Tourism in Assam with Special Reference to Sivasagar: Trends and Impacts

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Abstract

Tourism is an economic term, and being an economic activity, it is associated with the generation of income, employment and market facilities. Due to the advancement in transportation and communication, the demand for tourism has been increasing continuously. Despite periodic setbacks, tourism has grown steadily over time, demonstrating the sector's strength and resilience. Assam is witnessing a thrilling mix of soothing beauty, and natural wonder along with a voyage into the past, history and culture, and such attractions of tourism give Assam comparative advantages over the other states of the country. Yet such advantages have not brought her the prominent position in Assam that she deserves for a variety of reasons. Using linear regression and time-series analysis, this study attempted to assess the trajectory of both local and foreign visitor arrivals to Assam's five protected sites. The Mann-Kendall test and Sen's slope estimator have been utilized, which shows an upward trend for domestic tourist arrivals and a mixed trend for foreign tourists, but overall, both domestic and foreign tourist arrivals have shown an increasing trend for the most recent period (2003-2019). By accounting for the variation in the number of visitors to the chosen sites throughout the peak and off-peak seasons, the overall variation in income and employment generated has been estimated. The estimated results clearly indicate the tremendous potential of tourism to increase employment as well as income of the people involved in tourism-related activities in the vicinity of the concerned area.

Keywords: *Tourist Arrival, Tourism Trends, Time-Series, Employment-Income Elasticity*

1. Introduction

Tourism refers to industry and being an economic activity, it is associated with the generation of income, employment, and market facilities. In the era of globalization, tourism has become a buzzword in almost every knock and corner of the globe. With the advancement of transport and communication, people can now easily travel to any place in the world and hence the demand for tourism has been increasing continuously. According to United Nations World Tourism Organization (UNWTO), tourism has experienced persistent expansion with several newly developed destinations and diversification over the past half a century and it attained the status of one of the fastest growing economic sectors in the world (*Tourism Highlights*, 2017). Number of international visitors increased exponentially from 25 million in 1950 to 278 million in 1980, and then to 674 million in 2000, and further to 1,235 million in 2016 all over the world.

Consequently, the revenue from international visitors has grown sharply from USD 2 billion in 1950 to USD 104 billion in 1980, and then USD 495 billion in 2000, and further to USD 1,220 billion in 2016 (UNWTO, 2019). In the year 2018, international tourist arrivals and revenue grew to 1.4 billion mark and USD 1.7 trillion with 5%, 4% increase in the year 2018. Both the emerging and advanced economies are benefitted from growing tourism income. Since 2010 tourism exports continuously grew faster than merchandise exports, and reduced trade deficits in many countries (UNWTO, 2019). UNWTO had expected a serious fall in tourism activities in 2020 due to the COVID-19 pandemic and various containment measures, with an estimated loss of USD 1.3 trillion in export revenues, which is significantly higher (11 times) than the loss recorded during the global economic crisis of 2009, and 1 billion fewer international arrivals. Despite periodic setbacks, tourism has grown steadily over time, demonstrating the sector's strength and resilience. Indian history fascinates the tourism development of our country. In the tourism sector, India's cultural heritage, customs and conventions, traditions, fauna and flora, civilizations, natural beauty, art, architecture, all have a lot of appeal (Bhatia, 1978). In terms of Travel & Tourism Competitiveness, India ranks 34 among the 140 countries, and derive its strength from rich natural and cultural resources, strong price competitiveness and international openness. In 2018, contribution of India's travel and tourism to GDP reached USD 247 billion, an increase by 6.7 % from the previous year. Further, Indian travel and tourism sector supported about 43 million employments (direct and indirect) in 2018, with the expectation of generating 53 million jobs over the next ten years (WTTC, 2019). Assam, produces about one-seventh of the global tea output and around 53.55% of India’s overall tea production and it is the world’s largest tea-growing area. Tea economy of Assam is the largest economy in North Eastern Region (NER) with 20 industrial estates in 17 industrial areas, 3 industrial growth centres, and 11 Integrated Infrastructure Development Depots. There is also one export promotion park, one food processing industrial park and many more small, medium and large-scale related industries. Assam has a fascinating natural beauty and various attractions for tourists, for which Assam enjoys comparative advantages over many other states in the country. Yet those advantages have not brought sufficient development in the state as expected. Constraints of Assam’s tourism industry include communication bottlenecks, political instability, absence of entrepreneurship, and a lack of investment-friendly atmosphere (Das, 2013, 2017; Biswas 2018; Sharma, 2018). A trend analysis may help in planning and designing the need of hospitality, as well as infrastructural facilities. Also, it helps tourism organizations in advertising, marketing and other promotional activities, which is supported by the sector-wise statistical analysis (Jayapalan, 2001). The study of tourist statistics also plays a crucial role in creating job opportunities for unskilled and poorly educated people in rural areas (Tisdell and Bandara, 2004).

Objectives of the Study

The archaeological, sculptural, architectural, and technical skills of the Ahom Kingdom are attributed to the historical sites of Assam’s Sivasagar region that has immense potential as a tourism destination. The present study focuses on analysing growth patterns of tourism in Assam with an emphasis on the five protected historical monuments of Assam, located in the Sivasagar district. The contribution of tourism towards the generation of employment and income in and around the selected tourist sites has also been estimated in the present study.

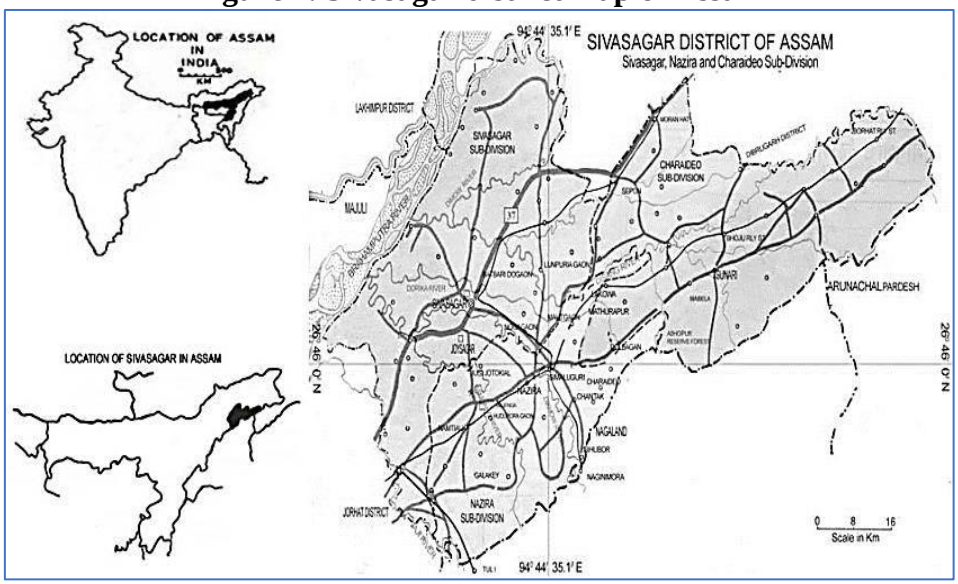
2. Methodology

Study Area

The natural beauty of Assam, its history and culture provide one to enjoy every possible type of holiday in the state. The Shakti temple of Goddess "Kamakhya" is also one of the country's most respected religious sites and famous for religious tourism. The destinations of tourist in Assam also include the five national parks – "Kaziranga, Manas, Nameri, Dibru-Saikhowa, and Orang National Park", and the wildlife sanctuaries, protected areas, historical monuments situated in Sivasagar and Tezpur. The river island of Majuli bears the centres of Vaishnavism culture which is also prevalent in some other parts of the state.

