Determinants of Tourism Growth in India: Analysing Economic and Environmental Factors Influencing Inbound and Domestic Tourism (2022–2023)

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Abstract: This research paper focuses on the tourism industry as a vital sector that plays a significant role in driving economic growth, generating employment opportunities, preserving cultural heritage, and strengthening international relationships. The study further explores the economic and environmental determinants that shape both inbound and domestic tourism in India. The research incorporates Pearson Correlation Matrix, Factor Analysis, and Multiple Linear Regression to analyse data sourced from government reports and articles for the year 2022. The top three countries from which India received the highest number of tourists in 2022 were the U.S.A, Bangladesh, and the U.K. Factor analysis revealed that 83.31% of total variance in tourism growth is explained by three major components, strongly linked to economic and disaster-related factors. The Kaiser-Meyer-Olkin (KMO) value was 0.668, confirming sampling adequacy, and Bartlett's Test of Sphericity was significant ($p = 0.000$), validating the use of factor analysis. Pearson correlation results show a strong relationship between Inbound Tourism and State GDP ($r = .772$), and similarly between Domestic Tourism and State GDP ($r = .767$). Regression analysis revealed a strong predictive model with an R value of 0.84 for inbound tourism and 0.799 for domestic tourism. The study concludes that economic factors such as GDP growth and effective utilization of sanctioned tourism funds are vital drivers for tourism development in India, alongside the need for effective disaster management strategies.

Keywords: inbound tourism; domestic tourism; disaster impact; tourism growth factors.

JEL Classification: O44; Z30; Z32

Introduction

This study primarily focuses on the growth of tourism in India following the impact of the COVID-19 pandemic. Tourism was one of the most severely affected industries globally during and after the health crisis. According to the United Nations World Tourism Organization, India welcomed approximately 17.91 million international tourists in 2019. However, this number sharply declined to 6.34 million in 2020 and 7.00 million in 2021 due to pandemic-related restrictions. It was only in 2022 that the sector began to recover, recording a rebound with 14.33 million foreign tourist arrivals. Globally, several countries that heavily rely on tourism - such as the Maldives, Seychelles, Aruba, Macau, Fiji, Thailand, the Bahamas, Saint Lucia, Grenada, Jordan, and Croatia - faced severe economic setbacks during 2020 and 2021. These nations experienced significant losses in GDP and employment, highlighting the vulnerability of tourism-dependent economies in times of global crises. However, by 2022, many of these countries began to regain stability as inbound tourism started to recover. (Jagdale and Ganatra 2021) Due to the impact of COVID-19, all tourism destinations in India experienced a 30% decline in domestic tourism. Additionally, the tourism industry witnessed a significant rise in unemployment, increasing from 10% to 20% (Jagdale and Ganatra 2021). Tourism plays a crucial role in enhancing the economy of many countries. With proper government

planning and investment, a healthy environment can be created for both tourists and industries associated with tourism. (Sun *et al.* 2021)

India is a country rich in culture, home to diverse languages, ancient heritage sites, and unique architectural marvels - all of which continue to attract foreign tourists. Following the COVID-19 pandemic, which caused a major disruption in global travel, the Indian government implemented several recovery measures to revitalize the tourism sector. Key actions included the launch of the Dekho Apna Desh campaign to promote domestic tourism, providing financial support to tour operators and travel agencies, extending e-Visa services to more countries, and implementing strict safety and hygiene protocols to restore traveller confidence. Additionally, initiatives like the Swadesh Darshan Scheme (Ministry of Tourism, and Government of India, "Developing Sustainable and Responsible Destinations.," Swadesh Darshan 2.0 Scheme Guidelines, 2022) and PRASHAD Scheme (Ministry of Tourism and Government of India. "PRASHAD 15th Finance Commission Scheme Guidelines.," Ministry of Tourism, Government of India., 2023) were strengthened to improve tourism infrastructure and promote spiritual and heritage tourism. After covid 19 these above schemes and helped the Indian tourism industry and began its recovery in 2022 (India records, 2023).

Inbound Tourism in India

Inbound tourism refers to visitors from other countries exploring India's diverse tourist destinations. It significantly boosts the nation's economy, culture, heritage, and natural beauty while creating employment, encouraging research, and building international relationships. Countries like Russia, with its 26 world-class destinations, and Malaysia, which promotes business, health, and food tourism, show how inbound tourism supports economic growth and job creation (Okhrimenko and Timakova 2021, Rupam, Vinayaraj and Jeetesh 2016, Jingjing and Peter 2018). Globally, inbound tourism also fosters regional development through R&D, innovation, and FDI, highlighting the importance of infrastructure and heritage-based events to attract international visitors (Okhrimenko and Timakova 2021, Alluri and Venkateswarlu 2023).

In India, 10.93 million Foreign Tourist Arrivals (FTA) and 17.91 million International Tourism Arrivals (ITA) were recorded in 2019, including 6.98 million NRIs, 5.7 lakh diaspora tourists, 3.3 lakh medical tourists, 1.8 lakh business travellers, 1.2 lakh holiday visitors (Sengupta and Chandni, 2020) and, the Government launched schemes like the Swadesh Darshan Scheme (2014–15), targeting eco, wildlife, tribal, and heritage tourism with thematic circuits To boost inbound tourism in India. By 2015–16, over ₹3,000 crore was spent under the scheme, with ₹160 crore for the Northeast, ₹78 crore for eco-tourism, and ₹68 crore for tribal circuits (Mishra, Sen and Ojha 2016). The PRASHAD Scheme further strengthened regional pilgrimage tourism, funding destinations like Velankannai, Kanchipuram, Puri, and Varanasi in multiple instalments (Karthilingam and Kannan 2020). It also focused on enhancing tourist amenities - ATM access, green energy, Wi-Fi, walkways, and water transportation - with major allocations in 2020 (*e.g.*, ₹129 crore for Uttar Pradesh and ₹69 crore for Punjab) (Ministry of Tourism, "Final Report on Study, Analysis and Development of Action Plan based on World Economic Forum Ranking System for Travel & Tourism Competitiveness for India," 2019) which help in the recovery of covid 19 crisis.

The Ministry of Tourism (2019) outlined five pillars for tourism development: business facilitation, safety, health, human resources, and infrastructure. These five pillars play a major role in upbringing the inbound tourist to India (Modi and Shah 2024). Economic analyses show a positive relationship between tourism and national income: there is a relationship between hotel transport and trade with forging exchange earnings and foreign tourist arrival revealed in R^2 of 99% using regression model (Sagar and Retheesh 2020). This was further supported by a correlation coefficient of 0.995, showing a near-perfect relationship between inbound tourism and foreign exchange earnings (Jayswal and Jaiswal 2016) increase in the number of inbound tourist paves way to foreign exchange earnings to India.

The introduction of the E-Visa led to a massive jump in foreign tourist inflow - from 39,000 in 2014 to 4.45 lakh in 2015, with particularly high arrivals in December (Abdull, Albahadili and Noori 2019). In total, 1,690 tourists from 42 countries used the E-Visa facility, including 465 from the USA and 300 from the UK hence after covid 19 E-visa helped the arrival of foreign travellers to visit India (Iyer and Thomas 2019) India's UDAN Scheme aimed at affordable regional connectivity through flights capped at ₹2,500, benefiting over 60 lakh passengers (Kumar *et al.* 2021) Pre-UDAN, Gujarat had seven airports; post-UDAN, states like Uttar Pradesh, Maharashtra, and Tamil Nadu saw expansions. The number of states with 4–7 airports grew from 7 to 13, while those with just 3–4 fell from 15 to 10, with new airports built in Himachal Pradesh and Haryana (Thoma, Handuj and Iyer 2020). A Mann-Whitney U test showed Indian travelers were significantly more satisfied than foreign travelers with the scheme at a 1% level, and eight routes including Shimla–Delhi and Salem–Chennai scored 100% efficiency (Singla and Singh 2023).

To further enhance tourist experience, Indian Railways introduced luxury trains and "tourist-friendly stations" with modern amenities, alongside inclusive tourism packages (Kumar and Komaraiah 2014). Railways contributed

27% to tourism growth in 2017–18, though it declined to 12.96% in 2019–20. Over 52.3% of young travellers reported satisfaction with improvements in services, and 90% praised food hygiene and overall service quality (Kumar 2016; Poongavanam *et al.* 2021). The Sagarmala Project, launched by the Ministry of Shipping, invested ₹8 lakh crore across 400 projects to modernize port infrastructure and promote cruise tourism in states like Kerala, Goa, Maharashtra, and Tamil Nadu. A one-way ANOVA test confirmed that factors like age, employment, and expenses were closely linked to cruise satisfaction (Ministry of Tourism, "Cruise Tourism – Potential & Strategy Study" 2005). While ocean, river, and luxury day cruises were launched, further promotional strategies and FDI are needed. Ports in Chennai, Kochi, Goa, Mumbai, Mangalore, and Tuticorin have been prioritized, with Kochi hosting over 25 cruise ships in 2016 alone (Chawla 2017).

Domestic Tourism in India

Domestic tourism refers to people traveling within their own country. It plays a vital role in bridging the gap left by international tourists, especially in lesser-known destinations. This form of tourism generates substantial revenue and contributes significantly to the national economy. Being one of the oldest and simplest modes of travel, it usually requires no formal documentation. Most domestic travelers use cost-effective surface transport like trains, buses, cars, or bikes, making it affordable. Moreover, it is inclusive and accessible to people from all economic backgrounds, enabling unrestricted travel across the country. Many people believe that domestic tourism is more cost-effective compared to outbound tourism. It offers easier access to destinations within the country and eliminates the need for travel documents, making it a more convenient option for many travelers (Nurul *et al.* 2020). Tourists often prefer domestic food over unfamiliar international cuisine and avoid the difficulties associated with currency exchange (Nurul *et al.* 2020). Additionally, online media platforms have played a significant role in spreading awareness and providing real-time updates on transportation and travel options, further supporting the growth of domestic tourism (Melese 2022). Technological advancements have enhanced the overall experience and accessibility of domestic travel. In contrast, the complex documentation and regulations required for international travel often discourage people from exploring other countries. However, developing countries like Ethiopia still face challenges in fully developing their domestic tourism sector (Bayih and Singh 2020). Despite this, domestic tourism holds great potential to strengthen a nation's economy and cultural identity. Through awareness programs, event organization, and proper employee training, attitudes toward domestic destinations are gradually changing for the better (Bayih and Singh 2020). Tourists increasingly seek opportunities to interact with local communities and participate in cultural activities. Hence, it is essential that tourism workers are trained to provide comprehensive information about local culture and destinations to enrich the visitor experience (Chebli, Kadri and Said 2022).

From 1997 to 2012, domestic tourism in India saw steady growth, rising from 160 million to 1036 million visitors. Notably, in 2004 and 2009, there was an 18% increase compared to the previous years (Malik, and Nusrath 2016). People primarily preferred domestic tourism for a change in climate, while marketing practices significantly influenced destination choice; however, pricing had minimal impact on their decision-making (Radhika and Jayalakshmy 2016). The growth of domestic tourism in India is driven by a safe and clean environment, rising incomes, changing lifestyles, and better infrastructure. Government initiatives, such as promotional campaigns and organized events, have further supported this trend (Chougle 2014). Post-COVID-19, the increasing population has notably impacted destination demand, with many people making weekend domestic trips a regular habit (Shyju *et al.* 2024).

