Page 1 – Cover Page

Transport Networks & Their Role in Tourism

Submitted By: Pabitra Jena and Rudra karia

Roll Number: 11 and 13

Class & Section: XII-A

Subject: Tourism

Submitted to : Vandna ozi mam

School: Navy Children School, Porbandar

Page 2 –

Certificate

This is to certify that Mr. Pabitra Jena and Mr. Rudra karia, students of Class XII-A, have successfully completed the project titled **"Transport Networks & Their Role in Tourism"** during the academic session **2025–26** under supervision of tourism teacher **Mrs. Vandna ozi Mam.** The project reflects their sincere efforts, research, and understanding of the subject.

(Signature of teacher)

_____

Page 3 –

Acknowledgement

We would like to express our heartfelt gratitude to our Tourism teacher, Mrs. Vandana Ozi Ma'am, for her valuable guidance, support, and encouragement throughout the completion of this project. Her suggestions helped us understand the topic and complete our work effectively.

We are also thankful to our parents for their continuous support, motivation, and understanding during the course of this project. We are also thankful to our friends for their support during every stage of this project.

Page 4 – Index / Table of Contents

Page 5 – Introduction

Transportation is a fundamental part of tourism; if there is no way to travel, there cannot be tourism. India's road network is the largest in the world, at over 6.6 million kilometres, and the fourth-largest rail network (by route length); moving billions of passengers each year.

Indian Railways carried around 6.9 billion passengers for the financial year 2023-24, a 5.2% increase from the prior year. This highlights the vital role of seamless connectivity in tourism. Transport networks do more than move tourists; they substantially contribute to the tourist experience and the competitiveness of a place. The travel mode, regardless of whether it is using road, rail, air, or water can turn an ordinary journey into an extraordinary journey. Each transport mode has its own benefits. Road transport gives flexibility of travelling to remote areas, rail transport provides comfortable travel, air travel provides connections across long distances quickly, and water transport provides slow leisurely routes. These modes provide access to varied regions.

This project aims to analyse the role of transport networks in shaping tourism in India. Understanding the strengths and weaknesses of these transport networks and also studying about how this transport network affect tourism.

Page 6 and 7 – Objectives

1. **To understand the transport network types.**
2. **To understand how transport network support tourism.**
3. **To identify challenges within transport systems that limit sustainable growth in Indian tourism.**
4. **To recommend solutions for improving transport connectivity that can impact tourism in India.**

– Research Methodology

Primary Research:
We conducted an online survey targeting some domestic tourists. The survey questionnaire was designed to gather insights about the problems tourists face in Indian tourism. The data of survey is in appendix-A.

Secondary Research:
Data was collected from various sources, including:

1. Ministry of Tourism, Government of India.

2. *India Tourism Data Compendium 2024*.

3. Indian Railways Annual Report 2023-24.

4. Airports Authority of India (*Annual Traffic Report 2024)*.

5. Ministry of Road Transport and Highway *(Road Transport Statistics 2024)* and many more.

   understanding the transport network types:

   1.road network

   2.rail network

   3.air network

   4. Water Transport network

Page 8 –

Chapter 1: Road Network

India's road network is the largest globally, with a total length of 6.7 million kilometres as of 2024. Roads carry approximately 82% of passenger traffic. Major initiatives like the Golden

Quadrilateral and Bharat Mala projects have significantly improved connectivity between major tourist circuits.

Merits of road network: - Door-to-Door Service. Flexibility and Accessibility. Cost-Effectiveness (For short to medium distances). Quick and Efficient (especially over short distances). Versatility **in** perishable items, oversized loads, and hazardous materials.

Demerits of Road Transport: - It is significantly affected by weather conditions. Traffic congestion in urban areas. It is less suitable for bulk transport due to lower load capacity compared to rail or water transport. Road transport contributes heavily to environmental pollution and accidents. Maintenance of roads requires constant investment.

Case Study: The Rann of Kutch region experienced increase in tourist visits due to the upgrade of National Highway 341 to a four-lane road, enhancing accessibility to the area. By 2024, these infrastructure enhancements have contributed to a remarkable increase in tourist arrivals. The Rann Utsav, an annual cultural festival held in the region, attracted approximately 7.42 lakh visitors in the 2023-24 season.

Page 9 –

Chapter 2: Rail Network

Indian Railways operates over 68,000 kilometres of route length, making it one of the largest rail networks globally. The introduction of Vande Bharat high-speed trains aims to reach 400 units by 2027, enhancing travel efficiency. IRCTC's Bharat Gaurav tourist trains connect various spiritual circuits, increasing the average trip length to 8 days.