Figure 1, illustrate the Sivasagar district, where many historical monuments of national importance and excellent sculptures are located. It was, once the capital of Ahom Kingdom, is situated on the banks of river Dekhow. The Ahom Queen 'Madambika Devi' has excavated a tank within the heart of the town having an area of about 129 acres in 1733 AD, which is named as Sivasagar tank (the ocean of lord Shiva). The Queen has also built three temples namely, the Vishnudol, the Sivadol, and the Devidol on the banks of the tank, out of which 'The Sivadol' is seen as being India's greatest Shiva temple (GoI, 2006). There are five protected monuments in Assam by the Archaeological Survey of India (ASI), viz. Ahom Raja's Palace, Karenghar Palace, Ranghar Pavilion, Vishnudol (Jaydol) and CharaideoMaidams. All these five monuments are located in the heart of the Sivasagar district except CharaideoMaidams, known as the Pyramids of Assam. Recently, the Sivasagar Green Mission team, a special project team formed by the district administration in order to boost tourism, has identified around 551 historical sites that have widened the scope and potential of archaeological and historical tourism in Sivasagar.

Figure 1. Sivasagar district map of Assam



Source: https://www.semanticscholar.org/

Data Collection

An evaluative and descriptive method has been adopted to meet the objectives of the study. Secondary data was gathered from the Ministry of Tourism, Government of India's Annual Statistical Reports. Monthly tourist arrival to different Monuments of Sivasagar was collected

from the office of the Archaeological Survey of India, Sivasagar district for 16 years (April 2003 to March 2019). Data is used to examine the growth pattern of tourist inflows in the study area. In addition, the yearly data on state level tourist arrivals have been collected for a period of 20 years from 1999 to 2018. In order to examine the contribution towards employment and income and to get an idea about the linkages between variation in employment and income generation with the changes in tourist arrivals, a sample of 200 tourism stakeholders in and around the tourist sites has been randomly selected and interviewed who have been earning their livelihood in various capacities from those sites.

Methods of Analysis

Several statistical methods have been found in the literature to analyze nature, flow and distribution of tourist, which includes the moving average, descriptive statistics, regression analysis (Ismail, Velnampy& Mustafa, 2012; Angappapillai&Shanmugasundram, 2013; Kurukulasooriya&Lelwala, 2014, Dhakal, 2013), and the Gini coefficient (Kurukulasooriya&Lelwala, 2014. Perera (2017) used ordinary least square on time series data, and the 12-month moving average approach to investigate patterns of visitor arrivals in Sri Lanka. Also, the author analyzed profile of tourists in terms of six categories: gender; age; season of arrivals; visiting reason; occupational classifications; and duration of hospitalization. Tourist arrivals in Sri Lanka have exhibited a moderate increase during 2001 to 2015. In terms of seasonality of arrivals, the months of January to March, as well as December, are considered to be the peak months, while May and June are considered lean months. During the observation period, the overall trend revealed that travellers, especially younger ones, showed a declining trend while elderly tourists showed an upward trend. Hazarika and Goswami (2021) analyzed the trend in rainfall and temperature, using two non-parametric methods - The Mann-Kendall test (Mann 1945, Kendall 1955) and Sen's slope estimator (Sen 1968), which may be applicable to analyse the seasonal pattern of tourists' arrival.

Reviewing existing pieces of literature, a linear regression is performed of the type

$$Y = m.t + c \ldots \ldots \ldots (1)$$

Where *m* denotes the rate of change over time t (year). The value of R^2 denotes the 'goodness of fit' of the described model or the corrected R^2 is adjusted for degrees of freedom.
The "Mann Kendall Test" and "Sen's slope estimator," both non-parametric approaches, were also used to determine recent visitor arrival patterns and assess their statistical significance.

Sen's Slope

Sen's slope approach is preferable to regression slopes for identifying patterns in time series since it is unlikely to be affected by incomplete data, that provides a direct estimate of the data series' trends (Hirsch et al. 1982). This strategy means calculating slopes for all pairs of ordinal time points and calculating the overall slope by averaging these slopes (Sen 1968; Gilbert 1987). In this method, the slopes (Ti) of all data pairs are determined initially as follows:

$$T_i = \frac{x_j - x_k}{j-k} \text{ for } i = 1,2.3, \ldots N, \ldots \ldots \ldots (2)$$

Here, $x_j$and $x_k$are the values at time j and k ($j > k$) respectively. Also, T_i has *N* number of values whose median represents the Sen's estimate of slope which can be evaluated by the following equation:

$$L = \begin{cases} T_{N+1/2} & \text{if } N \text{ is odd} \\ \\ & \end{cases} \qquad \ldots \ldots \ldots (3)$$

$$\frac{1}{2}(T_{N/2} + T_{N+2/2}) \text{ if } N \text{ is even}$$

The value of L denotes the increasing or decreasing trend having positive or negative values respectively in the time series.

Mann-Kendall Test

The Mann–Kendall (MK) approach (Mann 1945; Kendall 1955) was used to establish a statistically significant trend in the time series. This test can be used in conditions including data with outliers, abnormally distributed data, and with non-linear trends (Helsel and Hirsch 1992). The MK method has been used to compare the null hypothesis of no trend with the alternative hypothesis of a rising or falling trend. The MK test statistic (S) is calculated as follows:

$$S = \sum_{k=1}^{n-1} \sum_{j=k+1}^{n} \text{sgn}(x_j - x_k) \ldots \ldots \ldots (4)$$

$$\text{sgn}(x_j\text{-}x_k) = \begin{cases} +1 & \text{if } (x_j\text{-}x_k) > 0 \\ 0 & \text{if } (x_j\text{-}x_k) = 0 \\ -1 & \text{if } (x_j\text{-}x_k) < 0 \end{cases} \quad \ldots \ldots \ldots (5)$$

$$\text{var}(S) = [n(n-1)(2n+5) - \sum t(t-1)(2t+5)]/18 \ \ldots \ldots \ldots (6)$$

Where t indicates the extent of any given time and $\sum t$ represents the sum of overall times. In addition, the standard normal variate 'z' is evaluated with the help of Equation (7) (Douglas et al., 2000) having the sample size $n > 10$.

$$z = \begin{cases} (S-1)/\sqrt{\text{Var}(S)} & \text{if } S > 0 \\ 0 & \text{if } S = 0 \\ (S+1)/\sqrt{\text{Var}(S)} & \text{if } S < 0 \end{cases} \quad \ldots \ldots \ldots (7)$$

For a two-sided test, H_0 should be accepted if $z \leq z_{\alpha/2}$ at α%level of significance. The value of S could be either ($\pm$) which suggests either an upward or a downward trend. All the analysis has been done using R software.

3. Results and Discussion

Historical trend and Growth-Pattern of Tourist-Inflows to Assam during 1999-2018

Data published by the Ministry of Tourism (MoT), shows that Assam's share in total domestic tourists remained below 1 percent of total tourists in India throughout the study. For Foreign Tourists (FT), this figure is worse and declined from 0.86 percent in 1999 to 0.11 percent in 2018. As per the statistics published by the Directorate of Tourism, 59.3 lakh domestic tourist and 31739 foreign tourist visits were recorded in Assam during 2018 and registered a growth

rate of about 4.19 percent of domestic tourist and 20.58 percent of foreign tourist over the previous year (Table 1). Over nineteen years since 1999, foreign tourist visits registered an average annual growth of 12.34 percent and the domestic tourist 11.49 percent per annum. Moreover, growth in the number of tourists has been erratic. Also, the growth rate remained below rate of growth of national level tourists. However, foreign tourist inflows have shown a relatively sharp rise than that of domestic tourists in Assam.

