India Tourism Data Analysis Project Report

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Summary:

This data analysis report presents insights into India's tourism industry using Python. The analysis was conducted on a comprehensive dataset that captured various aspects of tourism in India. By applying data analysis techniques, we gained valuable insights into the contribution of tourism to India's economy, employment, and the popularity of different tourist destinations across the country. The report highlights the significant role of tourism in India's GDP and employment, emphasising its importance as a key economic sector. Additionally, the analysis showcases the diverse attractions that India offers, ranging from wildlife safaris and nature-seeking spots to historical landmarks and spiritual destinations. The findings of this report provide valuable information for policymakers, businesses, and stakeholders to make informed decisions and develop strategies to further enhance India's tourism industry.

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Methodology:

To conduct this data analysis, a systematic approach was followed to ensure accuracy and reliability in the findings. The methodology encompassed the following steps:

1. **Data Collection:** The data obtained from data.gov.in . We are using 8 different data sets which include statistical data about foreign tourist arrivals in India from 1981 to 2020, statistics of FTA distribution in India by age from 2001 to 2019 in percentage, quarterly distribution statistics of the percentage of foreign tourists visiting India from 2001 to 2019, comparisons between world tourism and Indian tourism with world rankings from 2001 to 2021, statistics of ITAs in India in 2019 This dataset includes the percentage distribution of international tourist visits to India by specific factors grouped by countries (also regions), statistics of the number of Domestic and foreign tourists to popular monuments in India during 2019,2020 and 2021 along with their regions, statistics of the contribution to the share market of Indian tourism in percentages from 2017 to 2019, statistics of domestic and foreign tourists visiting India in 2019 and 2020 per state.

2. **Data Preprocessing:** Before analysis, the collected data underwent preprocessing steps to ensure its quality and consistency. This involved cleaning the data by removing duplicates, handling missing values, and resolving any inconsistencies or errors, reshaping the data, renaming the index, dropping columns, combining data, parsing the dataframe.

3. **Statistical & Exploratory Data Analysis (EDA):** Statistical analysis data Analysis was conducted to present numerical data to uncover patterns, relationships, and trends. It involves applying statistical methods and techniques to draw meaningful conclusions and make informed decisions based on the data. Exploratory Data Analysis was conducted to gain a preliminary understanding of the data. Descriptive statistics,Visualisation technique plotting including measures of central tendency and dispersion, were calculated to summarise the data.

4. **Reporting:** The findings, insights, and recommendations were compiled into a comprehensive data analysis report. The report presented the analysis results in a clear and organised manner using visualisations, tables, and concise explanations.

Key Findings-

I have analysed how tourism has been faring in India during all these years and found some helpful insights. I have taken eight different aspect to analyse & find insights-

## A. Statistics of International Tourists to India [1981 - 2020]-

As we can see from the above multi line graph, there has been a steady increase in the number of tourists visiting India until 2020 as COVID-19 restrictions led to a huge blow on the Tourism sector. The pandemic has not only jeopardised the growth prospects of the sector but also caused a significant economic slump, which the sector would take some time to recover from.

Also, the growth in FTAs in India over the years, viz. 2003 to 2007, 2010, 2014 and 2017 saw a double-digit positive growth, while there was negative growth in the years 1991, 2001, 2002 (September 11 attacks i.e 9/11 attacks in U.S and many other factors) and 2009 (because of the 26/11 attack in Mumbai (Bombay), Maharashtra, India).

Note: Ministry of tourism initiated compilation and dissemination of arrivals of Non-Resident Indians (NRIs) and the Foreign Tourist Arrivals (FTAs) since 2014.
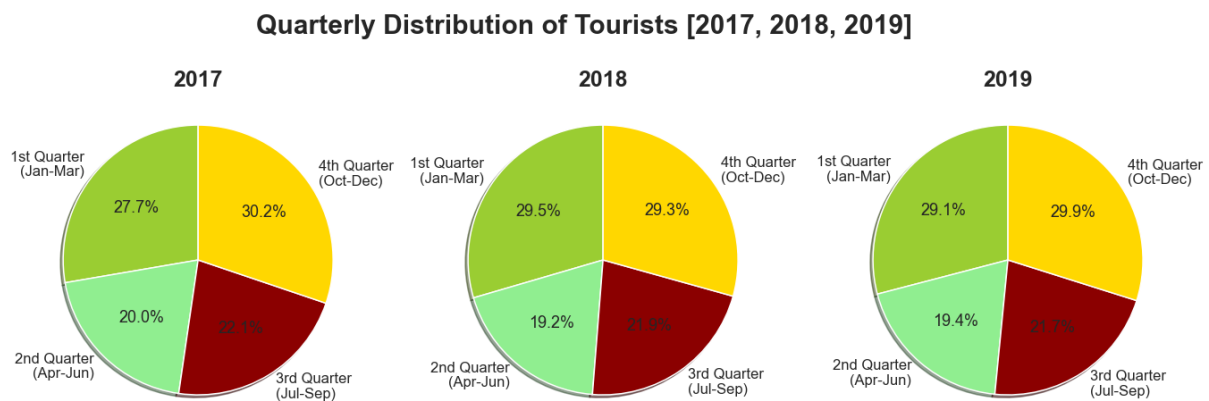
B. Quarterly Distribution of Tourists [2001 - 2019]-

