

Impact of Covid-19 on Different Categories of Foreign Tourist Arrivals in India

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ABSTRACT

Tourism industry is one of the major industries which help in promoting the economic growth of many countries through its contribution to foreign exchange earnings, employment, income improving, and investment inducing. However, this sector is vulnerable to various crisis events such as outbreaks, political turmoil and also financial crisis. The present study examines the impact of Covid -19 on different categories (Gender and Age group wise) of foreign tourist arrivals in India using Semi-log regression model including dummy variables. The result shows that before Covid period, male and female tourists were increasing significantly at an average annual rate of 9.3% and 10.4 % respectively. However, during Covid period, both genders witnessed a significant reduction in growth. The decline was greater for female tourists as compared to male tourists. Also, before pandemic, there was a positive and statistically significant growth in all age categories of foreign tourist arrivals in India. During Covid period, there was a significant negative growth in all age groups except 0-14 age group. This indicates a severe contraction in visitor arrivals due to travel restrictions, safety concerns and border closures.

Keywords: Tourism, Covid-19, Foreign Tourist Arrivals.

Introduction

Tourism is a significant economic driver for many countries, and India is no exception. As one of the world's largest economies and a country rich in culture, history, and natural beauty, India has long been a prominent destination for foreign tourists. The Indian tourism industry, encompassing both domestic and international visitors, has contributed significantly to the country's economic growth, employment generation, and foreign exchange earnings.

In recent years, the tourism sector in India has witnessed significant transformations driven by various factors including infrastructure development, the global economic environment, and international trends. However, like other sectors, tourism has faced challenges from unforeseen events such as global economic downturns, political uncertainties, and, more recently, the COVID-19 pandemic, which has had a profound impact on travel worldwide. The pandemic, in particular, led to unprecedented disruptions in international tourism, with travel restrictions and safety concerns resulting in a dramatic decline in foreign tourist arrivals (FTA) in India during 2020 and 2021. Thus, the purpose of my study is to find out the impact of covid-19 on foreign tourist arrivals in India –categories wise.

Objectives of the Study

- To analyse the impact of Covid-19 on growth of Foreign Tourist Arrivals to India by Gender for the period 2001 to 2021.

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- To analyse the impact of Covid-19 on growth of Foreign Tourist Arrivals to India by age group for the period 2001 to 2021.

Data and Methodology

In present study, annual time series data has been used for the period 2001 to 2021 for different categories of foreign tourist arrivals in India. The following categories of FTAs are considered in this study:

- Gender wise – Male and Female
- Age Group Wise – 0-14 years, 15-24 years, 25-34 years, 35-44 years, 45-54 years, 55-64 years and 65 & above.

Data on different categories are collected from the **India Tourism Statistics** publications by the **Ministry of Tourism, Government of India**.

For the analysis purpose, the entire period is divided into two sub periods- Pre-Covid Period and Covid Period.

- Pre-Covid Period – 2001 to 2019 (I Period)
- Covid Period – 2020 to 2021 (II Period)

A semi- log regression model with dummy variables is used for analysing the impact of different periods on the growth of categories wise foreign tourist arrivals in India.

The following is the semi log regression equation including dummy variables for determining the growth rates for different policy periods:

$$\text{Log } Y = a_1 + b_1 t + b_2 D_2 + b_3 D_{2t} + \mu_t$$

Log Y = Natural log of Foreign Tourist Arrivals in each category

a_1 = intercept of the Pre-Covid period

b_1 = growth rate in Pre-Covid period

b_2 = difference in the intercept of Pre-Covid and Covid period

b_3 = difference in the Slope of Pre-Covid and Covid period

μ_t = error term

D_2 = dummy variable for Covid Period

0 for 2001 to 2019

1 for 2020 to 2021

Results and Discussions

Table 1: Regression Statistics of Foreign Tourist Arrivals in India- Gender Wise

Gender		Coefficients	Standard Error	t Stat	P-Value
Male	Intercept	-172.473	11.20636	-15.3906	2.06E-11
	t	0.093253	0.005575	16.72607	5.43E-12
	D2	1305.775	380.5106	3.431639	0.003182
	D2t	-0.64723	0.188326	-3.43673	0.003147
Female	Intercept	-195.347	13.53949	-14.428	5.73E-11
	t	0.104424	0.006736	15.50232	1.83E-11
	D2	1486.727	459.7314	3.233904	0.004878
	D2t	-0.73681	0.227535	-3.23823	0.004833

The regression results show that during Pre- Covid period, male tourists are increasing at an average annual rate of 9.3% and it is also significant as its P-value is less than 0.01. Therefore, we can reject the null hypothesis and accept that there is a positive and statistically significant growth in male tourist's arrivals before the pandemic. During Covid period, the growth rate of male tourists reduced by 64.7% as compared to pre-covid period and it is statistically significant also. So, we reject the null hypothesis and accept that there is a negative and significant impact of covid 19 on male tourist arrivals in India.