Table 1: Tourist Inflow to Assam, during 1999-2018

Year	*Tourist Arrival to all States/U.T. in India (Mn)*		*Tourist Arrival in Assam (Number)*		*Growth Rate of Tourist Arrival to States/U.T. in India over Previous Year (%)*		*Growth Rate of Tourist Arrival to Assam over Previous Year (%)*		*State's share*	
	Foreign	Domestic	Foreign	Domestic	Foreign	Domestic	Foreign	Domestic	Foreign	Domestic
1999	5.83	190.67	5218	964939	5.3	13.4	35.8	2.8	***0.86***	***0.51***
2000	5.89	220.11	5959	1001577	1.1	15.4	14.2	3.9	***0.85***	***0.45***
2001	5.44	236.47	6171	1010651	-7.8	7.4	3.6	0.9	***0.11***	***0.43***
2002	5.16	269.60	6409	1953915	-5.1	14.0	3.9	93.3	***0.12***	***0.72***
2003	6.71	309.04	6610	2156675	30.1	14.6	3.1	10.4	***0.098***	***0.7***
2004	8.36	366.27	7285	2288093	24.6	18.5	10.2	6	***0.09***	***0.62***
2005	9.95	392.04	10782	2467652	19.0	7.0	48	7.9	***0.11***	***0.63***
2006	11.74	462.44	11151	3268657	18.0	18.0	3.4	32.5	***0.09***	***0.71***
2007	13.26	526.70	12899	3436833	12.9	13.9	15.7	5.1	***0.097***	***0.65***
2008	14.38	563.03	14426	3617306	8.5	6.9	11.8	5.3	***0.100***	***0.64***
2009	14.37	668.80	14942	3850521	-0.1	18.8	3.6	6.4	***0.104***	***0.58***
2010	17.91	747.70	15157	4050924	24.6	11.8	1.4	5.2	***0.085***	***0.54***
2011	19.50	864.53	16400	4339485	8.9	15.6	8.20	7.12	***0.084***	***0.50***
2012	18.26	1,045.05	17542	4511407	-6.3	20.9	6.97	3.96	***0.096***	***0.44***
2013	19.95	1,142.53	17542	4511407	9.2	9.3	0.00	0.00	***0.09***	***0.41***
2014	22.33	1282.80	17638	4684527	11.9	12.3	0.54	3.84	***0.41***	***0.37***
2015	23.33	1431.97	**21725**	4835492	4.4	11.6	23.17	3.23	***0.093***	***0.34***
2016	24.71	1615.39	**24673**	5491507	6.0	12.8	13.56	13.56	***0.099***	***0.34***
2017	26.89	1657.55	**26320**	5642950	8.8	2.6	6.67	2.75	***0.098***	***0.34***
2018	28.87	1854.93	**31739**	5934791	7.4	11.9	20.58	4.19	***0.11***	***0.32***

Source: **Govt. of India, Ministry of Tourism, *Indian tourism statistics*, 2019.**

The trends of foreign tourist arrivals, domestic tourist arrivals and overall tourist arrivals in Sivasagar district of Assam which is shown in the figure 2, 3 and 4 respectively. All the figures indicate a linear upward trend of foreign and domestic tourist arrival to the five protected monuments viz. Ranghar, Karenghar, Talatal Ghar, Vishnudol and Charaideo Maidams since 1999 to 2018.

Figure 2: Foreign Tourist Arrived in Assam Since 1999

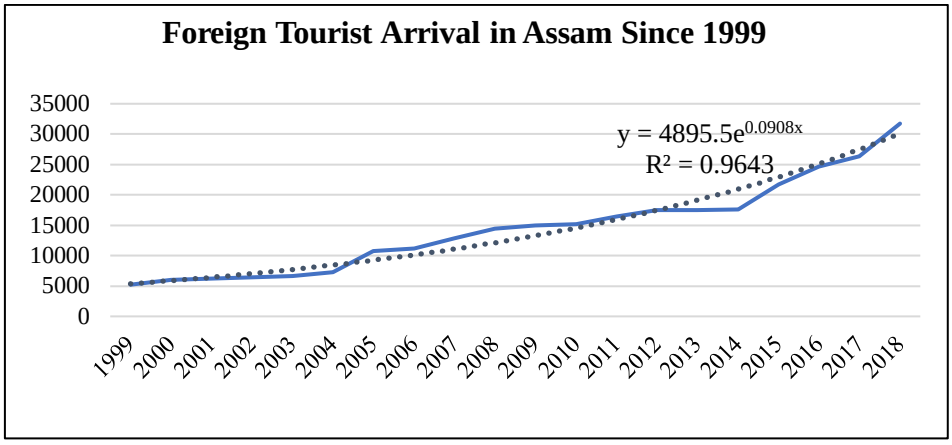


Figure 3: Arrival of Domestic Tourist in Assam Since 1999

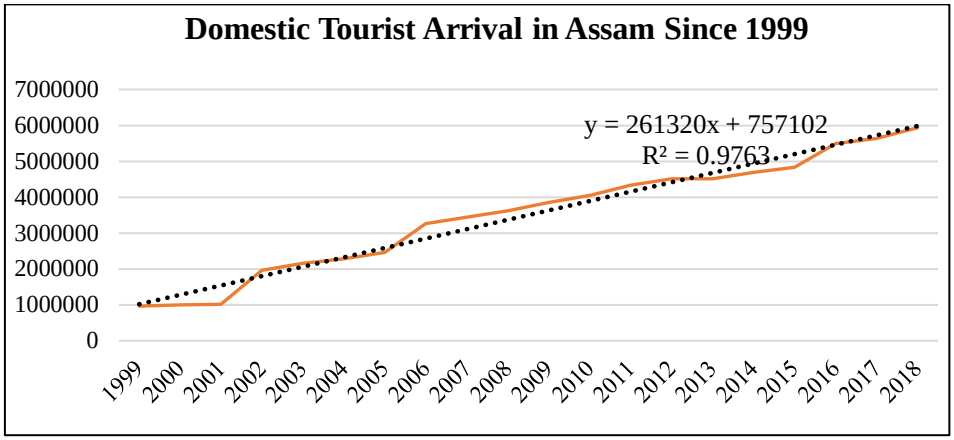


Figure 4: Total Arrival of Tourist in Assam Since 1999

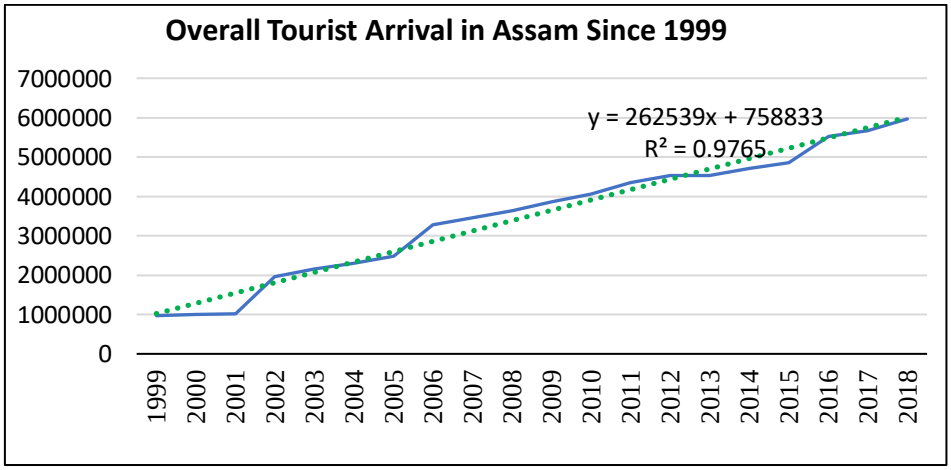


Table 2: Sen's Slope for Tourist Inflow to Assam, India (1999-2018)

Tourist Inflow	*Category*	*Sen's Slope*	*Mann-Kendall Z-value*	*p-value*
Tourist Arrivals to all States/UTs in India	Foreign	1324500	5.6777	<.001
	Domestic	85821984	6.132	<.001
Tourist Arrivals in Assam	Foreign	1135.083	6.1027	<.001
	Domestic	253002.1	6.1027	<.001

A (+ve) value of Sen's slope implies a rising pattern, while a (-ve) value of it specifies a falling pattern in the time series (Table-2). Mann-Kendall's Z-value reveals there are significant linear trends. From the results, a significant upward trend is seen in the case of tourist arrival to all States/U.T. in India as the value of Sen's slope is positive and the same is also true for domestic and foreign tourists to all States/U.T. in India as well as Assam during 1999 to 2018.