1. Total Arrivals [2001-2019]:
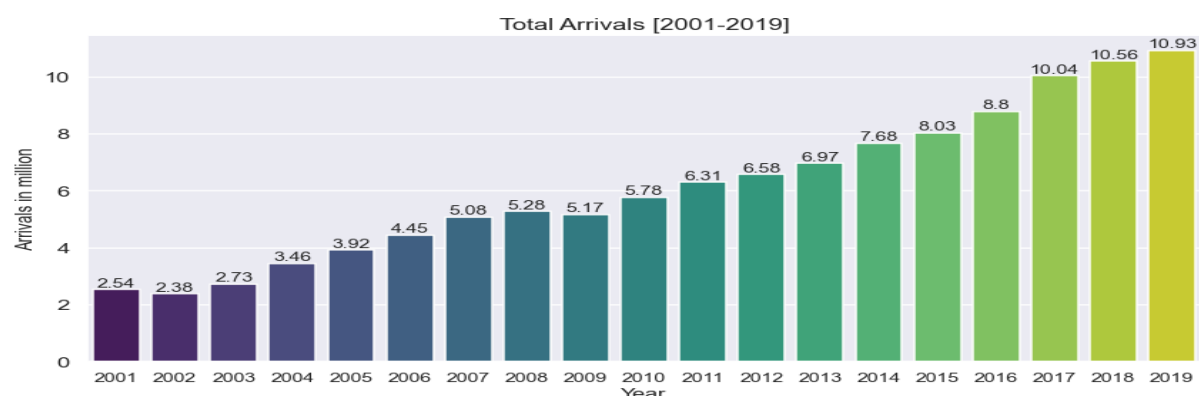
As we can observe from the above bar plot, tourism has been improving in India even if there were a few exceptions during certain years.

2. **Quarterly Distribution of FTAs during 2017, 2018 and 2019:**

Quarterly Distribution of Tourists [2017, 2018, 2019]

As per the pie charts above, we can observe that the number of FTAs In India has been highest during the winter season (4th Quarter (Oct-Dec) and 1st Quarter (Jan-Mar)) (best season to visit India because of favourable weather and temperature) and has been the lowest during the summer season (2nd Quarter (Apr-Jun)) (because of heat) during the years 2017, 2018 and 2019.

3. **Average Percentage Distribution of FTAs Quarterly [2001 - 2019]:**
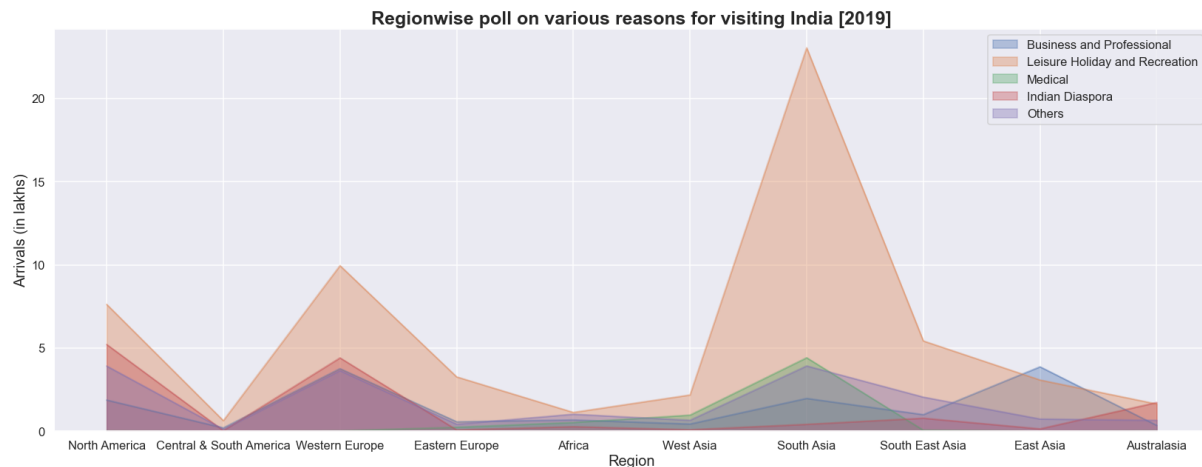
Average % Distribution of Tourists Quarterly from 2001-2019
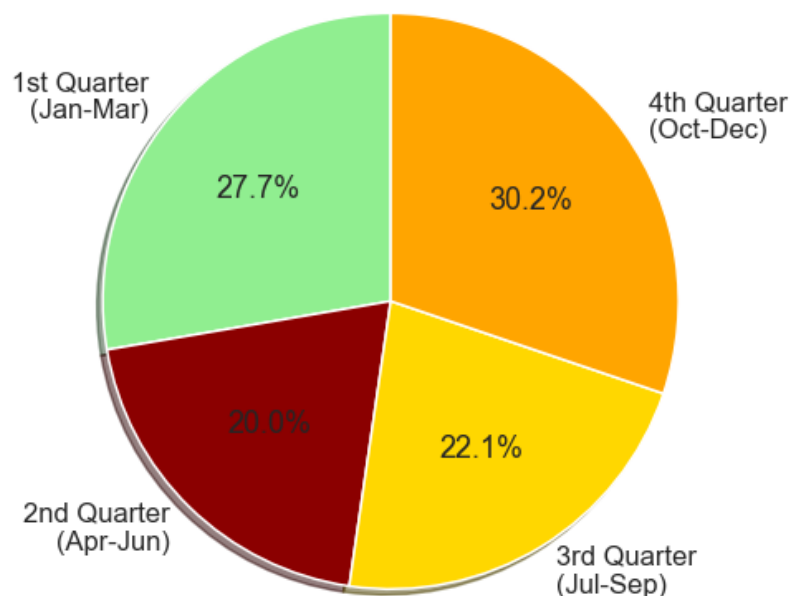
As per the pie chart, we can observe that on an average, the number of FTAs during the winter season has been the highest while it was the least during the summer season from 2001 to 2019.

C. <u>Statistics of ITAs to India based on purpose 2019-</u>

1. Statistics of ITAs to India based on purpose 2019 [Region Wise]:

As we can observe from the above area plot, South Asia (mostly from Bangladesh) contributes the highest tourist visits to India. While the reason for visiting India from the above-mentioned regions is mostly for Leisure Holiday and Recreation, it is the least for Medical purposes among the 4 specific reasons.

Medical tourism in India is doing exceptionally well. India ranks among top 3 medical tourism destinations in Asia owing to its low cost of treatment, quality healthcare infrastructure, and availability of highly-skilled doctors. During the recovery period, patients can turn to a multitude of therapies like Ayurveda, Naturopathy and Yoga. Another major factor that makes India a desirable medical tourism destination is the fact that it has English speaking doctors, reducing the language barrier for foreign tourists.

