



# SEASONAL DYNAMICS OF TOURIST INFLOW: A STUDY OF SHARAVANI MELA IN BHAGALPUR DISTRICT, BIHAR

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## ABSTRACT

Religious tourism plays a significant role in shaping seasonal visitor patterns across Indian districts known for their pilgrimage festivals. The Sharavani Mela, an annual religious event in Bhagalpur district, Bihar, attracts millions of devotees, especially Kanwariyas who undertake a sacred journey from Sultanganj to Deoghar. This study examines seasonal variations in tourist inflow associated with the Sharavani Mela using secondary data from 2010 to 2024. The tourist inflow during Mela and non-Mela periods was compared to determine the event's impact on local tourism dynamics. The findings reveal a statistically significant increase in tourist arrivals during the Mela period, suggesting a strong influence of religious festivities on seasonal tourism in India. These results highlight the importance of the Sharavani Mela as a catalyst for tourism development in the region and underscore the need for improved infrastructure and planning to accommodate fluctuating tourist volumes.

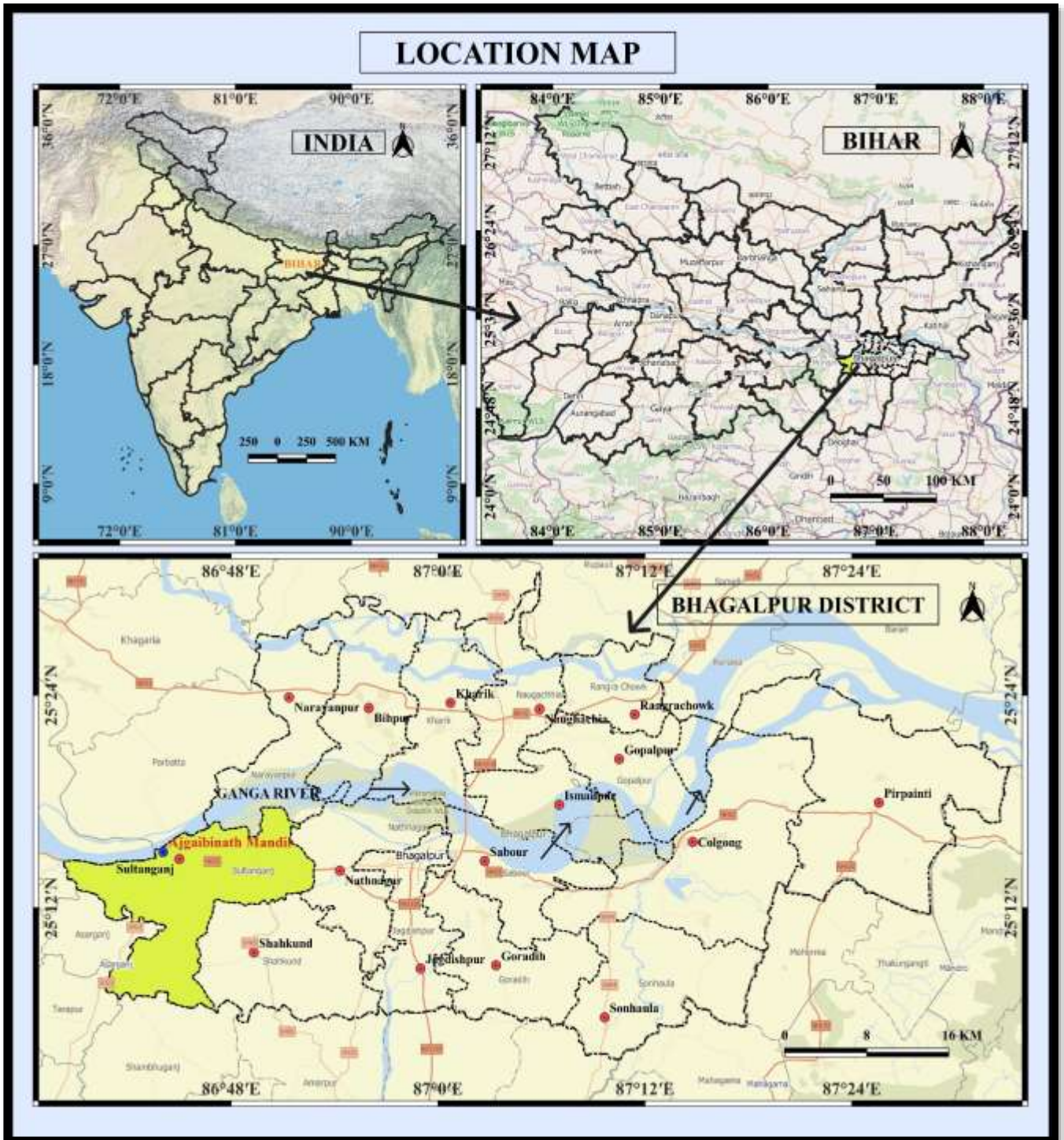
**KEY WORDS:** Sharavani Mela, Religious Tourism, Tourist Inflow, Local Economy.