Growth-Pattern of Tourist-Inflows to Sivasagar District during 2003-2019

Figures 5, 6 and 7 show the month wise trend of domestic tourist arrival during peak and lean season to the five protected monuments viz. Ranghar, Karenghar, Talatal Ghar, Vishnudol and Charaideo Maidams since 2003. It is clear from the data depicted in figure 5 that peak season starts from December to April including the month of July and the rest can be considered as lean season for domestic tourists. Figures 6 and 7 indicate an upward trend of domestic tourists' arrival to the five protected monuments from 1st April, 2003 to 31st May, 2019. From the authors' own observation, it was found that during festive seasons like December, January, February, March and April (celebration of English New Year and Assamese Bihu) and during holidays in the month of July due to summer vacation number of visitors to these monuments is at peak. Breezy weather and beauty of nature is also a reason for attracting more tourists in this season. Though the months of May, June, and August to November are considered as lean season, there is an increasing trend from 2008-09 as shown in the figure 6.

Figure 5: Arrival of Domestic Tourist to Sivasagar in Peak Season

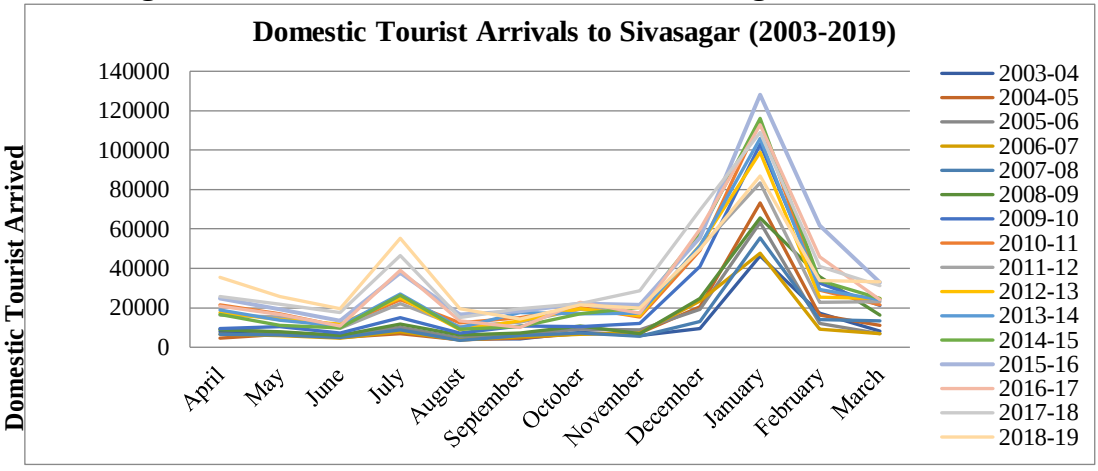


Figure 6: Arrival of Domestic Tourist to Sivasagar in Lean Season

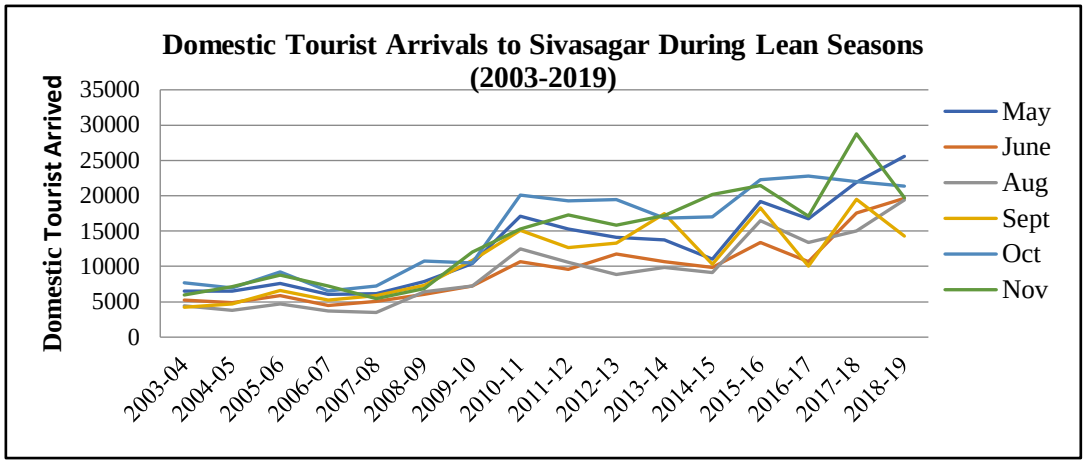
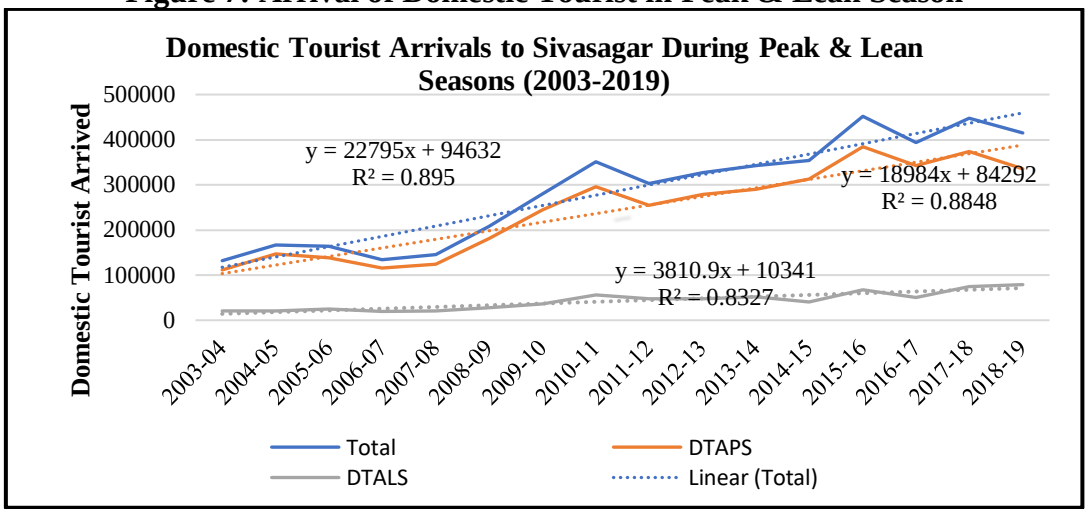


Figure 7: Arrival of Domestic Tourist in Peak & Lean Season



Among the peak months, January shows the highest inflow of tourists to the Sivasagar district, followed by December and July. February, March, and April also show an upward trend of domestic tourist arrival during 2006-07 to 2018-19. In the lean season, the month of May shows the highest increase in tourists' inflow during 2018-19, whereas September shows the lowest flow of tourist arrival to the district in the past few years. However, all the months show an upward trend from 2007-08 to 2018-19. Figures 8, 9 and 10 demonstrate the month wise variation of foreign tourist arrival during peak and lean season to the five protected monuments from 1st April, 2003 to 31st May, 2019. It is obvious from the figure 8 that the peak season of foreign tourist arrival to these protected monuments falls during October to April and the lean season is May to September. The main reason for more tourists' arrival during October to April is the pleasant weather. During the other months, the weather becomes very hot and rainy which is uncomfortable for the visitors from other weather zones. Moreover, opening of the nearby National Park viz. the Kaziranga National Park, one of the world's heritage sites from November to April is also one prime reason when several foreign tourists can visit the chosen sites together like a package.

