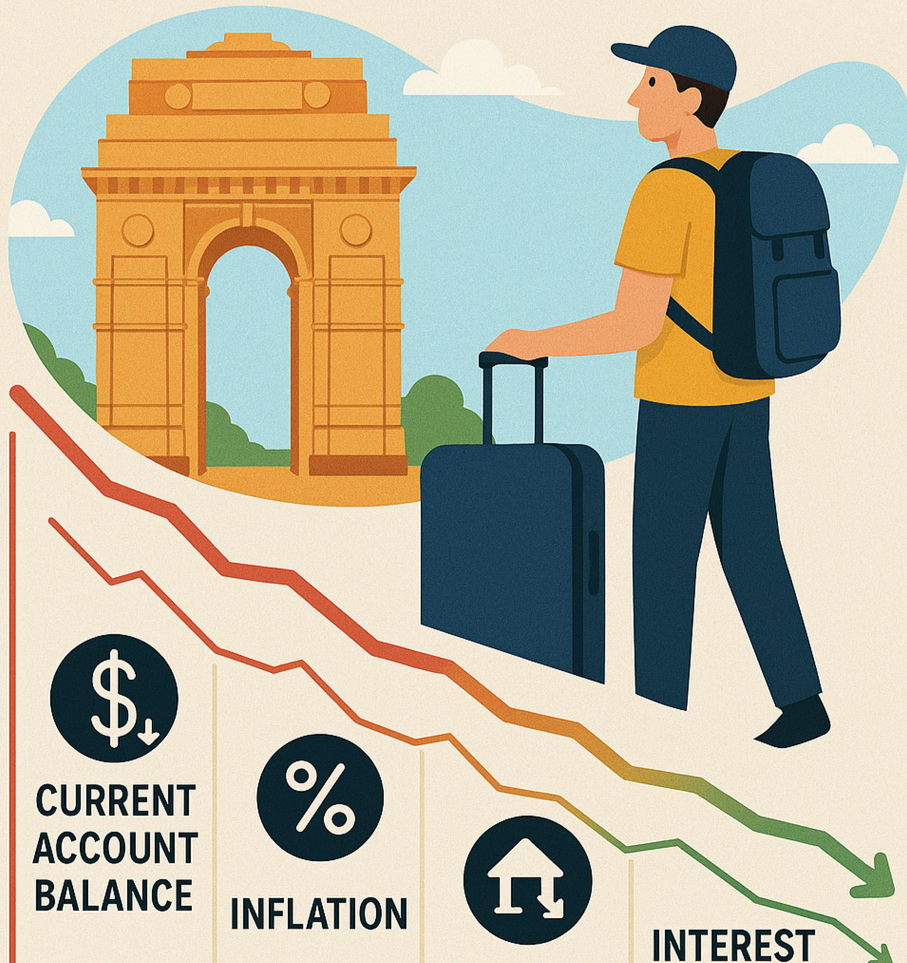




FOREIGN TOURIST ARRIVAL IN INDIA AND CAB, INFLATION, AND INTEREST RATES



**Economic Influences on Tourism in India:
A Time Series Approach**

By

Ebeena Benny and Dr Bobby Thomas

A book based on the Post Graduate Dissertation titled “The Influence of
Current Account Balance, Inflation, and Interest Rate on Foreign
Tourist Arrival.” published by Proquest LLC

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**Economic Influences on Tourism in India:
A Time Series Approach**

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PREFACE

Tourism is a powerful driver of economic development, cultural exchange, and international engagement. Understanding the economic forces that influence foreign tourist arrivals is critical for sustaining and enhancing this vital sector in a country as diverse and dynamic as India. *Economic Influences on Tourism in India: A Time Series Approach* is based on the postgraduate dissertation titled “The Influence of Current Account Balance, Inflation, and Interest Rate on Foreign Tourist Arrival,” which I had the privilege to guide and now co-author.

The dissertation’s inclusion in the ProQuest LLC repository is a rare honour, underscoring the scholarly value and relevance of the research. This recognition reflects not only the academic merit of the work but also its contribution to ongoing discussions around macroeconomic policy and tourism development.

Drawing upon 27 years of economic data (1995–2022) sourced from the World Bank, this study explores how key macroeconomic indicators—Current Account Balance (CAB), inflation, and interest rates—influence the trends and trajectories of foreign tourist arrivals (FTA) in India. The research uncovers nuanced relationships that have important implications for policymakers and tourism strategists through a robust methodology employing time series trend analysis, correlation assessments, and ordinary least squares (OLS) regression.

The findings demonstrate a significant correlation between CAB and FTA, affirming the role of external trade balances in shaping inbound tourism flows. While inflation shows a moderate

correlation with FTA, its direct impact appears limited, indicating a more complex and indirect interaction. Interestingly, despite showing no strong correlation, interest rates emerge as having a statistically significant influence, suggesting latent economic linkages that merit deeper exploration.

This work also stands as a testament to the evolving nature of research in the digital age. The careful and judicious use of Artificial Intelligence tools supported the analytical process—refining language, structuring data interpretation, and enhancing the presentation of findings—without compromising academic rigour or originality. AI served strictly as an assistant in improving clarity and communication, not as a substitute for critical thinking or scholarly integrity.

It is important to address the similarity report generated during academic review. This work showed a 68% similarity score in Turnitin, of which 67% matched the original dissertation published in the ProQuest database. The remaining 1% comprised material noted as “matches that are still very similar to the source material” in a submission made on 2025-04-29. It is worth noting that the original dissertation was submitted prior to this with a 0% similarity score, reaffirming the authenticity and originality of the research during its initial evaluation.

As India continues to position itself as a leading global tourist destination, the insights presented in this book aim to inform more grounded and effective policy frameworks. By addressing the economic undercurrents of foreign tourist arrivals, this study contributes to a better understanding of how macroeconomic stability can directly support a thriving and resilient tourism sector.

We are grateful to ProQuest LLC for recognizing and disseminating this research. We hope this book serves as a valuable resource for students, researchers, policymakers, and all those invested in the future of India's tourism economy.

Dr Bobby Thomas Athickal

PhD, MPhil, MCom, MA (Eco), MA (Phi), BEd, SET, NET

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ABSTRACT

Foreign tourist arrivals (FTA) are influenced by a variety of economic conditions, including the Current Account Balance (CAB), inflation, and interest rates. This study examines the relationship between these economic indicators and FTA in India over a 27-year period (1995–2022). Using secondary data sourced from the World Bank, the analysis employs statistical tools such as time series trend projection, correlation analysis, and OLS regression.

The findings reveal significant correlations between CAB and FTA, with CAB fluctuations having a notable impact on FTA. Inflation and FTA are also correlated, but the direct impact of inflation on FTA is not significant. Interest rates, despite a decreasing trend over the years, show a nuanced relationship with FTA, indicating a significant impact but no direct correlation. The study highlights regional economic dynamics and aligns some findings with international studies while contrasting others, such as the differing impacts of inflation observed in Indonesia.

