



## The impact of tourism on economic growth

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**Abstract:** *this study specifically investigates the impact of tourism on economic growth of Nepal. Annual Data are taken from period 2000 to 2018 for this study. Multiple regression model is used to examine the relationship between tourism and economic growth. GDP is taken as a proxy for economic growth and as dependent variable whereas tourist arrivals and NRs/US dollar exchange rate are taken as independent variable. Natural logarithm of variable is taken in order to make equation linear. Further, the result shows positive and significant relationship between tourist arrival and GDP whereas exchange rate has positive and insignificant relationship with GDP. This concludes that there is a positive impact between tourism and economic growth.*

**Keywords:** tourism arrival, exchange rate, economic growth

### 1. Introduction

Tourism is a collection of various activities and services which deliver a travel experience comprising of transportation, accommodation, drinking and eating establishments, retail shops, entertainment businesses and other hospitality services provided for individuals or groups traveling away from home and across the globe. The tourism sector is a relatively new phenomenon in international economic trades. As one of the world's largest economic sector, tourism provides jobs opportunity, drives exports of economy, and generates prosperity across the world. So it continues to make a very important difference to the lives of thousands of, millions of people by driving growth, reducing poverty and fostering economic development. According to the World Travel & Tourism Council's (WTTC) annual research in 2018, tourism is one of the world's booming industries, generating approximately US\$ 8.8 trillion annually and contributing 319 million jobs to the world economy.

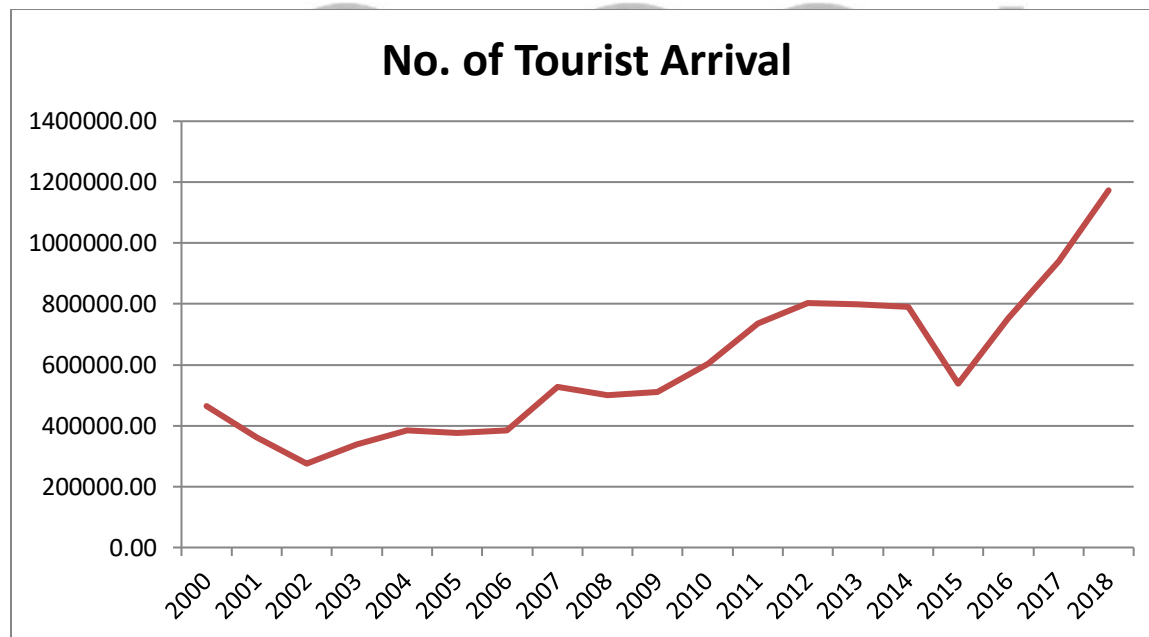
For developing countries like Nepal, where problems such as high rate of unemployment, corruption, hunger, healthcare, limited foreign exchange resources, and single-product economy prevail, development of a tourism industry plays a vital role in the country's economy. It has also become one of the main income sources for many developing countries like Nepal. Nepal has a very huge potential to become a top destination for tourists as the nation is famous for its snowcapped Himalayan mountains, abundant flora and fauna, exciting trekking routes and rich cultural and religious diversity. Various official travel website consider Nepal as to do check list for tourism. According to Lonely Planet, Kathmandu is the 5<sup>th</sup> most top travel destination, while tripadvisor.com has ranked Kathmandu, Nepal at 19<sup>th</sup> out of 25 best tourism destinations in the world for the year 2019. These facts reveal that there are many places like Kathmandu that could

