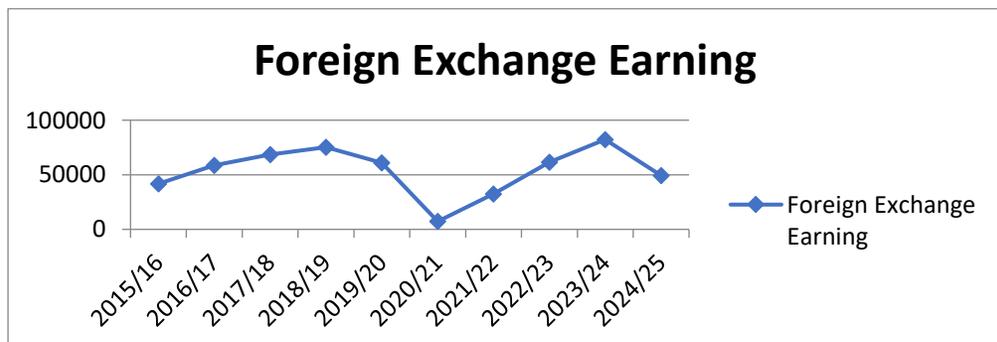


Figure 4 show that the Tourism royalties in Nepal show an unstable trend. Growth was slow in 2015-2016 and negative in 2016-2017 due to internal issues. Royalties improved in 2018-2020 but declined sharply in 2020–2021 because of the COVID-19 pandemic and economic slowdown.

Figure 5

Trend of Foreign Exchange Earnings from the Tourist Industry



Tourism sector profits in Nepal show a fluctuating pattern over ten years. The

highest profit was recorded in 2018/19. Profits increased in 2017–2018 but fell sharply in 2020/21 due to COVID-19. A strong recovery occurred in 2021/22, though earnings remain unstable overall.

Figure 6

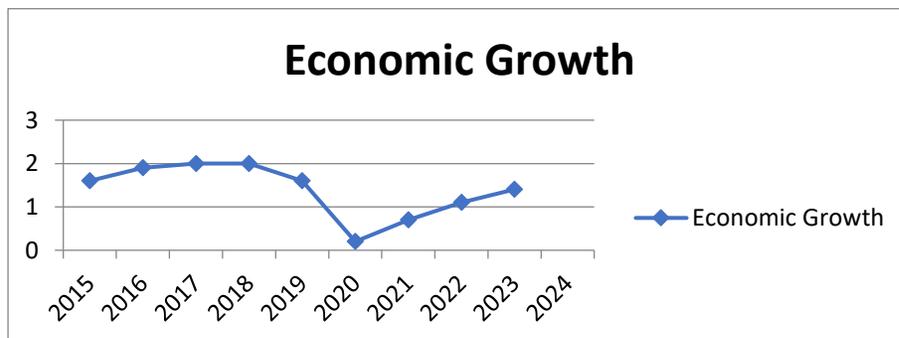
Employment from the Tourism industry



Tourism employment in Nepal generally increased over the decade, reaching its highest level in 2023/24. Employment growth was strong in recent years but declined in 2020/21 due to the COVID-19 pandemic. Overall, the tourism sector has created more jobs in recent years despite temporary setbacks.

Figure 7

Economic Growth from the tourism industry



Tourism employment in Nepal shows an overall upward trend over the last decade. The highest employment was recorded in 2023/24. Employment declined in 2020/21 due to COVID-19 but rebounded strongly afterward, indicating improved job creation in recent years compared to earlier periods.

Table 1

Descriptive Statistic Analysis of the variables

	Minimum	Maximum	Mean	S.D
Total Tourist Arrivals	150962	1197191	776079.90	384204.67
Length to Stay	12.40	15.50	13.45	1.03
Royalties	255745	769806	516092.90	162984.80
Employment	901547	1450000	1101786.30	168227.86
Foreign Exchange Earning	7266.3	82326.6	53785.04	22149.25
Contribution of Tourism GDP (%)	0.2	2.0	1.250	0.7307

The average number of tourist arrivals recorded in Nepal is 776,080, which fluctuates considerably over the years. The number of tourist arrivals also varies from a minimum of 150,962 to a maximum of 1,197,191, making the data volatile. The mean duration of stay of tourists is 13.45 days, which fluctuates slightly. The average values of tourist royalties are 516,092.9, and employment is approximately 1.10 million, both of which fluctuate. The foreign exchange earnings from tourist activities also fluctuate. Generally, the economic impact of tourist activities in Nepal is moderately varying between the low and high values over the years.

