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Tourist Information System for Promoting Tourism in India: A study of A Chhatrapati Sambhajinagar(Aurangabad) and Ahilyanagar (Ahmednagar) District

Dr. Rohidas S. Bhadakwad

Abstract

Maps have been an essential tool for every traveler's journey, from ancient times to today's modern travel guides, helping people understand continents, routes, and tourist destinations. In today's digital age, Geographic Information Systems (GIS) have transformed traditional maps into interactive, dynamic, and intelligent media, altering their conventional role. This study, based on this technological advancement in mapping, presents a web-based Tourist Information System (TIS) designed to compare the level of tourism development in the districts of Ahilyanagar (formerly Ahmednagar) and Chhatrapati Sambhajinagar (formerly Aurangabad) in Maharashtra state. This comparison is conducted through an analytical study of the four essential 'A' factors of tourism development: Attractions, Accessibility, Amenities, and Accommodation, which collectively provide a comprehensive understanding of a tourist destination's potential. The proposed six-tiered Tourist Information System (TIS) incorporates various components. This information system includes a robust web application, a real-time data acquisition mechanism, a well-structured database, interactive digital mapping, detailed information on tourist sites, and flexible online and offline accessibility. This information system will serve as a useful digital travel guide for modern times. It will enable users to identify nearby attractions, find tourist routes, and locate amenities with a single click. By effectively integrating geographic information technology with the practical needs of tourism, this innovative system also serves as a valuable strategic tool for tourists, planners, and policymakers, contributing to sustainable tourism development and balanced regional growth.

Keyword: Attractiveness, Accessibility, Amenities, Accommodation, Tourist Information System

Introduction

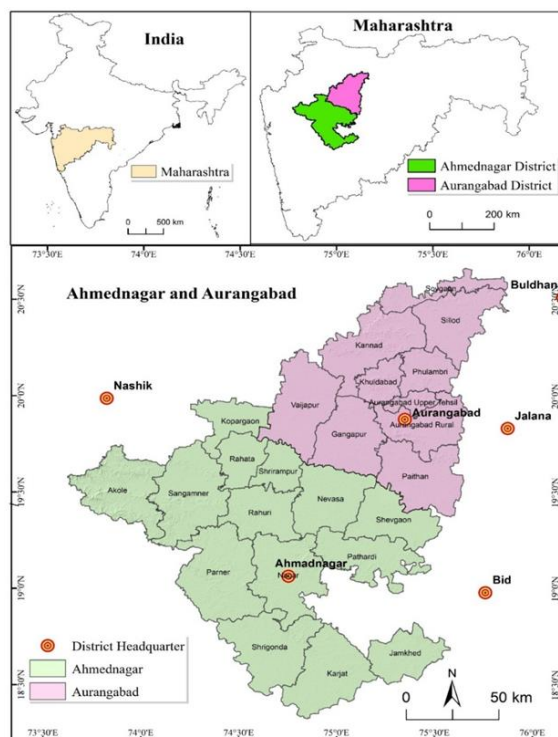
Tourism primarily involves travel undertaken for leisure or recreational purposes. The tourism industry provides the necessary services to meet the needs of these travelers. Tourists are individuals who travel from their usual place of residence to another location for pleasure and engage in various activities for non-commercial purposes. Tourism is a widespread global phenomenon, attracting people from all over the world. This is not only crucial for the country's economic development but also a major source of foreign exchange for developing countries. As a service industry, tourism encompasses both tangible and intangible elements. Tangible aspects include transportation, accommodation, and hospitality services, while intangible elements revolve around the motivations behind tourism, such as relaxation, cultural exploration, and the pursuit of new and adventurous experiences.

Maps play a vital role in facilitating travel and providing accurate information about geographical locations. Throughout history, guidebooks and travel books have been essential tools for tourists, often including maps to connect descriptions of places with their respective locations. In the age of information technology, the internet has revolutionized how tourists obtain information. Today, websites provide comprehensive details about travel, tours, and hospitality services. Travel agencies now offer their products and services directly to customers online. Geographic Information Systems (GIS) technology is useful for collecting, analyzing, and presenting information related to the physical and logical properties of the Earth's surface. It is crucial for data storage, manipulation, and analysis, and GIS provides more in-depth information than traditional maps. GIS is used in various fields, and the tourism sector also utilizes it extensively. It can help organize and analyze spatial information using databases, automated mapping systems, and management systems, and provides information in the form of interactive maps.