2. Tourists to India from Top 5 countries - 2019:
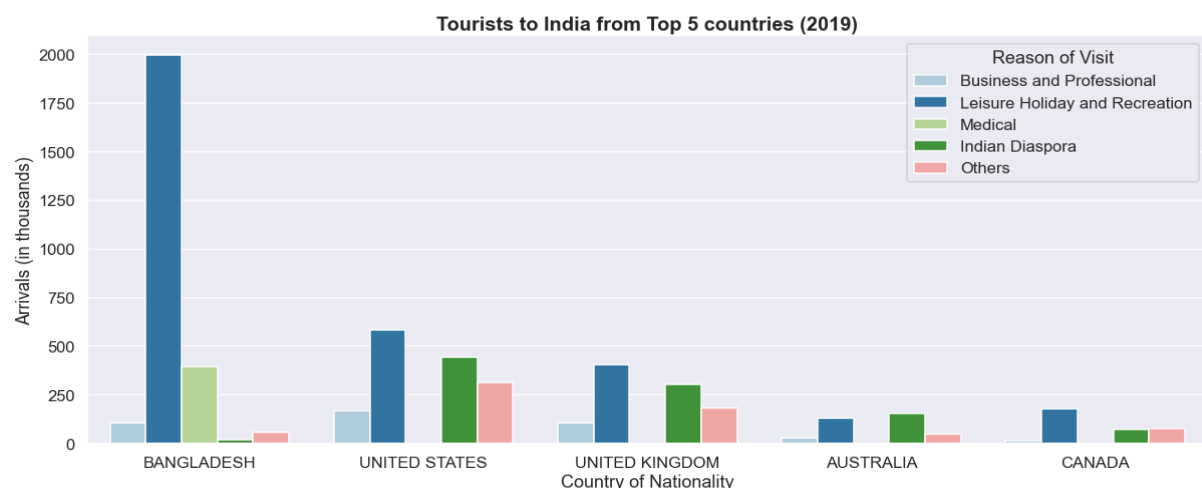
As we can observe from the above multibar graph, Bangladesh contributes the most to the Tourism sector of India. Most visitors from Bangladesh primarily visit India for Leisure. According to India's ministry of tourism's 'India Tourism Statistics at a Glance 2021' report, Bangladesh accounted for 23.6 percent of overall foreign tourist visits to India. This implies that it has been and is currently the primary source of international tourists to India.

3. Average Distribution of Tourists to India based on the purpose of visit - 2019:

Average distribution of tourists based on purpose of visit - 2019
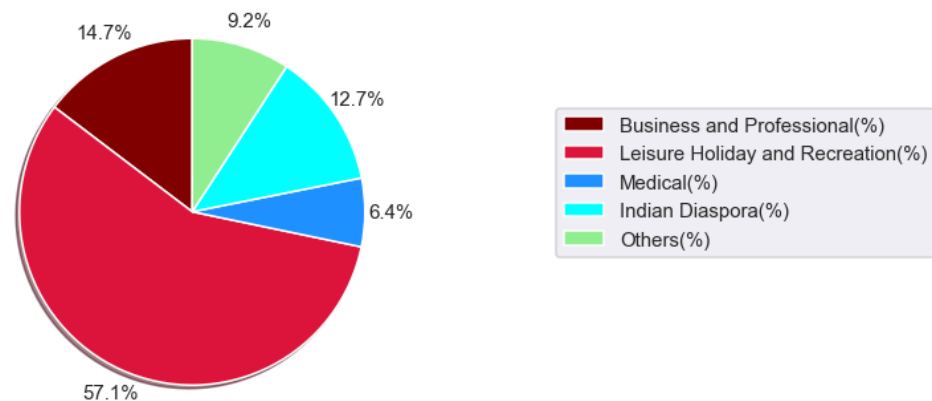
Thus from the above pie chart, it can be inferred that most tourists visit India primarily for leisure.

Each state in India is famous for different tourist attractions. Different places in India will entertain tourists with natural wonders, tranquil places, history and architecture, spirituality etc. All these aspire visitors to visit India for a memorable trip and is the perfect destination for leisure.

D. Contribution Statistics to the Share Market of Indian Tourism [2017 - 2019]-

1. Contribution to the Share Market of Indian Tourism region wise [2017 - 2019]:
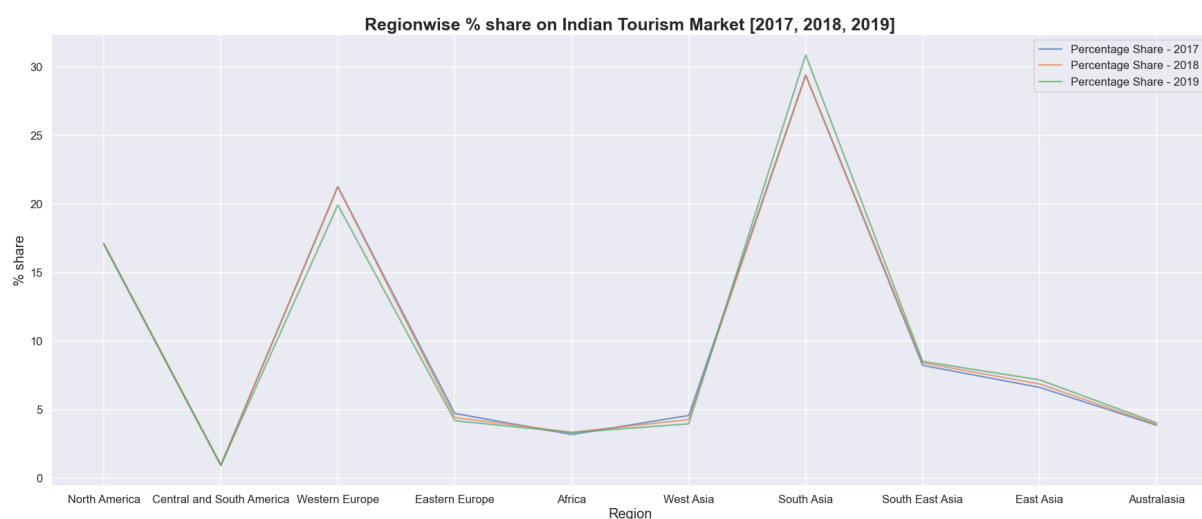
As per the above multi line graph, it is evident that South Asia (mostly from Bangladesh), Western Europe (mostly from U.K) and North America (USA and Canada) contribute the highest towards the Indian Tourism share market.