fascinate tourists from around the globe and help to foster the tourism earnings. Over the past several decades international tourism has gained distinct importance around the globe. Nepal's tourism sector has generated revenue of NPR 240.7 billion and supported over 1.05 million jobs directly and indirectly in year 2018.

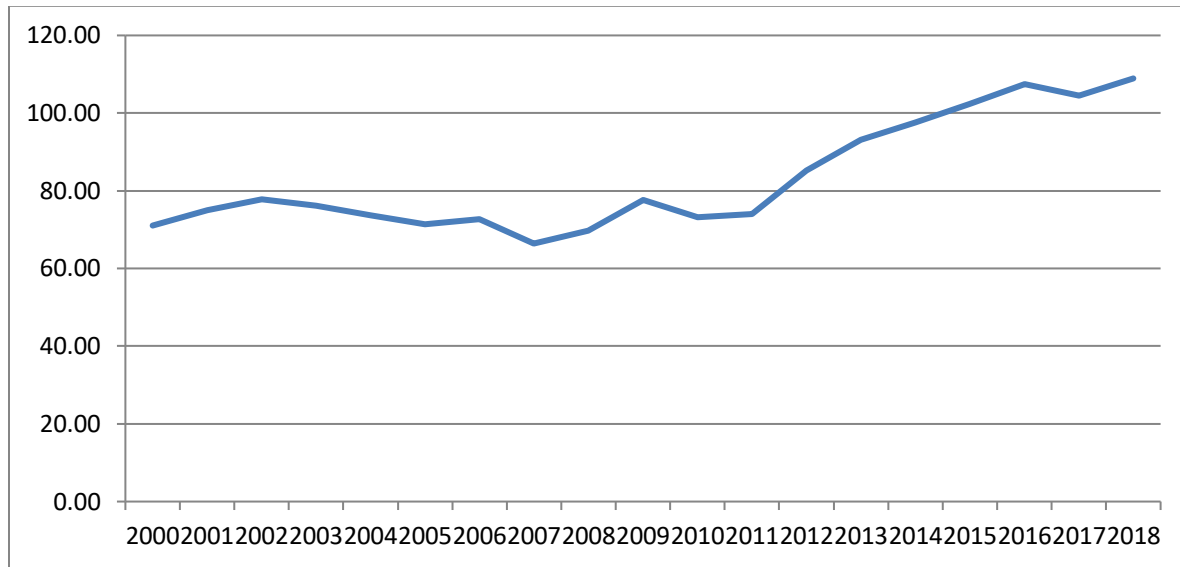
In recent years, researchers have been interested in the relationship between tourism and economic growth. So, the main purpose of this article is to examine the relationship between tourism and economic growth of Nepal. It endeavors to determine the relationship between earnings from tourism and GDP for the period 2000 to 2018. A general consensus has emerged that it increases foreign exchange income, creates job, employment opportunities, stimulates the growth of the tourism industry and therefore it triggers overall economic growth.

In this research paper, annual number of tourist arrival and exchange rate is considered to measure tourism activities and Gross Domestic Product (GDP) in current US dollar is taken as proxy of economic growth and development. Graphical presentation of three important variables used in this research study is as follows from period 2000 to 2018.