Figure 8: Arrival of Foreign Tourist to Protected Monuments in Sivasagar

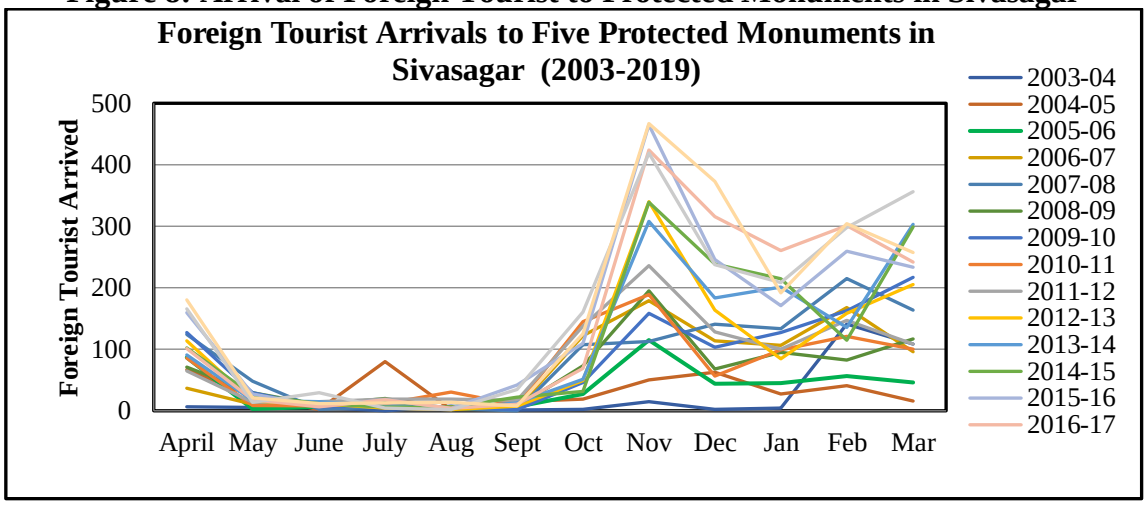


Figure 9: Arrival of Foreign Tourist to Sivasagar in Peak Season

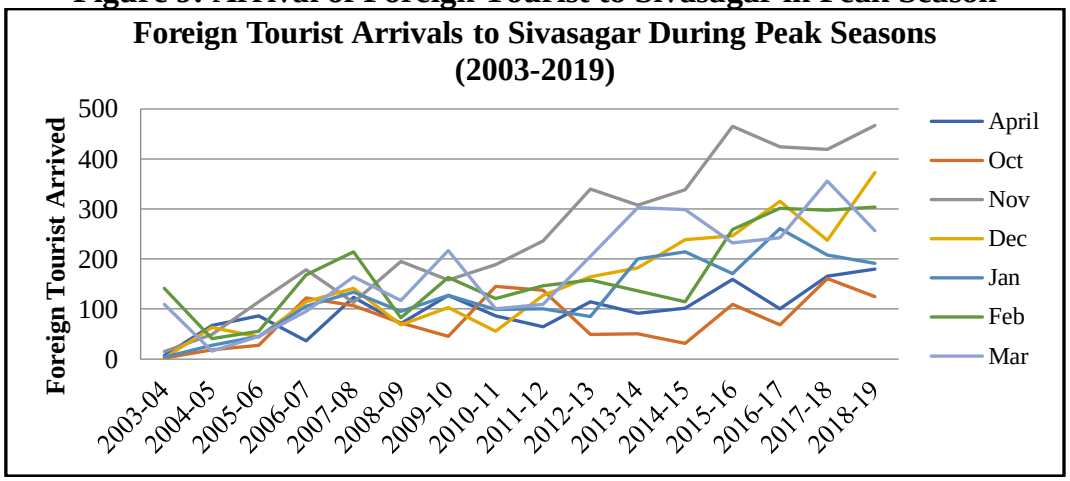


Figure 10: Arrival of Foreign Tourist to Sivasagar in Lean Season

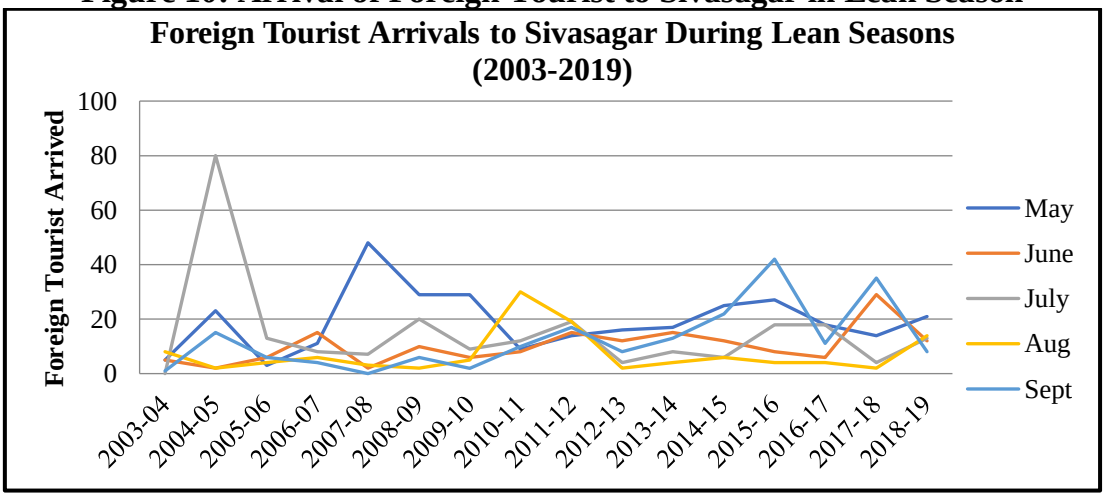


Figure 11: Arrival of Foreign Tourist in Peak Season

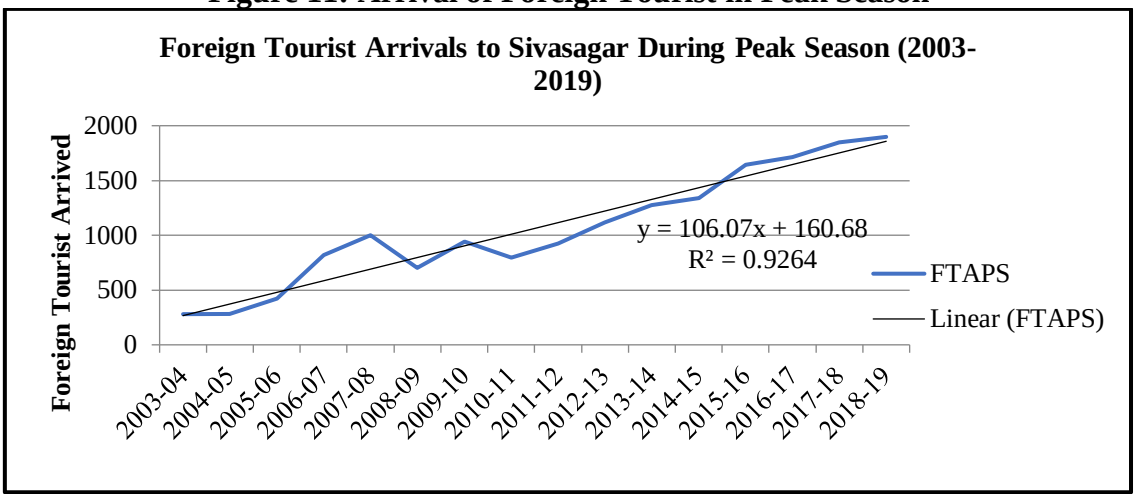


Figure 12: Arrival of Foreign Tourist in Lean Season

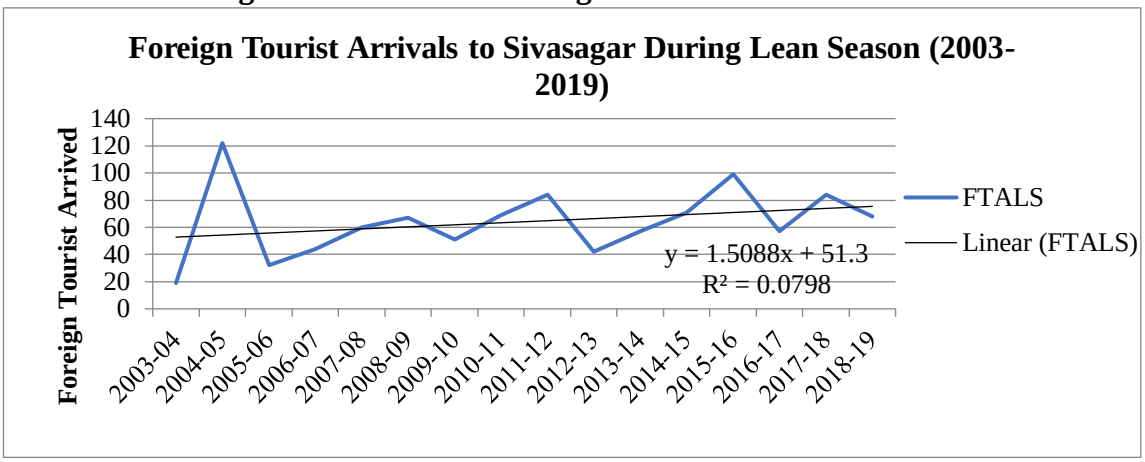


Figure 13: Arrival of Foreign Tourist in Lean & Peak Season

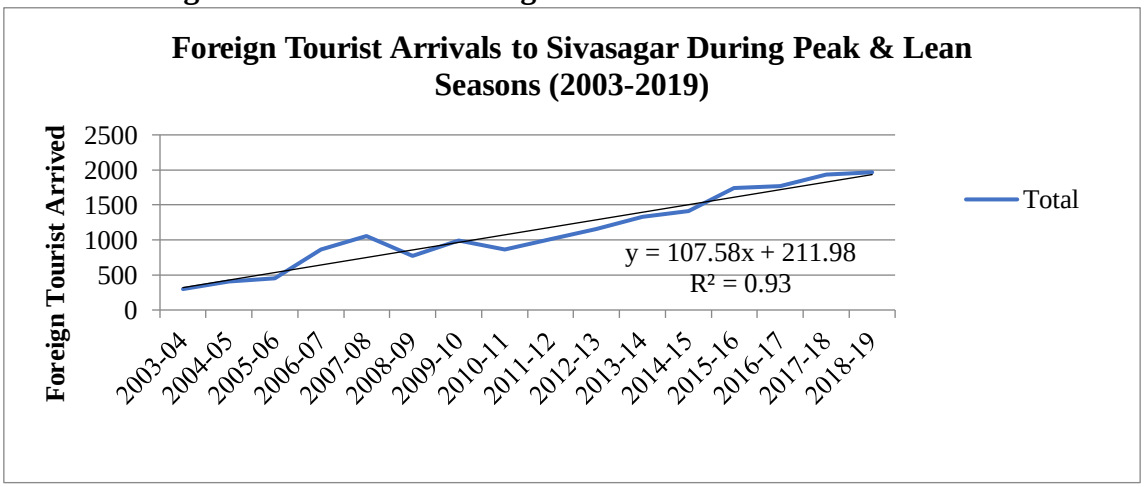
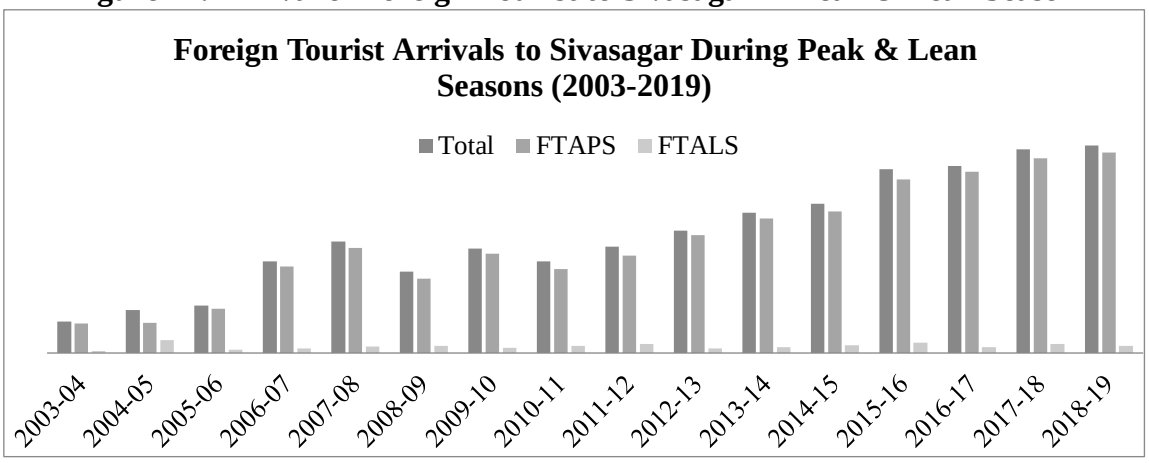


Figure 14: Arrival of Foreign Tourist to Sivasagar in Lean & Peak Season



An upward trend of foreign tourist arrival has been noticed in Sivasagar since 2004-05. November and December show the highest increase, whereas January to March show a moderate increase, while October and April show the lowest increase in foreign tourist inflow to the Sivasagar district during peak season. Again, the months between May to September show a decreasing trend and indicates the lowest number of tourist arrivals during the lean period.

Table 3: Sen's Slope for Tourist Inflow to Protected Monuments of Assam (2003-2019)

	Months	***Sen's Slope***	***Mann-Kendall Z value***	***p-value***
Domestic	***Total***	***21500.11***	***4.2771***	***<0.0000***
	April	1573.44	4.0970	<0.0000
	May	1109.43	3.7369	0.00018
	June	856.06	4.0070	<0.0000
	July	3000.50	4.8174	<0.0000
	August	883.35	3.7369	0.00018
	September	976.16	3.5568	0.00037
	October	1161.46	3.5568	0.00037