Since 2014, adhering to the definition of International Tourist Arrivals, India has started the inclusion of figures of arrivals of Non resident Indians. This has resulted in improvement of numbers pertaining to contributions to the Indian Tourism Share Market.

2. **Contribution to the Indian Tourism Share Market country wise [2017 - 2019]:**

Percentage shares of countries on Indian Tourism [2017, 2018, 2019]
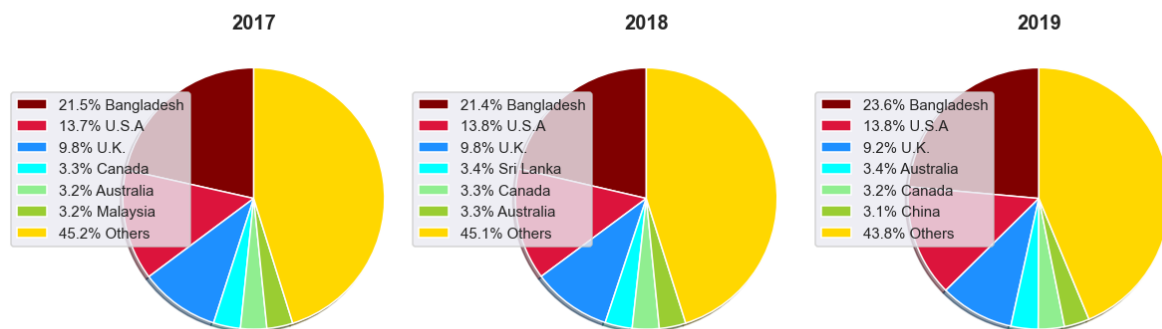
From the above pie charts, we can infer that during the years 2017, 2018 and 2019, the contributions to the Indian Share Market by the Major countries has been constant with Bangladesh, U.S.A and U.K. on the lead.

E. **Tourist segregation based on age [2001 - 2019]-**

1. **FTAs segregated based on age [2001 - 2019]:**

From the above multi line plot, we can infer that most of the tourists who visited India from 2001 to 2019 belonged to the age group of late 20s to early 50s. The proportion of FTAs in different age groups has not changed much in the last few years. The highest numbers of FTAs in India were from the 35-44 years age group (21.0%) followed by the age groups of 45-54 years and 25-34 years. The lowest number of FTAs occurred in the age-group of 15-24 and 65 & above (8.7%).

2. **Average %age distribution of Tourists based on age [2001 - 2019]:**

**Average % of tourists based on age [2001-2019]**
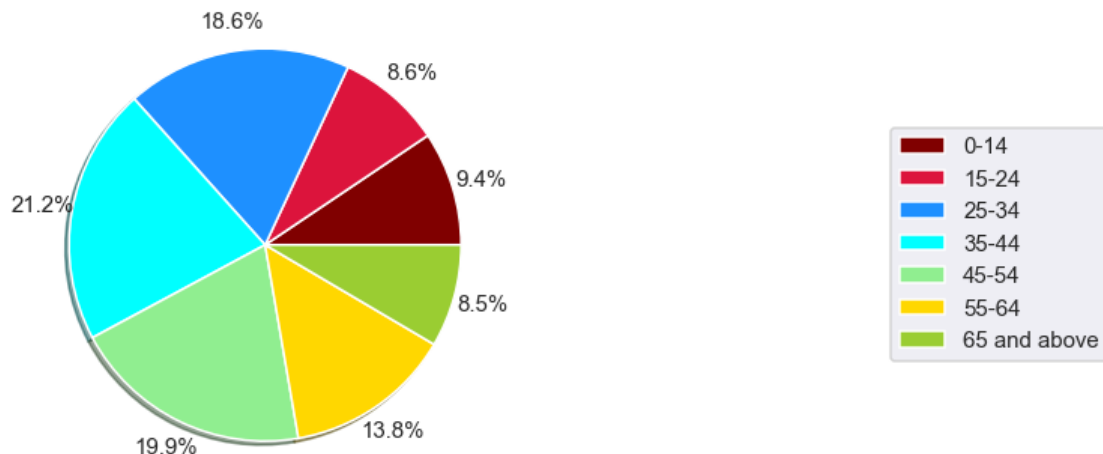
As per the above pie chart, it can be deduced that the highest percentage of tourists visiting India are youths and the middle ages. This can be due to the fact that the youngsters aren't that well off when it comes to the capital and the senior citizens would prefer to travel to places that are relaxing and comfortable or India doesn't end up attracting tourists from these age groups.

As much as the elderly might avoid and refrain; travelling is the perfect resort for them to rejuvenate themselves and finally enjoy life the way they want to. Just like kids or the young, even they need a vacation for a variety of reasons- the primary one being that it boosts their physical, mental, and emotional health. But, Most people feel that the biggest deterrent to tourism is lack of infrastructure, Lack of good budget hotels , proper roads as well as hygiene and sanitation are problems that put off most would-be travellers to India.

The youngsters on the other hand could contribute largely to Indian tourism especially through education. Although the main purpose of international student mobility is to study, it can also be considered a type of tourist activity. India is still not seen by international applicants as a destination for education because of its education system which needs a lot of improvement. If Indian education does improve and gets recognized by the world, then there could be a rise in the international students to India which could indirectly improve the contribution by the youngsters to Indian Tourism.

