Resilience Assessment of Significance of Transportation System in Tourism of Surat City

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Abstract - *The way we design our city needs a serious rethink. Our topic is to design and develop Surat city as the most attractive place for tourists and the most auspicious and preferable city to live. We are trying to give the best way to explore the city for tourists and local users. We are going to provide some different and convenient ways in tourism. Route optimization means increasing the maximum utilization of the route in a proper way. The spatial analysis technique - Geographical Information System (GIS) plays a vital role in route optimization, which suggests the alternate and most convenient routes by using its analysis. The methodology of this development is sufficient and contains the step by step progress as visit the destinations, observe the current situation, collect the data related to it, analyze all the data, setting up the new idea.*

***Key Words:* Tourism, Optimum Route, Tourist Attraction, GIS, Surat**

1. INTRODUCTION

Surat is a unique city; 'Diamond Hub of the World', 'Embroidery capital of India', 'Textile City of India' as it is proudly called. Surat is the fastest growing city in the world and a powerful magnet for fashion moguls, art lovers and diamond dealers. Surat is an important tourist destination in Gujarat. Today, tourism industry is the fastest and largest growing industry in the world. The concept of travel & tourism in Surat started a long day back ago, when Portuguese people entered through Surat and developed trade in India. Since then the City is receiving innumerable number of tourists for different purposes. Surat has an international airport, so the major benefits of the generation are foreign exchange earnings and employment. The GDP of Surat will see an average growth rate of 9.2% over 2019-35 period. According to the report, as many as 17 of 20 fastest-growing cities in the World between 2019 and 2035 will be from India. Surat has a timeless familiarity for its tourists, with recognizable historical landmarks, along with exquisite cuisine and priceless artistic treasure. Anyone who is keen to explore the vibrant culture, cutting-edge architecture, fabulous food, and history should go for a trip. Surat is a futuristic global city with focus on enhancing economy, protecting the ecology and preserving the identity and culture of the city.

2. STUDY AREA PROFILE

The present study is carried out in Surat, Gujarat, India. Surat is the second largest populous city of Gujarat and ranked seven largest populous cities in India(Registrar General & Census Commissioner, 2011). The population of the Surat is 44,61,002 (4.46 million), and area of the Surat Municipal Corporation (Surat Urban Development Authority, 2006) is 326.515 km^2 according to the census 2011. Surat is divided into seven administrative zones and 101 census wards.
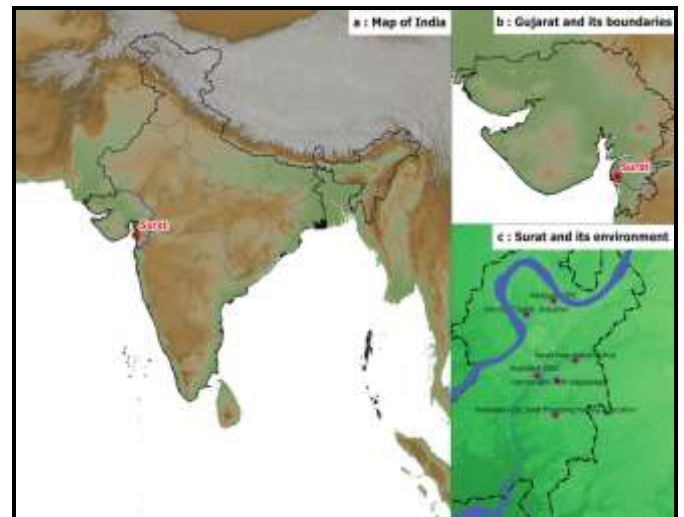

Fig -1: Location of Surat

2.1 LOCATION

Surat, located in the western part of India in the state of Gujarat, on the banks of the river Tapi, is an important historical trade center and serves as a trade link between India and the Gulf countries. Even during the Mughal period, Surat was a gateway to the Deccan plateau and an important port and trading center. Today, the city is one of the fastest growing cities in India. Surat is an important commercial city in south Gujarat, and is approximately 250 kilometers (km.) north of Bombay. The city is located at 21°10' N – 72°49' E, with an altitude of about 13 meters (m.) above mean sea level (AMSL).