	November	1291.87	3.8269	0.00012
	December	3715.36	4.1871	<0.0000
	January	4719.59	3.0165	0.00255
	February	2077.08	2.8364	0.00456
	March	1718.25	4.5473	<0.0000
Foreigner	***Total***	***111.2095***	***4.7274***	***<0.0000***
	April	7.4	3.0165	0.002557
	May	0.7071429	0.85717	0.3914
	June	0.5909091	2.0076	0.04468
	July	-0.1714286	-0.22603	0.8212
	August	0.00000	0.00000	1.0000
	September	1.1	2.391	0.0168
	October	5	2.026	0.04276
	November	30.55	4.4572	<0.0000
	December	20.26667	4.097	<0.0000
	January	13.57738	3.2866	0.001014
	February	13.15	2.4762	0.01328
	March	17.50893	3.5153	0.0004392

The above Mann-Kendall Test (MK-test) analysis using R-programming shows an upward trend for domestic tourist arrivals as the value of Sen's slope is positive for all the months. Moreover, the values are statistically significant since the p-value for all the months is less than .05 and witnessed a statistically significant linear upward trend for the arrival of domestic tourists to all the protected monuments of Assam during the period 2003 to 2019.

Mann-Kendall's trend analysis for foreign tourist arrivals also shows a linear upward trend for April, June, and September to March indicating a p-value less than .05, whereas some other months like May, July and August witnessed a mixed trend for the period 2003-2019. Since the overall p-value is less than 0.05, we can conclude that there is significant upward trend for domestic tourist arrivals to the protected monuments and a mixed trend of foreign tourist arrivals to the same of the Sivasagar district of Assam during the period 2003-2019.