**F.   Indian Tourism State Wise Statistics [2019 - 2020]:**

1.   Foreign tourists per State/UTs [2019 - 2020]:

Foreign tourists per State/UTs [2019, 2020]
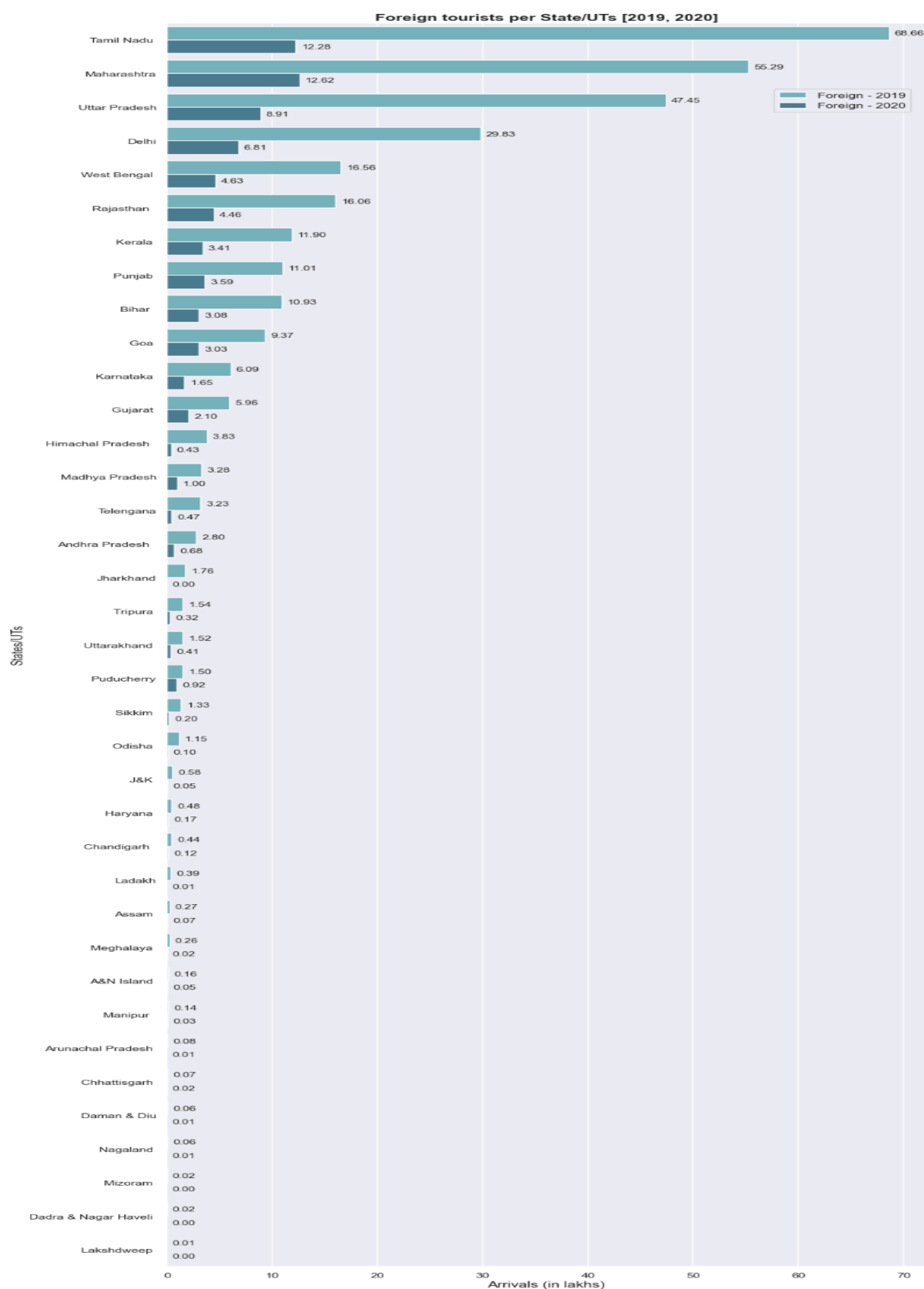
As per the above horizontal barplot, it can be observed that during the year 2019, Tamil Nadu, Maharashtra, Uttar Pradesh, Delhi and others had the highest number of foreign tourists to their state. It can also be inferred that significant revenue was derived from Tourism in these states. Thus during 2020, due to Covid-19 restrictions, there was an enormous decrease in the Tourists which led to a huge blow to the Tourism sector in these states.

Tamil Nadu has the largest tourism industry in India with a percentage share of 21.31% and 21.86% of domestic and foreign tourist visits in the country. Thus the steep decline in tourist traffic in 2020 on the advent of pandemic severely affected the Tourism sector of the state.