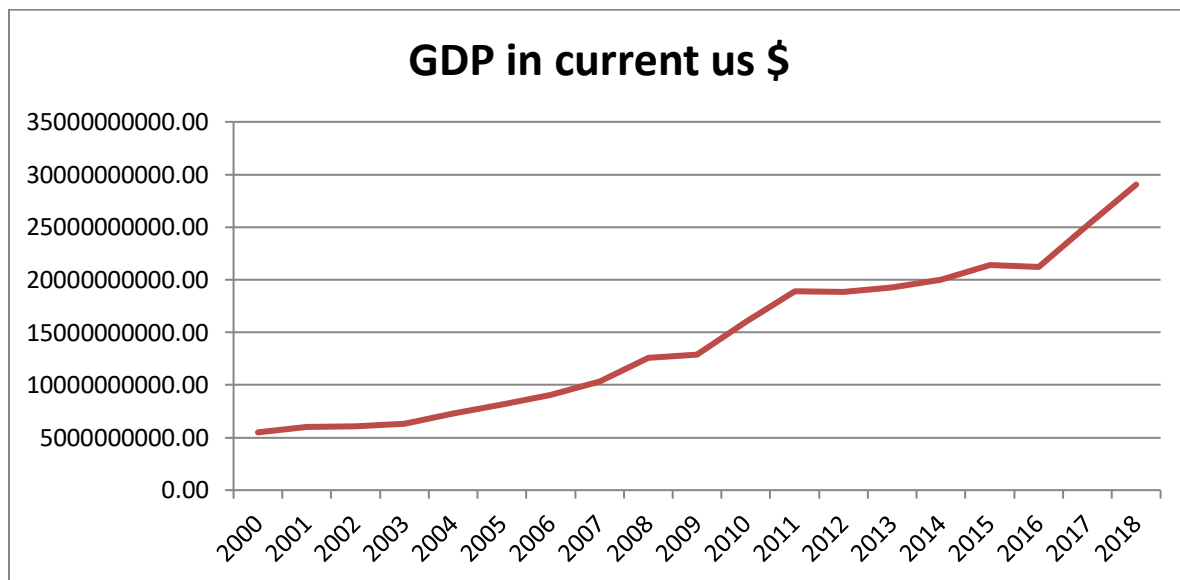
**Figure 1: Annual number of tourist arrival from period 2000 to 2018.**



**Figure 2: NRs/US dollar exchange rate.**



**Figure 3: annual GDP in current US dollar**



## 2. Literature review

Tourism is one of the largest sectors in the world and one of the fastest growing sectors of economic activity. The prevailing literature regarding tourism (Pearce, 1991) classifies the socio-economic impacts on the economy are as follows:

- Balance of payment (BOP): for many Tourist attracted countries, tourism is often the main source of foreign exchange income & earning.

- Regional development: tourism frequently spreads economic activities across the domestic border of the particular country
- Diversification of the economy: because of its multi-faceted nature, tourism may foster and trigger solid economic development of an economy.
- Income levels: income effects of tourism may give rise to wide variations in income multiplier of economy.
- Government revenue: the government earns revenues due to tax collections, although it has been acknowledged that significant expenditures for building and construction activities may also be required
- Employment opportunities: in most countries tourism is an important source of employment, especially for the less-educated and unskilled labor force.

(Dritsakis, 2004) examined the impact of tourism on the long-run economic growth of Greece. One co integrated vector was found among GDP, real effective exchange rate and international tourism earnings from 1960 to 2000. Error Correction Model & granger causality test indicated that there is a strong causal relationship between tourism earnings and economic growth, a strong causal relationship between real exchange rate(RER) and economic growth and simply causal relationships between economic growth and tourism earnings and between real exchange rate(RER) and international tourism earnings. In total, his study supports both tourism led economic development and economic-driven tourism growth.

(Khalil, 2007) examined the role of tourism in economic growth of Pakistan. Using annual data for the period 1960 to 2005, they identified empirically whether there is a unidirectional or bidirectional causal relation between tourism and economic growth. Using the model of the co-integration and Granger Causality Test, their study explored the short-term dynamic relations as well as long-run equilibrium conditions and concluded about the existence of co-integration between tourism and economic growth in Pakistan.

(Burger, 1978) and (Pradhanga, 2000) assessed the economic impacts of tourism in Nepal using Input-Output Model whereas (Sharma, 2001) and (Upadhyay, 2004) analyzed economic impact of tourism using simple regression models in their research.

(Karki, 2015) in his research study “economic impact of tourism on Nepal’s economy using co integration and error correction model” by using annual macroeconomic data for Nepal for the period of 1962-2011, results conclude that there is a co integrating relationship between tourism and economic growth.