The research underscores the importance of stabilizing economic indicators like CAB and mitigating inflationary pressures to foster a thriving tourism sector. Policymakers are encouraged to consider these dynamics when formulating strategies to enhance FTA and ensure the sustainable growth of India's tourism industry.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

Foreign tourist arrivals are influenced by a variety of factors, particularly social and economic conditions. Key economic indicators that impact tourism include the Balance of Payments (BoP), current account balance (CAB), interest rates, inflation rates, Gross Domestic Product (GDP), unemployment levels, government debt, currency exchange rates, productivity growth, and industrial production. These elements collectively shape the economic environment, thereby affecting the flow of international tourists.

. The BoP is a crucial economic indicator that reflects a country's economic transactions with the rest of the world. An important economic metric representing a nation's trade with the rest of the world is the balance of payments (BoP). It includes the trade balance, capital flows, and financial transfers. The BoP significantly impacts various aspects of a country's economy, including its tourism sector. A balanced and favourable BoP can lead to a more attractive and affordable travel destination. At the same time, it can also enable the government to invest in tourism development, which, in turn, can stimulate foreign tourism and contribute to India's economic growth. Therefore, policymakers and stakeholders in the tourism industry need to closely monitor and manage the BoP to foster a thriving tourism sector. Studies show that the economic conditions of a country influence foreign tourist arrivals in addition to BoP.

The interest rate prevailing in a country can influence tourist arrivals in several ways. One of the most direct impacts of interest rates on tourism is through exchange rates. A stronger currency can make travel to that country more expensive for foreigners, potentially reducing foreign tourist arrivals. On the other hand, lower interest

rates may lead to a weaker currency, making travel to India more affordable for foreigners and potentially increasing tourist arrivals. Interest rates are a key determinant of a country's overall economic environment. They affect borrowing and lending behaviour, influence consumer spending and business investment, and can impact currency exchange rates—all of which have direct and indirect implications for sectors such as tourism. They influence borrowing costs, consumer spending, business investments, and currency values—all of which can directly or indirectly affect sectors like tourism. When interest rates are high, the cost of financing rises, which can slow down investment in new tourism infrastructure and services. Similarly, inflation affects the tourism sector by reducing the purchasing power of travellers. High inflation makes goods and services more expensive, making travel less affordable and less appealing to foreign tourists. If central banks raise interest rates to control inflation, it can further discourage travel by increasing borrowing costs and reducing consumers' disposable income, thereby making international travel less affordable. This study examines the impact of such economic factors on foreign tourist arrivals in India.

1.2 Significance of the Study

The study of the impact of CAB, interest rate, and inflation on foreign tourist arrivals in India is a valuable area of research with several important implications. Tourism is a vital pillar of India's economy, contributing significantly to employment generation, foreign exchange earnings, and the growth of allied sectors like hospitality, transportation, and retail. It also plays a crucial role in promoting regional development and fostering inclusive economic

growth across the country. It generates foreign exchange earnings, creates jobs, and promotes economic growth. Understanding how the primary economic conditions reflected through economic conditions affect tourist arrivals can have substantial economic implications, as it can help policymakers make informed decisions to stimulate or regulate the tourism sector. Economic conditions can influence the investment decisions of businesses within the tourism industry. Higher economic conditions may increase the cost of capital for tourism-related businesses, potentially impacting their expansion plans and investment in infrastructure and services. Tourism businesses can use knowledge of the impact of economic conditions to manage risk. For example, they can develop strategies to mitigate the effects of economic conditions fluctuations on their financial performance and make more informed decisions about pricing and marketing. In conclusion, understanding the relationship between economic conditions and foreign tourist arrivals in India is significant due to its economic implications, influence on exchange rates, investment decisions, government policy, and potential to inform risk management and marketing strategies within the tourism industry. This knowledge can help various stakeholders make more informed decisions and contribute to the growth and sustainability of India's tourism sector.

1.3 Statement of the problem

The impact of foreign tourist arrivals on a country's economic condition is generally positive due to the revenue generated from tourism-related services. However, this impact can be influenced by various factors, including tourist size and spending habits, exchange rate effects, and the overall economic context of the destination country. Countries often aim to promote tourism to boost their

current account balances, but they also need to manage associated challenges and risks. One important economic indicator that sheds light on a nation's foreign financial dealings is its state of the economy. It is a list of every financial transaction between a nation and the rest of the globe during a given time frame, usually a year or a quarter. Economic conditions can be complex and influenced by various factors. It is important to note that foreign tourist arrivals alone do not directly determine interest rates. Central banks primarily set economic conditions and are influenced by a wide range of economic and financial factors. It is important to note that the overall impact of foreign tourist arrivals on inflation is typically limited in most countries, as tourism is just one of many factors affecting inflation. Central banks and policymakers monitor various economic indicators and variables when making decisions about monetary policy and managing inflation. While tourism can influence inflation to some extent, it is not typically the primary driver of inflation in an economy. Therefore, the present study is titled “The Influence of Current Account Balance, Inflation, and Interest Rate on Foreign Tourist Arrival.”

1.4 Objectives of the study

The research had the following objectives when it was designed.

1. The influence of Current Account Balance on Foreign Tourist Arrival.
2. The influence of Inflation on Foreign Tourist Arrival.
3. The influence of Interest Rate on Foreign Tourist Arrival.

1.5 Methodology of the study

The present study assesses the influence of current account balance, inflation and interest rate on foreign tourist arrival.

1.5.1 Nature and source of data

I use secondary data published by the World Bank. The data related to balance of payment, lending interest rate, inflation, and consumer price from 1995-2022 are taken for this analysis.

1.5.2 Tools of Analysis

Statistical tools like time series trend projection, correlation analysis, and OLS regression are used.

1.5.3 Period of study

I use the data from 1995 – 2022 for analysis.

1.5.4 Sample selection

The researcher used secondary data collected from published records of the World Bank, which is readily accessible and convenient for the study. Therefore, the sampling method is convenience sampling.

1.6 Hypothesis

- H01 Current Account Balance have no significant correlation with Foreign Tourist Arrival.
- H02 Inflation has no significant correlation with Foreign Tourist Arrival.
- H03 Interest Rate have no significant correlation with Foreign Tourist arrival.

1.7 Limitations of the study

- i. The study period was limited to 27 years, from 1995 to 2022.
- ii. Inherent secondary data and statistical tool limitations may have affected the study to a certain extent.

1.8 Chapter scheme

The report is presented in four chapters—Foreign Tourist Arrival of India, CAB, Inflation and Interest Rate.

Chapter – 1 Introduction

This introduction chapter deals with topics like the introduction of foreign tourists, the study's objective, problem statement, data collection, analysis tools, period of study, hypothesis, and chapter scheme.

Chapter – 2 Literature Review

This chapter contains a literature review related to foreign tourist arrivals. The data relating to India has been collected here. CAB, interest rate, exchange rate, economic growth, quality of life, and inflation have been collected as a literature review.

Chapter – 3 Theoretical Framework

This chapter describes the Foreign Tourist Arrival through a theoretical framework. Here is the study about the relationship of foreign Tourist arrival with BOP, Interest Rate and Inflation.