2. **Domestic tourists per State/UTs [2019 - 2020]:**

Domestic tourists per State/UTs [2019, 2020]
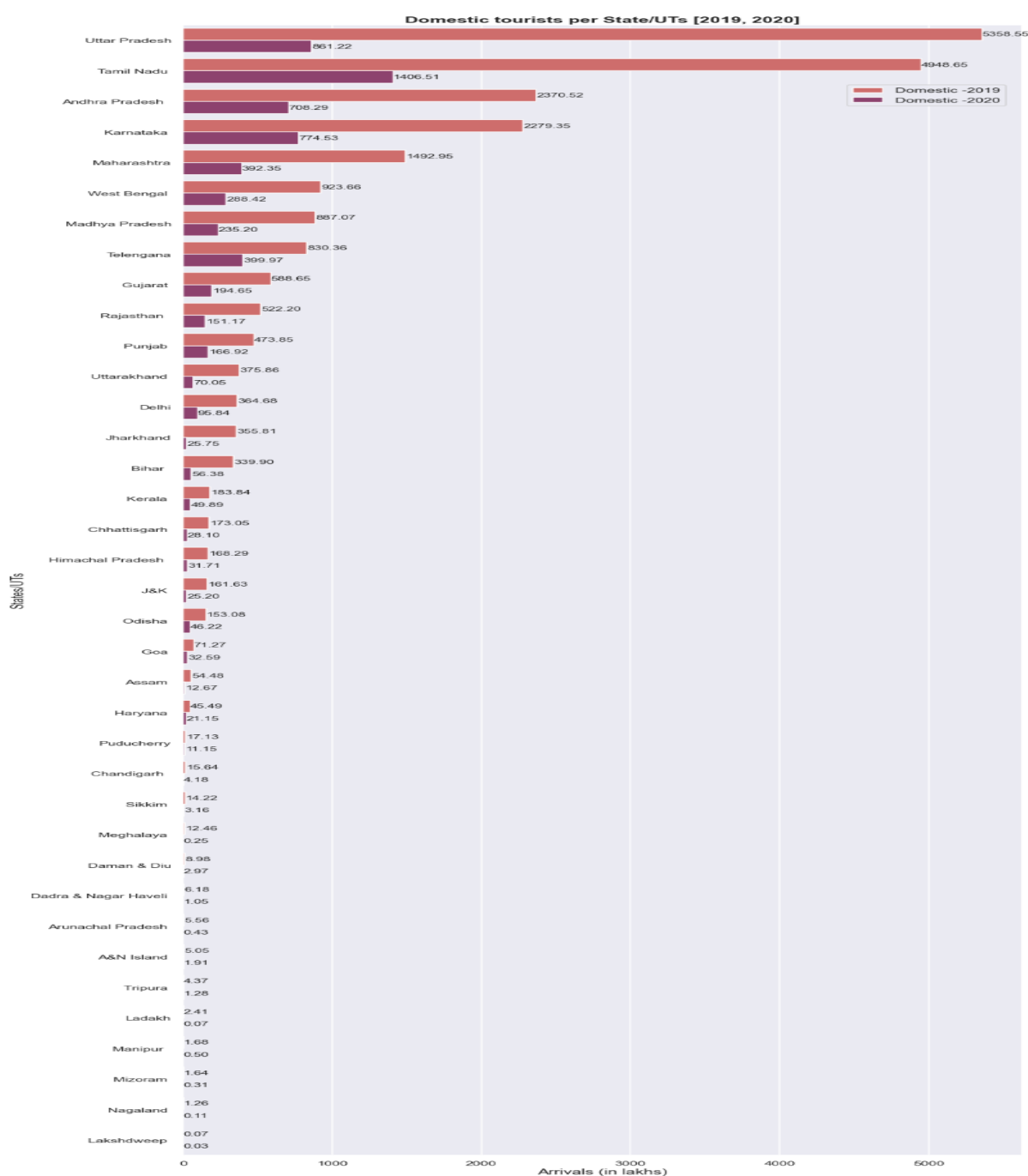
As per the above horizontal bar graph, it can be observed that during the year 2019, Uttar Pradesh, Tamil Nadu, Andhra Pradesh, Karnataka and others had the highest number of domestic tourists to their state. It can also be inferred that significant revenue was derived from Tourism in these states. Thus during 2020, due to Covid-19 restrictions, there was an enormous decrease in the Tourists which led to a huge blow to the Tourism sector in these states.

Since domestic tourism is several times larger than international tourism in India, any effect on domestic tourism could have a big impact on the Tourism sector overall. Thus in 2020, Covid-19 restrictions limited tourism activity which translates into a huge reduction in tourism expenditure incurred by all types of tourists— inbound, domestic, and outbound. Thus there was a steep decline in the overall revenue obtained from Tourism, particularly domestic tourism.

In 2019, the state of Uttar Pradesh attracted the most domestic tourists sweeping 23.1% of tourist share of India, counting about 53,6 Cr domestic tourists, while international figures too were no less encouraging at about 47.5 Lacs. But in 2020, tourist traffic in Uttar Pradesh has witnessed a severe blow following the outbreak of the coronavirus pandemic. Thus the decline in tourist traffic not only hindered tourism but also the revenue and jobs that come with it in the state of Uttar Pradesh.

3. **Total tourists per State/UTs [2019 - 2020]:**
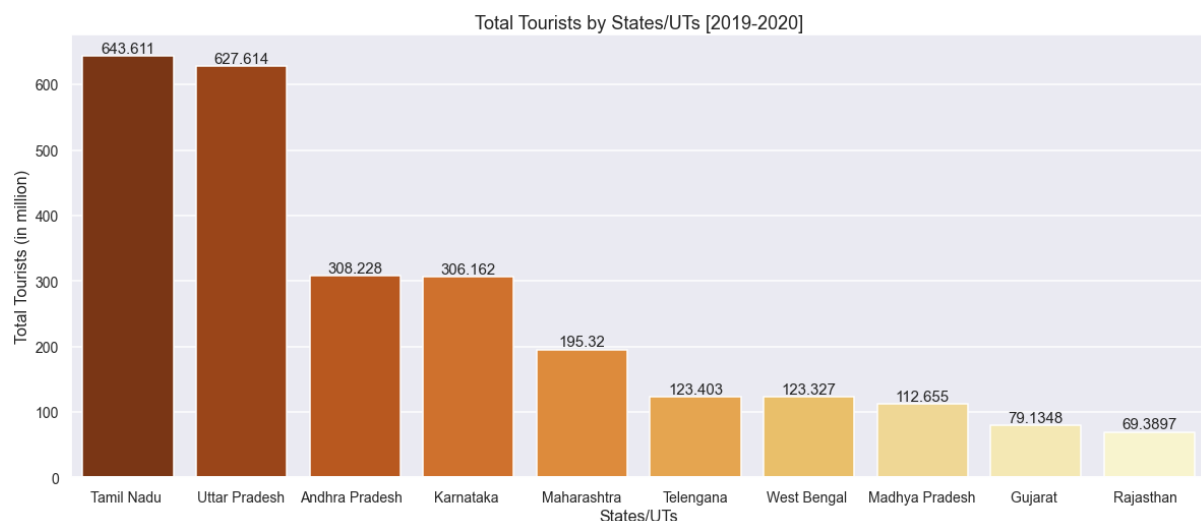
Thus from the above bar plot, it can be inferred that overall TamilNadu stood first in the Tourism sector followed by Uttar Pradesh during the years 2019 and 2020 and it is the same even now.
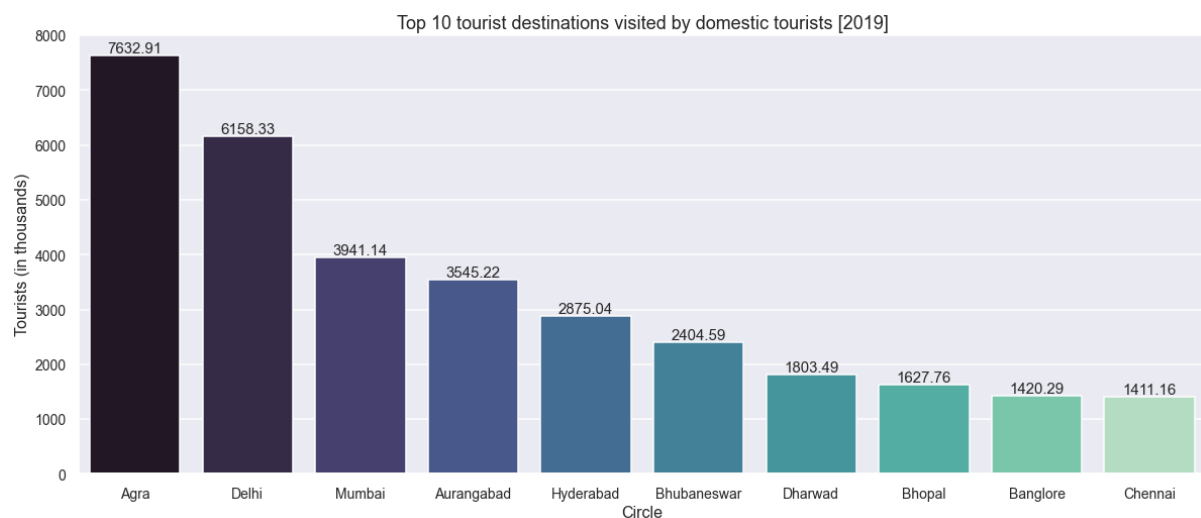
G. **Popular monuments during 2019,2020,2021-**