The steady increase in India's GDP - from an average growth of 3.6% (1950-1955) to 6.6% (2000-2004) - has contributed significantly to the rise of domestic tourism. Economic growth has enhanced people's income and travel capacity, boosting tourism demand (Basu and Maerten 2007). The sustainable economic growth in India is driven by financial development, people's saving and investment habits, a robust financial system, impactful new policies, and industrialization. These factors have also supported the expansion of domestic tourism by increasing economic stability and spending power (Dogga, Kuruva and Kashyap 2023). Increased earning capacity raises people's income, where income influences consumption more than wealth. Past consumption patterns also help determine the country's disposable income, which boosts domestic tourism demand (Khari 2023). In India, most people prioritize spending on education over health, while the government supports the poor through insurance schemes and allocated ₹1.38 lakh crore for the health sector. Improved social welfare and government support contribute indirectly to the growth of domestic tourism by enhancing overall wellbeing (Sinha and Adhikary 2020). By 2025, the spending capacity of the middle and upper-middle classes in India is expected to rise, with urban middle-class populations growing significantly. Since the 1991 reforms, poverty has decreased due to this growth, which in turn boosts domestic tourism demand (Beinhocker, Farrell and Zainulbhai 2007). The lower and new middle-class populations in India grew from 23.6% and 28.9% (1999-2000) to 30.1% and 50.3% (2011-2012),

respectively. This expansion has positively influenced domestic tourism by increasing the number of potential travelers (Krishnan and Hatekar 2017).

India ranks third globally in internet usage, with over 20 crore users annually and 8.33% of global internet share. A study found that 95.33% of respondents were familiar with computers, reflecting strong digital adaptation that supports domestic tourism through online access to travel information and services (Sing 2012). India's younger generation is increasingly adopting a Western lifestyle, leading to greater comfort and reliance on digital devices like mobiles, computers, and tablets. This shift has significantly influenced consumer behavior, including how people plan and engage in domestic tourism (Joseph and Singh 2013). The Indian government allocated $105 billion for highways, civil aviation, and irrigation, and $361 billion for ports, railways, telecom, and electricity. Policies like the Road, Railway, Airport, and Port policies were introduced to strengthen infrastructure, which indirectly supports domestic tourism growth (Mishra 2012). The Tourism Policy of 1982 encouraged private sector participation and volunteer involvement to strengthen the tourism sector. The National Action Plan for Tourism (1992) aimed to boost domestic and international tourism, enhance destination services, and generate employment opportunities (Alpesh and Shri 2022).

Role of GDP in Tourism Development

Tourism plays a vital role in increasing a country's GDP, as growth in both domestic and inbound tourism greatly influences economic development (Vedapradha *et al.* 2017). Several key factors determine GDP growth through their impact on tourism. Government policies and regulations that support the tourism sector encourage investment and sustainable development (Mishra 2012). Infrastructure development, such as transportation networks and hospitality facilities, improves accessibility and the overall tourist experience (Prajapati and Parikh 2022). Natural resources, including scenic landscapes and cultural heritage sites, attract visitors and generate revenue (Nayak and Hanagodimath 2024). Technological advancements facilitate better marketing, booking systems, and service delivery within the tourism industry (Ukpabi and Karjaluoto 2017). Additionally, growth in the labor force, especially a skilled workforce in tourism-related sectors, enhances the quality and capacity of services, further boosting the contribution of tourism to GDP (Patra *et al.* 2017).

India is known for its vast cultural diversity and unique tourist destinations, often referred to as the "subcontinent of the world." Visitors can experience a wide array of people, languages, customs, religions, heritage sites, and cultures. Ancient temples and traditional artwork continue to attract foreign tourists, making tourism a significant contributor to India's GDP (Shekhar 2025; Kumar 2025). With 26 states, each possessing distinct languages and cultural practices, India also promotes strong domestic tourism. Inter-state travel allows people to explore and admire diverse traditions and lifestyles, thereby bolstering domestic tourism - a crucial component of economic development (Shekhar 2025; Simpson 2024). Several industries are closely connected to tourism - including hotels, restaurants, transportation, food & beverage, retail, banking, and financial services. These allied sectors substantially contribute to the GDP by supporting and enriching the tourism experience (Simpson 2024).

Tourism significantly contributes to a country's GDP, acting both as a driver and a beneficiary of economic growth. In India, the tourism industry rebounded to contribute approximately 5% of GDP in FY 2022–23, driven primarily by strong domestic tourism, which exceeded pre-pandemic spending levels and helped the sector reach ₹19.13 trillion. Employment in the sector also rose by 10% over 2019 levels (Bastian, Bastian and Rabitz 2019; Sreyesh and Vamshidhar 2024). Globally, the travel and tourism industry accounted for around 9–10% of GDP before the pandemic, with its total contribution - including indirect and induced effects - projected to reach $11.1 trillion (about 10% of global GDP) in 2024, supporting nearly 348 million jobs worldwide (Goretti et al., 2021).

Empirical analyses using cointegration and causality models confirm that in India, both government tourism expenditure and private investment significantly promote GDP growth, reinforcing the tourism-led growth hypothesis. Moreover, strong correlations have been observed between tourism turnover, employment, foreign exchange earnings, and GDP growth, underscoring tourism's dual role as both a contributor to and a reflection of economic development (Singh and Alam 2024, Sreyesh and Vamshidhar 2024).

Disaster and Its Impact

The global human population has crossed 8.2 billion, with people spread across diverse regions of the world. Some countries have extremely high populations, such as India with 1.43 billion, China with 1.41 billion, the United States with 335 million, and Indonesia with 278 million. In contrast, some countries have very small populations, including Vatican City with around 800 people, Tuvalu with 11,500, Nauru with 12,300, and Palau with 18,000 (World Population Review 2025, United Nations Department of Economic and Social A, India Population 2025). People live in a wide variety of environments, including hill stations, coastal areas, desert regions, river valleys, forests,

plateaus, polar regions, and islands. Regardless of the location, people strive for a peaceful life. However, this peace is often disrupted by natural and man-made disasters.

In areas with high population density, man-made disasters are more common and more impactful. These include industrial accidents, building collapses, urban fires, and transport accidents (Kumar 2024). Coastal populations are especially vulnerable to natural disasters such as cyclones, hurricanes, typhoons, tsunamis, rising sea levels, and coastal erosion (Haran *et al.* 2020). Similarly, people living in hill stations are at risk from landslides, earthquakes, flash floods, forest fires, avalanches, cold waves, and heavy rainfall (Praveen and Rajesh 2021). Different regions experience different types of disasters, and the impact of these disasters is usually classified as either high impact or low impact. When a disaster occurs in a densely populated area, the consequences are severe - this is considered a high-impact disaster. On the other hand, if a disaster strikes an area with little or no human presence, the damage and loss are minimal, and it is termed a low-impact disaster. Therefore, the level of disaster impact is often determined by the density of the human population in the affected area (Choo and Yoon 2024).

Global climate change is leading to an increase in various natural disasters worldwide, including earthquakes, cyclones, floods, and extreme temperature events (Maarten *et al.* 2008). These escalating hazards underscore the significant environmental impacts and growing challenges faced globally, profoundly affecting human populations and national development. For instance, natural disasters have affected an estimated 68 million people worldwide and reduced country development after such events (González *et al.* 2021). The May 1960 Chilean earthquake, the world's largest at Richter 9.5, affected a 300-mile area (Steinbrugge and Clough). This devastating event resulted in over 3,000 deaths and left millions homeless. Deadly cyclones, formed by low pressure at sea, cause immense global devastation, exemplified by a Typhoon with 305 km/h winds that left over 20,000 homeless in Japan, caused extensive landslides, and led to over $50 million in industrial losses (Breaton, *et al.* 2023). These disasters critically impact vulnerable communities, with many fishermen losing lives and livelihoods due to destroyed boats and high sea waves (Sea *et al.* 2021). Flooding, triggered by heavy rainfall, snowmelt, or cyclones, submerges land, severely impacting national economies, especially where drainage is poor. Besides destroying infrastructure, floods degrade the environment, harm agriculture and wildlife, contaminate groundwater (Aldardasawi and Beytullah 2021), and spread diseases, leading to fatalities, homelessness, joblessness, and compromised drinking water supplies (Husain, Trak and Meshram 2018). Climatic shifts profoundly affect daily life, with cold waves (temperatures below 10°C) impacting Indian regions like Himachal Pradesh and Delhi, affecting agriculture, transportation, and causing over 1100 reported deaths, primarily between October and January (Nair 2023, Bhatla *et al.* 2016).

Among man-made disasters, war devastates economies, infrastructure, and health systems, leading to mass casualties (*e.g.*, 100,000 deaths, including women and children) and widespread mental distress (Mohsen 2008, Ventevogel 2015). Uncontrolled fires, often due to human carelessness (*e.g.*, kitchen accidents, electrical faults), destroy forests and lives, frequently originating from industrial and transport settings (Planas, Montiel, and Casal 1997). Terrorism, a significant global threat, involves violent acts like bombings and kidnappings, costing the world economy billions and severely impacting regions like Iraq and Afghanistan (Greenbaum, Dugan and LaFree 2007, Bardwell and Iqbal 2020). Finally, despite its economic benefits, railway transportation faces increasing accidents, with India reporting 3151 incidents from 2000-2016, mainly from human error, equipment failures, or sabotage (Aher and D. Tiwari 2017).

1. Literature Review

Disaster and its Impact on tourism Industries

This research primarily focuses on the key factors that influenced Indian tourism following the impact of COVID-19. The Indian tourism industry experienced a significant decline during the pandemic, and it was only in 2022 that the sector began to recover, gradually attracting all categories of tourists once again.

Previous studies have primarily focused on key areas such as the impact of natural disasters on Indian tourism, internal political conflicts, the global significance of inbound tourism, central government funding for tourism development, and investments aimed at increasing foreign tourist arrivals. Additionally, considerable attention has been given to the effects of the COVID-19 pandemic on the Indian tourism sector between 2019 and 2021, (Barbhuiya and Chatterjee 2020, Acheampong, *et al.* 2025, Singh and Alam 2024, Galiano Martínez *et al.* 2025). In 2016, the tourism industry directly generated approximately 25 million jobs. By 2019, it had become the second-largest employment-generating industry worldwide, employing around 4,00,37,000 people (Amutha 2016). Tourism has emerged as an indirect yet powerful driver of economic growth, enabling several developing nations to transition into more developed economies. In India, tourism is among the fastest-growing industries. Foreign exchange earnings from tourism increased significantly - from USD 1,861 million in 1991 to USD 21,071 million in 2015 (Saqib and Satar 2018).

The tourism industry is one of the most dynamic and rapidly growing sectors worldwide, significantly contributing to national economies, employment, and cultural exchange. However, it is also highly vulnerable to crises and disruptions. The COVID-19 pandemic, which struck globally in early 2020, had an unprecedented impact on tourism, leading to a near-total shutdown of travel activities across countries. According to the World Tourism Organization (UNWTO), global international tourist arrivals dropped by 74% in 2020, while India witnessed a 75% decline in Foreign Tourist Arrivals (FTA) and a drastic dip in Domestic Tourist Visits (DTV) as per the Ministry of Tourism reports. The ripple effect was felt across hospitality, transportation, and allied sectors, particularly in developing nations like India, where tourism contributes significantly to state GDP and employment (Ministry of Tourism., "India tourism statistics 2021," Government of India., 2021).