Chapter – 4 Data Analysis

This chapter presents the analysis of observed facts in collected quantitative terms. Introduction of data analysis, the nature of study and summary statistics. Data analysis consists of three parts: Trend analysis, correlation analysis, and regression analysis. Trend analysis, Correlation Analysis and Regression Analysis are carried out in the following dimensions:

1. Time series plot of FTA, Inflation and Interest Rate.
2. Time series plot of FTA and CAB.

Chapter – 5 Findings, Conclusions, Suggestions

The chapter deals with the introduction, findings, suggestions, and conclusion about the relationship between the CAB, Interest Rate and Inflation and the FTA.

CHAPTER 2

REVIEW OF LITERATURE

2.1 Introduction

"Tourism is a highly complex phenomenon and can be fully understood only by adopting a multidisciplinary approach" (Candela & Figini, 2012). "Tourism as a social force and institution is impacting the life of people, and many are associated with the industry directly or indirectly" (Guerra et al., 2015). Concordantly, tourism causes some changes and transformations in many subjects, such as cross-cultural interaction, freedom from prejudice, contribution to a peaceful environment and so on. It also changes in itself. This study is focused on the influence of the balance of payment, inflation and interest rate on foreign tourist arrival. "Tourism has significantly increased its scope and opportunity in India. Having been criticised by the then social scientists as being elitist tags, the growth of international tourism receipts in India was confined to less than 0.05 per cent for a long time, which was even less than Sri Lanka. India's third largest export industry is tourism after readymade garments and gem & jewellery. The foreign exchange earnings from tourism in 2000 was Rs.14238 crore. The rate of growth in foreign exchange earnings from tourism is exceptionally high (+ 24%) and is expected to become even higher in the coming years" (Batabyal & Ghosh, 2012).

2.2 Tourism

While looking at classical definitions of travel and tourism, it is understood that it is necessary to revise them according to the current changes. In this regard, "travel" refers to the activity of travellers. A traveller is someone who moves between different geographic locations for any purpose and any duration. Travel comprises all journeys from one place to another. It includes all journeys made by people who enter a country for leisure, to work, reside, study or who

just pass through a country without stopping. Tourism means the temporary, short-term movement of people to destinations outside the places where they normally live and work, as well as their activities during their stay at these destinations. It should be noted that all tourism should have some travel, but not all travel is tourism. Travel refers to the activity of travellers, while tourism refers to the activity of visitors. A visitor is a traveller taking a trip to a main destination outside his/her usual environment for less than a year for any main purpose (business, leisure or other personal purpose) other than to be employed by a resident entity in the country or place visited.

The travel and tourism industry is a significant and rapidly expanding sector globally. In 2017, its economic growth rate of 4.6% surpassed that of the global economy (3%) for the seventh consecutive year, and it outpaced other major industrial sectors as well. This growth was remarkable, with the industry's GDP expanding at a rate 50% higher than that of the overall global economy. Moreover, the industry provided employment to 313 million people worldwide, representing 1 in 10 jobs, and contributed 10.4% to global GDP. International tourist arrivals in 2017 reached 1.322 billion, marking a 7% increase from the previous year and the most robust growth rate in seven years.

"The tourism industry is contributing to the development of the Indian economy. The role of the industry has improved and contributed to generating the needed foreign reserves. Hence, studying the growth rate of tourist arrivals in India is vital. The seasonal analysis may help propose an appropriate policy framework, which may further enhance the scope of tourism in India. The objectives of the study were to assess the rate of growth of

tourist arrival in India, and measure the seasonal variation in the tourist arrivals in India and also assess the change in foreign exchange earnings driven by the burgeoning tourism industry” (Suresh Kumar et al., 2018).

2.3 Impact of FTA on Exchange Rate

“Jena and Dassh (2015) examined the degree and structure of the impact of exchange rate change and volatility on tourist arrival in India by using Quantiles Regression Analysis (QRA) from January 1990 to March 2015. The study made the use of inbound tourist arrival as the dependent variable and world GDP per capita, nominal Indian Rupee/US Dollar exchange rate and exchange rate volatility as the independent variable. The impact of the exchange rate change is that the results are in contrast with both measures of tourist arrival” (Jena & Dash, 2020).

“Le Thanh Tung examined the impact of the exchange rate policy on the number of foreign tourist arrivals in Vietnam. His regression results show that the exchange rate maintained a positive impact on the demand for foreign tourists and indicate that domestic currency devaluation also had a positive effect on the number of foreign tourists to Vietnam. The number of foreign tourist arrivals in the early periods had a positive impact on itself in the current period” (Tung, 2019). He used the Granger causality test.

“S. Nisthar¹ & AAM Nufile prominently aimed to find the relationship between tourist arrivals and the exchange rates in the Sri Lankan context using the quantitative approach method. The time series data from 1950 to 2014 were collected from the annual report of the Central Bank of Sri Lanka. The tourist arrival was the dependent variable. The Exchange rate of French Franc, Exchange rate of Indian Rupee, Exchange rate of Japanese Yen, Exchange rate

of Pound Sterling, Exchange rate of US dollar, and Dummy (D) were the independent variables in this study. All the variables used in this study were stationary at their first difference" (Nisthar & Nufile, 2019).

2.4 Impact of FTA on BoP

"Sajad Ahmad Mir says that Indian tourism has an enormous potential for generating employment and foreign exchange earnings. Since it is a multi-dimensional and service-oriented industry, all divisions of the central and state governments, private sector, and charitable organisations have become vigorous partners in attaining sustainable growth in the country's tourism. The country's total number of foreign tourist arrivals has increased" (Mir, 2017).

"Pallabi Bharali analysed the growth of the tourism sector as well as its percentage share as Foreign Exchange Receipts to the Balance of Payments (BoP) of the country India" (Bharali, 2020)

"Sri Sulasmiyati says that inflation has a significantly negative effect on the number of foreign tourists visiting Indonesia. It was also found that economic growth is not affected by inflation" (Sulasmiyati, 2019). He used OLS Regression for his analysis.

2.5 Impact of FTA on GDP

"Qin Chen has examined the role of economic and environmental factors and tourism policy related to tourist arrival on the sustainability of tourism growth in China. The current study also examines the unit root using Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) tests. The results revealed that GDP, national income, tourism policy related to tourist arrival, and FDI have a positive linkage with the sustainability of tourism growth. The results also exposed that environmental factors such as CO₂, GHG,

and nitrous oxide emissions have a negative linkage with the sustainability of tourism growth. This study provides the guidelines to the relevant authorities and regulators in developing and implementing the sustainability of tourism growth regulations by promoting economic and environmental conditions and effective tourism policies in the country" (Chen, 2023). He used non-linear autoregressive distributed lagged (NARDL) to check the linkage among variables.

