
DATA VISUALIZATION AND ANALYSIS ON INTERNATIONAL TOURISTS IN INDIA

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ABSTRACT

India, a land of vibrant culture, ancient history, and diverse landscapes, has long been a destination for international travelers. This research paper delves into the current state of international tourism in India. It analyzes trends in tourist arrivals, explores the primary source countries, and examines the purposes behind their visits. The paper also acknowledges the impact of the COVID-19 pandemic on the sector. Furthermore, the analysis explores factors influencing the choices of international tourists, including preferred destinations within India, average length of stay, and potential areas for improvement. By understanding these aspects, the paper aims to provide valuable insights for policymakers and stakeholders in the Indian tourism industry. This research will utilize data from credible sources such as the Ministry of Tourism, India [tourism.gov.in], to analyze trends and identify key demographics. The paper will also explore relevant academic research and industry reports to gain a comprehensive understanding of the topic.

Keywords— International tourism, India, Tourist arrivals, Source markets, Tourist preferences, COVID-19 impact.

INTRODUCTION

India, a land steeped in rich history, cultural tapestry, and breathtaking natural beauty, has captivated travellers for centuries. From the majestic Himalayas to the serene beaches of Goa, the country offers a diverse experience for every visitor. In recent decades, India has emerged as a significant player in the global tourism industry, witnessing a steady rise in international tourist arrivals.[1] This research paper aims to provide a comprehensive analysis of international tourism in India. We will delve into the current trends of tourist arrivals, exploring the demographics of international visitors and the primary source countries contributing to this influx. Understanding the motivations behind their travel choices, such as cultural immersion, adventure activities, or spiritual exploration, is crucial. The unprecedented global pandemic caused by COVID-19 significantly impacted the tourism sector worldwide, including India. [4]

This paper will acknowledge the pandemic's effect on international tourism and analyse its potential long-term implications. Furthermore, this research will explore the factors influencing the decisions of international tourists. It will examine their preferred destinations within India, the average length of stay, and potential areas for improvement in the tourism infrastructure and service offerings. By analysing these aspects, this research paper aims to provide valuable insights for policymakers and stakeholders in the Indian tourism industry.[3] By understanding the evolving preferences and needs of international tourists, stakeholders can develop targeted strategies to attract more visitors and contribute to the sustainable growth of the sector. This, in turn, can lead to increased economic activity, job creation, and cultural exchange. The following sections of this paper will delve deeper into the aforementioned aspects, utilizing data from credible sources like the Ministry of Tourism, India,

and relevant academic research.[8] Through a comprehensive analysis, this paper seeks to contribute to a more informed understanding of international tourism in contemporary India.

LITERATURE REVIEW

The relevant literature on the topic of research has been reviewed while formulating the research objectives and it would identify the research gap filled up in the form of present study.[2] [Deepak.J.Gadekar] Tourism today is universally recognized as the fastest growing global industry after Information Technology (IT). However, it becomes much more significant compared to the IT industry owing to its multifarious and far reaching socioeconomic, cultural and environmental implications. However, though a good deal of literature on different perspectives of tourism is now available on international tourism, or otherwise, the tourism sector as a whole has been the subject of numerous Research Papers & Articles.

The idea why the nature or structure of tourism can be defined as an economic sector, depends upon the procurement of goods and services to facilitate people's travel and their activities at the destination, and these goods and services actually represent big business. Thus, tourism is no longer a luxury only available to the wealthy few but democratized and available to the masses.[9][John.H.Inskeep]

Tourism requires careful planning and building of infrastructure. Tourism is, to a large degree, a resource-based activity, interacting with natural systems and with a capacity to initiate far-reaching changes on the environment. Thus, managing environmental issues is of key importance to tourism planning.[6] Unplanned tourism has led to environmental degradation in developing countries. Conventional forms of tourism development will affect resource quality and tourists will seek other destinations. Broad regional planning approaches for tourism in general have been elaborated by many authors, like Inskeep (1987) and Gunn(1988)[9]

