

Impact of Tourism on Generation of Employment in India

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Abstract

Tourism industry acts as a important component of economic changes. In emerging countries like India, tourism has become one of the important sectors of economy. This sector is generating large number of organized and unorganized jobs. In this paper an attempt has been made to study the impact and contribution of tourism on employment generation in India. In additions to this, we also forecasted the number of jobs this industry will generate. The different statistical tools such as Regression Analysis, ARIMAX and Descriptive Statistics were used for this purpose.

Keywords: Employment, International Tourist arrivals, International Tourism Receipts, FDI, Multiple Regression Analysis, ARIMAX.

1. Introduction

Indian Economy depends on many sectors such as Agriculture, Industrial Production, Service Sector etc. In India one of the fastest growing sector is Service Sector. This service sector includes Insurance and Banking, Information Technology, Aviation, Retail, Tourism etc. Tourism is an important sector in most countries and it generates direct, indirect and induced economic activity in the region.

India is a country with rich traditional and cultural diversity. Indian Tourism offers different cultures, festivals, traditions and beautiful vast geographical area. India is one of the fastest growing economies in the world. The tourism sector of India is economically important and is growing rapidly. It is expected to grow faster in the years to come. Several marketing and branding campaigns such as "INCREDIBLE INDIA !" and "ATITHI DEVO

BHAVA !" have provided a focused impetus to Growth.

Employment is considered as a variable for measuring growth of an economy of a country. Tourism sector plays significant role in economic development by generating organized and unorganized jobs employment.

Thus tourism plays significant role in economic development by generating employment and contributing in GDP.

2. Literature Review

Many government, quasi-government or private organizations such as Ministry of Tourism , CSO, RBI, Ministry of Finance, Ministry of Labour and Employment and Tourism Industry bodies are focusing on growth in Tourism Industry. Several attempts has been done by many researchers for anticipating growth in employment through Tourism.

Mahalakshmi and Stanley (2016) has examined the impact of India's economic growth on Tourism, contributors to economic growth, role of tourism industry in India's GDP. By using statistical tools, the paper establishes relationship between tourists and their different issues.

Changle et al (2016) has attempted to forecast the GDP growth using ARIMA model. He concluded that the GDP of India would be rising continuously over the estimated period.

Dayananda and Leelavathi (2016) has examined and calculated the contribution of travel and tourism to GDP in India. It also gave % share in employment through Travel and Tourism.

Jaswal (2014) has discussed how India is emerging as a popular tourist destination in the World, driven

by the focus on Innovation and creating value for tourist. Author also studied the impact of tourism on India's economic growth. He also analyze role of tourism industry in India's GDP and also explores impact of policies of the government and support from all levels on growth in tourism in India.

Aynalem et.al (2016) has discussed the Job Opportunities and Challenges faced by Tourism and Hospitality industry. They observed that there will be sustainable growth in Tourism sector only if the sector can employ qualified workforce which is necessary for excellent and prompt service.. They also observed that Tourism and hospitality creates employment opportunities in different sectors. The challenges faced by the sector are pay structure and working conditions, sexual harassment, discrimination, unequal treatment, low education and training, undemocratic and rigid corporate culture, and seasonality. They also mentioned political instability which affects inbound tourist as one of the main challenged faced by the industry .

Mamula (2015) has studied the accuracy of various forecasting methods. Author also predicted demand of international tourism in Croatia. Author also compared different forecasting methods like the Holts winter triple exponential smoothing, seasonal naïve model, ARIMA and multiple linear regression model. He has observed that the multiple regression model perform highly accurate forecasting of German tourist arrivals in Croatia.

Jelusic (2017) provides a model of tourism useful to analyzed and forecast foreign exchange tourism inflows and outflows. Author stated that the model is useful to frame new Tourism policy, International trade policy and economic policy as a whole.

Mir (2014) studied the economic viability of the Indian tourism industry by using secondary data. According to him, the Indian tourism industry has an important role in economic development of economy. Author stated that tourism sector is creating skilled and unskilled jobs, improving standard of living, particularly in rural areas, boosting the Indian traditional Art and craft, increasing foreign exchange and developing infrastructure. He concluded that tourism can be used as a catalyst for socio-economic development provided Government and other people involved in tourism employs sustainable development of tourism in planned manner.