"Hubert G. Scarlett examined the economic impact of tourism on economic growth and other macroeconomic variables in a panel of 46 countries. It was found that tourism has a statistically significant positive effect on economic growth. In the linear model, the positive effect on growth is 50 per cent higher if tourism receipts relative to GDP are used as the tourism measure instead of tourist arrivals per capita. When the non-linear specification is considered, it is found that tourism specialisation at higher levels dampens the positive effect on growth. However, increased tourist receipts positively affect growth at all levels. Regardless of the measure of tourism, an increase in tourism augurs well for the services and agriculture value-added shares of GDP as well as the labour prospect in the service and industry sectors and among the vulnerable employed" (Scarlett, 2021).

2.6 Impact of FTA on Quality of Life

Matatolu (2019) "aims at increasing awareness and understanding of extant knowledge relating to empirical research undertaken on how tourism activities impact residents' quality of life (QOL). He concludes that tourism and resident QOL show that once a community becomes a tourist place or destination, the lives of the residents or "hosts" are affected at various levels, so the support of

the hosts is critical for the sustainability of the tourism development” (Matatolu, 2019).

“Sarpong, Steve Yaw Bein, Murad A.Gyamfi, Bright Akwasi Sarkodie, Samuel Asumadu study contributes to the debate and examines the influence of international tourism arrival (TA), real international tourism receipts (TR), and renewable energy consumption (REC) on quality of life (QoL) by using a panel of eight Southern African countries spanning 1995–2017. The results found a significant positive and long-run relationship between TA, TR, and QoL. A significant negative effect was found between REC, trade openness (TO), and QoL, while urbanisation (Urb) had an insignificant negative impact on QoL. The results imply that tourism is an effective economic tool for improving human development in Southern Africa” (Sarpong et al., 2020).

Mishra (2018) examined "that the tourism industry plays a crucial role in India's economic development. It contributes a larger share in employment generation. Tourism augments the country's foreign exchange reserve. It plays a sustainable role in a country's economic growth. The tourism industry plays a crucial role in India's economic development. Rich cultural and natural heritage and historical and religious places attract international tourist arrivals (ITAs) towards India. This paper will analyse the trends of tourism in India. It would study the impact of GDP on tourism. We would also study the relationship between foreign tourist arrival (FTA) and foreign exchange earnings (FEE)" (Mishra, 2018).

2.7 Time Series Models on FTA

Atmanegara et al. (2019) aim to forecast the number of foreign tourists visiting Indonesia by nationality in 2019. "The number of tourist arrivals from Bahrain and Singapore represents low-count

data and high-count data, respectively. This work employs intervention analysis on the count time series model and intervention analysis on ARIMA. Based on RMSE, MAD, and MAPE on out-of-sample data, it was concluded that intervention on Poisson AR is the best model to forecast international visitors from Bahrain and Singapore"(Eviyana Atmanegara, Suhartono, 2019).

“Shalini Chandra and Kriti Kumari's studies aim to compare various time series models to forecast monthly foreign tourist arrivals to India. The models considered here include Naive I & Naive II, seasonal autoregressive integrated moving average (SARIMA) and grey models. Empirical findings show that Naive I better forecasts foreign tourist arrivals to India relative to other time series models under MAPE and U-statistic criteria" (Chandra & Kumari, 2018).

“Navoneel Chakrabarty has found that the Distribution and Trend Analysis have been almost similar to the Original Distribution and Trends of Foreign Tourists in the four quarters of 2012. This similarity in Distribution Analysis has been shown using visualisations like Pie Charts and that in Trend Analysis has been shown using Line Plots" (Chakrabarty, 2020).

“Alexander Culiuc estimates the impact of macroeconomic supply- and demand-side determinants of tourism, one of the largest components of services exports globally, and the backbone of many smaller economies. The results show that the gravity model explains tourism flows better than goods trade for equivalent specifications” (Culiuc, 2014).

2.8 Conclusion

Foreign tourist arrivals have a multifaceted impact on economies, influencing exchange rates, the balance of payments, economic growth, and quality of life. They also require sophisticated modelling and analysis techniques for forecasting and understanding trends. Sustainable tourism development, economic stability, and community engagement emerge as crucial factors in harnessing the benefits of the FTA while mitigating potential challenges.

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CHAPTER 3

THEORETICAL FRAMEWORK

3.1 Introduction

This chapter establishes the impact of foreign tourist arrival on BOP, Interest rate and inflation. The theoretical framework for studying foreign tourist arrivals encompasses a multi-dimensional approach, drawing upon various theories and models from different disciplines. Economic theories, such as demand and supply factors, exchange rates, and income levels, contribute to understanding the economic motivations that drive foreign tourists to choose specific destinations. Sociocultural theories delve into the cultural, social, and psychological factors that influence travel decisions, exploring aspects like cultural exchange, lifestyle preferences, and social influences.

3.2 J-Curve Theory

The J-Curve Theory was not proposed by a single individual but rather emerged as an economic concept developed by various economists over time. The theory gained prominence in the 1960s and is associated with the analysis of the impact of exchange rate changes on a country's trade balance. The term "J-curve hypothesis" describes how a country's balance of trade is affected by currency devaluation. The theoretical understanding of the hypothesis derived from the works of both Alfred Marshall and Abba Lerner, which it was stated that "if the initial balance of trade is Zero, and if the supply elasticities are infinite, then the absolute values of exports and imports elasticities have to be at least large enough to add up to unity to have an exchange rate devaluation and brings about the surplus in balance of payment" believed that the theory can be established at looking at the changes in elasticity overtime (Akonji, 2013).

3.3 Cost Push Inflation Theory

Cost-push inflation is a phenomenon in which rising production costs result in higher pricing for goods and services. This might result in higher travel-related expenditures for lodging, transportation, and other expenses in the tourism setting. Wage increases imposed by unions and company profit increases are the leading causes of cost-push inflation. This kind of inflation is not recent; it was discovered as early as the Middle Ages. The primary factor contributing to cost-push inflation is money pay growth, outpacing labour productivity. The cost of producing commodities rises as a result of labour unions' pressure on businesses to give significant wage increases. In response, employers increase the cost of their goods. Increased pay allows workers to purchase the same amount as previously. In this way, the wage-cost spiral countries, thereby leading to cost-push or wage-push inflation (Totonchi, 2011).

3.4 Multiplier Effect on Tourism

A study examining the multiplier effect on tourism. The assessments have emphasised the multiplier effect of tourism to determine the worldwide incidence of tourism spending on the domestic economy. The term "tourism multiplier" describes the adjustments made to a nation's income, production, employment, and balance of payments due to the increased costs incurred by visitors. The studies conducted to quantify the global incidence of tourism spending on the national economy have led to the establishment of the multiplier effect of tourism, seen as a continuum of inductions of changes in the purchasing power of the tourism sector in income and expenditure in the various branches of the national economy where tourism has

connections, making new revenue each time (Băeșu & Nesteriuc Oana, 2018).

3.5 Conclusion

Theoretical frameworks provide a foundation for understanding and analysing various aspects of a phenomenon. In the context of foreign tourist arrival, they play a crucial role in shaping our perspectives and guiding research.