The necessity for adaptive resilience strategies in tourism to cope with future shocks. The research indicated that while international travel took longer to rebound, domestic tourism presented opportunities for quicker recovery, driven by local exploration and fewer restrictions (Gossling *et al.* 2021). Similarly, domestic tourism emerged as a focal point in post-pandemic recovery strategies due to its relatively low risk and strong potential for revenue regeneration (Kaushal and Srivastava 2021). Moreover, government policies, regional economic strength, and investment in tourism infrastructure played vital roles in the speed and strength of the tourism recovery process. Several states in India with higher GDP and well-developed tourism facilities reportedly experienced quicker rebounds in domestic travel, while those more severely affected by natural or man-made disasters lagged behind (Sharma and Nicolau 2022).

From an institutional perspective, the Ministry of Tourism launched the "Dekho Apna Desh" initiative to revive domestic travel, while also increasing sanctioned funds for tourism development across states. Data trends from 2022 suggest a noticeable uptick in DTVs, attributed to eased travel restrictions, improved infrastructure, and greater tourist confidence However, at the same time, the impact of natural and man-made disasters - such as floods, landslides, and industrial accidents - cannot be overlooked, especially in tourism-dependent regions (Ritchie and Y. Jiang 2019, Balakrishnan Nair 2020). The Research's highlighted that areas frequently hit by disasters tend to see prolonged declines in tourism inflows unless countered by effective crisis communication and recovery marketing strategies (Rosselló, Becken and Santana-Gallego 2020, Meher 2024, Pal, *et al.* 2016).

Disaster Impact

Air travel plays a significant role in spreading infectious diseases globally, as seen during the SARS outbreak, which was widely transmitted by international travellers (Baker 2015). Natural disasters such as tsunamis and cyclones have a more profound impact on tourists than heatwaves or avalanches, while terrorism and crime also decrease tourism arrivals (PARK and Y. Reisinger 2008). The global tourism sector suffered immense losses during the COVID-19 pandemic, with millions of jobs affected and top tourism-dependent countries like France, Spain, and the USA seeing sharp declines (Sultana, Islam and Islam 2020).

Economic perception and destination image significantly influence traveler decisions, especially among middle-income groups who avoid disaster-affected areas (Genc 2018). During the pandemic, countries with strong tourism sectors faced major losses, with income drops and a complete halt in travel during April–May 2020 (Salehnia, Zabihi and Safarzaei2020). Quantitative analyses of disasters like earthquakes and floods show variations in death tolls and economic losses across countries (Rossello, Becken and Santana-Gallego 2020).

Stakeholders such as hotels, transport, and tourism operators faced systemic challenges during the COVID-19 crisis, highlighting the need for resilient policies (Sigala 2020). Recovery management consists of six key stages that guide the response before, during, and after a disaster (Muskat, Nakanishi and Blackman 2014). In Nepal, the 2015 earthquake caused a drastic drop in tourism, but recovery followed with strong GDP growth and increased tourism receipts (Min *et al.* 2020). Effective risk and crisis management planning help reduce tourism-related losses during disasters (Ghimire *et al.* 2015).

In Indonesia, the "spillover effect" was observed when tourists shifted from disaster-hit areas to safer destinations, reflecting redistribution in tourism flows (Rindrasih *et al.* 2019). In Zhejiang, China, where COVID-19 originated, tourist behavior shifted toward safer, more isolated lodging options, especially among younger demographics (Hong *et al.* 2020). In addition to global and national studies, localized disaster impact assessments reveal the vulnerabilities at the household and regional levels. Patankar (2019) studied Mumbai, Chennai, and Puri and noted that floods caused damage to homes and essential appliances, while uninsured small businesses faced huge losses. Similarly, Madhanarekha (2015) documented the 2015 Chennai floods, highlighting the combined efforts of the government and volunteers during rescue operations and the inadequacy of compensation post-disaster. Goodnews Israel Oshiogbele (March 2021) emphasized the lack of awareness and communication during floods, recommending the inclusion of disaster education in school curricula and improved NGO-private sector involvement. Patil (2012) outlined India's disaster management framework post-1999, categorized into five disaster

types and managed through a network of national-level committees, including the Central Relief Commission and National Crisis Management Committee.

Studies like Pillai *et al.* (2021) explored landslide vulnerability in Ranni, Kerala, where slope, soil type, and poor drainage infrastructure contributed to disaster risk. Gupta *et al.* (2021) analyzed cyclone impacts in West Bengal, stressing the importance of IMD's early warning system and coordinated post-disaster efforts from government and NGOs. In Assam, Ali *et al.* (2021) detailed the health-oriented disaster management during COVID-19, where the state employed "Three T" (Test, Treat, Transport) and "Three S" (Surveillance, Segregate, Save) strategies, covering 30,000 villages with effective response mechanisms. Agarwal *et al.* (2021) focused on a major man-made disaster - the Deepwater Horizon oil spill in the Gulf of Mexico - which caused significant ecological damage across five US states. Lastly, Khatu *et al.* (2021) proposed cyclone shelters designed using REVIT software and manual testing to withstand structural loads, guided by Government of India and UNDP protocols. These shelters are crucial for future disaster resilience, particularly in cyclone- and tsunami-prone regions.

Tourism

A study in the Nilgiris region highlighted that destination attractiveness and support services such as transport are crucial for increasing tourist inflow, with natural beauty and climate being the major pull factors (Govindarajan 2002). Research from Zimbabwe confirmed that cultural and nature-based attractions, combined with safety, clean water, and communication services, significantly enhance destination appeal (Vengesayi, Mavondo and Reisinger 2009). In the United States, a study applying the 4Es model - Education, Entertainment, Esthetics, and Escapism - showed that esthetics strongly influenced tourists' memories, which positively affected satisfaction and destination loyalty (Quadri-Felitti and Fiore 2013). Analysis of Tamil Nadu's international tourism trends between 2001–2012 revealed a consistent 13–14% growth due to cultural heritage and coastal attractions (Kumar, Bhavani and Karthik 2014). Tourism has been defined in many ways, but studies now emphasize its pleasure-driven nature, though research in the field remains limited due to lack of historical academic interest (Butler 2015). Typology-based research confirmed that pre-visit expectations and post-visit experiences are critical in determining tourist satisfaction and likelihood of return (Żegleń and Grzywacz 2016). In Malaysia, business, medical, and gastronomic tourism were explored, with medical tourism showing the strongest association with tourist motivation and promotion (Konar, Mothiravally and Kumar 2016). A study in Malawi identified infrastructure deficits, lack of security systems, and poor hospitality education as barriers to tourism growth (Jackson 2017). Research in Tamil Nadu found that young tourists preferred the area for its environment and affordability, with recommendations to improve parking and preserve nature (Jayaprakash and Mythili 2017). In Madurai, domestic tourists valued the cultural experience and found the destination safe, with guides playing a key role in satisfaction (Ketharaj and Anitha 2018). Tourists in Tamil Nadu appreciated climate and safety but faced issues like traffic and infrastructure; they ranked local foods like homemade chocolates" highly (Sumina 2019). In Kodaikanal, tourists were attracted to scenery and climate, although high transport costs and limited guidance created dissatisfaction (Amarjothi and Kumar 2020). An analysis of ten top global tourist cities found that their advanced e-marketing and updated websites enhanced destination promotion, although cultural and sports opportunities needed improvement (Basarangil 2021). Gastronomy tourism emerged as a growing trend, with tourist food-related spending increasing from 18% to 24% between 2004–2014, highlighting the role of food in memory creation and destination value (Cetin 2021). A generational study from Turkey indicated that post-COVID, Generation X prioritizes safety while Generations Y and Z are more open to travel, though safety measures can further motivate all groups (Buzlukcu and Sahin 2021). Api tourism, involving beekeeping, honey production, and bee museums, was proposed as a unique, memory-based tourism model for rural development (Cesur 2021). Digital technology has transformed tourism promotion, making destinations more accessible through tools like websites, Google Maps, and translation apps, though it also brings risks such as fake reviews and misinformation (Onat and Karakus 2021). Historical data on tourism development confirmed that geography alone does not determine success; supporting infrastructure, trained staff, and varied cultural activities are equally vital (Aleksanyan 2021). The impact of COVID-19 on tourism in Tamil Nadu saw a major drop in tourist inflow, with recommendations to improve online booking, safety protocols, and medical tourism (Martin 2022). Tourists increasingly prefer self-guided travel using digital platforms, finding satisfaction in safety, food quality, and flexibility (Vidhyalakshmi, and Nannore 2023). The Nilgiris Mountain Railway continues to attract visitors due to its scenic views, heritage value, and affordability, contributing over 20% to Tamil Nadu's tourist inflow (Sathish and Vasanthi 2023).

Despite these valuable contributions, most of the literature has either focused on international tourism recovery or broader tourism policy changes, with limited studies offering a quantitative, state-wise analysis of domestic tourism recovery in India specifically during the year 2022, which is a crucial period marking the shift from

pandemic disruption to sectoral revival. Further, although some studies mention the importance of disasters, few have systematically included disaster-related deaths (both natural and man-made) as predictors affecting tourism trends.

2. Research Gap

Based on the reviewed literature, it is evident that prior research on tourism and disasters can be broadly grouped into three major areas. The first set of studies has focused on the development of tourism and its significant contribution to national economies, particularly in terms of GDP growth, employment generation, and foreign exchange earnings. These works often emphasize the role of government policies, funding, and infrastructure in boosting the tourism sector. The second group of studies has concentrated on the impact of natural and man-made disasters - such as floods, earthquakes, cyclones, industrial accidents, and especially the COVID-19 pandemic - on the tourism industry. These studies primarily discuss how disasters disrupt tourism, damage destination image, affect visitor behavior, and highlight the need for crisis management, resilience strategies, and emergency responses. The third strand of literature explores what makes a destination attractive to tourists. Factors such as safety, infrastructure, digital tools, cultural heritage, affordability, tourist expectations, and overall experience have been identified as crucial in drawing and retaining visitors.

However, a significant research gap remains. While the existing literature has extensively discussed tourism development, the impacts of disasters, and destination attractiveness, there is a lack of focus on how tourism recovers and develops after a disaster, particularly in the context of post-pandemic recovery. Most studies have either examined the damage caused by disasters or proposed general crisis management measures, but few have systematically analyzed the factors that influence the revival of the tourism industry after a major disruption. In the case of India, there is limited state-wise, quantitative research on how different regions have recovered since the COVID-19 pandemic and what specific factors - such as regional GDP, infrastructure quality, domestic tourism trends, or government initiatives - have contributed to this recovery. Therefore, this study aims to address the following research gap: What are the key factors that influence the revival of the tourism industry in India after a major disaster such as COVID-19, and how have different regions responded to this recovery challenge? This investigation is crucial because tourism plays a vital role in economic development, and understanding post-disaster recovery dynamics can guide future policy and planning efforts.