3. Objectives

The objectives of the study are

- 1) To study the effect of different factors related to tourism industry viz. Tourist arrivals, Tourism receipts and Foreign Direct Investment on economical growth of India.
- 2) To predict GDP per capita of India considering the influence of tourism factors Tourist arrivals, Tourism receipts and Foreign Direct Investment.

4. Research Methodology

This study is based on Secondary Data provided by World Bank. The data collected for twenty-three years on yearly basis from 1995 to 2017 includes GDP per capita, International Tourists arrivals, International Tourism receipts and FDI of India.

The data collected were analysed using Statistical Packages SPSS, version 20 and Microsoft Excel. The various descriptive and data analysis techniques such as Correlation, Multiple Linear Regression and ARIMAX Model were used in this research.

4.1 Variables Under Study

1) NUMBER OF EMPLOYMENT (IN THOUSANDS)

It is the total number of employment created by Tourism Industry. It is one of the macroeconomic variable used for measuring the economic growth of a country. The values for Number of Employment is obtained through the data provided by THE WORLD BANK (in thousand)

2) INTERNATIONAL TOURIST ARRIVALS (TA)

International tourist arrivals is the number of inbound tourist , who travel to another country except the country in which they have their usual residence. Since arrivals of foreign tourists contributes to an Indian economy, it can be considered as one of the independent variable. The values for international tourist arrivals is obtained through THE WORLD BANK (in thousands).

3) INTERNATIONAL TOURISM RECEIPTS (TR)

International tourism receipts are the expenditures by the inbound tourists , including their payments to national carriers to international transport. It can be considered as independent variable. The values

for international tourism receipts is obtained through by THE WORLD BANK (in current U.S. dollars).

4) FOREIGN DIRECT INVESTMENT (FDI)

FDI is flows of capital from one nation to another nation. Foreign direct investment in India is considered as a component of economic development. It can be considered as independent variable. The values for foreign direct investment is obtained through by THE WORLD BANK (in current U.S. dollars).

5. Tools And Techniques

A) DESCRIPTIVE ANALYSIS

To analyze the pattern and trend of the data along with their predictions, descriptive analysis was used. Line plots and tables were used to show the results of analysis.

B) MULTIPLE LINEAR REGRESSION MODEL

Multiple linear regression modeling is a statistical methodology that describes a linear relationship between a dependent variables with two or more independent variables. The multiple Linear Regression Model is given by

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_k X_k + \epsilon_k$$

Where,

Y is the dependent variables

X_1, X_2, \dots, X_k are k independent variables

$\beta_0, \beta_1, \dots, \beta_k$ are k parameters which are to

be estimated

ϵ_k are the random error terms, such that $\epsilon_k \sim N(0, \sigma^2)$

The parameter β_k represents the expected change in the response Y per unit change in X_k when all of the remaining regressor variables $X_i (i \neq k)$ are held constant.

Multiple regression can establish how a set of independent variables explains the proportion of the variance in the dependent variable through R² and can establish the relative predictive importance of the independent variables. The hypothesis under consideration is :

Ho: $\beta_0 = \beta_1 = \beta_2 = \dots = \beta_k = 0$ V/S H1: $\beta_k \neq 0$ at least for one k.

Rejection of the null hypothesis indicates that at least one of the independent variables among X_1, X_2, \dots, X_k contributes significantly to the model.

C) ARIMAX

ARIMAX is related to the ARIMA technique but, while ARIMA is suitable for datasets that are univariate. ARIMAX is suitable

for analysis where there are additional independent variables (multivariate) in categorical and/or numeric format. It is an extended version of the ARIMA model. It includes also other independent (predictor) variables.

An Autoregressive Integrated Moving Average with Explanatory Variable (ARIMAX) model can be viewed as a multiple regression model with one or more autoregressive (AR) terms and/or one or more moving average (MA) terms..

Autoregressive terms for a dependent variable are merely lagged values of that dependent variable that have a statistically significant relationship with its most recent value. Time-series dependent variable be well estimated by a properly weighted combination of the following four right-hand-side (RHS) variables.

1. x_t = The value of the independent variable at time t.

2. y_{t-i} = The immediately preceding value of the dependent variable at time t-i ; $i= 1, 2, \dots, p$.

3. e_{t-j} = The estimation error produced by the model at time t-j ; $j=1, 2, \dots, q$.