2.2 BEST TIME TO VISIT

The best time to visit in Surat is the winter months, from October to March. The temperature ranges between 15°C and 29°C, making it an ideal for sightseeing and other outdoor activities. The winter season is very pleasant in Surat. Also generally October is the month Surat gets all high during Navratri. People of all ages come out of their houses to let lose themselves in Garba and Dandiya. The energy is simply infectious at this time. The summers in Surat start in April and continue till June. The temperature may rise up to 40°C, and the air is quite dry and hot, making sightseeing a bad idea. Come July and monsoon knocks the door of Surat, bringing down the temperatures. Since it is wet all around, sightseeing might be a challenge.

3. PROBLEM STATEMENT

Tourism industry is a booming industry that enriches knowledge, brings social development and economic growth also. Nowadays, tourism is fast growing area. But, there are lots of problems faced by tourists during their tour due to poor facilities, uncertainties, cleanliness, safety, etc. The important factors, which have limited the growth of tourism in Surat, are mentioned below:

- Not aware about tourism places.
- Lack of appropriate presentation of tourist destination.
- Not proper connectivity between tourism origin and tourism destination.
- Result into loss of potential of tourism.

Dailies bring out reports on such issues. In this growing field, it is highly important to study the major issues faced by tourists and to take necessary steps to reduce such problems.

4. TOURISM OF SURAT

Surat is a unique city. Surat was ruled by Mughals, Maratha, east India company, Dutch, Portuguese. They built many heritage buildings. The urban public transportation system is a means of providing mobility to locals, visitors as well as tourists. Surat has an international airport, so the major benefit of the generate for foreign exchange earnings and employment.

The GDP of Surat will see an average growth rate of 9.2% over 2019-35 period. According to the report, as many as 17 of 20 fastest-growing cities in the World between 2019 and 2035 will be from India.

4.1 ECONOMY

Fig -2: Metropolitan Surat economic centers and industries map

Diamond polishing

Surat is a major hub of diamond cutting and polishing. The first diamond workshops in Gujarat appeared in Surat and Navasari in the late 1950s. Around the world, 8 out of 10 diamonds on the market were cut and polished in Surat. This industry earns India about US$10 billion in annual exports. A legacy of old Dutch trade links, it began after a Surti entrepreneur returned from East Africa bringing diamond cutters.

Textiles

Since it is known for producing textiles, including silk, Surat is known as the textile hub of the nation or the Silk City of India. It is very famous for its cotton mills and Surat Zari Craft. Surat is the biggest centre of MMF (man-made fibre) in India. It has a total of 381 dyeing and printing mills and 41,100 powerloom units. There are over a hundred thousand units and mills in total. The overall annual turnover is around 5 billion rupees. There are over 800 cloth wholesalers in Surat. It is the largest manufacturer of clothes in India, and Surti dress material can be found in any state of India. Surat produces 9 million metres of

fabric annually, which accounts for 60% of the total polyester cloth production in India. Now the city is focusing on increasing the exports of its textile.

Information technology

There are many SME Domestic IT Companies present in Surat. MNC IT companies like IBM, HCL have satellite or virtual branches in Surat. On 14 February 2014 Govt of Gujarat DST had handover STPI Surat at Bhestan-Jiav Road, Bhestan Near Udhana-Sachin BRTS Route.Surat city administration will demand for setting up of an Information Technology (IT) hub and an Indian Institute of Information Technology(IIIT) on the outskirts of the city.The first smart IT city in India is being constituted by the Microsoft CityNext Initiative in Surat, Gujarat.

Diamond Research And Mercantile City (DREAM)

The government of Gujarat plans another project near Surat similar to Gujarat International Finance Tec-City (GIFT). The Chief Minister has suggested that the government wishes to develop DREAM to have a five-seven star hotel, bank, IT, corporate trading house, entertainment zone and other facilities while the Surat Diamond Bourse (SBD) will be based there. Allotment of Khajod land for the project is convenient for the state government because they have 2,000 acres (810 ha) of available land. The Trade Centre, located near Sarsana village, will have a 100,160-square-metre (1,078,100 sq ft) pillar-less air-conditioned hall with a 90-by-35-metre (295 by 115 ft) pillar-less dome.