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CHAPTER 4

DATA ANALYSIS

4.1 Introduction

The present analysis is conducted to examine the relationship between interest rate, BOP, inflation, and FTA. Time series data analysis with the help of Gretl, an open-source time series data analysis software, is used for this purpose.

The following objectives were formulated for the study:

1. The influence of Current Account Balance on Foreign Tourist Arrival.
2. The influence of Inflation on Foreign Tourist Arrival.
3. The influence of Interest Rate on Foreign Tourist Arrival.

4.2 Nature of Data

I use secondary data published by the World Bank. In this study, the researcher analyses 27 years of time-series data collected from the World Bank.

4.3 Summary Statistics

Summary statistics are provided here to provide a concise and simplified dataset representation. This helps to analyse the main characteristics of the secondary data used in this analysis. Table 4.1 shows a summary of the FTA, interest rate, inflation, and BOP.

Table 4.1
Summary Statistics

Statistics	FTA	Interest Rate	Inflation consumer price	CAB
Mean	64.680	11.237	6.641	-22.506
Median	47.645	10.833	6.085	-11.199
Std. Dev.	51.392	2.000	2.844	28.780
C.V.	0.795	0.178	0.428	1.279
Skewness	1.091	0.640	0.714	-0.682
Ex. kurtosis	-0.231	-0.249	-0.623	0.017
IQ range	68.160	2.930	4.892	33.410

Source: Gretl Output

Table 4.1 indicates the following:

FTA: The mean FTA over the 27 years is 64.68 lakhs. It suggests that the average number of foreign tourist arrivals in India over the 27-year period is approximately 64.680 lakhs. The median value indicates that half of the years had foreign tourist arrival numbers below 47.645 lakhs, and the other half had numbers above this value. The higher standard deviation indicates greater variability in the annual foreign tourist arrival numbers. A C.V. of 0.795% indicates moderate relative variability in the foreign tourist arrival numbers. A positive skewness (1.091) indicates a longer right tail, suggesting that the data is skewed to the right. A negative value of the excess

kurtosis (-0.231) suggests that the distribution has thinner tails than a normal distribution. It's slightly platykurtic. The interquartile range of 68.160 represents the range of the middle 50% of the data.

Interest Rate: The mean interest rate over the 27 years is approximately 11.237. The median interest rate is approximately 10.833. This suggests that the middle value of the interest rates is lower than the mean, indicating a right-skewed distribution. The standard deviation is 2.000. This measures the amount of variation or dispersion in the interest rates. A lower standard deviation implies less variability around the mean. The Coefficient of variation is 0.178, indicating a relatively low level of variability compared to the mean. This suggests that interest rates have not fluctuated significantly in relation to the average over the 27-year period. The skewness is 0.640, indicating a right-skewed distribution. This means that some periods with higher interest rates may contribute to a longer or fatter tail on the right side of the distribution. A negative value of excess kurtosis (-0.249) suggests that the distribution of interest rates is slightly less heavy-tailed than a normal distribution. This implies that extreme values are not as common as in a normal distribution. The interquartile range is 2.930, providing a measure of the spread of the middle 50% of the interest rate data.

Inflation: The mean inflation rate over the past 27 years is approximately 6.641%. The median inflation rate is approximately 6.085%. Since the median is less than the mean, it suggests that the distribution of inflation rates may be slightly skewed to the right. The standard deviation of 2.844 indicates the amount of variation or volatility in the inflation rates over the 27-year period. A higher standard deviation implies greater variability. The Coefficient of variation is a relative measure of variability. A C.V. of 0.428

suggests a moderate level of variability in the inflation rates relative to the mean. The positive skewness of 0.714 indicates that the distribution of inflation rates is skewed to the right. This means that there may be some periods of higher inflation that contribute to a longer or fatter tail on the right side of the distribution. The negative excess kurtosis (-0.623) suggests that the distribution of inflation rates is slightly less heavy-tailed than a normal distribution. This means that extreme values (high or low inflation rates) are not as common as they would be in a normal distribution.

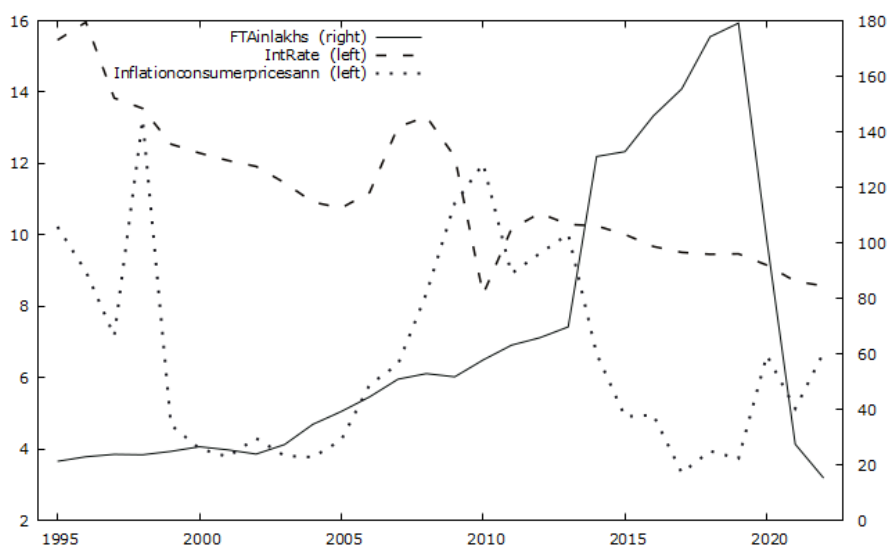
CAB: The mean is approximately -22.506. In the context of Current Account Balance, a negative mean suggests that, on average, there has been a deficit in the CAB over the 27-year period. The median is approximately -11.199. Since the median is less than the mean, it indicates that the distribution of CAB values is negatively skewed. The standard deviation is 28.780. This measure of variability indicates that the CAB values have experienced considerable fluctuations over the 27-year period. The Coefficient of variation is 1.279. This relatively high value suggests a significant relative variation in CAB compared to the mean. The negative skewness (-0.682) implies a distribution that is skewed to the left, suggesting that there are more instances of positive deviations from the mean than negative deviations. The excess kurtosis of 0.017 indicates that the distribution of CAB values is close to a normal distribution in terms of kurtosis. The interquartile range is 33.410. It provides a measure of the spread of the middle 50% of the CAB values.

4.3.1 Time series plot of FTA, Interest rate, Inflation and CAB

A time series plot is a graphical representation of data points in a time-ordered sequence. In the below diagram, plot the x-axis time for the years 1995-2022. The y-axis represents the values of foreign tourist arrivals, interest rates, inflation, and CAB income in the corresponding period. The following figures show the plot of the time series for foreign tourists' arrival, interest rate, inflation, and CAB.