Merits of rail network: - crucial role in the transportation of both passengers and goods. Advantage is its ability to carry large volumes over long distances efficiently and at relatively low cost. Rail transport is more energy-efficient and environmentally friendly compared to road and air transport. Easy for long-distance travel. Indian Railways also supports tourism by offering access to remote or culturally important destinations.

Demerits of rail network: - The initial infrastructure cost is very high. Rail transport also lacks flexibility, as it operates on fixed routes and schedules. In rural and hilly regions, rail connectivity is limited. overcrowding, delays, outdated technology and aging infrastructure can negatively impact the train travel.

Case Study: The Vande Bharat Express, a semi-high-speed train introduced by Indian Railways, has significantly boosted tourism on several routes across India. One notable example is the Delhi–Katra Vande Bharat Express, which began operations in October 2019, drastically reducing the travel time.

Pages 10 –

Chapter 3: Air Network

India has 146 operational airports. In 2024, Revenue Passenger Kilometres (RPKs) increased by 10.4% year-on-year, surpassing pre-pandemic levels. Low-cost carriers like IndiGo and SpiceJet dominate the domestic market with a 78% share, facilitating short city breaks.The aviation sector contributes approximately USD 27.1 billion to India's GDP and supports around 5 million jobs.

Merits of Air network: - The air network is the fastest mode of transport. It is ideal for covering long distances quickly and comfortably. It connects remote and inaccessible regions like the Northeast and Andaman & Nicobar Islands. Air transport is crucial during emergencies for medical and disaster relief operations. It also supports international connectivity. Promotes trade by enabling fast movement of goods. The development of airports further contributes to infrastructure growth.

Demerits of Air network: - Air transport is expensive compared to road and rail. It requires high maintenance costs. Weather conditions can often cause delays or cancellations. Air travel also has limitations in carrying heavy and bulky goods.

Case study: - The launch of direct flights between Mumbai and Goa as part of the expanding domestic air network has significantly boosted tourism in the region. By providing quick and convenient air travel options, the journey time has been reduced from several hours by road or rail to just about an hour by air.

Pages 11 –

Chapter 4: Water Transport network: -

India has 106 declared National Waterways; however, they handle only 0.1% of the country's traffic, indicating untapped potential for leisure tourism. Integrated transport solutions, such as the Kochi Water Metro combined with Metro Rail, are essential for seamless travel experiences.

Merits of water transport network: - Water transport is an economical and efficient mode for carrying heavy and bulky goods over long distances. It plays a vital role in connecting coastal areas, islands, and inland waterways. Waterways reduce traffic congestion on roads and railways. ports and harbours developed around water routes boost local economies.

Demerits of water transport network: - Water transport is generally slower than road, rail, and air travel. It is also limited by geographic factors, as not all areas have navigable coastal

access. Weather conditions like storms and floods can disrupt services. Additionally, water transport is vulnerable to piracy and accidents, which can affect safety and reliability.

Case study: - Initiatives like the Mumbai-Goa coastal service and the Ganga Vilas River cruise, covering 3,200 kilometres, aim to boost water-based tourism.

Page 12-

Understanding how transport network support tourism.

Transportation networks are critical to tourism by improving accessibility, providing regional development, and enhancing travel experience. In the large and varied country of India, travel is facilitated by inter-modal transport – road, rail, air, and water, allowing trillions of visitors to access remote destinations with greater ease.

For example, the introduction of the Vande Bharat Express service alleviated travel time to major cities, providing better access to destinations like Katra; The impacts of 'pilgrimage tourism' are significant.

Tourism on land is facilitated by the thousands of kilometres of road networks in India, including national highways and state roads between urban cities and rural/ coastal areas - promoting leisure and adventure tourism opportunities. In Kerala for instance, the use of inland waterways improved congestion and travel options (Kochi Water Metro) by providing visitors with unique experiences, including houseboat cruises and exhilarating short boat rides.

On the global stage, the Sabarimala Project is proposing to leverage India's coastal potential and ports to improve maritime transport and innovative coastal tourism opportunities. Such initiatives demonstrate how a well-developed transport network can serve as a catalyst for tourism, driving economic growth and cultural exchange.

In conclusion, the linkage between transportation and tourism development is undeniable. By improving connectivity and accessibility, transport networks not only facilitate travel but also contribute to the sustainable growth of the tourism industry, benefiting both tourists and local communities.