5. TOURIST FLOW

	Business	Leisure	Religion	Other
2002-03	12	4	5	3
2003-04	12	5	7	13
2009-10	7	7	11	10
2013-14	10	8	10	11

Table -1: Tourist Flow-Purpose Wise
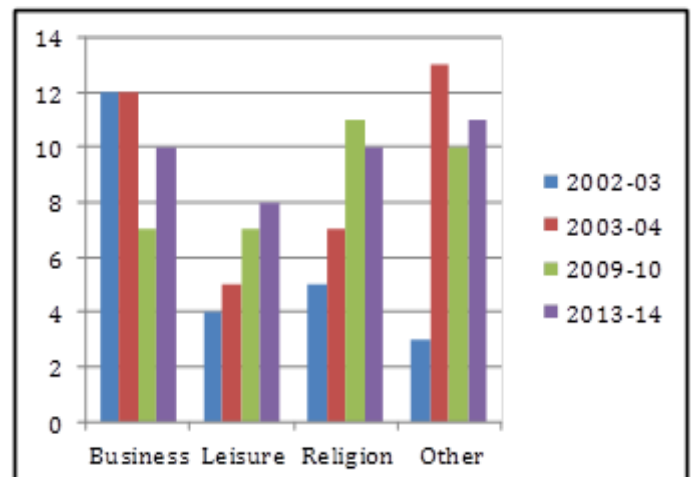
Chart -1: Tourist Flow-Purpose Wise

Table -2: Tourist Flow-Origin Wise

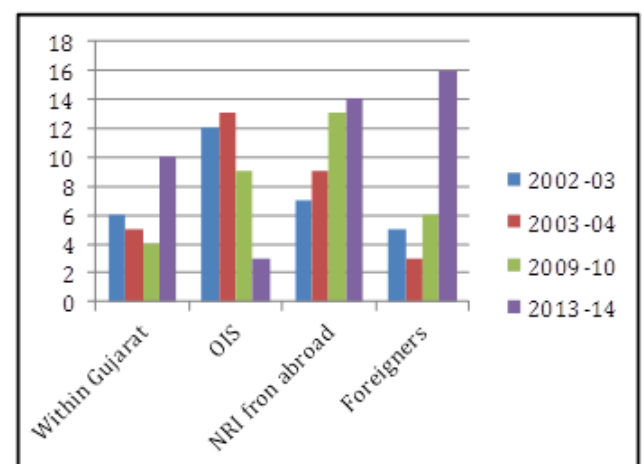|	Within Gujarat	OIS	NRI from Abroad	Foreigners
2002-03	6	12	7	5
2003-04	5	13	9	3
2009-10	4	6	13	6
2013-14	12	6	14	16

Chart -2: Tourist Flow-Origin Wise

6. TOURISM: A WHOLESOME MENU

Tourism industry has emerged as one of the fastest growing industries in the world, and economically important for rapid growth of India. There are various types of tourism branches like natural ecosystem & wildlife centuries, pilgrimage tourism, cultural tourism, business tourism, etc.

Natural ecosystem & Wildlife centuries:

Gopi Talav

Amaazia

Botanical Garden

Aquarium

Science Centre

Sarthana Nature Park

Pilgrimage Tourism:

Swaminarayan Gurukul

Kantareshwar Temple

ISKCON Temple

Chintamani Jain Temple

Swaminarayan Temple

Ambikaniketan Temple

Heritage Tourism:

Surat Castle

Heritage Walkway

Clock Tower

British Cemetry

Armenian Cemetry

Multipurpose Sites:

Performing Art Centre

Indoor Stadium

Educational Tourism:

Andrews Library

J.J. Traning College

Beach Tourism: **Industrial Tourism:**

Dumas Beach   Hazira Port

Other:

Cable Bridge   VR Mall

Cultures and traditions:

Kite Flying   Navratri Celebration

7. GIS PERFORMANCE

GIS (Geographic Information System)

GIS technology is very useful in the formulation and implementation of spatial and temporal changes. These techniques are quite developed and becoming operational now. GIS tools for identifying and mapping the urban population will give efficient results than traditional methods, that too, in a shorter time.