Web-based GIS mapping solutions are crucial in the tourism industry. They allow users to select information directly from a map interface. This enables individuals to choose their areas of interest and easily obtain information about important locations from the map database, making it a powerful tool for both tourists and service providers in the modern age of travel.

This study identifies and examines the four 'A' factors (Attractions, Accessibility, Amenities, and Accommodation). In this case, tourism development was studied through a Tourist Information System (TIS), a web-based GIS system developed for a comparative study of tourism development in the Ahilyanagar and Chhatrapati Sambhajnagar districts of Maharashtra state. Tourist Information System (TIS) is a six-level design which providing tourism information such as; Web Application Framework, Structured and Knowledge Database, Transmission and Acquisition of data, Basic Application (Location, Map Service), Tourism Attraction Information and Flexible Accessibility online/ offline. Tourist Information System is an updated system that acts as a travel guide. By changing the old system in different ways, taking into account the needs of the new system, the tourist needs to have information about the various elements of tourism with the help of four A Factors. We have developed user-friendly online and offline programs of Tourist Information System (TIS) technology to fulfill the need of the tourist. In short, if a tourist wants to visit a tourist place, the information is available on one click what facilities are there, how to go or which routes to follow, what to see, where to stay, and various nearby fully potential tourist places.

Study Area



This study presents a comparative analysis of tourism development in Ahilyanagar and Chhatrapati Sambhajnagar districts of Maharashtra. Ahilyanagar, located between 18° 2'–19° 9' N and 73° 9'–75° 5' E, spans 17,413 sq km and comprises 14 tehsils. It is home to Kalsubai, the highest peak in Maharashtra, along with other Sahyadri peaks such as Harishchandragad, Ratangad, Kulang, and Ajuba. As per the 2011 Census, the district's population was 4,543,159, with a literacy rate of 80.22% and a sex ratio of 934. Chhatrapati Sambhajnagar, covering 10,100 sq km between 19° 0'–20° 0' N and 74° 0'–76° 0' E, lies mainly in the Godavari basin and includes the Antur, Abbasgad, and Satonda ranges. It is renowned for its diverse natural, historical, cultural, and agro-tourism attractions. In 2011, Chhatrapati Sambhajnagar had a population of 3,701,282, with a literacy rate of 61.15% and a sex ratio of 924. The analysis highlights unique geographical characteristics and tourism potential, offering insights for strategic regional tourism planning.

Aims and Objectives

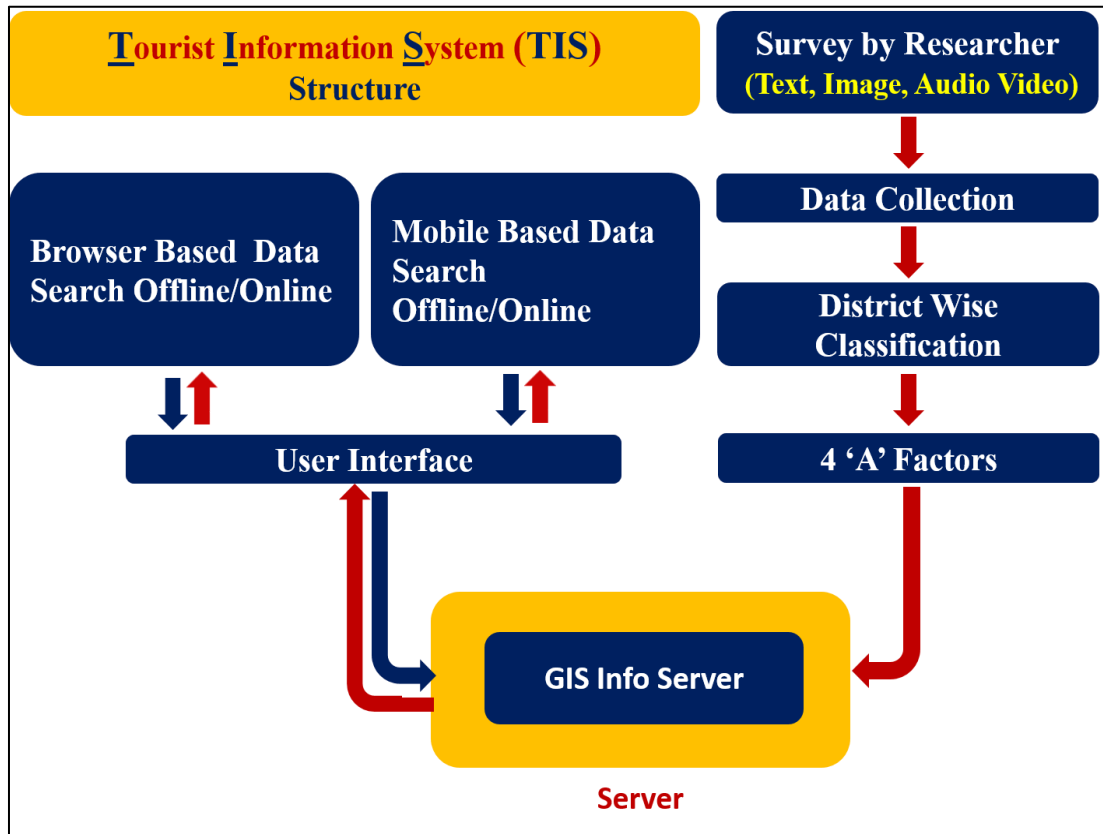
1. Prepare the Tourist Information System (TIS) with the help of GIS techniques.
2. Provide a way to find out easily accessible information over the internet.