Table 2

Correlation Analysis of the Variables

	EG	TTA	LS	RTS	ET	FEE
Economic Growth	1					
Total Tourist Arrivals	0.389 (0.266)	1				
Length to Stay	-0.659* (0.038)	- 0.852** (0.002)	1			
Royalties	-0.642* (0.046)	0.250 (0.486)	0.053 (0.885)	1		
Employment	-0.536 (0.110)	0.426 (0.178)	-0.118 (0.745)	0.860* * (0.001)	1	
Foreign Exchange Earning	0.673* (0.033)	0.775** (0.009)	- 0.811* * (0.004)	-0.002 (0.996)	0.242 (0.50)	1

* Correlation is significant at the 0.05 level (2-tailed)

** Correlation is significant at the 0.01 level (2-tailed)

Figures in parentheses are p-values

The Pearson correlation results indicate that tourism's economic contribution shows a significant positive association with foreign exchange earnings, suggesting that higher foreign currency inflows strongly support economic development. On the contrary, economic contribution is negatively related to length of stay and tourism royalties. Employment and tourist arrivals have weaker and statistically insignificant relationships with economic contribution over the study period.

Table 3

*Regression Analysis of the variables
Model Summary*

Model	R	R Square	Adjusted R-Square	Std Error of the Estimate
1	0.994a	0.988	0.973	0.1201

a. Predictor: (Constant), Foreign Exchange Earnings, Employment, Royalties, Total Tourist Arrivals, Length to stay

The results of regression analysis portray a very strong association between tourism variables and economic growth variables. The large value of R measures a very strong ability to predict and interpret variables. The R² value indicates that only about 98.8% of the variation of economic growth variables can be explained by tourist arrivals, length of stay, royalties, employment, and foreign exchange earnings variables. The low value of the standard error ratifies a strong model fit.

Coefficient of Regression

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 (Constant)	3.584	1.420		2.524	0.065		
Total Tourist Arrivals	4.213E-007	0.000	0.222	1.499	0.208	0.138	7.267
Length of Stay	-0.003	0.102	-0.004	-0.029	0.978	0.144	6.940
Royalties	-2.715E-008	0.000	-0.006	-0.051	0.962	0.210	4.759
Employment	-3.480E-006	0.000	-0.801	-5.808	0.004	0.158	6.336
Foreign Exchange	2.283E-005	0.000	0.692	6.744	0.003	0.285	3.504

Earning

a Dependent Variable: Contribution of Tourism Economic Growth (%)

The results of the regression analysis reveal that most of the variables in tourism have an insignificant contribution to economic growth. The variables that have an insignificant effect on economic growth are tourist arrivals, tourist stay, and royalties, which have a tendency to have less expenditure and leakage effects. However, the variable that has a significant negative effect on economic growth is tourist employment, which has a tendency to be less productive and seasonal. The variable foreign exchange earned from tourist activities has a significant effect on economic development, which has a tendency of being positively related to economic development.

Discussion and Justification

There are empirical results by using time-series data from FY 2015/16 to 2024/25 in order to examine tourism's impact on the economic growth of Nepal. The regression results show that foreign exchange earnings from tourism significantly contribute to economic development, thereby justifying that tourism is one of the major sectors that generate national income. On the other hand, tourism employment does not contribute positively to growth because of low productivity and seasonality, coupled with informality. Other tourism indicators, such as visitor numbers, length of stay, and royalties, have insignificant impacts. These findings suggest that the quality of revenue matters rather than the volume of tourists, which signals the need for high-value tourism and an efficient revenue system in Nepal.

Conclusion

The study examines the impact of the Nepalese tourism industry on economic growth from FY 2015/16 to 2024/25 based on secondary data and statistical tools. Conclusions derived: although tourism has provided a great boost to the economy, its contribution is unstable due to structural weaknesses and shocks from abroad, for example, COVID-19. The number of tourists and income fell drastically during the pandemic and still have not reached the previous level before the pandemic. According to the regression result, foreign exchange earnings and employment in the tourism sector are significant determinants of GDP, while the number of visitors, their length of stay, and royalties are insignificant. Overall, tourism's economic impact depends more upon revenue quality and productivity than on tourist volume.

Recommendations

Nepal should be prioritizing high-value and sustainable tourism, then productivity and skills in tourism employment, strengthening revenue collection systems, reducing leakages, and promoting spending-intensive tourism activities for better economic growth.

Implications

“Tourism has now emerged as an integral part of the overall development efforts in the Nepalese context as well.” Tourism is found to be important for the overall development of the Nepalese economy. It is recommended that the government make adequate efforts in infrastructure development and tourism-friendly policies in order for the GDP growth of the nation to be ensured in the future. Improvement in service delivery and the use of “where and how” instead of “what and why” in tourism promotion is recommended for the private sector. There is potential for employment and empowerment as well as balanced regional development.

Future Research Directions

Future studies can extend this analysis by investigating how technology, or cybertourism, might be used as an aid for economic growth. Future studies also should be used to determine how tourism affects the environment, or how eco-tourism, eco-traveling, or green tourism might be a more sustainable option for the world's ecosystems. Tourism's regional impact at the city or provincial government level might also show how some regions continue to be left behind while new opportunities lie hidden within these regions as well. Variables such as foreign direct investment, employment, or foreign exchange might be used as variables for analysis as well.

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