The ARIMAX model with one explanatory variable is given by,

$$y_t = \beta x_t + \phi_1 y_{t-1} + \dots + \phi_p y_{t-p} + e_t + \theta_1 e_{t-1} + \dots + \theta_q e_{t-q}$$

The above model can be used for the prediction of dependent variable when explanatory variables are given.

6. Results and Discussion

To study the impact of the determinants International Tourists arrivals (TA), International Tourism receipts (TR) and FDI of India (FDI) on Number of Jobs per year generated by Tourism Sector and measure the degree of association among the determinants following techniques were used.

1) DESCRIPTIVE STATISTICS

To obtain a visualization of the variables under study, mean and standard deviation is calculated. The values are presented in below.

Table 1 : Descriptive Statistics

	Mean	Std. Deviation	N
Number of Jobs per year generated by Tourism Sector	22687.53	2407.18	23
Tourist receipts	10850956521.74	7970314345.79	23

Tourism arrivals	5713652.17	4250499.92	23
FDI	19415293197.96	16337697761.72	23

As evident from Table 1, average number of Jobs per year generated by Tourism Sector is around 22688, average tourist arrivals is 5713652, average tourist receipt is 10850956521.7391 and average FDI is 19415293197.9565 during the study period.

2) CORRELATION ANALYSIS

Table 2 Correlations between variables

		Number of Jobs	Tourist arrivals	Tourism receipts	FDI
Number of Jobs	Pearson Correlation	1.000	0.694	0.766	0.775
	p Value	0.000	0.000	0.000	0.000
	Result	Sig	Sig	Sig	Sig

As evident from Table 2, the Pearson's correlation coefficient between Number of Jobs per year generated by Tourism Sector and Tourist arrivals, tourism receipts and FDI is 0.694, 0.766 and 0.775 respectively. Since the value of correlation coefficient are significant (p value <= 0.05), there is linear relationship between independent variables and dependent variable.

3) REGRESSION ANALYSIS

The Regression Model is,

$$\text{Number of Jobs} = \beta_0 + \beta_1 * \text{TA} + \beta_2 * \text{TR} + \beta_3 * \text{FDI}$$

Table 3 Regression Analysis

R	R2	Adjusted R2	Std. Error of the Estimate	Durbin-Watson
0.792	0.628	0.560	1580.44677	0.891
a. Predictors: (Constant), FDI, Tourist arrivals (TA), Tourism receipts (TR)				
b. Number of Jobs generated per year by Tourism Sector				

As evident from Table 3 the value of coefficient of determination R2 =0.628. This indicates that almost 63% of the variance in number jobs is predicted from the variables Tourist arrivals, Tourism receipts and FDI (independent). Since the value of Durbin-Watson statistic is 0.891 < 2, indicates positive autocorrelation.

Table 4 ANOVA for Regression Model

Model	SS	df	MS	F	p value
Regression	80021431.5	3	26673810.5	10.7	0.00
Residual	47458428.2	19	2497812.		
Total	127479859.6	22			

As evident from Table 4, Regression sum of squares is 80021431.451, Residual sum of squares is 47458428.158 and total sum of squares is 127479859.609. Since p value <= 0.05, We reject the null hypothesis at 5 % Level of Significance and conclude that $\beta_k \neq 0$, at least for one k; k=1,2,3.

Table 5 Coefficients of the Regression

Model	Coefficients		Collinearity Statistics	
	B	Std. Error	Tolerance	VIF
(Constant)	20226.9	569.573		
Tourist arrivals	1.384E-07	.000	.079	7.661
Tourism receipts	-5.215E-05	.000	.133	7.534
FDI	6.473E-08	.000	.194	5.144

As evident from Table 5 the values of coefficients $\beta_0, \beta_1, \beta_2, \beta_3$ are 20226.903, 1.384E-07, -5.215E-05 and 6.473E-08 respectively. Also, the value for VIF for all the variables is less than 10, which indicates absence of multicollinearity.

4) ARIMAX METHODOLOGY

For predicting number of jobs generated by tourism sector with 3 explanatory variables (TA, TR, FDI), ARIMAX Methodology is used.

Table 6 BIC Values for different Models

MODEL	BIC
ARIMA(1,0,1)	15.1
ARIMA(1,1,1)	14.604
ARIMA(2,1,1)	14.779
ARIMA(1,1,7)	15.615
ARIMA(1,0,1)	15.1

As evident from table 6, BIC value for ARIMA(1,1,1) is smaller hence the ARIMA (1,1,1) model is considered for forecasting GDP per capita with explanatory variables TA,TR,FDI.