3. Research Methodology

This study adopts a quantitative research design to examine the factors influencing both Domestic Tourist Visits (DTV) and Foreign Tourist Arrivals (FTAs) across the 28 Indian states and 8 union territories during the year 2022. This year is significant, as it marks a turning point when India and many other countries began recovering from the COVID-19 pandemic. Tourism activities, especially domestic travel, began to rebound during this phase, while international travel also showed early signs of recovery. The dual focus on domestic and foreign tourism enables a more comprehensive understanding of the tourism sector's revival and its relationship with economic indicators, government policies, and disaster-related factors.

The objectives of this study are:

1. To analyze the relationship between state-level economic performance, tourism investments, and the volume of both domestic and foreign tourist visits in 2022.
2. To examine how natural and man-made disaster occurrences influence DTV and FTAs across Indian states.
3. To assess the role of government funding and service sector contributions in shaping tourism inflows post-pandemic.

The significance of this research lies in its attempt to fill a key gap in the existing literature by focusing on post-disaster recovery patterns in both domestic and international tourism. Most prior studies have separately examined domestic or foreign tourism or have only explored tourism disruptions during disasters. This study, however, uses updated data from 2022 to evaluate not just the impact of disasters but also the role of economic and infrastructural factors in the revival of both tourist categories.

The scope of the study includes all states and union territories of India, analyzing tourism activity at the state level. It concentrates solely on the year 2022, a critical period of post-COVID recovery, and limits its analysis to the selected economic and disaster-related indicators. The study does not include qualitative perceptions of tourists or longitudinal trends across multiple years.

Data Collection: Secondary data were sourced from reputable government and institutional databases, including the Ministry of Tourism, National Disaster Management Authority, and the Reserve Bank of India. The variables considered encompass:

- State GDP (2022): Reflecting the economic strength of each state.
- Contribution of Trade, Repair, Hotels & Restaurants Sector: Indicative of the state's service sector vitality.
- Sanctioned Tourism Funds (2014–2022): Representing government investment in tourism infrastructure.
- Natural Disaster Deaths (2022): Highlighting the impact of unforeseen natural calamities.
- Man-Made Disaster Deaths (2022): Accounting for incidents like accidents or conflicts affecting tourism.

Analytical Tools: Multiple Linear Regression analysis was conducted using SPSS software to determine the relationship between DTV and the selected independent variables. The model's validity was assessed through R-squared values, F-tests, and significance levels.

Study Area and Period: The area of the study encompasses all 28 states and 8 union territories of India, providing a comprehensive national-level analysis of both Domestic Tourist Visits (DTV) and Foreign Tourist Arrivals (FTAs) during the year 2022. This wide geographical coverage ensures that the research captures regional disparities in tourism trends, disaster impacts, and economic conditions across India. Each state and union territory serves as an individual observation unit, allowing for a comparative evaluation of how various factors - including state GDP, service sector performance, sanctioned tourism funds, and disaster-related fatalities - affect tourism inflows. The selection of India as the study area is especially relevant given the country's diverse tourism potential, vulnerability to both natural and man-made disasters, and its evolving post-pandemic recovery strategies.

The hypotheses for this study are as follows:

- **H1:** State GDP has a significant positive relationship with both Domestic Tourist Visits and Foreign Tourist Arrivals.
- **H2:** The contribution of the Trade, Repair, Hotels & Restaurants sector significantly influences DTV and FTAs.
- **H3:** Sanctioned tourism funds between 2014 and 2022 positively affect tourism activity in 2022.
- **H4:** Natural disaster deaths negatively impact DTV and FTAs.
- **H5:** Man-made disaster deaths have a significant influence on tourism inflows, particularly on FTAs.

The limitations of the study arise from its reliance on secondary data sources, which may not fully reflect local socio-cultural contexts or behavioural patterns of tourists. Additionally, the impact of marketing efforts, media coverage, or travel advisories has not been considered, and some variables that influence tourism (like visa regulations or global travel sentiment) are outside the study's scope.

4. Results and Discussion

This chapter presents an in-depth analysis of the data collected across various Indian states and union territories, focusing on the interconnected factors influencing foreign and domestic tourist inflows in the year 2022. The findings are organized to explore not only tourism volumes but also the socio-economic, infrastructural, and disaster-related variables that potentially affect tourism dynamics.

The analysis is based on a comprehensive table that includes metrics such as the nearest major international airports, foreign and domestic tourist arrivals, state GDP, sectoral contributions from trade, hotels, and restaurants, sanctioned tourism development funds (2014–2022), and natural and man-made disaster mortality rates. This multifaceted approach enables a holistic understanding of how different factors - ranging from economic strength and infrastructure to environmental safety and funding support - influence tourism at the regional level.

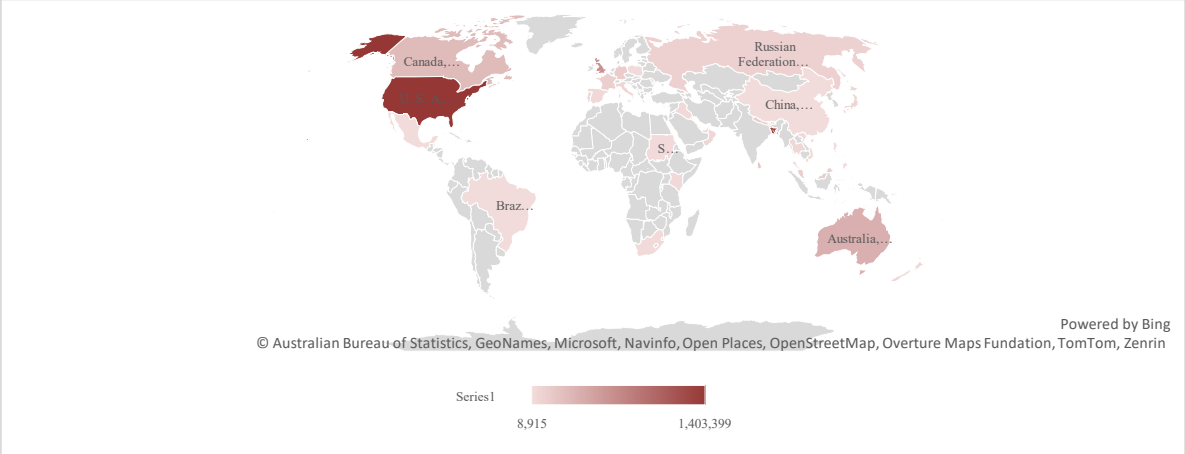
The discussion aims to interpret these figures to identify patterns and correlations, such as the relationship between airport connectivity and FTAs, economic development and tourism volume, or disaster vulnerability and its deterrent effect on tourism. Furthermore, states with high FTAs (*e.g.*, Delhi, Maharashtra, West Bengal, Gujarat) are compared with those showing low international tourist activity, despite having considerable domestic tourist visits or economic potential.

This chapter also critically examines how government support through sanctioned tourism funds aligns with the tourism performance of states, and how disaster events - both natural and man-made - impact tourist perception and safety considerations. Through this integrated discussion, the chapter offers insights that are vital for stakeholders and policymakers in planning for sustainable and resilient tourism growth in India.

Table 1. Country-wise Foreign Tourist Arrivals to India from Top Source Nations – 2022
(Breakdown by Major Western, Asian, Gulf, and Neighboring Countries)

Canada	2,89,259	Singapore	1,32,668
U. S. A	14,03,399	Thailand	54,367
France	1,20,282	Japan	64,196
Germany	1,41,425	Rep. of Korea	49,423
U.K.	6,41,051	Australia	376,898
Brazil	12,301	New Zealand	54,974
Poland	18,025	Mexico	8,915
Russian Fed.	97,911	Portugal	69,522
Kenya	35,743	Italy	62,226
South Africa	25,860	Nether lands	55,019
Sudan	24,930	Spain	39,658
Oman	56,474	Mauritius	24,743
U.A.E	43,702	Iraq	36,277
Israel	36,418	Maldives	71,707
Bangladesh	12,77,557	Bhutan	20,772
Nepal	1,38,203	Vietnam	37,232
Sri Lanka	1,83,459	Philippines	28,379
Malaysia	1,26,192	China	11,762

Figure 1. Country-wise Foreign Tourist Arrivals to India from Top Source Nations – 2022



The reasons behind visiting India can broadly be classified into two major factors: economic growth in the tourists' home countries (GDP growth) and the cost of travelling to India. Among these, GDP growth in the tourists' countries plays a crucial role. When a country experiences economic growth, it increases the disposable income of its residents. As people have more surplus income beyond their basic needs, they tend to spend more on leisure activities such as international travel. Higher GDP growth improves living standards, enhances purchasing power, and encourages individuals to explore foreign destinations for recreation, cultural exposure, and relaxation. As a result, countries with stronger economic performance often contribute a higher number of outbound tourists, including those travelling to India.

The second important factor influencing inbound tourism is the cost of travel and services in India. India is considered a cost-effective destination compared to many other international tourist locations. When the quality of tourism services - such as accommodation, transportation, food, and hospitality - is high and the overall cost remains relatively low, it becomes more attractive to foreign tourists. Affordable travel expenses combined with

diverse cultural experiences, heritage sites, and natural attractions significantly increase India's appeal as a preferred destination for international travellers.

The table presents data on inbound tourist arrivals to India during 2022–2023 from various countries around the world. It highlights the number of foreign tourists arriving from each country, reflecting the importance of international tourism in supporting India's economy, generating foreign exchange earnings, and promoting cultural exchange between India and the global community.

In 2022, India experienced a substantial rise in international tourist arrivals, with the United States emerging as the top source country. A total of 14,03,399 American tourists visited India that year, averaging approximately 1,16,950 visitors per month.

The primary motivations for their travel included a deep interest in India's spiritual heritage, architectural marvels like ancient temples, and unique shopping experiences. A major factor influencing their decision was India's cost-effectiveness; compared to Western countries, India offers a much more budget-friendly travel experience (MediaBird Magazine, "10 things that attract Americans to travel India."). While many Americans travel globally, their most frequently visited countries include Mexico, Canada, the United Kingdom, France, and Italy - primarily due to geographical proximity, ease of access, and cultural appeal.

The United Kingdom followed the United States in contributing to India's foreign tourist arrivals in 2022, with 6,41,051 British tourists, averaging approximately 53,421 visitors per month. Several factors make India an appealing destination for travelers from the U.K. A strong historical connection dating back to the colonial era has fostered sustained interest in India's cultural and architectural heritage (Anand, "Why is UK an important source market for Indian tourism? Discuss the profile of British tourists visiting India." 2024). Tourists from the U.K. are often drawn to India's UNESCO World Heritage Sites, such as the Taj Mahal, Qutub Minar, and the Ajanta and Ellora Caves, as well as spiritual destinations like Varanasi, Bodh Gaya, and Rishikesh (Singh 2024).

In addition to spiritual and cultural tourism, India's vast geographical diversity supports a wide range of travel experiences - from Himalayan treks and wildlife safaris in national parks to relaxing holidays on Goa's beaches and Kerala's backwaters. India's vibrant nightlife in metropolitan cities like Mumbai, Bangalore, and Delhi offers cosmopolitan appeal, while its affordable accommodations, food, and transportation make it a cost-effective option for long-term travel (Travel and Tour World, "India Tourism Showcases its Culture and Heritage to Allure European and UK Tourists at World Travel Market London," 2024.) Business travelers also find India attractive due to its growing economy, startup ecosystem, and expanding trade relations with the U.K. Moreover, the availability of e-visas, the promotion of India through tourism campaigns like 'Incredible India', and improved air connectivity have made travel more accessible. These diverse offerings, combined with a welcoming environment, make India a multifaceted and compelling destination for British tourists (Fida *et al.* 2023).