Figure 4.1

Time series plot of FTA, Inflation and Interest Rate



Source: Gretl Output

The number of foreign tourists appears to have gradually increased from 1995 to 2000, with moderate growth each year. From 2001 to 2003 seems to be some fluctuation in the growth rate during these years. During 2004-2007, significant growth is observed during these years, with the number of foreign tourist arrivals increasing substantially each year. Despite economic uncertainties globally from 2008 to 2009, some growth was observed. There is an upward

trend in foreign tourist arrivals during the 2010 to 2019 period, with consistent growth each year; accelerated growth can be seen in 2014. This suggests a healthy and growing tourism industry. During 2020, there was a significant drop in foreign tourist arrivals, which is likely due to the COVID-19 pandemic and the resulting travel restrictions and lockdowns worldwide.

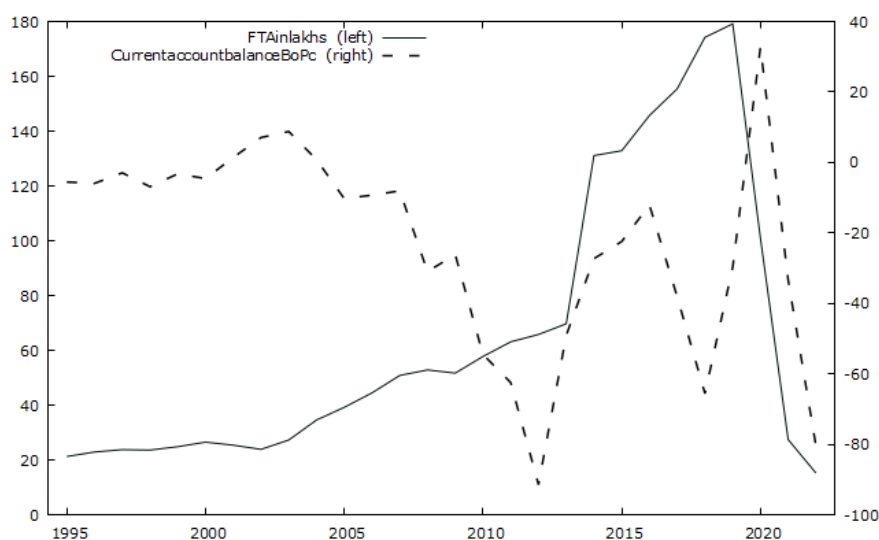
The Interest Rate data for India shows a decreasing trend over the years with some fluctuations. From 1995-2000, interest rates gradually decreased from 15.46% to 12.29%. During this period, we might expect to see a positive impact on FTA, as lower interest rates likely stimulated economic activity and encouraged more foreign tourists to visit. From 2001-2009, interest rates continued to decline, albeit more gradually, reaching a low point of around 8.33% in 2010. This period coincided with fluctuations in FTA growth. From 2010-2022, interest rates remained relatively low, with some fluctuations, but they generally stayed below historical averages. Despite this, FTA growth showed mixed patterns, with some years experiencing growth while others experienced declines.

From 1995-2003, inflation rates varied, but overall, they were relatively moderate. The growth rate of FTA during these years showed both increases and decreases, likely influenced by factors beyond inflation, such as economic conditions, travel trends, and geopolitical events. From 2004 to 2008, inflation rates remained relatively low during these years, with occasional fluctuations. FTA showed significant growth during this period, which could be attributed to various factors such as improving economic conditions globally, increased globalisation, and marketing efforts by tourism boards. From 2009 to 2010, inflation rates increased notably during this period, with double-digit inflation in 2010. FTA growth during

these years may have been impacted by the global financial crisis, which led to reduced travel spending and economic uncertainty. From 2011 to 2017, inflation rates fluctuated, but they generally remained moderate. FTA continued to grow steadily, possibly reflecting increasing global travel trends and economic recovery from the financial crisis. From 2018 to 2022, inflation rates remained relatively stable, with occasional upticks. FTA growth during this period showed fluctuations, likely influenced by factors such as economic conditions, geopolitical events, and the impact of the COVID-19 pandemic on travel.

Figure 4.2

Time Series Plot of FTA and CAB



Source: Gretl Output

From 1995 to 2005, the current account balance fluctuated, sometimes being negative and sometimes positive. FTA showed overall growth during these years, indicating that the current account balance might not have had a significant negative impact on tourism

demand. From 2006 to 2009, the current account balance remained negative, reaching particularly low levels in 2008 and 2009. Despite this, FTA continued to grow during these years, suggesting that other factors such as economic conditions in source countries, travel trends, and marketing efforts likely played a more dominant role in driving FTA growth. From 2010-2022, the current account balance continued to fluctuate, sometimes being negative and sometimes positive. FTA growth during these years also showed fluctuations, possibly influenced by a combination of factors, including economic conditions, currency exchange rates, geopolitical events, and the impact of the COVID-19 pandemic on travel.

4.3.2 Correlation Analysis

Correlation analysis is conducted to test the correlation between CAB, Inflation, Interest rate and FTA. The following null hypothesis was formulated:

- $H_{0\ 1}$ CAB and Foreign Tourist Arrival are not significantly correlated.
- $H_{0\ 2}$ Inflation and Foreign Tourist Arrival are not significantly correlated.
- $H_{0\ 3}$ Interest Rate and Foreign Tourist Arrival are not significantly correlated.

Kendall's tau is used to test the hypothesis. Test results are given in Table.

Table 4.2**Test Results: Correlation Analysis**

	Kendall's tau	Z -score	p-value	Decision
FTA and CAB	-0.3333	-2.50908	0.012	H_{01} Rejected
FTA and Inflation	-0.1429	-1.08661	0.277	H_{02} Accepted
FTA and Interest Rate	-0.5026	-3.7735	0.001	H_{03} Rejected

Source: Gretl Output

Decision: The p-value of the result is less than 0.05. It is concluded that FTA is significantly correlated with CAB. The null hypothesis is rejected. The p-value of the test result is greater than 0.05. It is concluded that FTA is significantly correlated with inflation. The null hypothesis is accepted. The p-value of the test result is less than 0.05. It is concluded that FTA is not significantly correlated with interest rates. The null hypothesis is rejected.

4.3.3 Regression Analysis

Regression analysis is a powerful statistical method used to understand the relationship between one dependent variable (usually denoted as y) and one or more independent variables (usually denoted as X). OLS is a valuable tool in time series analysis, providing a systematic framework for estimating relationships from time series data. Linearity, independence of observations,

homoscedasticity, normality of errors, no perfect multicollinearity, zero conditional mean, and exogeneity are the assumptions of OLS regression.

Since correlation analysis and trend analysis are satisfied for CAB and interest rate, we can go through the regression analysis procedure.

The following null hypotheses are formed:

H_{0 4} Current Account Balance has no significant influence on Foreign Tourist Arrival.

H_{0 5} Inflation has no significant influence on Foreign Tourist Arrival.

H_{0 6} Interest Rate has no significant influence on Foreign Tourist Arrival.

Ordinary Least Square regression analysis is used to test the above hypothesis. The following OLS regression model is formulated.

$$Y = \beta_0 + \beta_1 X + \epsilon$$

Where:

Y is the dependent variable of Foreign Tourist Arrival

X is the independent variable CAB or Interest rate and inflation rate

β_0 is the intercept (the value of Y when X=0)

β_1 is the slope (the change in Y for a one-unit change in X)

ϵ is the error term (the difference between the observed and predicted values of Y)

Table 4.3 shows the result of the regression analysis.