Income-Employment Variation as an Impact of Tourist-Inflows to Sivasagar District

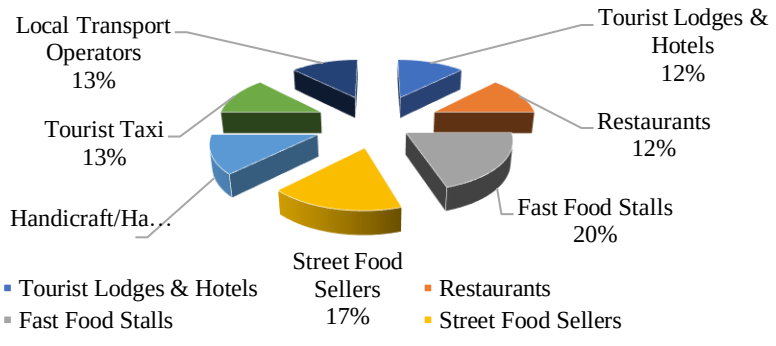
In order to understand the impact of tourism on the generation of income and employment, a primary survey comprising 200 tourism stakeholders by simple random sampling has been conducted during the period 2021-2022. The information was gathered from the stakeholders engaged in various tourism-related activities and earning their livelihood in various capacities from the area around the five protected historical monuments in order to get accurate income estimates from the respondents throughout the lean and the peak seasons.By accounting for the variation in the number of visitors in the chosen sites during the peak and off-peak seasons, the overall variation in income and employment generated is estimated. Table 4 and the figure 15, display the distribution of the total respondents by the category of their occupation.

Table 4: Distribution of Surveyed Respondents as Per Their Nature of Employment

Category	Number of Respondents
Tourist Lodges & Hotels	25
Restaurants	25
Fast Food Stalls	40
Street Food Sellers	35
Handicraft/Handloom Sellers	25
Tourist Taxi	25
Local Transport Operators	25
Total	200

Source: Authors' survey during 2021-22.

Figure 15: Pie-chart of Surveyed Respondents According to their Nature of Employment



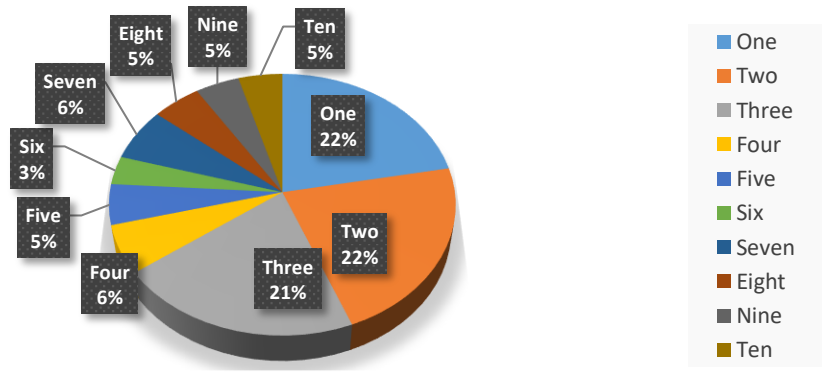
To provide an idea of employment as well as income, only these seven categories of respondents have been considered for the study. Thus, the estimated figure give an idea of the minimal employment generated compared to its actual and potential capacity, i.e., the estimate will be the minimum guaranteed level of work and the consequent income. In addition to the respondents' total monthly income, total number of employees/assistants recruited by the respondents also gives a sense of their actual economic situation. Here, the discrepancies between these two crucial elements during the lean and busy tourist seasons are computed from various categories of respondents.

Table 5: Distribution of Surveyed Respondents Based on Number of Employees in Each Business during Lean Season

Category	Total Lean Season Employees										Total
	One	Two	Three	Four	Five	Six	Seven	Eight	Nine	Ten	
Tourist Lodges & Hotels	0	0	0	0	0	3	4	4	6	8	25
Restaurants	0	0	0	0	2	4	9	6	3	1	25
Fast Food Stalls	0	2	18	12	8	0	0	0	0	0	40
Street Food Sellers	15	13	7	0	0	0	0	0	0	0	35
Handicraft/Handloom Sellers	0	8	17	0	0	0	0	0	0	0	25
Tourist Taxi	10	15	0	0	0	0	0	0	0	0	25
Local Transport Operators	19	6	0	0	0	0	0	0	0	0	25
Total	44	44	42	12	10	7	13	10	9	9	200

Source: Authors' own survey during 2021-22

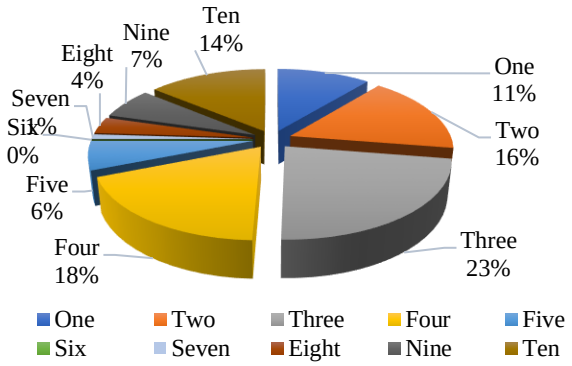
Figure 16: Distribution of Surveyed Respondents Based on the Total Number of Employees in Each Business During Lean Season



Out of 200 surveyed individuals, 88 respondents (44 per cent) which includes street food sellers, local and tourist taxi operators are found to hire only one or two employees in the lean season. The second largest group of 42 respondents (21 per cent) which includes street food, fast food stalls, and handloom sellers are found to hire three employees during this season. The third largest group of 25 respondents (12 per cent) consisting of 9 restaurants and 4 hotel owners hire seven employees, and out of 40 fast food sellers 12 hire four employees in the lean season. Five employees are hired by 2 restaurants and 8 fast food stall owners comprising 5 percent of the surveyed respondents. Rest 18 percent of the surveyed stakeholders consisting of 23 restaurants, and 25 tourist lodge and hotel owners, hire six to ten employees in the lean season since their business are not solely dependent on the inflow of tourists to the selected sites of the district.

Table 6: Distribution of Surveyed Respondents Based on Number of Employees in Each Business During Peak Season											
Category	**Total Lean Season Employees**										**Total**
	One	**Two**	**Three**	**Four**	**Five**	**Six**	**Seven**	**Eight**	**Nine**	**Ten**	
Tourist Lodges & Hotels	0	0	0	0	0	0	0	4	4	17	25
Restaurants	0	0	0	0	0	0	2	3	9	11	25
Fast Food Stalls	0	0	2	28	10	0	0	0	0	0	40
Street Food Sellers	0	13	22	0	0	0	0	0	0	0	35
Handicraft/Handloom Sellers	0	4	12	9	0	0	0	0	0	0	25
Tourist Taxi	8	10	5	0	2	0	0	0	0	0	25
Local Transport Operators	14	6	5	0	0	0	0	0	0	0	25
Total	22	33	46	37	12	0	2	7	13	28	200
Source: Authors' survey during 2021-22.											