Optimum Route can be generated with the help of ARCGIS software and Google Map.

Step-1 Create Boundary of Surat in Map
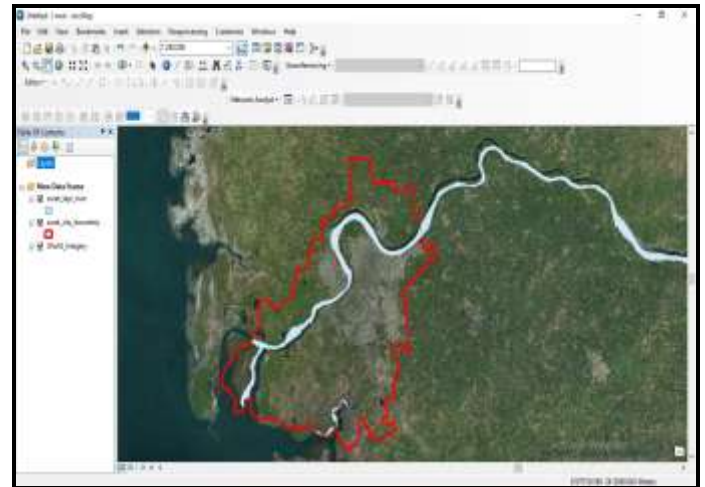
Step-2 Locate Tourism Destinations in Map
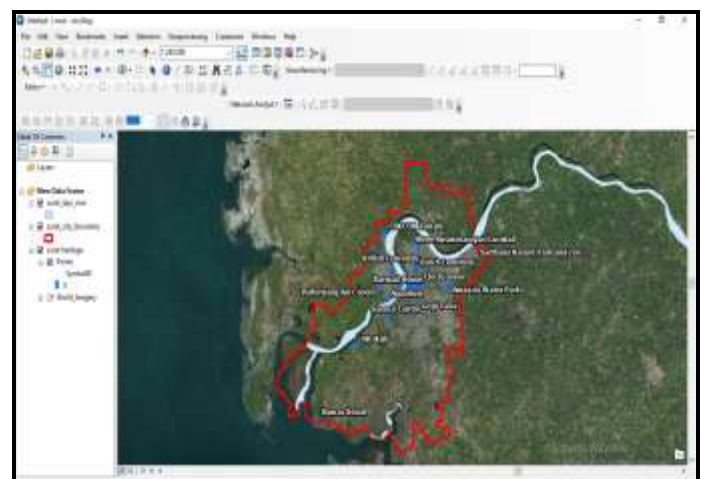
Step-3 Tracing Route in GIS
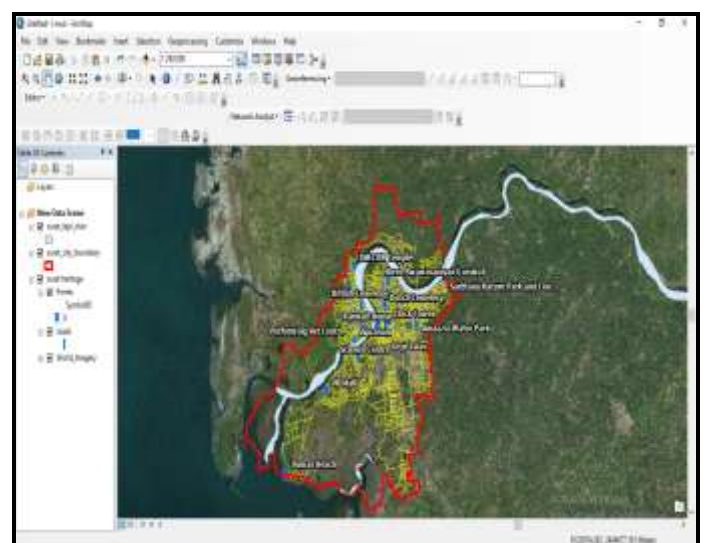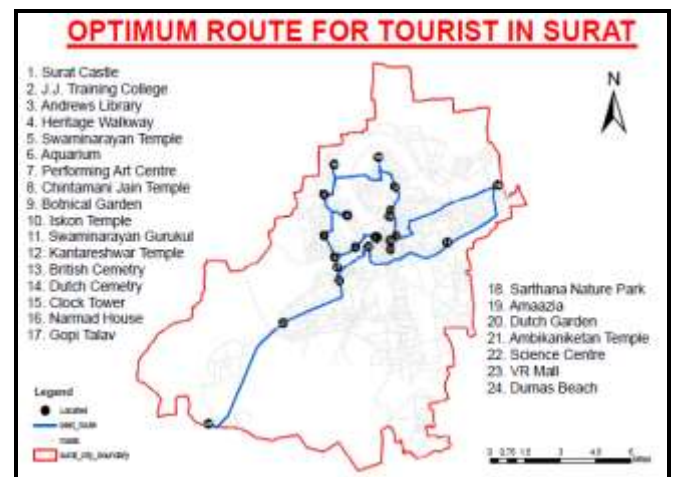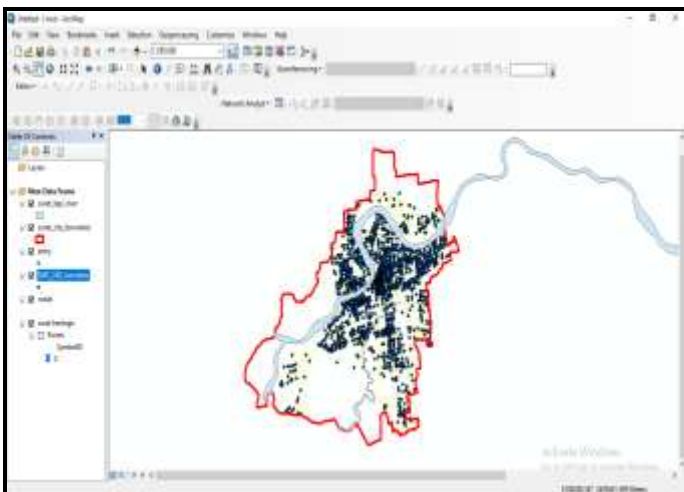
Step-4 Locate Point for Network Analysis