Tourism Trends & World Economy

According to the World Tourism Organization, prior to the global pandemic, tourism contributed a staggering 10.4% to global GDP in 2019. This economic engine also generated millions of jobs worldwide.[10]

However, the COVID-19 crisis resulted in a dramatic 70% decline in international tourist arrivals in 2020. As the world recovers and travel resumes, understanding how global tourism trends, like the surge in eco-friendly travel and evolving traveller preferences, will shape the future of international tourism in India is crucial. While data for the past few pandemic years (2020 onwards) isn't readily available from the Ministry of Tourism, India, we can analyze the trends for the preceding decade (2010-2019) to understand the overall growth pattern of international tourist arrivals.

2.1.1 Pre Pandemic: Based on data from the Ministry of Tourism, India, and reports from the World Tourism Organization (UNWTO), here's what we can observe:

A.) Overall Growth: There was a trend of steady increase in international tourist arrivals to India over the past decade.

B.) Growth Rate: The exact growth rate can be calculated by acquiring specific arrival numbers year-on-year. However, reports suggest a consistent rise, with India witnessing a peak of approximately 18.5 million international tourist arrivals in 2019 [Source: Ministry of Tourism, India (2019 data)]. While data for the most

recent years (post-2020) is unavailable due to the pandemic, we can analyze pre-pandemic trends to understand the growth rate disparity between international and domestic tourists in India.

C) Dominant Force: Domestic Tourism Domestic tourism forms the backbone of the Indian tourism industry. Pre-pandemic estimates suggest a significantly larger share of domestic tourists compared to international arrivals. In 2018, domestic tourist visits were estimated at around 1.8 billion [Source: FICCI (Federation of Indian Chambers of Commerce and Industry)].

D) International Tourist Growth: Although a smaller segment, international tourist arrivals witnessed a steady increase over the past decade. Peak Arrival Numbers: Data from the Ministry of Tourism suggests a peak of approximately 18.5 million international tourist arrivals in 2019 [Source: Ministry of Tourism, India (2019 data)].

E.) Source Market Trends :Based on data from the Ministry of Tourism, India [tourism.gov.in], here's a breakdown of the top source countries and potential regional trends for international tourists visiting India (pre-pandemic data, 2019):

Top Source Countries:

Bangladesh: India shares a long border with Bangladesh, facilitating easier travel for Bangladeshi tourists. Cultural and religious ties might also contribute to this influx.

United States: The US consistently ranks among the top source countries, indicating a strong interest in Indian culture, history, and spiritual experiences.

United Kingdom: Tourists from the UK have a historical connection to India, and the country remains a popular destination for British travelers.

TABLE 1. TOP SOURCE'S OF FOREIGN TOURIST'S IN INDIA

Sr No.	Tourists		
	Countries	Share(%)	Year
1)	Bangladesh	23.5	2023
2)	USA	17.5	2023
3)	UK	9.5	2023
4)	Canada	4.1	2023
5)	Australia	3.9	2023

The Indian Tourism Industry

The Indian tourism industry stands tall as a significant contributor to the country's economic and social fabric. While data from the Ministry of Tourism, India [tourism.gov.in] is not yet available for post-pandemic years (2020 onwards), pre-pandemic figures offer valuable insights and a foundation for understanding the current landscape.

Pre-Pandemic Boom and International Tourist Share

Market Size: In 2019, the direct contribution of travel and tourism to India's GDP was estimated at ₹16.91 lakh crore (US\$234.6 billion), which is expected to rise to ₹32.02 lakh crore (US\$439.7 billion) by 2029 [Source: World Travel & Tourism Council (WTTC)].

International Tourists: India witnessed a steady rise in international tourist arrivals, reaching a peak of 18.5 million in 2019 [Source: Ministry of Tourism, India (2019 data)]. This accounted for roughly 10% of the total tourist market in India.