1. **Top 10 Tourism Destinations visited by foreigners 2019:**

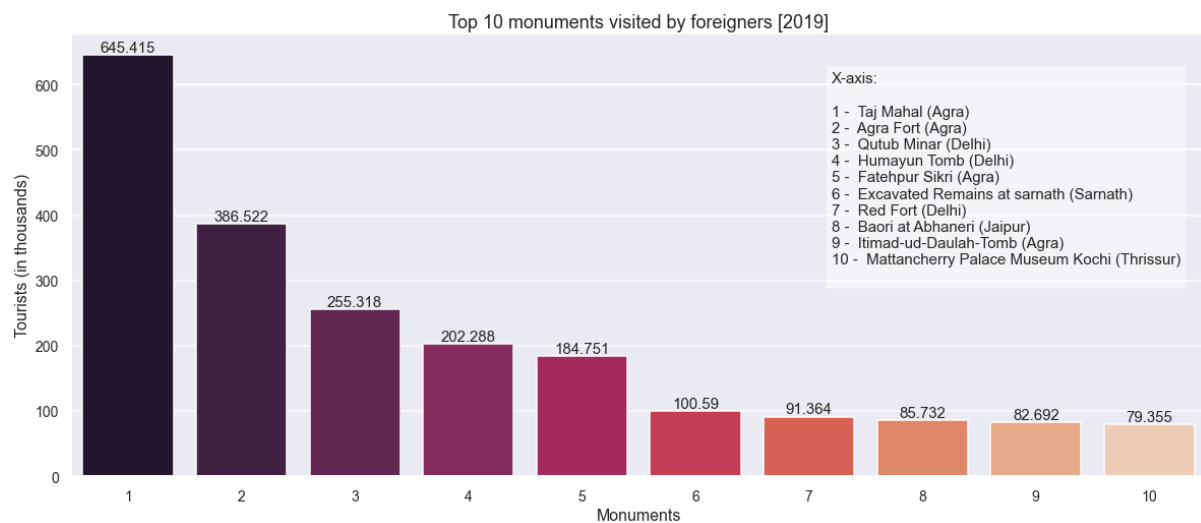Top 10 tourist destinations visited by foreigners [2019]
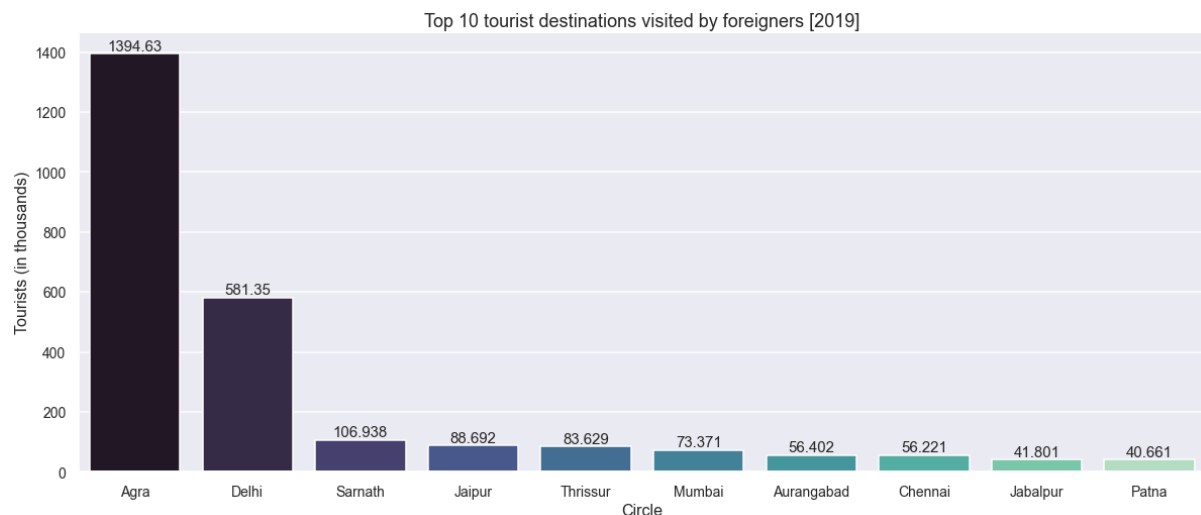
As per the above bar plot, it can be observed that Agra was and is the most popular Tourist spot followed by Delhi. This can be due to the fact that Taj Mahal which is India's most recognizable iconic monument, is situated in Agra. And it is also to be noted that since Delhi is just 200km away from Agra and is also quite famous for its unique monuments, it surely piques the interests of many tourists visiting India.