During Pre- Covid period, female tourists are increasing at an average annual rate of 10.4% and it is also significant as its P-value is less than 0.01. Therefore, we can reject the null hypothesis and

accept that there is a positive and statistically significant growth in female tourist's arrivals before the pandemic. During Covid period, the growth rate of female tourists reduced by 73.6% as compared to pre-covid period and it is statistically significant also. So, we reject the null hypothesis and accept that there is a negative and significant impact of Covid 19 on female tourist arrivals in India.

Table 2: Growth Rates of Foreign Tourist Arrivals by Gender in Different Periods

Gender	Periods	Growth Rate %	Significant/Insignificant
Male	Pre-Covid Period	9.3	Significant
	Covid Period	-55.39	significant
Female	Pre-Covid Period	10.4	Significant
	Covid Period	-63.23	Significant

The above table shows that before pandemic, male and female tourists were increasing significantly at an average annual rate of 9.3% and 10.4 % respectively. However, during Covid period, both genders witnessed a significant reduction in growth. The decline was greater for female tourists as compared to male tourists.

Table 3: Regression Statistics of Foreign Tourist Arrivals in India- Age Group wise

Age Group		Coefficients	Standard Error	t Stat	P-Value
0-14	Intercept	-175.508	11.9801	-14.65	4.50E-11
	t	0.093849	0.00596	15.74591	1.43E-11
	D2	223.0522	406.7827	0.548333	0.590592
	D2t	-0.111132	0.201329	-0.55291	0.587525
15-24	Intercept	-131.314	6.3334	-20.7335	1.66E-13
	t	0.071842	0.003151	22.80036	3.48E-14
	D2	1152.17	215.0497	5.357693	5.22E-05
	D2t	-0.571115	0.106434	-5.36619	5.13E-05
25-34	Intercept	-150.425982	6.146534924	-24.47329824	1.08E-14
	t	0.08172211	0.003057966	26.72433324	2.51E-15
	D2	1655.64525	208.7047832	7.932953055	4.09E-07
	D2t	-0.82037898	0.103294098	-7.942167052	4.03E-07
35-44	Intercept	-152.223581	6.620652692	-22.99223173	3.03E-14
	t	0.08268166	0.003293845	25.1018685	7.1E-15
	D2	1271.35145	224.8033895	5.655392713	2.85E-05
	D2t	-0.63015797	0.111261768	-5.663742193	2.8E-05
45-54	Intercept	-157.195771	6.946363585	-22.62993706	3.94E-14
	t	0.08512073	0.003455889	24.63062976	9.71E-15
	D2	1150.14655	235.8628599	4.876335959	0.000142
	D2t	-0.57014555	0.116735424	-4.884083405	0.00014
55-64	Intercept	-172.608635	10.09686963	-17.09526232	3.82E-12
	t	0.09259928	0.0050233	18.43395476	1.13E-12
	D2	1738.2241	342.8378775	5.070105187	9.47E-05
	D2t	-0.86123698	0.169680487	-5.075639495	9.36E-05
65 & Above	Intercept	-171.268752	11.64118129	-14.71231718	4.21E-11
	t	0.09168858	0.005791611	15.83127374	1.31E-11
	D2	2406.38806	395.2747764	6.087886723	1.21E-05
	D2t	-1.19195048	0.195633041	-6.092787147	1.2E-05

0-14 Age group

The above regression results show that during pre covid period, tourists are increasing at an average annual rate of 9.3% and it is also significant as its P-value is less than 0.01. During Covid Period, there is no change in growth rate as it is coming out be insignificant. Hence, we cannot reject the null hypothesis and accept that there is no impact of Covid-19 on growth rate of foreign tourist arrivals of 0-14 age group.