In 2022, India welcomed 1,277,557 tourists from Bangladesh, drawn by strong linguistic and cultural ties, medical tourism, religious and cultural interests, educational opportunities, and family or social visits. Cross-border travel to cities like Kolkata is made seamless through shared language (Bengali), cultural affinities, and close proximity - many even travel by bus or train. A significant portion of Bangladeshi visitors come for medical treatment - drawn by India's high-quality, cost-effective healthcare infrastructure, shorter wait times, and access to advanced procedures unavailable in Bangladesh. One study focusing on Kolkata hospitals found that these "demand-pull" medical tourism factors were a major motivation for more than 200 Bangladeshi patients interviewed (Choudhury *et al.* 2023). Another investigation highlighted the role of aligned procedural and interpersonal justice perceptions in prompting Bangladeshi patients to seek care in India (Nabi *et al.* 2023). Education and cultural tourism also play a role, supported by family ties and religious visits, while travel costs remain affordable, with typical 5–9 day trips costing around USD 115 - often relying on public transport (Sinha and Sharma 2020).

From the above data, it is observed that the countries with the least number of tourists visiting India in 2022 were Mexico (8,915 tourists), China (11,762 tourists), and Brazil (12,301 tourists). The lower tourist arrivals from Mexico, China, and Brazil can be attributed to factors such as long geographical distance, limited direct connectivity, and higher travel costs. In China's case, post-pandemic restrictions also affected travel. Moreover, low cultural familiarity and limited promotion of Indian tourism in these regions contributed to the reduced tourist flow.

Table 2. State-wise Overview of Tourism, Economic Indicators, and Disaster Impact in India – 2022
(Including Foreign and Domestic Tourist Visits, GDP Contribution, Sanctioned Tourism Funds, and Disaster-related Deaths)

Nearest Major International Airport Handling Foreign Tourists	State/UT	Foreign Tourists (FTAs in Thousands) – 2022	Domestic Tourist Visits (DTV in thousands) 2022	State GDP 2022	Trade, Repair, Hotels & Restaurants Contribution	Sanctioned Tourism Funds 2014 to 2022	Sanctioned Fund Years	Natural Disaster Deaths (2022)	Man-Made Disaster Deaths (2022)
Delhi Airport	Chandigarh	28,000	3,027,000	2638390000	246930000	-	–	0	0
Delhi Airport	Delhi	8,16,000	27,186,000	5488260000	989250000	-	–	0	1653
Delhi Airport	Haryana	2,000	2,108,000	5191350000	978690000	495200	2019–20	5	5705
Delhi Airport	Himachal Pradesh	29,000	15,071,000	1126330000	96100000	-	–	133	150
Delhi Airport	Jammu & Kashmir	20,000	18,499,000	1002860000	165980000	404600	2016–17	263	550
Delhi Airport	Ladakh	21,000	510,000	-	-	-	–	5	0
Amritsar Airport	Punjab	3,29,000	26,089,000	3995640000	495260000	315700	2021–22	5	53
Delhi Airport + Jaipur Airport	Rajasthan	3,97,000	108,328,000	6851050000	1410190000	326400	2015–16	22	0
Delhi Airport + Lucknow Airport	Uttar Pradesh	6,49,000	317,914,000	11160110000	1487440000	1303900	2014–15 to 2018–19	51	23
Delhi Airport	Uttarakhand	62,000	54,643,000	1732800000	403630000	1452600	2015–16 to 2021–22	66	0
Chennai/Kolkata Airport	Andaman & Nicobar	4,000	235,000	69250000	-	-	–	Nil	Nil
Gaya Airport	Bihar	87,000	25,330,000	3768230000	892110000	415400	2015–16	106	169
Kolkata Airport	Jharkhand	1,92,000	38,284,000	2392360000	364720000	391300	2018–19	131	5
Kolkata Airport	Odisha	22,000	7,868,000	4162000000	496080000	500000	2014–15	3129	459
Kolkata Airport	West Bengal	10,37,000	84,542,000	7350490000	2228490000	300300	2016–17	15	72
Assam (Guwahati domestic hub)	Arunachal Pradesh	1,000	222,000	159960000	9420000	378800	2020–21	18	0
Kolkata Airport (nearest international hub)	Assam	9,000	8,382,000	2447880000	514890000	298000	2015–16	180	200
Kolkata/Delhi	Manipur	4,000	140,000	193190000	-	-	–	58	0
Kolkata/Delhi	Meghalaya	8,000	937,000	235470000	82030000	293200	2020–21	52	0
Kolkata/Delhi	Mizoram	3,000	218,000	72640000	-	-	–	12	12
Kolkata/Delhi	Nagaland	3,000	97,000	170740000	30280000	252600	2018–19	15	2
Kolkata/Bagdogra	Sikkim	69,000	1,626,000	187380000	19130000	333200	2020–21	1	0

Kolkata/Agartala (limited international)	Tripura	8,000	236,000	377520000	57060000	378000	2020–21	0	0
Nagpur/Raipur (limited connectivity)	Chhattisgarh	0	23,636,000	299430000	156920000	433300	2020–21	5	459
Dabolim + MOPA Airport	Goa	1,75,000	7,012,000	463620000	59630000	-	–	2	5
Ahmedabad Airport	Gujarat	17,77,000	135,811,000	12946460000	1864450000	1555300	2016–17 to 2021–22	54	15934
Delhi/Nagpur	Madhya Pradesh	2,04,000	35,849,000	5460050000	1119250000	948200	2017–18 to 2020–21	311	5427
Mumbai Airport	Maharashtra	15,12,000	111,298,000	19358420000	1758890000	529200	2017–18	363	25
Mumbai	Dadra & Nagar Haveli	2,000	800,000	-	-	-	–	0	22
Chennai/Vizag	Andhra Pradesh	1,66,000	192,717,000	6724550000	819910000	708500	2015–16 to 2017–18	0	0
Bengaluru Airport	Karnataka	1,29,000	182,413,000	11875570000	1946290000	-	–	22	0
Cochin + Trivandrum + Calicut	Kerala	3,46,000	18,867,000	5459900000	1409860000	461400	2016–17	32	4317
Cochin	Lakshadweep	0	23,000	-	-	-	–	0	0
Chennai Airport	Puducherry	1,000	1,760,000	226550000	38540000	-	–	0	0
Chennai + Coimbatore + Trichy + Madurai	Tamil Nadu	4,07,000	218,585,000	12788310000	2231900000	188500	2016–17	4	0
Hyderabad Airport	Telangana	68,000	60,748,000	6435280000	2042240000	367300	2020–21	44	0

Figure 2. Sanctioned Tourism Funds 2014 to 2022

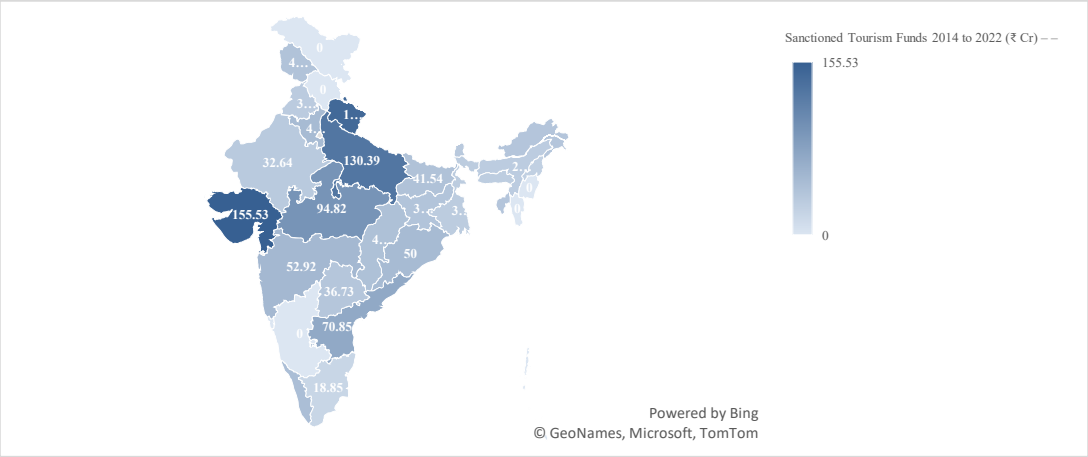


Figure 3. State GDP 2022

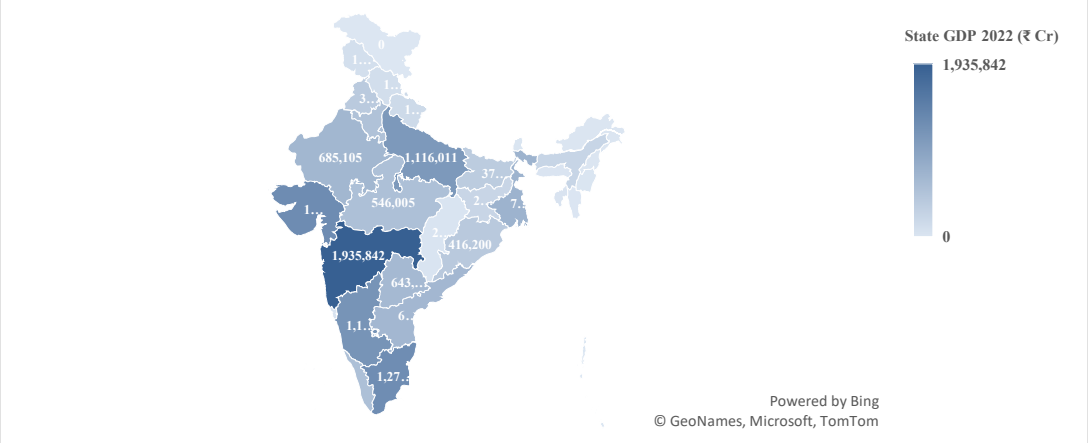
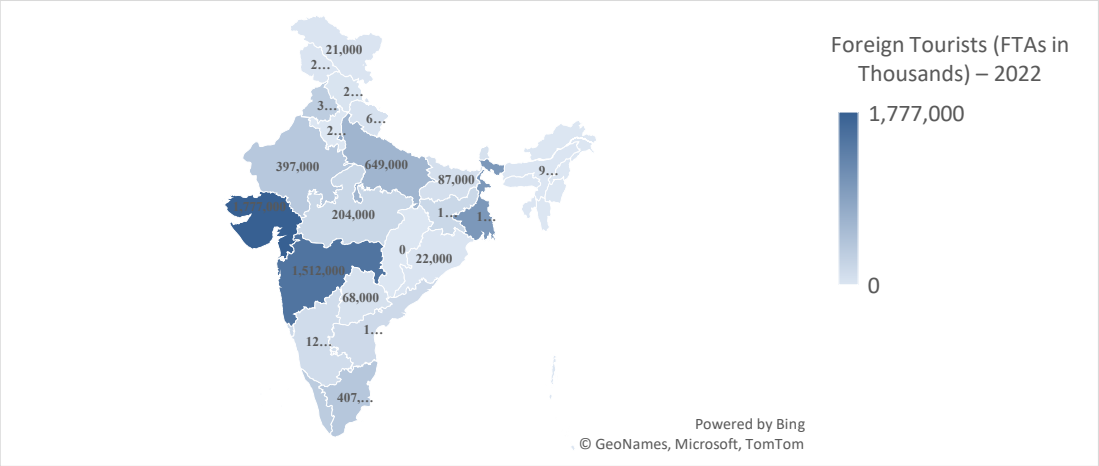


Figure 4. Foreign Tourists (FTAs in Thousands) – 2022.