Table 7 : Predicted values of Number of jobs generated through Tourism using ARIMA.

YE AR	Actual Employment	Predicted Employment	LCL	UCL
1995	18472.3	-	-	-
1996	18157.2	18824.12	14491.70	23156.54
1997	18880.1	18901.08	15396.36	22405.81
1998	19215.5	19102.48	15666.92	22538.04
1999	19478	19533.81	16106.48	22961.14
2000	23386.4	19882.30	16455.98	23308.61
2001	20047.7	21197.18	17770.99	24623.37
2002	22193.6	22161.41	18735.24	25587.58
2003	23539.5	21874.20	18448.03	25300.37
2004	23836	22939.72	19513.54	26365.89
2005	22460.5	23892.79	20466.62	27318.97
2006	24485.7	23951.63	20525.46	27377.80
2007	23303.4	24034.10	20607.93	27460.27
2008	25089.9	24476.60	21050.43	27902.77
2009	23962	24698.22	21272.05	28124.39
2010	23144.3	25117.13	21690.96	28543.31
2011	23500.6	24620.46	21194.29	28046.63
2012	23661.6	24244.81	20818.64	27670.98
2013	23943.3	24288.82	20862.65	27714.99
2014	24480.2	24442.49	21016.31	27868.66
2015	24911.9	24750.67	21324.50	28176.84
2016	25515.4	25177.61	21751.43	28603.78
2017	26148.1	25655.79	22229.62	29081.96
2018		26223.38	22797.21	29649.55
2019		26676.91	23118.68	30235.15
2020		26991.32	22972.85	31009.79
2021		27356.90	23055.67	31658.12
2022		27703.66	23094.49	32312.83
2023		28057.34	23174.63	32940.05
2024		28408.47	23261.52	33555.42
2025		28760.54	23364.12	34156.97
2026		29112.27	23476.75	34747.78
2027		29464.12	23599.48	35328.76
2028		29815.92	23730.70	35901.15
2029		30167.75	23869.69	36465.80
2030		30519.57	24015.63	37023.50
2031		30871.38	24167.89	37574.88
2032		31223.20	24325.92	38120.49
2033		31575.02	24489.24	38660.80
2034		31926.84	24657.46	39196.22
2035		32278.66	24830.20	39727.12

As evident from Table 7 , the predicted values for number of jobs generated through Tourism along with LCL and UCL are obtained from 2018 to 2035.

7. Conclusion

The conclusions obtained from the study are as follows:

1. The value of coefficient of determination, $R^2 = 0.628$, which indicates that almost 63% of the variance in number of jobs generated by Tourism sector (dependent variable) is predicted from the variables Tourist arrivals, Tourism receipts and FDI (independent).
2. The value of Durbin-Watson statistic is $0.891 < 2$, indicates positive autocorrelation. Since p value ≤ 0.05 , We reject the null hypothesis at 5 % Level of Significance and conclude that $\beta_k \neq 0$, at least for one k ; $k=1,2,3$ i.e. the independent variables contributes significantly to the model.
3. The fitted model is:
 $(\text{Number of Jobs})_{\text{est}} = 20226.903 + 1.384E - 07 * TA + - - 5.215E - 05 * TR + 6.473E-08 * FDI$
4. $\beta_0 = 20226.903$ is a constant.
5. $\beta_1 = 1.384E-07$ implies positive effect of Tourist arrivals on number of jobs generated through Tourism..
6. $\beta_2 = -5.215E-05$ implies negative effect of Tourism receipts on number of jobs generated through Tourism..
7. $\beta_3 = 6.473E-08$ implies positive effect of FDI on number of jobs generated through Tourism..
8. The VIF for all independent variables included in our study is less than 10, Hence there is no multicollinearity problem in the data.
9. The ARIMA(1,1,1) model used gives the prediction of GDP per capita of India considering the influence of tourism factors Tourist arrivals, Tourism receipts and Foreign Direct Investment.

YEAR	NUMBER OF EMPLOYMENTS (in thousands)
2020	26991.3185
2025	28760.54
2030	30519.565
2035	32278.6586

10. The Predicted values shows the constant growth. Hence, the influence of Tourism industry in employment generation is high. This is beneficial for the financial development of India.

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