Page 13 –

Identifying challenges in transport systems that limit sustainable growth in Indian tourism.

Transportation systems in India face various challenges that limits the sustainable development of tourism . The issue of inadequate infrastructure within several tourist destinations, particularly, remote and rural areas is problematic in a country of India's size and population . While some areas have obtained world-class developmental facilities, others have lacked amenities including thoroughly clean restrooms, reliable energy, and proper roads. Such factors affects tourist travel experience and impacts the probability of recommending the area to others or returning again. In crowded cities like Mumbai and Delhi, heavy traffic makes travel slow and tiring. Tourists may feel frustrated as they spend extra hours stuck in traffic, reducing their overall experience.

In conclusion, India's inadequate transport means - poor roads, traffic congestion, and limited transport choices - make it difficult for tourists to travel. Many beautiful and interesting places are not accessible because of poor transport links. Altogether, these transport issues - poor roads, traffic, pollution - impact the comfort and safety of tourists. India cannot sustain tourism growth unless it addresses travel issues with better planning and sustainable transport methods.

Page 14 –

Recommending solutions to improve transport connectivity that can impact tourism in India

Enhancing transport connectivity is a key factor in improving tourism in India. One great way to do this is to create multimodal transport connections or systems that combine road, rail, air, and water transport and networks. Significant government initiatives such as the Bharatmala project and the Sagarmala project will improve highway and port, respectively, to enable better access to tourist destinations . The UDAN scheme will provide better regional air connectivity for travelers to previously remote regions, and effective investment in modernising rail speed stations will improve rail travel experience under the Amrit Bharat Station Scheme .

Improving public transport by adding real-time information can make travel easier for tourists. Using eco-friendly options like electric buses and ropeways helps protect the environment. These changes also offer new and interesting ways to explore places. Focusing on these small but important details will make travel smoother. This will help India build a better and more connected tourism system for everyone.

Page 15: -

Conclusion

Transport networks play a vital role in the growth and development of tourism in India. Efficient and accessible transport systems such as roads, railways, airways, and waterways connect tourists to diverse destinations, from bustling cities to remote rural and natural sites. Improvements in infrastructure like highways, high-speed trains, airports, and water transport can greatly enhance the overall tourist experience by reducing travel time and increasing comfort. However, challenges like traffic congestion, pollution, limited connectivity in remote areas, and inadequate last-mile transport restrict sustainable tourism growth. To overcome these issues, adopting integrated and eco-friendly transport solutions, expanding regional connectivity, and modernizing existing infrastructure are essential. These efforts will ensure smoother, safer, and more enjoyable travel for tourists while preserving the environment and benefiting local communities. Ultimately, a well-planned and sustainable transport network is key to unlocking the full potential of India's tourism industry.

Page 16: -

References

1. **Ministry of Tourism, Government of India.**
2. *India Tourism Data Compendium 2024*.
3. **Indian Railways Annual Report 2023-24.**
4. **Airports Authority of India(***Annual Traffic Report 2024)*.
5. **Ministry of Road Transport and Highway** *(Road Transport Statistics 2024)*.
6. **UN World Tourism Organization (UNWTO).** *Tourism Highlights 2023*.
7. **News articles and case studies on Vande Bharat Express, Kochi Water Metro, and Rann of Kutch tourism development from reliable sources such as** *The Hindu*, *Times of India*, *Economic Times*.

Page-17

Appendix(A) Data of survey

Question	Respondent 1	Respondent 2	Respondent 3	Respondent 4	Respondent 5
1. Which mode of transport do you prefer	Rail	Air	Road	Rail	Air

for travel?					
2. What is the biggest problem you face while travelling in India?	Overcrowded trains	Flight delays	Poor road conditions	Lack of last-mile connectivity	High airfare costs
3. How would you rate the availability of transport options at tourist destinations?	Fair	Good	Poor	Fair	Good
4. Do you think transport infrastructure supports sustainable tourism? (Yes/No)	No	No	Yes	No	Yes

5. What improvement would you suggest for India's transport network to better support tourism?	Improve last-mile connectivity	Increase affordable flight options	Upgrade road infrastructure	Develop integrated ticketing systems	Enhance rail speed and frequency

Page 18-

Appendix(B) PICTURES OF RAIL AND ROAD network

India National Highway Network Map

India Railway Network
Railway Route Map and Major Railway Stations