15-24 Age Group

During Pre- Covid period, tourists are increasing at an average annual rate of 7.1% and it is also significant as its P-value is less than 0.01. During Covid period, the growth rate of tourists reduced by 57.11% as compared to pre-covid period and it is statistically significant also. So, we reject the null hypothesis and accept that there is a negative and significant impact of Covid 19 on foreign tourist arrivals of 15-24 age groups in India.

25-34 Age Group

During Pre- Covid period, tourists are increasing at an average annual rate of 8.17% and it is also significant as its P-value is less than 0.01. During Covid period, the growth rate of tourists reduced by 82.03% as compared to pre-covid period and it is statistically significant also. So, we reject the null hypothesis and accept that there is a negative and significant impact of Covid 19 on foreign tourist arrivals of 25-34 age groups in India.

35-44 Age Group

During Pre- Covid period, tourists are increasing at an average annual rate of 8.2% and it is also significant as its P-value is less than 0.01. During Covid period, the growth rate of tourists reduced by 63.01% as compared to pre-covid period and it is statistically significant also. So, we reject the null hypothesis and accept that there is a negative and significant impact of Covid 19 on foreign tourist arrivals of 35-44 age groups in India.

45-54 Age Group

During Pre- Covid period, tourists are increasing at an average annual rate of 8.5% and it is also significant as its P-value is less than 0.01. During Covid period, the growth rate of tourists reduced by 57.01% as compared to pre-covid period and it is statistically significant also. So, we reject the null hypothesis and accept that there is a negative and significant impact of Covid 19 on foreign tourist arrivals of 45-54 age groups in India.

55-64 Age Group

During Pre- Covid period, tourists are increasing at an average annual rate of 9.2% and it is also significant as its P-value is less than 0.01. During Covid period, the growth rate of tourists reduced by 86.12% as compared to pre-covid period and it is statistically significant also. So, we reject the null hypothesis and accept that there is a negative and significant impact of Covid 19 on foreign tourist arrivals of 55-64 age groups in India.

65 & Above Age Group

During Pre- Covid period, tourists are increasing at an average annual rate of 9.1% and it is also significant as its P-value is less than 0.01. During Covid period, the growth rate of tourists reduced by 119% as compared to pre-covid period and it is statistically significant also. So, we reject the null hypothesis and accept that there is a negative and significant impact of Covid 19 on foreign tourist arrivals of 65& above age groups in India.

Table 4: Growth Rates of Foreign Tourist Arrivals by Age Groups in Different Periods

Age Group	Periods	Growth Rate %	Significant/Insignificant
0-14	Pre-Covid Period	9.3	Significant
	Covid Period	9.3	Insignificant
15-24	Pre-Covid Period	7.1	Significant
	Covid Period	-49.93	Significant
25-34	Pre-Covid Period	8.17	Significant
	Covid Period	-73.86	Significant
35-44	Pre-Covid Period	8.2	Significant
	Covid Period	-54.75	Significant
45-54	Pre-Covid Period	8.5	Significant
	Covid Period	-48.51	Significant
55-64	Pre-Covid Period	9.2	Significant
	Covid Period	-76.87	Significant
65 & Above	Pre-Covid Period	9.1	Significant
	Covid Period	-110.03	Significant

The above table shows that before pandemic, there was a positive and statistically significant growth in all age categories of foreign tourist arrivals in India. High growth is observed in 0-14, 55-64 and 65 & above age categories indicating the growing participation of senior and family tourists in international tourism to India.

During Covid period, there was a significant negative growth in all age groups except 0-14 age group. This indicates a severe contraction in visitor arrivals due to travel restrictions, safety concerns and border closures. The largest decline was seen in 25-34, 55-64 and 65 & above age groups with growth rates of -73.86%, -76.87% and -110.03% respectively. This indicates that older tourists were highly affected by the health related vulnerabilities and risk perception whereas young tourists were affected by travel restrictions and decreased leisure mobility.

Conclusion

This paper has analysed the impact of Covid-19 on various categories (gender wise and age group wise) of foreign tourist arrivals in India. For this, semi log regression model including dummy variable has been used. The whole period is divided into two periods- Pre-Covid Period and Covid Period. The analysis shows that before pandemic, male and female tourists were increasing significantly at an average annual rate of 9.3% and 10.4 % respectively. However, during Covid period, both genders witnessed a significant reduction in growth. The decline was greater for female tourists as compared to male tourists.

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