Step-5 Processing for Network Analysis

Step-6 Graphic Points for Network Analysis

Step-7 Obtain Optimum Route in GIS

8. EXPECTED OUTCUM OF THE PROJECT

The route is determined as an optimum distance between places.

9. CONCLUSION
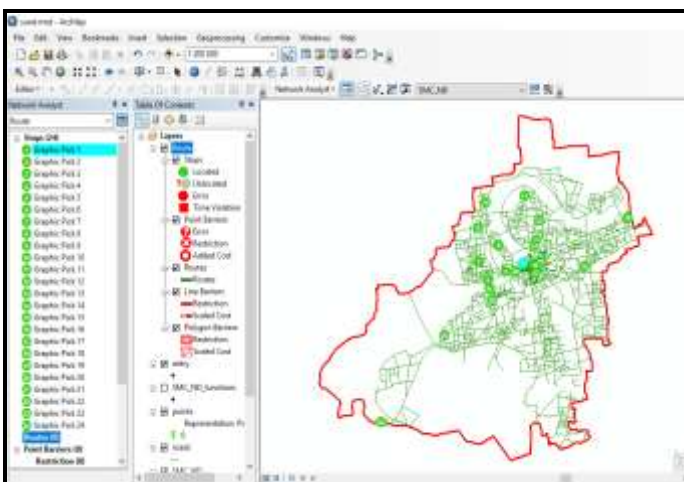
Surat has tourist flow for entertainment purpose and also for business purpose. The city should concentrate on providing infrastructure facilities in order to attract tourists and promote tourism in the city. The city can also provide training facilities so that the local employment can increase in this sector. Tourism should be developed in order to maintain and preserve the local traditions and culture. The proposed routes are based on optimized length among the tourist sites. As a subject of tourism, the detail information about the history of each is required. For that their properties can be listed out, which addressed here through documentation of each tourist destinations. Alternatives can be proposed by the Network Analysis of ArcGIS for discovering the best possible outcome. These all optimized route will reduce the overall travel length and travel time for the tourists.

ACKNOWLEDGEMENT

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