(Gautam, 2011) In his research paper “tourism and economic growth in Nepal” attempted to confirm empirically about positive impact of tourism in Nepal, co-integration test was used to ascertain the long run relationship and error correction method for short run dynamics and granger causality test was also used to determine causal relationship between variables. The

result showed that tourism causes economic growth both in short and long run, it also indicate bi-directional causality between these variables.

### 3. Data and Methodology

#### 3.1.Data sources

In this research paper, annual time series data are collected from period 2000 to 2018. The data are obtained from various sources; the tourist's arrival data are taken from statistics on tourism for Nepal (Nepal tourism statistics; annual statistical report) and ministry of culture, tourism and civil aviation of Nepal .gross domestic product and exchange rate data are taken from World Bank data base

#### 3.2.Model

In this research paper, multiple linear regressions are used. Multiple linear regression are the most common form of linear regression analysis which is used to explain the relationship between dependent (response) variable and two or more independent (explanatory) variables. (Nepal tourism statistics , 2019) (world bank)

The formula

$$Y_i = \beta_0 + \beta_1 x_{i1} + \beta_2 x_{i2} + \dots + \beta_p x_{ip} + \epsilon$$

where,

$Y_i$  =dependent variable

$X_i$ =independent variable

$\beta_0$ =intercept (constant)

$\beta_p$ = slope coefficient of independent variables

$\epsilon$ = error (residuals)

so, in this research paper following function is used to examine the relationship between tourism and economic growth.

$$GDP = F (TA, EXR) \dots \dots \dots 1$$

Natural logarithm of variables is taken in order to make equation linear .linear equation helps to make trends visible and describe relationship between variables. Natural logarithm of GDP is stated as lnGDP, natural logarithm of exchange rate as lnEXR and natural logarithm of tourist arrival as lnTA.

$$\ln GDP = \beta_0 + \beta_1 \ln EXR + \beta_2 \ln TA + \epsilon \dots \dots \dots 2$$

Where, lnGDP is dependent variable,  $\beta_0$  is constant (intercept),  $\beta_1 \ln EXR$  is coefficient of lnEXR(independent variable),  $\beta_2 \ln TA$  is coefficient of lnTA (independent variable ),  $\epsilon$  is error (residuals).

## 4. Result and discussion

### 4.1. Least square method

This research paper uses E-views software to analyze the annual time series data from period 2000 to 2018.

**Table 1: least squares (source: Eviews 10(Author’s calculation))**

Dependent Variable: LNGDP

Method: Least Squares

Sample: 2000 2018

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	6.024854	1.710594	3.522083	0.0028
LNEXR	0.765040	0.423452	1.806674	0.0897
LNTA	1.048740	0.176579	5.939208	0.0000
R-squared	0.864019	Mean dependent var	23.25788	
Adjusted R-squared	0.847022	S.D. dependent var	0.547710	
S.E. of regression	0.214223	Akaike info criterion	-0.099660	
Sum squared resid	0.734263	Schwarz criterion	0.049462	
Log likelihood	3.946771	Hannan-Quinn criter.	-0.074423	
F-statistic	50.83188	Durbin-Watson stat	0.955161	
Prob(F-statistic)	0.000000			

$$\text{LNGDP} = 6.02854 + 0.765040 \text{LNEXR} + 1.048740 \text{LNTA} + \epsilon$$

The analysis of annual time series gives R-square of 0.864019 or 86.40% which suggests 86.40% of model is explained by the independent variables (tourists’ arrival and exchange rate) and remaining by other variables. Further, adjusted R-square is 0.847022 or 84.7022 % which tells about the goodness of fit in addition to other independent variables. Higher R-square is generally considered good because higher R-Square explain more about independent variables and its relation with dependent variable. The prob(F-statistics) is 0.00 which is less than 0.05, which means overall model is statistically significant

Coefficient of exchange rate is 0.765040 which is positive but statistically insignificant to the Gross domestic product, whereas coefficient of tourist arrival is 1.048740 which is positive and

statistically significant. Which states 1 % change in tourist arrival results to 1.048740 % increase in gross domestic product.