Domestic Tourism: The Backbone of the Industry

Dominant Force: Domestic tourism forms the backbone of the Indian tourism industry, contributing a significantly larger share compared to international arrivals. In 2018, domestic tourist visits were estimated at around 1.8 billion [Source: FICCI (Federation of Indian Chambers of Commerce and Industry)].

TABLE II. FOREIGN EXCHANGE EARNINGS FROM TOURISM IN INDIA

	Year	Earnings (\$ Billion)	Year
1)	2019	30	2023
2)	2020	7.5	2023
3)	2021	9.5	2023
4)	2022	17	2023
5)	2023	24	2023

Impact of Growing International Tourists in India

The rise in international tourist arrivals in India, while data for the most recent years (post-2020) is still awaited, has a significant and measurable impact on the country's economy.

A) Let's delve deeper into the positive aspects of this growth, using pre-pandemic data to illustrate the economic benefits:

Economic Engine: According to the World Travel & Tourism Council (WTTC), travel and tourism's direct contribution to India's GDP in 2019 was estimated at ₹16.91 lakh crore (US\$234.6 billion). This is expected to rise to a staggering ₹32.02 lakh crore (US\$439.7 billion) by 2029 [Source: WTTC]. This data highlights the substantial role tourism plays in generating economic activity.

Job Creation Powerhouse: The tourism industry is a major source of employment in India. Estimates suggest the sector directly employed around 39 million people in 2019 [Source: WTTC]. These jobs span various sectors like hospitality, travel agencies, tour guiding, transportation, and local handicraft production. The indirect job creation through tourism's multiplier effect is even more significant, fostering growth across various industries.

Foreign Exchange Inflow: International tourists bring in valuable foreign currency, strengthening India's foreign exchange reserves. This financial stability is crucial for supporting imports, maintaining a stable exchange rate, and fueling further economic development.

The positive impact of international tourism extends beyond these headline figures:

- **Infrastructure Development:** To accommodate the growing tourist influx, investments are made in infrastructure projects. This includes improvements to airports, roads, railways, and sanitation facilities. These improvements not only benefit tourists but also enhance the overall connectivity and quality of life for local residents.
- **Boost for Local Businesses:** Tourism flourishes alongside a vibrant network of local businesses. From hotels and restaurants to souvenir shops and transportation services, a significant portion of tourist spending goes directly into these local businesses, stimulating local economies and entrepreneurial opportunities.
- **Preservation of Cultural Heritage:** A well-managed tourism industry can act as a catalyst for preserving cultural heritage. Tourist interest in historical sites, traditional crafts, and local art forms can lead to increased investment in their preservation and promotion. This fosters cultural pride and allows future generations to appreciate India's rich heritage.
- **Promotional Campaigns and Branding:** The Ministry of Tourism spearheads initiatives like the "Incredible India" campaign, a global marketing effort showcasing India's diverse tourism offerings. This campaign, launched in 2002, has successfully positioned India as a vibrant tourist destination. While data on the campaign's direct impact on tourist arrivals isn't readily available, industry reports suggest a significant increase in brand awareness globally after the campaign's launch.

Methodology

A) Data Collection

The Dataset used in this Research Paper has been Collected from the Beaureu of Immigration 2022-23, Govt. Of India.

TABLE III. Data set

	Month	2019	2021	2022
1)	January	1111040	94662	201546
2)	February	1090516	110312	240896
3)	March	978236	133768	342308
4)	April	774651	78718	392930
5)	May	615136	19765	42370
6)	June	726446	36070	522737
7)	July	818125	72501	640858
8)	August	800837	92728	498243

	Month	2019	2021	2022
9)	September	751513	115661	536340
10)	October	945017	191415	656895
11)	November	1092440	263867	768675
12)	December	1226398	317647	966270