2. **Top 10 Tourism Destinations visited by domestic travellers 2019:**

Top 10 tourist destinations visited by domestic tourists [2019]
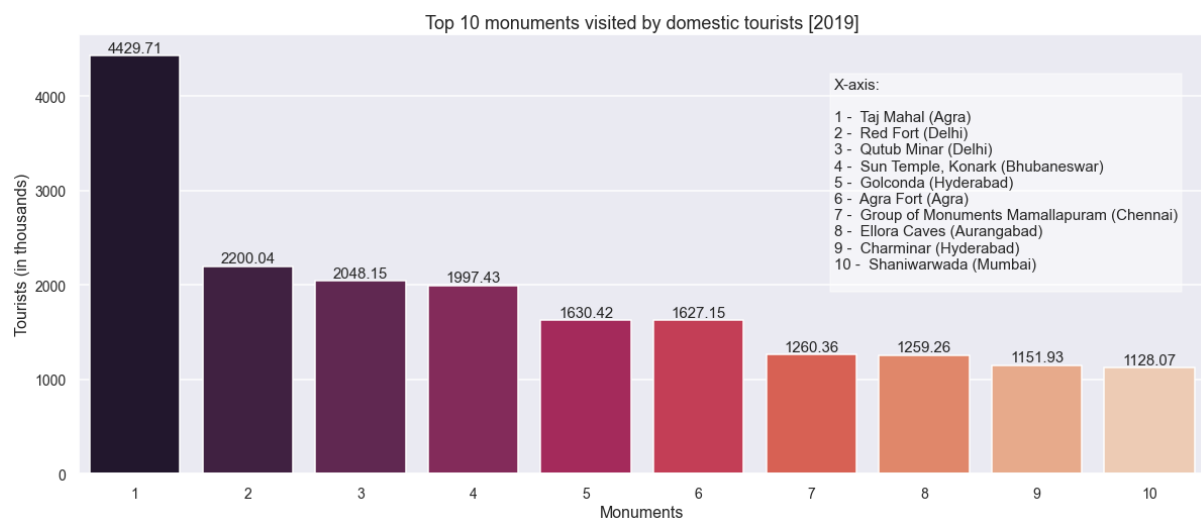
A clear pattern similar to the previous graph can be observed in the above bar plot. Agra and Delhi are still the most popular tourist destinations even among domestic travellers, while the rest of the popular tourist zones which are popular for their heritage or their infrastructure are pretty much newer destinations which are not so popular among the foreign tourists.

3. Top 10 Monuments visited by foreigners 2019:

Top 10 monuments visited by foreigners [2019]

X-axis:

1 - Taj Mahal (Agra)
2 - Agra Fort (Agra)
3 - Qutub Minar (Delhi)
4 - Humayun Tomb (Delhi)
5 - Fatehpur Sikri (Agra)
6 - Excavated Remains at sarnath (Sarnath)
7 - Red Fort (Delhi)
8 - Baori at Abhaneri (Jaipur)
9 - Itimad-ud-Daulah-Tomb (Agra)
10 - Mattancherry Palace Museum Kochi (Thrissur)

As seen in the popular tourism destinations plot, it is evident from the above bar plot that most of the popular monuments visited by the FTAs are situated in Agra and Delhi, famous among them being one of the seven wonders of the world 'Taj Mahal'.

4. Top 10 Monuments visited by domestic travellers 2019:

Top 10 monuments visited by domestic tourists [2019]

X-axis:

1 - Taj Mahal (Agra)
2 - Red Fort (Delhi)
3 - Qutub Minar (Delhi)
4 - Sun Temple, Konark (Bhubaneswar)
5 - Golconda (Hyderabad)
6 - Agra Fort (Agra)
7 - Group of Monuments Mamallapuram (Chennai)
8 - Ellora Caves (Aurangabad)
9 - Charminar (Hyderabad)
10 - Shaniwarwada (Mumbai)

Just like the previous graph, it can be observed in the above bar plot as well that the monuments located in Agra and Delhi are popular enough, while it can also be observed that certain monuments which are not so popular have surely piqued the interests of the domestic travellers.

It can be observed from these plots that all the popular places that are mentioned here mostly belong to North India. But it doesn't mean the other parts of India aren't faring well! As we can observe from the popular tourism state plots, it can be concluded that Tamil Nadu which is pretty popular for its impressive temples and which receives the highest tourists throughout India is a state from the South!, which is also followed by South Indian states such as Andhra Pradesh and Karnataka.

But North-East India lags in tourism as a result of insufficient funds, lack of infrastructure, transportation, lack of alternative means of transport, marketing, boundary issues, terror effect and permit period. If the government were to take the initiative of developing these states, then there would be justice done to the tourism sector of these states. After all, North East India is home to some of the most stunning, diverse and unspoilt scenery in India. From the snow capped peaks of the soaring Himalayan mountains, to the grassy plains of Assam and the steamy forests and majestic waterfalls of Meghalaya – North East India showcases unspoilt nature at its finest!

H. <u>Position of Indian Tourism in the world [2001 - 2021]-</u>

Indian Tourism rank in the world [2001-2019]

From the above line plot, we can observe that Indian Tourism was improving until 2020 as COVID-19 restrictions led to a steep decline in tourism. As NRIs were included in the tourism statistics of India ever since 2014, there was a steep increase in the number of tourists to India as well as its position w.r.t Tourism in the world.

Conclusion-

Indian tourism developed a lot since the year of 2010 as the investment for the domestic tourism industry and the foreign tourism industry was increased to a great extent. Many other factors like transportation, hotel management system and other necessary tourism components got major upgrades.

Hopefully, India will work towards improving tourism and bring it back to its former glory so it can continue to improve from here.