4.1 Foreign Tourists (FTAs in Thousands) – 2022

In 2022, the top three Indian states that received the highest number of foreign tourists were Gujarat (17,77,000), Maharashtra (15,12,000), and West Bengal (10,37,000). These states stood out due to their excellent international connectivity, vibrant business environments, and rich cultural and heritage offerings. Gujarat is widely recognized for its diverse tourism experiences, including the Gir National Park - the only home of the Asiatic lion, the White Rann of Kutch with its iconic Rann Utsav, heritage sites like Rani Ki Vav, and spiritual destinations such as Dwarka and Somnath (Dhawan 2013, Sarkar 2024). Maharashtra, home to the financial capital Mumbai, offers a cosmopolitan experience through landmarks such as the Gateway of India, Chhatrapati Shivaji Maharaj Terminus, and a vibrant film and nightlife culture. It also houses UNESCO World Heritage sites

like the Ajanta and Ellora Caves, along with popular hill stations like Lonavala and Mahabaleshwar (Jacob *et al.* 2021). West Bengal attracts international tourists with its colonial charm and cultural vibrancy in Kolkata, the scenic beauty of Darjeeling, the unique biodiversity of the Sundarbans, and the terracotta temples of Bishnupur. The state's cultural depth and artistic heritage make it a key destination for both leisure and academic travelers (Mondal, n.d.) (Mondal 2016). Together, these three states reflect India's ability to offer a combination of nature, spirituality, history, and modern urban experiences that continue to appeal strongly to foreign tourists.

In 2022, the Union Territory of Ladakh attracted only 21,000 foreign tourists, while the northeastern states of Nagaland and Mizoram each recorded just 3,000 international arrivals. Chhattisgarh saw no foreign visitors during the year. This discrepancy primarily stems from inadequate international flight connections - for example, Ladakh's Kushok Bakula Rimpochee Airport has limited routes, and Mizoram's Lengpui Airport serves mainly domestic traffic. The challenging terrain and weak infrastructure further limit accessibility in these regions. Additionally, there is limited international promotion, though Nagaland has begun cultural promotion through events like the Hornbill Festival. These areas also cover relatively small land masses with low populations - Ladakh spans 59,146 km² with 274,000 residents, Nagaland 16,579 km², and Mizoram 21,081 km² - making large-scale tourism economically impractical (Wikipedia). Despite infrastructure enhancements such as the Atal Tunnel improving year-round access, Ladakh's tourism, which exceeded 500,000 visitors in 2022, is causing significant ecological strain - highlighting both its growing potential and the urgent need for sustainable tourism management (Yen 2025).

4.2 Domestic Tourist Visits (DTV in Thousands) – 2022

In 2022, the Indian states that received the highest number of domestic tourists were Uttar Pradesh (317.9 million), Tamil Nadu (218.6 million), and Andhra Pradesh (192.7 million). These states consistently top the charts due to their rich blend of religious, cultural, and natural attractions that appeal strongly to Indian travelers. Uttar Pradesh leads in domestic tourism primarily because of its deeply spiritual and historical destinations such as Varanasi, Ayodhya, Mathura-Vrindavan, Prayagraj, Agra, and Sarnath. The state government's promotion of the "Heritage Arc" connecting Agra, Lucknow, and Varanasi has further strengthened its tourism appeal. According to a study religious tourism in cities like Kashi and Ayodhya significantly boosts employment and local economic development. Tamil Nadu, known as the "Land of Temples," attracts visitors to iconic temples such as Meenakshi Amman in Madurai, Ramanathaswamy in Rameswaram, and the Brihadeeswarar Temple in Thanjavur (Pandey 2024). In addition, scenic destinations like Ooty, Kodaikanal, and Marina Beach in Chennai enhance the state's appeal for nature and leisure tourism. pilgrimage, coastal tourism, and government initiatives are major contributors to Tamil Nadu's tourism growth (Radhakrishnan 2015). Meanwhile, Andhra Pradesh sees the highest tourist concentration in Tirupati, home to the Sri Venkateswara Temple, one of the most visited spiritual centers in the country. Andhra Pradesh became the top domestic tourism state largely due to Tirupati's appeal, alongside growing interest in eco-tourism spots like Araku Valley and the coastal city of Visakhapatnam (Dhawan 2013). These three states effectively combine cultural depth, religious heritage, and tourism infrastructure, making them top choices for Indian travelers.

In 2022, the Union Territory of Lakshadweep (23,000 visits) and the northeastern states of Manipur (140,000 visits) and Arunachal Pradesh (222,000 visits) recorded the lowest numbers of domestic tourists in India. All three are geographically small and sparsely populated - Lakshadweep spans roughly 32 km² with about 64,000 inhabitants, Manipur covers 22,327 km² housing around 2.7 million, and Arunachal Pradesh stretches over 83,743 km² with close to 1.5 million residents - factors that limit large-scale tourism development. Their geographic isolation - Lakshadweep as a remote archipelago only accessible via Agatti Island airport and limited ferries (Salahudheen 2024). Manipur traversed through difficult terrain despite a single airport, and Arunachal constrained by sparse highway connectivity - coupled with limited infrastructure and promotion, have hindered tourist inflow (Laskar and Debnath 2024). Additionally, bureaucratic restrictions like protected-area permits in the Northeast further deter many potential domestic travelers . Although these regions possess significant tourism potential - Lakshadweep's unmatched coral reefs, Manipur's Loktak Lake (a Ramsar site), and Arunachal's scenic landscapes and cultural festivals - current visitation remains low due to accessibility and promotional challenges.

4.3 State GDP – 2022

In 2022, Maharashtra (₹19,35,842 crore), Gujarat (₹12,94,646 crore), and Tamil Nadu (₹12,78,831 crore) were the top three contributors to India's state GDP, driven by robust industrial, services, and tourism sectors. In Maharashtra, tourism plays a pivotal role in the economy - accounting for approximately 20–22 % of the state's GDP in the travel, trade, hotels, and restaurants sector, supporting thousands of jobs and regional development. Tourism is a major thrust area, contributing significantly to employment and complementing the industrial base (Malay 2025). Gujarat's tourism industry contributes around 10.2 % of the state's GDP, adding substantial

revenue through visitor spending. Research on Gujarat tourism indicates that strategic infrastructure investments and heritage promotion (*e.g.*, Rann Utsav, Gir National Park) have bolstered its economic impact (Rinkeshkumar and Mahida 2023). Lastly, in Tamil Nadu, tourism is one of the most dynamic service sectors, contributing directly and indirectly to nearly 8–8.5 % of the state GDP. The National Council of Applied Economic Research reports that tourism supports about 15 % of total employment, underlining its role in socio-economic development (Ministry of Tourism and Government of India, "Regional Tourism Satellite Account – Tamil Nadu," 2014).

Despite their rich natural resources, the northeastern states of Mizoram (₹7,264 crore), Arunachal Pradesh (₹15,996 crore), and Nagaland (₹17,074 crore) recorded the lowest GDP figures in 2022, reflecting their smaller economic base and limited diversification. Mizoram remains constrained by a predominantly agrarian economy - over 60% of its population depends on agriculture, yet industrial and service sectors are underdeveloped due to geographic isolation, poor connectivity, and limited infrastructure (Lalengkima 2022). Although the state shows high GSDP growth rates (~11.6%), this growth stems from small-scale sectors and lacks broader industrial momentum (Peter 2018). Arunachal Pradesh, with its vast yet remote terrain, continues its reliance on agriculture, forestry, and hydropower, but struggles due to deficient physical infrastructure, scant industrial activity, and fragile governance - barriers highlighted in studies like "Challenges in Economic Diversification – Arunachal Pradesh. Similarly, Nagaland depends heavily on agriculture and has minimal secondary industry; while the tertiary sector - including tourism - contributes around 58% of GSDP, this remains inadequate without substantial structural support (Kumar and Shobana 2023). A comparative study of northeastern tourism reveals that despite rich cultural and natural assets, all three states suffer from low investment, poor connectivity, lack of tourism infrastructure, and limited private-sector engagement, which collectively hinder tourism's capacity to drive GDP growth.

4.4 Trade, Repair, Hotels & Restaurants Contribution

In 2022, West Bengal recorded a total contribution of ₹22,28,490 lakh from the combined trade, repair, hotels, and restaurants sector. While trade and repair activities primarily support local commerce and services, it is the hotels and restaurants segment that directly reflects the strength of West Bengal's tourism industry. According to a recent study by Proshanta Dey (2024), tourism in West Bengal has experienced consistent growth driven by its rich cultural heritage, diverse heritage tourism sites, and improved transport infrastructure. Popular destinations such as Kolkata, Darjeeling, the Sundarbans, Digha, and Shantiniketan continue to attract both domestic and international tourists, boosting economic activities in accommodation and hospitality services. The study highlights that West Bengal's targeted tourism policies, promotional campaigns, and enhanced connectivity - such as upgraded railways and international airports - have been vital in generating employment and increasing revenue within the hospitality sector. This underscores how tourism, primarily through hotels and restaurants, acts as a key driver of the state's service-led economic development (Dey, 2024). In 2022, Gujarat recorded a combined contribution of ₹18,64,450 lakh from the trade, repair, hotels, and restaurants sector. While trade and repair primarily support the general economy and local consumption, it is the hotels and restaurants component that directly reflects the strength of Gujarat's tourism industry. According to a study by Patel and Mehta (2012), Gujarat has strategically leveraged its diverse cultural and natural assets - including the Rann of Kutch, Gir National Park, Dwarka, Somnath, and the heritage city of Ahmedabad - to expand its hospitality sector. The state has focused on infrastructure development, event tourism (like the Rann Utsav), and heritage promotion to attract both domestic and international tourists. These efforts have significantly boosted occupancy in hotels and growth in food services, both of which are integral to tourism's GDP contribution. Thus, while not all elements of the sector are tourism-driven, the hotel and restaurant sub-sector plays a vital role in Gujarat's service economy and its growing tourism profile (Viramgami and Patel 2012). In 2022, Maharashtra reported a combined contribution of ₹17,58,890 lakh from the trade, repair, hotels, and restaurants sector. While trade and repair services support general commerce, the hotels and restaurants sub-sector directly reflects the impact of tourism. According to an analytical study on Maharashtra's tourism growth, hotels and restaurants accounted for approximately 20–22% of the gross state domestic product, also contributing around 3.5% to total state employment (Meshram 2022). Another assessment highlighted that tourism - attractions like the Ajanta and Ellora Caves, Mumbai's heritage and nightlife, hill stations like Lonavala and Mahabaleshwar, religious sites such as Shirdi, and Konkan beaches - acts as a significant driver for infrastructure development and hospitality services in the state (Japan International Cooperation Agency., "Ajanta Ellora Conservation and Tourism Development Project (1) 2007). Studies show that even a moderate investment of ₹10 lakh in the hotel and restaurant industry creates up to 89 jobs, compared to 44.7 in agriculture and just 12.6 in manufacturing, demonstrating tourism's high employment multiplier effect. (Vernekar and Shukla 2021). These findings indicate that tourism through the hotels and restaurants sub-sector plays a vital role in Maharashtra's service-led economic development, contributing significantly to GDP growth, job creation, and overall regional prosperity. In 2022, Arunachal Pradesh (₹942 lakh), Sikkim (₹1,913 lakh), and