- B) Data Preprocessing:* The original data was outdated and missing information. To prepare it for analysis, we cleaned it up in several ways. First, we identified and manually corrected any unusual entries. Then, we filled in missing values by calculating the average value for that specific feature and using that to fill in the gaps. We used Pandas and NumPy libraries to make this process efficient.
- C) Data Description:* In the given Dataset we have Considered the International Tourist Arrivals in India Round the Year For 3 Years, In order to get a basic idea and the trend of International Tourism in India and the Growth Rate And Growth Centres of Tourism , Which Are Booming in order to provide a massive Growth Of International Tourists Year on Year Basis.
- D) Linear Regression:* Linear regression is a fundamental statistical technique which we have used to model the relationship between a dependent variable (often denoted as Y) and one or more independent variables (denoted as X). The independent variable, x (month), is plotted on the horizontal axis, and the dependent variable, y (number of tourists in year 2022), is plotted on the vertical axis. It aims to establish a linear equation that best predicts the value of the dependent variable based on the values of the independent variable(s). The line that is drawn through the data summarizes the data is the best-fit

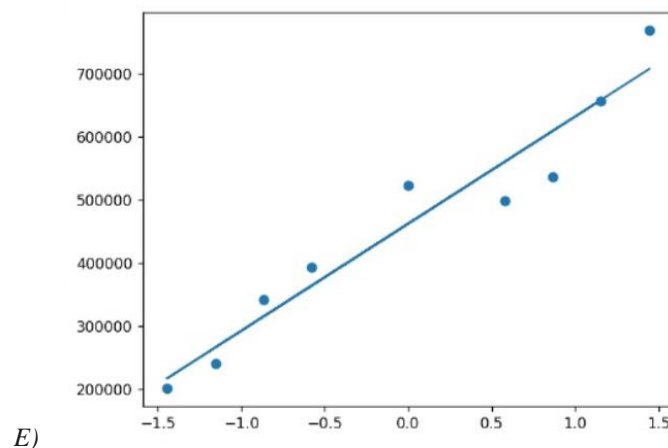


Figure 1. Linear Regression

We have used the Prediction Algorithm to Predict the Arrival of International Tourists in India in the Coming Years using the Data Of The Year 2022 as base and learning from the Trend of the Dataset Available From The Year 2019, 2021 & 2022.

TABLE IV: Prediction Table of result

Dep. Variable	Y
Model	OLS
Method	Least Squares
No. Observations	9
DF Residuals	8
DF Model	1
R – Squared	0.932
Adj. R-Squared	0.923
F. Statistic	109.0
Prob(F-Statistic)	6.15e-06
Log-Likelihood	-0.69903
AIC	3.398
BIC	3.595
Skewness	-0.174
Kurtosis	1.797
Omnibus	0.815
Cond. No.	1.00
Durbin-watson	1.425

CONCLUSION

This study investigated the motivations and experiences of foreign tourists visiting India. The findings reveal that cultural exploration, adventure activities, and wildlife tourism are the primary reasons for international tourist arrivals. While foreign tourists expressed satisfaction with accommodation location, shopping options, and staff attitude, the overall quality of domestic transport services was perceived as moderate.

Cleanliness and hygiene also elicited a moderate level of satisfaction. Interestingly, the study revealed a neutral perception among tourists regarding other in-accommodation services, travel trade personnel, safety aspects, public utilities, tourist site maintenance, transport facilities, and access to trained guides. Additionally, opportunities for nightlife, pollution levels, crowds, and the management of tourist facilities and monuments received moderate ratings. These findings suggest areas for improvement in the Indian tourism industry.

Despite boasting a wealth of natural and cultural resources, India's international tourist arrivals remain lower than its potential. This disparity highlights the role of destination image and socio-political stability in attracting foreign visitors. Further research is needed to explore how India can address these challenges and solidify its position as a global tourism leader.

By focusing on infrastructure development, improving hygiene standards, and promoting responsible tourism practices, India can create a more attractive and enriching experience for international tourists. Additionally, efforts to enhance destination image and address socio-political concerns can contribute to a significant rise in international tourist arrivals, allowing India to fully capitalize on its unique tourism offerings.

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