Data Collection for Tourist Information System (TIS)

A main step to development for Tourist Information System (TIS) software involves collecting the required information and storing it in the server database. This data includes details of tourist destinations, attractions of tourist destinations, photographs, available tourism services, various transport systems, types of accommodation etc. After the data collection process, the information is digitally mapped using GIS software. This classified information has been used to create a comprehensive database of natural, religious, heritage/historical and social/educational tourism sites in Chhatrapati Sambhajnagar and Ahilyanagar districts as well as classifying tourist sites based on the four 'A' factors (attraction, amenities, accessibility and accommodation).

Tourist Information System (TIS) Model

This model introduces and examines the four 'A' factors of attractions, accessibility, amenities and accommodation. In this case, tourism facilities which are included in 4 A factors were implemented in Tourist Information System (TIS). This is web based GIS system developed by to comparative study of tourism development in Chhatrapati Sambhajnagar and Ahilyanagar District of Maharashtra state. Tourist Information System (TIS) is a six-level design which providing tourism information such as; Web Application Framework, Structured and Knowledge Database, Transmission and Acquisition of data, Basic Application (Location, Map Service), Tourism Attraction Information and Flexible Accessibility online/ offline shows the structure of user friendly web based online / offline Tourist Information System (TIS) program. GIS Server, Server, User interface, data collected based on 4A factors are the major building block of TIS Program. Tourist Information System is an updated system that acts as a travel guide. By changing the old system in different ways, taking into account the needs of the new system, the tourist needs to have information about the various elements of tourism with the help of four A Factors. We have developed user-friendly online and offline programs of Tourist Information System (TIS) technology to fulfill the need of the tourist. Shows the typical homepage of TIS Program developed in the present work. It Consist of different tabs and menu bars useful to navigate the required tourist destinations/information.

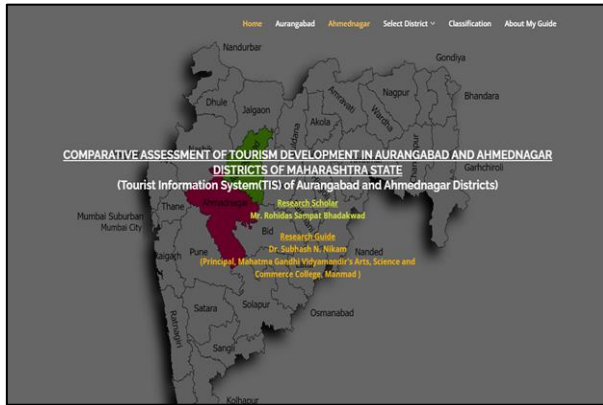


Methodology used for development of Tourist Information System (TIS)

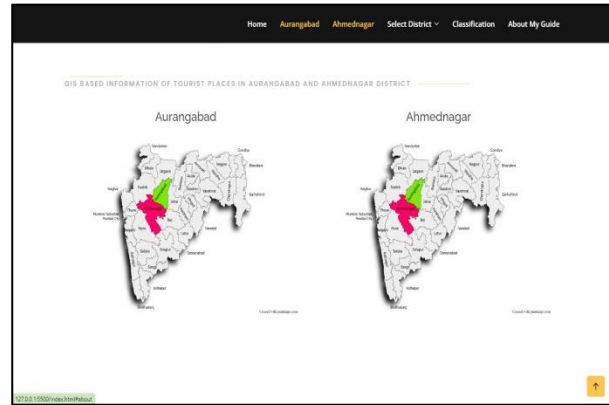
In short, if a tourist wants to visit a tourist place, the information is available on one click what facilities are there, how to go or which routes to follow, what to see, where to stay, and various nearby fully potential tourist places.