Nagaland (₹3,028 lakh) recorded the lowest contributions to their economies from the hotels and restaurants sub-sector - indicating that tourism-related services form a relatively small portion of their Gross State Domestic Product (GSDP). A detailed 2016 report by North Eastern Development Finance Corporation (NEDFi) estimates that tourism (hospitality) contributed just 6.24% to Arunachal Pradesh's GSDP in 2009–10 - a marginal share compared to other northeastern states (Bardhan and Halder 2013, North Eastern Development Finance Corporation 2016). Similarly, although Sikkim has steadily seen rising tourist numbers (1.6 million domestic visitors in 2022), its service-based GDP contribution from tourism remains modest at roughly 2–3%. In Nagaland, tourism is still in its nascent stage: a 2019 study highlights that tourism infrastructure and services are underdeveloped, limiting the industry's capacity to contribute significantly to the state's GSDP despite growing cultural tourism initiatives like the Hornbill Festival

4.5 Sanctioned Tourism Funds (2014–2022)

According to official data released by the Ministry of Tourism, Government of India, under centrally sponsored tourism development schemes, states like Uttar Pradesh, Madhya Pradesh, and Tamil Nadu have received the highest sanctioned funds for tourism infrastructure projects. Among these, Uttar Pradesh tops the list with ₹13,03,900 lakh, followed by Madhya Pradesh with ₹9,48,200 lakh, and Tamil Nadu with ₹1,88,500 lakh (Ministry of Tourism, and Government of India 2022). These allocations reflect the government's focused strategy to improve tourism-related infrastructure such as roads, sanitation, amenities at tourist sites, and the promotion of heritage circuits under schemes like Swadesh Darshan, PRASHAD (Mishra, Sen and Ojha 2016), and Assistance to Central Agencies. Academic research supports this, with Suraj V. Ayyappan et al. employing network analysis in Varanasi, Lucknow, Ayodhya, and Prayagraj to demonstrate the strong correlation between tourism facilities - such as transport, wastewater treatment, and accommodation - and increased tourist demand (Munshi *et al.* 2022). Additionally, the Farm Tourism Development Model (FTDM) suggests a holistic framework for rural infrastructure, integrating ecotourism and local community involvement in Uttar Pradesh (Yaduvanshi *et al.* 2025). In Tamil Nadu, literature underscores how the state tourism development authority and Public-Private Partnerships have fostered infrastructure build-out - such as festivals, eco-tourism circuits, and accommodation - enhancing both capacity and local socioeconomic uplift (Subramaniyan and Anuradha 2023). Similarly, in Madhya Pradesh, resource-development case studies outline the pivotal role of tourism as a catalyst for infrastructure growth and economic development in communities (Pandey *et al.* 2014).

4.6 Sanctioned Fund Years

The top states with consistent or multi-year fund sanctions were Uttar Pradesh (2014–15 to 2018–19), Tamil Nadu (2016–17), and Gujarat (2016–17 to 2021–22). These timelines show continuous tourism development efforts. In contrast, Ladakh, Lakshadweep, and Mizoram had no mentioned years for fund allocation, possibly indicating a lack of focused tourism investment over the years.

4.7 Natural Disaster Deaths (2022)

Odisha (3,129 deaths), In 2022, Odisha recorded the highest number of natural disaster-related deaths among Indian states, with 2,445 fatalities, stemming from events such as floods, sunstroke, cyclones, lightning, and landslides (u/Huehue_BR, "Death by forces of nature – accidental deaths in India in 2022," Reddit, 2024). Madhya Pradesh (311 deaths), and Bihar (106 deaths) were the top three states with the highest natural disaster-related fatalities in 2022 Research from the Internal Displacement Monitoring Centre (IDMC) highlights that from 2011–2021, states such as Madhya Pradesh and Bihar ranked among the highest in lives lost to natural disasters, while Delhi and Chandigarh reported zero such fatalities, indicating their vulnerability to floods, storms, and other calamities (Dakua *et al.* 2023). On the other end, Lakshadweep, Tripura, and Delhi reported zero natural disaster deaths, showcasing either resilience or lesser impact zones.

4.8 Man-Made Disaster Deaths (2022)

The highest man-made disaster deaths occurred in Gujarat (15,934 deaths) A research article on man-made disasters in Gujarat highlights industrial accidents, fire outbreaks, and infrastructure failures as the leading causes of fatalities. The Rajkot game zone fire (2024) is one notable example of such disasters (Kumar 2024). News reports from NDTV confirm this fire as a significant man-made disaster incident in Gujarat (Press Trust of India, "Rajkot game zone fire that killed 27 is man-made disaster," Gujarat High Court., 2024), Madhya Pradesh (5,427 deaths) State-level reports and parliamentary data indicate Madhya Pradesh has experienced numerous fatalities from man-made disasters, predominantly traffic accidents and industrial mishaps. These are documented in the Ministry of Home Affairs' annual disaster reports and supported by academic studies on regional disaster vulnerability (National Crime Records Bureau, "Accidental Deaths & Suicides in India 2022," 2022), Haryana

(5,705 deaths) Haryana's high fatality numbers have been attributed mainly to road accidents and industrial accidents (National Crime Records Bureau, "Accidental Deaths & Suicides in India 2022," 2022), as reported in NCRB statistics and regional news outlets, reflecting industrial accidents, road mishaps, or other such events. In contrast, Uttarakhand, Tamil Nadu, and Arunachal Pradesh had zero deaths reported from man-made disasters, indicating relatively better safety or lower exposure to such risks.

Table 3. Pearson Correlation Matrix between Tourism Indicators, Economic Factors, and Disaster Deaths

Correlations		Foreign Tourists (FTAs in Thousands)	Domestic Tourist Visits (DTV in thousands) 2022	State GDP 2022	Trade, Repair, Hotels & Restaurants Contribution	Sanctioned Tourism Funds 2014 to 2022	Natural Disaster Deaths (2022)	Man-Made Disaster Deaths (2022)
Foreign Tourists (FTAs in Thousands)	Pearson Correlation	1	.485**	.772**	.654**	.447**	-.040	.551**
	Sig. (2-tailed)		.003	.000	.000	.006	.815	.001
	N	36	36	36	36	36	36	36
Domestic Tourist Visits (DTV in thousands) 2022	Pearson Correlation	.485**	1	.767**	.702**	.471**	-.083	.110
	Sig. (2-tailed)	.003		.000	.000	.004	.630	.524
	N	36	36	36	36	36	36	36
State GDP 2022	Pearson Correlation	.772**	.767**	1	.880**	.413*	.065	.336*
	Sig. (2-tailed)	.000	.000		.000	.012	.708	.045
	N	36	36	36	36	36	36	36
Trade, Repair, Hotels & Restaurants Contribution	Pearson Correlation	.654**	.702**	.880**	1	.363*	-.012	.335*
	Sig. (2-tailed)	.000	.000	.000		.030	.945	.045
	N	36	36	36	36	36	36	36
Sanctioned Tourism Funds 2014 to 2022	Pearson Correlation	.447**	.471**	.413*	.363*	1	.107	.550**
	Sig. (2-tailed)	.006	.004	.012	.030		.536	.001
	N	36	36	36	36	36	36	36
Natural Disaster Deaths (2022)	Pearson Correlation	-.040	-.083	.065	-.012	.107	1	-.011
	Sig. (2-tailed)	.815	.630	.708	.945	.536		.947
	N	36	36	36	36	36	36	36
Man-Made Disaster Deaths (2022)	Pearson Correlation	.551**	.110	.336*	.335*	.550**	-.011	1
	Sig. (2-tailed)	.001	.524	.045	.045	.001	.947	
	N	36	36	36	36	36	36	36

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

4.9 Foreign Tourists (FTAs in Thousands)

The number of foreign tourist arrivals shows a strong and statistically significant correlation with several key economic indicators. It is highly correlated with State GDP ($r = 0.772$, $p < 0.01$), indicating that states with higher economic output tend to attract more foreign tourists. This might be due to better infrastructure, global connectivity, or promotional efforts. Similarly, there's a strong positive correlation with Trade, Repair, Hotels & Restaurants contribution ($r = 0.654$, $p < 0.01$), showing that the tourism ecosystem supports and attracts

international visitors. A moderate positive correlation exists with Sanctioned Tourism Funds (r = 0.447, p < 0.01), which implies that states receiving more tourism funding may invest in foreign tourist facilities and experiences. There's no significant correlation with Natural Disaster Deaths (r = -0.040, p = 0.815), suggesting that foreign tourists may not be heavily deterred by such risks. Interestingly, there is a moderate positive correlation with Man-Made Disaster Deaths (r = 0.551, p < 0.01), which may indicate foreign visits are concentrated in economically active states that are also prone to such events (*e.g.*, industrialized states).

4.10 Domestic Tourist Visits (DTV in Thousands)

Domestic tourism also exhibits strong positive correlations with economic strength and infrastructure. The correlation with State GDP is very high (r = 0.767, p < 0.01), showing that states with larger economies attract more internal tourists, possibly due to better transport, cultural appeal, and amenities. It also correlates highly with the Trade, Repair, Hotels & Restaurants sector (r = 0.702, p < 0.01), indicating the importance of service industries in encouraging local travel. There is a moderate positive correlation with Sanctioned Tourism Funds (r = 0.471, p < 0.01), suggesting that financial support from the government may improve facilities and attract more domestic tourists. However, no significant relationship was found with Natural Disaster Deaths (r = -0.083, p = 0.630), showing that domestic tourists are either undeterred or quick to adapt to disaster-affected areas. The correlation with Man-Made Disaster Deaths is also insignificant (r = 0.110, p = 0.524), indicating minimal impact on domestic travel decisions.

Table 4. KMO and Bartlett's Test of Sampling Adequacy

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.668
Bartlett's Test of Sphericity	Approx. Chi-Square	148.927
	df	21
	Sig.	.000

To assess the suitability of the data for factor analysis, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's Test of Sphericity were examined. The KMO value was 0.668, indicating a moderate level of adequacy, suggesting that the dataset is appropriate for factor analysis. Bartlett's Test was highly significant (Chi-Square = 148.927, df = 21, p < 0.001), confirming that correlations exist among the variables and that factor analysis is a valid technique for this dataset.

Table 5. Communalities

Variable	Extraction
Foreign Tourists (FTAs in Thousands)	.738
Domestic Tourist Visits (DTV in thousands) 2022	.792
State GDP 2022	.932
Trade, Repair, Hotels & Restaurants Contribution	.842
Sanctioned Tourism Funds 2014 to 2022	.654
Natural Disaster Deaths (2022)	.987
Man-Made Disaster Deaths (2022)	.887

The communalities of the variables ranged from 0.654 to 0.987, indicating that a substantial amount of variance for each variable is explained by the extracted components. State GDP (0.932), Natural Disaster Deaths (0.987), and Man-Made Disaster Deaths (0.887) exhibited particularly high communalities, while Sanctioned Tourism Funds (0.654) had the lowest, though still acceptable. This supports the robustness of the factor extraction process.