#### 4.2.Diagnostic test

Diagnostic test are generally done to evaluate the adequacy of the model specification, it includes breusch-godfrey serial correlation LM Test, Heteroskedasticity test: breusch-pagan-Godfrey and Normality Test which are as follows:

##### 4.2.1. Serial correlation test

**Table 2: serial correlation test (source: Eviews 10(Author’s calculation))**

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	2.142582	Prob. F(1,15)	0.1639
Obs*R-squared	2.374733	Prob. Chi-Square(1)	0.1233

Null hypothesis: there is no serial correlation

Prob. Chi square is greater than 5% which means we cannot reject null hypothesis. So, we accept null hypothesis, which conclude there is No auto or serial correlation

##### 4.2.2. Heteroskedasticity test

**Table 3: Heteroskedasticity test (source: Eviews 10(Author’s calculation))**

Heteroskedasticity Test: Breusch-Pagan-Godfrey

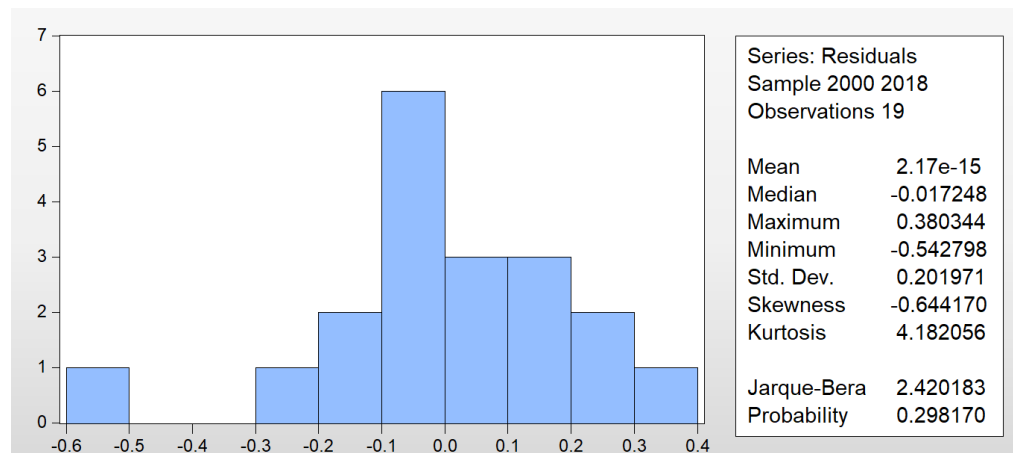
F-statistic	0.143575	Prob. F(2,16)	0.8674
Obs*R-squared	0.334979	Prob. Chi-Square(2)	0.8458
Scaled explained SS	0.377945	Prob. Chi-Square(2)	0.8278

Null hypothesis: There is No Heteroskedasticity

Prob. Chi square is greater than 5 % which means we cannot reject null hypothesis.so, we accept null hypothesis, which conclude that there is No problem of Heteroskedasticity.

### 4.2.3. Normality test

**Figure 4: Normality test (source: Eviews 10(Author’s calculation))**



Null hypothesis: Residuals are normally distributed

Prob. Value is greater than 5 % which means we cannot reject Null hypothesis. So, we accept null hypothesis, which conclude that residuals are normally distributed.

## 5. Conclusion

This study concludes that increase in tourism leads to contribution in economic growth. Above analysis interpretation shows that tourist arrival has positive and significant relationship with gross domestic product and exchange rate has positive but insignificant relationship with gross domestic product. The results are similar to (Dritsakis, 2004) and (Karki, 2015) which suggest tourism earnings positively contributes to the economic growth of an economy. Tourism plays a very significant role in contribution to the economic growth as it provides some sort of employment opportunity to the locals and whole as a nation. There are various tourist attraction countries which contributes a significant part to countries GDP. Top 3 of them are Maldives 38.92% of GDP, British virgin Island 32.96 % of GDP and Macao 28.05 % of GDP. (quartz, 2019). In 2018, contribution of travel and tourism to GDP for Nepal was 7.9 %, Nepal has a huge tendency to attract large number of tourist arrivals. In order to that government should heavily invest in promoting tourism via campaign etc. this paper provides more evidence to existing literature regarding the impact of tourism on economic growth of an economy.



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