The Tourist Information System (TIS) outlined in above figure underwent a systematic process. Initially, a grid method was employed to scrutinize all tourist locations in Chhatrapati Sambhajnagar and Ahilyanagar districts. Subsequently, 18 notable places in Chhatrapati Sambhajnagar and 22 in Ahilyanagar were selected. Following this, an extensive visitation to the chosen destinations in both districts took place. During these visits, pertinent information, encompassing basic details, attractions, photographs, statistical data, amenities, and accommodation information, was gathered through the use of a structured questionnaire.

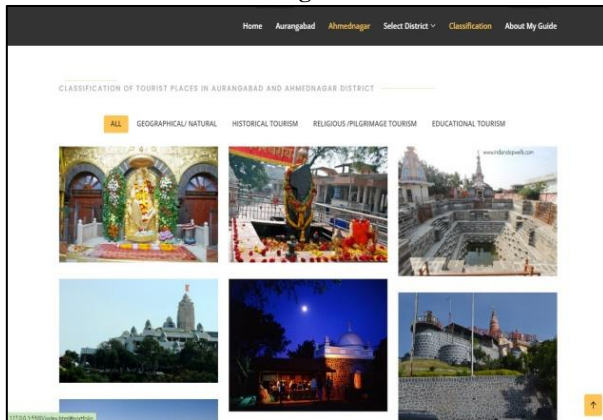
The selected tourist spots were then categorized into four distinct groups: natural, religious, cultural/heritage/historical, and social/educational. The amassed data underwent further classification based on four 'A' factors, namely Attractions, Amenities, Accessibility, and Accommodation. This organized classification was subsequently uploaded to the data server utilizing Geographic Information System (GIS) within the Tourist Information System (TIS). The TIS system has been designed with the aim of providing easy access and user-friendliness for tourists worldwide.



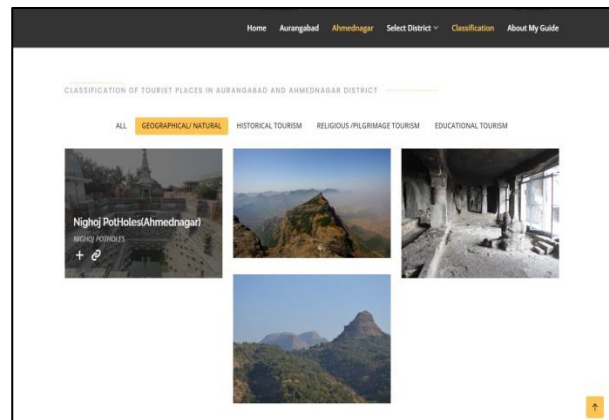
Typical Homepage of Tourist Information System (TIS) Program



District Wise Map



Religious Classification



Natural/ Geographical Classification

Conclusion

The present study demonstrates that the integration of Geographic Information Systems (GIS) into tourism planning offers a transformative approach to understanding, organizing, and promoting regional tourism potential. By developing the Tourist Information System (TIS) for Chhatrapati Sambhajnagar and Ahilyanagar districts, this research highlights the significance of the 'Four A' factors (Attractions, Amenities, Accessibility, and Accommodation) in shaping tourist experiences and supporting sustainable tourism development. The comparative analysis reveals that both districts possess rich natural, cultural, historical, and religious resources, yet the effectiveness of their tourism development largely depends on the availability of reliable, accessible, and user-friendly information.

The TIS platform, with its interactive maps, structured database, and online/offline flexibility, bridges the existing information gap between tourists and tourism service providers. It simplifies travel planning by enabling users to explore destinations, routes, facilities, and nearby attractions through a single interface. This digital system not only enhances convenience for travelers but also supports policymakers, planners, and local stakeholders in identifying development priorities, managing tourism assets, and improving service delivery.

Overall, the research underscores the essential role of modern geospatial technologies in strengthening regional tourism infrastructure. By providing accurate spatial data, real-time accessibility, and comprehensive information, the TIS model contributes to more informed decision-making and improved visitor satisfaction. As tourism continues to expand globally, the adoption of GIS-based systems like TIS will be crucial for promoting sustainable, inclusive, and well-managed tourism development across diverse regions

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Conflicts of interest

The authors declare that there are no conflicts of interest regarding the publication of this paper.

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