Table 4.3**Influence of CAB on FTA**

Number observations 1995-2022 (T = 28)

Dependent variable: FTA in lakhs

	coefficient	std. error	t-ratio	p-value	Significance
const	54.5505	12.2435	4.455	0.0001	***
CAB	-0.45007	0.33888	-1.328	0.1957	.
Mean dependent var	64.68000	S.D. dependent var	51.39177		
Sum squared resid	66779.84	S.E. of regression	50.67993		
R-squared	0.063529	Adjusted R-squared	0.027510		
F (1, 26)	1.763795	P-value (F)	0.195693		
Log-likelihood	-148.6076	Akaike criterion	301.2152		
Schwarz criterion	303.8796	Hannan-Quinn	302.0298		
rho	0.863806	Durbin-Watson	0.315372		

Source: Gretl Output

Therefore, only 6% of the R-squared value indicates the changes in the dependent variable are included in the regression model. Since the p-value is greater than 0.05, we accept the null hypothesis. Therefore, it is concluded that CAB has a significant impact on FTA.

Number of observations 1995-2022 (T = 28)

Dependent variable: FTA in lakhs

Table 4.4**Influence of Interest rate on FTA**

	coefficient	std. error	t-ratio	p-value	Significance
const	215.098	72.4630	2.968	0.0064	***
Int Rate	-13.3862	5.58075	-2.399	0.0239	**
Mean dependent var	64.68000	S.D. dependent var			51.39177
Sum squared resid	51962.23	S.E. of regression			44.70511
R-squared	0.271320	Adjusted R-squared			0.243294
F (1, 26)	5.753472	P-value (F)			0.023923
Log-likelihood	-145.0952	Akaike criterion			294.1905
Schwarz criterion	296.8549	Hannan-Quinn			295.0050
rho	0.822511	Durbin-Watson			0.441833

Source: Gretl Output

The R- R-squared value indicates that 30.56% of the changes in the dependent variable are included in the regression model. Since the p-value is less than 0.05, we reject the null hypothesis. Therefore, it is concluded that interest rate has a significant impact on FTA. These results reject the findings of "Le Thanh Tung, who examined the impact of the exchange rate policy on the number of foreign tourist arrivals in Vietnam. His regression results show that the exchange rate maintained a positive impact on the demand for foreign tourists and indicate that domestic currency devaluation also had a positive effect on the number of foreign tourists to Vietnam. The number of foreign tourist arrivals in the early periods had a positive impact on itself in the current period." (Tung, 2019).

Number of observations 1995-2022 (T = 28)

Dependent variable: FTA in lakhs

Table 4.5

Influence of Inflation on FTA

	coefficient	std. error	t-ratio	p-value	Significance
const	98.4593	41.8580	2.352	0.0265	**
Inflation					
rate	-5.08662	4.38887	-1.159	0.2570	
Mean dependent var	64.68000		S.D. dependent var	51.39177	
Sum squared resid	65660.64		S.E. of regression	50.25345	
R-squared	0.079223		Adjusted R-squared	0.043809	
F(1, 26)	1.343236		P-value(F)	0.256998	
Log-likelihood	-148.3710		Akaike criterion	300.7420	
Schwarz	303.4064		Hannan-Quinn	301.5565	
rho	0.878809		Durbin-Watson	0.260616	

Source: Gretl Output

Therefore, only 6% of the R-squared value indicates the changes in the dependent variable are included in the regression model. Since the p-value is greater than 0.05, we accept the null hypothesis. Therefore, it is concluded that the inflation rate has no significant impact on FTA. These results reject the findings of "Sri Sulasmiyati says that inflation has a significantly negative effect on the number of foreign tourists visiting Indonesia. It was also found that economic growth is not affected by inflation" (Sulasmiyati, 2019).

The link between one dependent variable and one or more independent variables is modelled using regression analysis. The impact of the independent variables on the dependent variable is estimated. Based on the values of the independent variables, regression offers an equation that may be used to predict the value of the dependent variable. Regression, as opposed to correlation, enables one variable to be predicted from the values of other variables. The equation of the models is:

Model 1:

$$\text{FTA in lakhs} = 54.6 - 0.450 \cdot \text{BOP}$$

(14.5) (0.398)

$$T = 28, R\text{-squared} = 0.064$$

(standard errors in parentheses)

Model 2:

$$\text{FTA in lakhs} = 215 - 13.4 \cdot \text{Interest Rate}$$

(72.5) (5.58)

$$T = 28, R\text{-squared} = 0.271$$

(standard errors in parentheses)

Model 3:

$$\text{FTA in lakhs} = 98.5 - 5.09 \cdot \text{Inflation rate}$$

(41.9) (4.39)

$$T = 28, R\text{-squared} = 0.079$$

(standard errors in parentheses)

The regression analysis highlights that among the economic indicators examined, only interest rates significantly influence foreign tourist arrivals (FTA), with a negative relationship suggesting that higher rates may deter tourism, possibly due to

reduced investment in infrastructure and economic activity. Current Account Balance (CAB) and inflation, despite theoretical expectations, do not show significant effects on FTA, indicating that tourism is relatively unaffected by CAB fluctuations and resilient to moderate inflationary changes, with external factors likely playing a more dominant role in shaping tourism trends.

4.3.4 Conclusion

The analysis reveals mixed findings on the influence of economic indicators on foreign tourist arrivals (FTA). While a significant negative correlation exists between FTA and both Current Account Balance (CAB) and interest rates, regression analysis shows that only interest rates have a significant negative influence on FTA, indicating that higher rates may deter tourism indirectly by impacting economic activity and infrastructure investment. CAB and inflation, despite theoretical implications, do not show significant direct effects on FTA, highlighting the resilience of tourism to these variables and the likely dominance of external factors in shaping tourism trends.

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CHAPTER 5

FINDINGS, SUGGESTIONS AND CONCLUSION

5.1 Introduction

Foreign tourist arrivals play a multifaceted role in shaping a country's economic landscape, affecting interest rates, inflation rates, and the current account balance. Understanding these dynamics is essential for policymakers and businesses to make informed decisions, allowing them to effectively manage the economic impacts of tourism. By analysing factors like tourism trends, economic conditions, and market shifts, stakeholders can develop strategies to maximise the benefits of tourism while mitigating potential challenges. Data from 1995 to 2022 is available [here](#).

The following objectives were formulated for this purpose;

1. The influence of Current Account Balance on Foreign Tourist Arrival.
2. The influence of Inflation on Foreign Tourist Arrival.
3. The influence of Interest Rate on Foreign Tourist Arrival.

5.2 Findings

A summary of the findings is given under four heads.

5.2.1 Summary Statistics of FTA

1. The average number of foreign tourist arrivals in India over the 27-year period is approximately 64.68 lakh, indicating the typical annual influx of international visitors to the country during this time frame.
2. The median value of foreign tourist arrival indicates that half of the years had foreign tourist arrival numbers below 47.645 lakhs, and the other half had numbers above this value.