Figure 17: Distribution of Surveyed Respondents Based on Total Number of Employees in Each Business During Peak Season



Majority of the main hotels in the city or popular tourist destinations are usually fully booked starting from the month of November through April and July each year. Thus, these seven months can be regarded as the year's busiest travel period. Table 6 and figure 17 indicate the respondents' distribution based on the total number of employees they hired during the peak season, including both regular and temporary workers. Table 6 shows that the first group of 22 respondents (11 per cent) employ just one employee for each additional vehicle they operate. The second group of 33 respondents (16 per cent), which includes 16 transport operators, 13 vendors of street food, and 4 artisans, employ two workers during the busiest times of the year. The second-largest group, which includes 46 respondents (23 per cent) and include 2 fast-food stands, 22 vendors of street food, 12 proprietors of shops selling handmade items, and 10 operators of transportation services, employ three workers during this season. There are a total of 37 respondents (18 per cent),of which 28 fast food vendors (compared to 12 during the lean season) and 9 artisans employ four staffs during the busy season. Only 2 handicraft shop owners and 10 fast food stall owners (6 per cent) report hiring five employees in this season. In the peak season, just two restaurant owners recruit seven personnel, while the next seven respondents (4 per cent)—four hotel owners and three restaurant owners—hire eight. An additional 13 responders (7 per cent) made up of 4 hotel owners and 9 restaurant owners (compared to 3 in the lean season) employ nine workers, indicating a higher inflow of income in this season. The final group of 28 respondents (14 per cent) included 17 hotel and 11 restaurant owners, whose activities and therefore income increase significantly in this season with the rise in tourist influx to the city employed the highest ten number of workers. Impact of variation in tourist arrival on employment has been estimated using tables 5 and 6. First, the sample respondents' total and average employment from various activities during both seasons

has been estimated. Then changes in employment are calculated and shown in table 7 by comparing these two.

Table 7: Employment and Tourist Inflow Percentage Variation from Lean to Peak Season from the Observed Sample Survey

Category	*Employees in Lean Season*	*Employees in Peak Season*	*Employment Variation (%)*	*Tourists in Lean Season*	*Tourists in Peak Season*	*Tourist Inflow Variation (%)*	*Tourist Elasticity of Employment*
Tourist Lodges & Hotels	212	238	12.26	203	367	80.79	**0.1518**
Restaurants	158	229	44.93	817	2120	159.45	**0.2818**
Fast Food Stalls	146	168	15.06	876	2380	171.69	**0.0877**
Street Food Sellers	62	92	48.38	518	1237	138.8	**0.3486**
Handicraft/Handloom Sellers	67	80	19.4	309	816	164.08	**0.1182**
Tourist Taxi	40	53	32.5	362	745	105.8	**0.3072**
Local Transport Operators	31	41	32.25	492	1108	125.2	**0.2576**
Total	716	901	25.84	3577	8773	145.26	**0.1779**

Source: Authors' survey during 2021-22.

Table 7 reveals more employment prospects for the local population with the rise in number of tourists visiting the area. A roughly 26% increase in overall employment is seen for an increase in tourist arrivals of 145.26 per cent. There is an increase in employment of 185 working days due to an absolute rise in tourist inflow of 5196. This suggests that an increase of about 356 working days is conceivable for every ten thousand increases in tourist flow.As a result, as the number of tourists visiting the region grows, so do the employment opportunities in a variety of industries, including transportation, lodging, dining, cottage industries producing local handicrafts and woven goods, travel agencies, tour companies, and tour guides in the area concerned. The elasticity shows the maximum impact is on street food seller and followed by tourist taxis. Table 8 reveals that due to increase in tourist inflow recorded by the sample activities during peak over lean season of the year by 145.26 per cent, monthly income of those respondents has increased by about 55 per cent. In other words, due to increase in 5196 tourists there is an approximate increase in income of those people of Rs 3892000 i.e., for an absolute increase of 10000 tourists in such type of areas, income of the stakeholders together increases by around Rs 7490377. That is an indication of tremendous potential of tourism to increase revenue or income of the people involved in tourism related activities. The tourist elasticity of income reveals maximum benefit to transport and restaurant sector and followed by the handicraft/handloom.

Table 8: Total Monthly Income and Tourist Inflow, Percentage Variation from Lean to Peak Season from the Observed Sample Survey

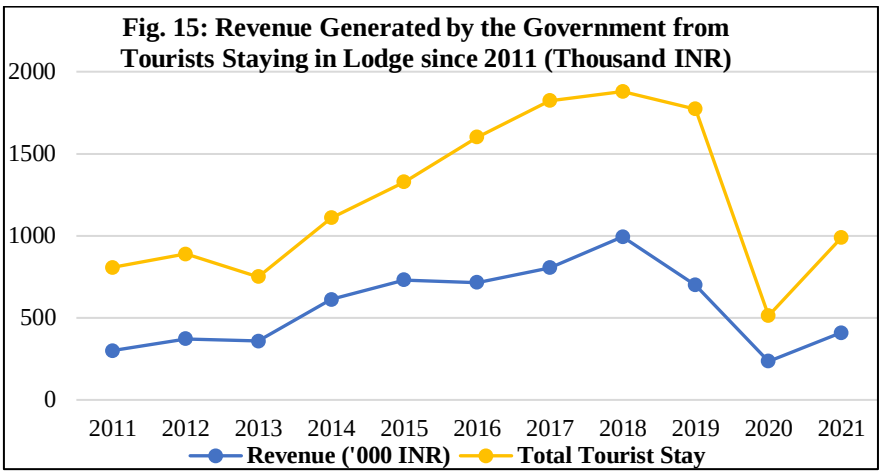
Category	*Lean Income*	*Peak Income*	*Income Variation (%)*	*Tourists in Lean Season*	*Tourists in Peak Season*	*Tourist Inflow Variation (%)*	*Tourist Elasticity of Income*
Tourist Lodges & Hotels	1840500	2280000	23.88	203	367	80.79	**0.2956**
Restaurants	1173000	2043500	74.21	817	2120	159.45	**0.4654**
Fast Food Stalls	1445500	2224000	53.86	876	2380	171.69	**0.3137**
Street Food Sellers	934500	1316500	40.88	518	1237	138.8	**0.2945**
Handicraft/Handloom Sellers	749000	1279000	70.76	309	816	164.08	**0.4313**
Tourist Taxi	954000	1482000	55.35	362	745	105.8	**0.5232**

Local Transport Operators	619000	982500	58.72	492	1108	125.2	**0.4690**
Total	7715500	11607500	50.44	3577	8773	145.26	**0.3472**
Source: Authors' survey during 2021-22.							

Lastly, figure 15 clearly reveals parallel movement of earning from tourism with changing arrival of tourists and staying in government lodges in Sivasagar area. Also, there are fringe earnings of informal businesses related to tourism undertaken by the surrounding people. The figure also reveals the severe fall in earning from tourism in 2020-21, which can be attributed to the Covid-19 pandemic. The equation below shows the significantly high elasticity of earning with respect to tourist arrival in Sivasagar which reveals the potential of tourism in the area.

$$\text{LnEarning} = 5.75^{***} + 1.0534\ \text{LnTourists}^{***}$$
$$(7.98) \qquad (10.30)$$

(Figure in the parentheses represent corresponding t-values)



4. Conclusion

This study finds a significant rising trend of both domestic and foreign tourist arrivals to Assam since 1999 despite a setback during the current Covid-19 pandemic. Similar, is the case for protected monuments of Sivasagar district. The months of December to April, and July, are regarded as high peak seasons for domestic tourists, while October and November are considered minor peak season. January registers the highest number of domestic tourist arrivals while the months of May, June, August, and September record the lowest number of visitors (Figure 5). The peak season for international visitors to the five protected sites of Assam's Sivasagar district begins in October and goes up to April, while the lean season begins in May and ends in September. The increasing trends of tourist inflows to centrally protected monuments and its contribution to income and employment generation in and around the chosen sites imply that heritage tourism is an emerging avenue in Sivasagar district. From the findings, it is also noticed that foreign tourist arrivals to Sivasagar are still a few in number. To attract large number of international tourists both public and private sectors must work to overcome all the challenges faced by the tourism sector such as lack of recreation facilities, infrastructure, transportation, accommodations in potential destinations, and so on. Hence, not only having historical monuments is enough, infrastructure development is needed in the field of hospitality to provide opportunities for more tourist attraction and to facilitate local employment as well.

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