Table 6.Total Variance Explained

Component	Rotation Sums of Squared Loadings			
	Total	Total	% of Variance	Cumulative %
1	3.684	2.951	42.161	42.161
2	1.143	1.853	26.470	68.631
3	1.005	1.027	14.676	83.306
	Total		83.31%	

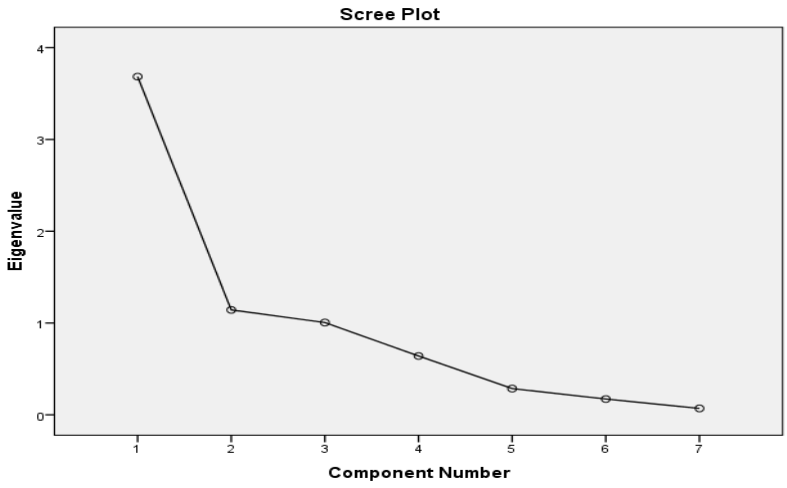
The total variance explained by the analysis revealed that three components together accounted for 83.31% of the total variance in the data. Component 1 contributed 42.16%, Component 2 explained 26.47%, and Component 3 accounted for 14.68%. This high cumulative variance demonstrates that these three components adequately capture the underlying structure of the dataset.

Table 7. Rotated Component Matrix (Varimax Rotation)

Variable	Component 1	Component 2	Component 3
Foreign Tourists (FTAs in Thousands)	.643	.564	-
Domestic Tourist Visits (DTV in thousands) 2022	.887	-	-
State GDP 2022	.927	.262	-
Trade, Repair, Hotels & Restaurants Contribution	.889	.226	-
Sanctioned Tourism Funds 2014 to 2022	.311	.729	.158
Natural Disaster Deaths (2022)	-	-	.993
Man-Made Disaster Deaths (2022)	-	.937	-

The rotated component matrix using Varimax rotation provided clearer interpretation. Component 1 was strongly associated with Domestic Tourist Visits (0.887), State GDP (0.927), Trade, Hotels & Restaurants (0.889), and Foreign Tourists (0.643), indicating that this factor represents economic strength and tourism volume. Component 2 was associated with Sanctioned Tourism Funds (0.729) and Man-Made Disaster Deaths (0.937), suggesting a policy-driven and human-activity-related dimension. Component 3 was uniquely defined by Natural Disaster Deaths (0.993), representing the distinct influence of natural calamities on the studied variables.

Figure 5. Scree Plot – Number of Factors to Retain



The scree plot further supported the retention of three components, as the graph showed a clear inflection point after the third factor, indicating that additional components would contribute minimally to explaining the variance. Overall, the factor analysis highlighted three meaningful and interpretable dimensions that collectively describe the interrelationships between tourism indicators, economic factors, and disaster impacts in Indian states.

H2: There is a significant relationship between inbound foreign tourist arrivals (FTA) and factors such as State GDP, Trade-Repair-Hotel-Restaurant sector contribution, natural disaster deaths (2022), and man-made disaster deaths (2022).

- Foreign Tourists (FTA) $Y_1 = \beta_0 + \beta_1$ State GDP + β_2 16-25 Trade, Repair, Hotels & Restaurants Contribution + β_3 Natural Disaster Deaths (2022) + β_4 Man-Made Disaster Deaths (2022) + e

Table 8. Log-Linear Multiple Regression Output Summary (Inbound Tourism Prediction Model)
Regression Statistics

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
FTA	.736[a]	.542	.466	1.57597

To test Hypothesis (H2), a multiple regression analysis using log-transformed variables was carried out. The Model Summary indicates a strong relationship between the dependent variable, foreign tourist arrivals (LN_FTA), and the set of independent variables, with an R value of 0.736. The R^2 value of 0.542 reveals that approximately 54.2 percent of the variation in foreign tourist arrivals is explained by State GDP, Trade, Repair, Hotels and Restaurants contribution, natural disaster deaths, and man-made disaster deaths. This suggests that the model provides a moderately good fit to the data.

The adjusted R^2 value of 0.466, which accounts for the number of predictors included in the model, confirms that the explanatory power remains reasonable after adjustment. The standard error of the estimate is 1.576, indicating an acceptable average deviation between the observed and predicted values of foreign tourist arrivals in logarithmic terms. Overall, the model demonstrates adequate explanatory strength and supports the suitability of the selected variables for examining the influence on foreign tourist arrivals.

Table 9. Anova Analysis

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	70.566	4	17.641	7.103	.001[b]
	Residual	59.609	24	2.484		
	Total	130.174	28			
a. Dependent Variable: LN_FTA						
b. Predictors: (Constant), LN_MDdeath, LN_GDP, LN_NDdeath, LN_THR						

The ANOVA results reveal that the log–log regression model is statistically significant, with an F value of 7.103 and a significance level of 0.001. This confirms that the independent variables, when considered together, have a significant influence on foreign tourist arrivals. Hence, the null hypothesis that the predictors have no joint effect on foreign tourist arrivals is rejected, validating the overall suitability of the model for further interpretation.

From the regression results, the intercept value is −12.493, which implies that when all independent variables are held at zero, the predicted value of foreign tourist arrivals in logarithmic form would be negative. This outcome has no practical interpretation, as variables such as GDP and disaster-related deaths cannot realistically take a value of zero. Hence, the intercept serves only as a scaling constant in the log–log model.

The coefficient for State GDP is positive (β = 1.189), indicating a strong positive elasticity between economic growth and foreign tourist arrivals. This suggests that a one percent increase in State GDP is associated with an estimated 1.189 percent increase in foreign tourist arrivals, holding other factors constant. Although this relationship aligns with theoretical expectations - where stronger economic performance enhances infrastructure, accessibility, and tourism facilities - the effect is not statistically significant in this model, possibly due to multicollinearity with other economic variables.

Table 10. Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-12.493	5.005		-2.496	.020		
	LN_GDP	1.189	.793	.821	1.500	.147	.064	15.694
	LN_THR	-.090	.733	-.067	-.122	.904	.063	15.761
	LN_ND death	-.082	.154	-.081	-.533	.599	.827	1.209
	LN_MD death	-.006	.103	-.010	-.062	.951	.754	1.327
a. Dependent Variable: LN_FTA								

Y_1= -12.493 + 1.189X_1 + -0.090 X_2 + -0.082 X_3+-0.006X_4

The coefficient for the Trade, Repair, Hotels and Restaurants sector contribution is negative (β = −0.090) and statistically insignificant. This indicates that a one percent increase in the contribution of this sector leads to a marginal decline of 0.09 percent in foreign tourist arrivals. The insignificant effect suggests that the sector's contribution alone does not directly influence inbound tourism, which may be due to overlapping effects with GDP or uneven quality and distribution of tourism-related services across states.

Natural disaster deaths exhibit a negative elasticity (β = −0.082), implying that a one percent increase in deaths caused by natural disasters results in a 0.082 percent decrease in foreign tourist arrivals. Although this effect is not statistically significant, the negative sign indicates that natural disasters tend to discourage inbound tourism. This supports the argument that natural disasters, especially when associated with loss of life and international media coverage, may negatively influence the perceptions and travel decisions of foreign tourists.

Similarly, man-made disaster deaths also show a negative elasticity (β = −0.006), suggesting a very small decline in foreign tourist arrivals with an increase in such incidents. However, the effect is statistically insignificant and economically negligible. This indicates that foreign tourists may not perceive man-made disasters as a major deterrent to travel, particularly when such events are localized and do not disrupt overall tourism infrastructure. As a result, man-made disasters appear to have a limited influence on inbound tourism during the study period.

Overall, the findings indicate that economic growth has a positive association with foreign tourist arrivals, while disaster-related variables show a weak and statistically insignificant impact. This suggests that foreign tourists may place greater emphasis on economic conditions and destination readiness rather than short-term disaster-related incidents when making travel decisions.

Table 10. Collinearity Diagnostics

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions				
				(Constant)	LN_GDP	LN_THR	LN_NDdeath	LN_MDdeath
1	1	4.355	1.000	.00	.00	.00	.01	.01
	2	.432	3.174	.00	.00	.00	.02	.67
	3	.209	4.564	.00	.00	.00	.97	.23
	4	.003	36.955	.68	.01	.03	.01	.09
	5	.000	159.966	.32	.99	.97	.00	.00
a. Dependent Variable: LN_FTA								

The collinearity diagnostics reveal the presence of multicollinearity among the explanatory variables, particularly State GDP and the Trade, Repair, Hotels and Restaurants sector contribution. This is evidenced by the very high condition index values in the higher dimensions, especially the maximum condition index of 139.706, along with the large variance proportions associated with State GDP and the Trade, Repair, Hotels and Restaurants sector in the same dimension.

Such multicollinearity can inflate standard errors and weaken the statistical significance of individual regression coefficients, even when the overall model remains statistically significant. Therefore, caution must be exercised while interpreting the individual effects of economic variables on domestic tourist visits, as their combined influence may be more meaningful than their separate effects

Conclusions and Further

The analysis reveals that economic factors, such as State GDP and government investment in tourism infrastructure, positively influence Domestic Tourist Visits. Conversely, both natural and man-made disasters have a detrimental impact on tourism, highlighting the sector's sensitivity to unforeseen events. The findings emphasize the need for robust disaster management and strategic planning to ensure the sustainable growth of the tourism industry.

Suggestions

Based on the study's findings, the following recommendations are proposed:

1. Enhanced Investment: Increased allocation of funds towards tourism infrastructure to attract more domestic tourists.
2. Disaster Preparedness: Development of comprehensive disaster management plans to mitigate the adverse effects of unforeseen events on tourism.
3. Promotion of Domestic Tourism: Initiatives to encourage domestic travel, such as promotional campaigns and incentives.
4. Data-Driven Strategies: Utilization of data analytics to monitor tourism trends and make informed policy decisions.

Scope for Future Research

Future studies could explore:

- Longitudinal Analysis: Examining tourism trends over multiple years to assess long-term recovery patterns.
- Impact of Specific Policies: Evaluating the effectiveness of government initiatives aimed at reviving the tourism sector.
- Tourist Behavior: Investigating changes in tourist preferences and behaviors in the post-pandemic era.
- Comparative Studies: Comparing India's tourism recovery with other countries to identify best practices and areas for improvement.

Declarations

Credit Authorship Contribution Statement:

Praveen M.: Conceptualization, Writing – original draft, Data collection, Formal analysis.
Ranjitha R.: Data curation, Investigation, Validation.
Tamil Selvi R.: Methodology, Supervision, Review & editing.
Dayana Jevalin R.: Visualization, Resources, Proofreading, Project administration.

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