3. The higher standard deviation of foreign tourist arrival indicates a greater degree of variability in the annual foreign tourist arrival numbers. C.V. of 0.795% indicates a moderate relative variability in the foreign tourist arrival numbers.

5.2.2 Influence of CAB on Foreign Tourist Arrival

4. On average, there has been a deficit in the CAB over the 27-year period.
5. When the mean is higher than the median, it suggests that there are some very high values pulling the mean upwards, creating a longer right tail in the distribution.
6. The CAB values have experienced considerable fluctuations over the 27-year period.
7. From 1995 to 2005, the current account balance fluctuated, sometimes being negative and sometimes positive.
8. From 2006 to 2009, the current account balance remained negative, reaching particularly low levels in 2008 and 2009.
9. From 2010-2022, the current account balance continued to fluctuate, sometimes being negative and sometimes positive.
10. FTA and CAB are significantly correlated.
11. CAB has a significant impact on FTA.

5.2.3. Influence of Inflation on Foreign Tourist Arrival

12. The mean inflation rate over the 27 years is 6.641%.

13. The median inflation rate is approximately 6.085%. Since the median is less than the mean, it suggests that the distribution of inflation rates may be slightly skewed to the right.
14. The standard deviation of 2.844 indicates the amount of variation or volatility in the inflation rates over the 27-year period. A higher standard deviation implies greater variability.
15. From 1995-2003, inflation rates varied, but overall, they were relatively moderate. The growth rate of FTA during these years showed both increases and decreases, likely influenced by factors beyond inflation, such as economic conditions, travel trends, and geopolitical events.
16. From 2004 to 2008, inflation rates remained relatively low during these years, with occasional fluctuations.
17. From 2009 to 2010, inflation rates increased notably during this period, with double-digit inflation in 2010.
18. From 2011 to 2017, inflation rates fluctuated, but they generally remained moderate.
19. From 2018 to 2022, inflation rates remained relatively stable, with occasional upticks.
20. The mean interest rate over the 27 years is 11.237.
21. The coefficient of variation (C.V.) is a relative measure of dispersion that expresses the standard deviation as a proportion of the mean. A C.V. of 0.428 indicates a moderate level of variability in inflation rates, suggesting that the data points show a balanced spread around the mean—neither too scattered nor too concentrated.
22. FTA and inflation are significantly correlated.

23. Inflation has a negative coefficient, though it is not significant.
24. The inflation rate has no significant impact on FTA. This supports the findings of Sri Sulasmiyati, who says that inflation has a significantly negative effect on the number of foreign tourists visiting Indonesia, although economic growth is not affected by inflation (Sulasmiyati, 2019).

5.2.4 Influence of Interest Rate on Foreign Tourist Arrival

25. The median interest rate is approximately 10.833. This suggests that the middle value of the interest rates is lower than the mean, indicating a right-skewed distribution.
26. The standard deviation is 2.000. This measures the amount of variation or dispersion in the interest rates. A lower standard deviation implies less variability around the mean.
27. From 1995-2000, Interest rates gradually decreased from 15.46% to 12.29%.
28. FTA growth showed mixed patterns, with some years experiencing growth while others experienced declines.
29. The Coefficient of variation is 0.178, indicating a relatively low level of variability compared to the mean.
30. The Interest Rate data for India shows a decreasing trend over the years with little fluctuations.
31. FTA and interest rates are not significantly correlated.
32. The interest rate has a significant impact on FTA.

5.3 Discussion and Suggestions

The deficit in India's CAB over the 27-year period indicates a broader economic context that may affect FTA. Fluctuations in CAB can influence FTA, where CAB significantly correlates with and

impacts FTA. There is a significant correlation between inflation and FTA in India; the impact of inflation on FTA appears to be non-significant. This contrasts with Sri Sulasmiyati's findings for Indonesia, where inflation negatively affects FTA. It's crucial to note these differing impacts based on regional economic dynamics. The decreasing trend in interest rates in India over the years, coupled with a non-significant correlation but significant impact on FTA, suggests a nuanced relationship. Unlike exchange rates or CAB, interest rates may not directly influence FTA but can still have an impact, possibly through broader economic effects. Therefore, the following suggestions are made.

1. As CAB fluctuations can affect FTA, strategies to manage and stabilise the balance of payments could indirectly support the tourism sector by creating a more conducive economic environment.
2. While inflation's direct impact on FTA seems non-significant in India, policymakers should still aim to mitigate inflationary pressures to maintain overall economic stability, which can indirectly benefit the tourism sector.

5.4 Conclusion

On average, there has been a deficit in India's CAB. Fluctuations in CAB values can significantly impact FTA, as they are closely related. CAB values have fluctuated over time, sometimes being negative and sometimes positive. Inflation rates varied but generally remained moderate over different periods. While inflation and FTA are correlated, inflation's direct impact on FTA is not significant. FTA growth was influenced by broader economic conditions and events beyond inflation. Interest rates in India decreased over the years with some fluctuations. Although interest rates and FTA are

not significantly correlated, interest rates can impact FTA. FTA growth showed mixed patterns despite changes in interest rates.

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APPENDIX

Year	FTA in Lakhs	BOP	Inflation	InterestRate
1995	2124000	-5563227578	10.22	15.46
1996	2288000	-5956139582	8.98	15.96
1997	2374000	-2965195307	7.16	13.83
1998	2359000	-6903105373	13.23	13.54
1999	2482000	-3228022816	4.67	12.54
2000	2649000	-4601248652	4.01	12.29
2001	2537000	1410181566	3.78	12.08
2002	2384000	7059496037	4.30	11.92
2003	2726000	8772510264	3.81	11.46
2004	3457000	780195722	3.77	10.92
2005	3919000	-10283543308	4.25	10.75
2006	4447000	-9299060317	5.80	11.19
2007	5082000	-8075694484	6.37	13.02
2008	5283000	-30971987181	8.35	13.31
2009	5168000	-26186435957	10.88	12.19
2010	5776000	-54515877624	11.99	8.33
2011	6309000	-62517637222	8.91	10.17
2012	6578000	-91471245846	9.48	10.60
2013	6968000	-49122670388	10.02	10.29
2014	13107000	-27314281993	6.67	10.25
2015	13284000	-22456838010	4.91	10.01
2016	14570000	-12113787707	4.95	9.67
2017	15543000	-38167659224	3.33	9.51
2018	17423000	-65599439053	3.94	9.45
2019	17914000	-29762864650	3.73	9.47
2020	10093000	32730048588	6.62	9.15
2021	2740000	-33422359358	5.13	8.70
2022	1520000	-80433190824	6.70	8.57

Source: <https://data.worldbank.org/indicator/ST.INT.ARVL>
<https://data.worldbank.org/indicator/BN.CAB.XOKA.CD>
<https://data.worldbank.org/indicator/FP.CPI.TOTL.ZG>
<https://data.worldbank.org/indicator/FR.INR.LEND>