## INTRODUCTION

Religious and pilgrimage tourism constitute a significant facet of India's socio-economic framework, profoundly influencing seasonal travel patterns and fostering regional development. Among the numerous cultural and spiritual events across the country, the Sharavani Mela, held annually during the sacred month of Shravan (July–August) in Bhagalpur district, Bihar, stands out for its religious and socio-economic importance. This month-long festival attracts millions of Kanwariyas, devotees of Lord Shiva, who undertake a solemn pilgrimage to procure holy water (Ganga Jal) from the Uttarvahini Ganga River at Sultanganj, a town of considerable historical and religious significance situated on the southern banks of the Ganges. Sultanganj serves as a pivotal spiritual locus and transit

point for these pilgrims, who then traverse approximately 105 kilometres on foot to offer the sanctified water at the revered Baba Baidyanath Dham in Deoghar, Jharkhand. During the festival, the pilgrimage route assumes the character of a vibrant religious fair, reflecting the fervent devotion of the participants.

The Sharavani Mela not only enhances the spiritual ethos of the region but also precipitates substantial seasonal economic activity, manifesting in increased demand for transportation, lodging, and ancillary services within Bhagalpur and along the pilgrimage corridor. To effectively manage the influx of pilgrims, the Bhagalpur district administration implements comprehensive security protocols, establishes medical camps, and mobilises emergency response units to ensure the safety and well-being of the devotees.



**Figure 1**

**Route Overview of Kanwar Yatra**

1. **Starting Point:** Ajaibinath Temple, Sultanganj (Bhagalpur), Kanwariya collect holy Ganga water at the north-flowing Ganga near the ancient Ajaibinath Temple,
2. **Journey Begins:** Walking Route Devotees carry the water in bamboo slings (kanwaras), chanting "Bol Bam", and proceed southward toward Jharkhand.
3. **Key Intermediate Halts (on average every 8–10 km)**  
**Common stops include:**

- Kamrai → Asarganj → Tarapur → Rampur → Kumarsar → Chandan Nagar → Jalebiya → Suiya → Abrakhia → Katoria → Lakshman Jhula → Inaravaran → Bhulbhulaiya → Goryari → Kalakatia → Bhutbangla → Darshaniya,
- 4. **Arrival – Baba Baidyanath Dham, Deoghar (Jharkhand).** The pilgrimage culminates with Jalabhishek of the Shiva Linga at Baidyanath Dham, one of India's 12 Jyotirlingas



**Table 1: Kanwar Yatra route from Sultanganj (Ajgaibinath Ghat) to Baba Baidyanath Temple, Deoghar, along with distances**

Sl. No.	From	To	Distance (km)
1.	Sultanganj	Kamrai	6
2.	Kamrai	Asarganj	7
3.	Asarganj	Tarapur	8
4.	Tarapur	Rampur	7
5.	Rampur	Kumarsar	8
6.	Kumarsar	Chandan Nagar	10
7.	Chandan Nagar	Jalebiya More	8
8.	Jalebiya More	Suiya	8
9.	Suiya	Abrakhia	8
10.	Abrakhia	Katoria	8
11.	Katoria	Lakshman Jhula	8
12.	Lakshman Jhula	Inaravaran	8
13.	Inaravaran	Bhulbhulaiya	3
14.	Bhulbhulaiya	Goryari	5
15.	Goryari	Kalakatia Dharamsala	3
16.	Kalakatia Dharamsala	Bhutbangla	5
17.	Bhutbangla	Darshaniya	1
18.	Darshaniya	Baba Baidyanath Dham	1
Total			<b>105 km</b>

Source: <https://deoghar.co/>

## LITERATURE REVIEW

Tourism research in India has evolved over the years, with studies addressing various aspects, including tourist satisfaction, seasonality, infrastructure, sustainability, and technological integration. The following review presents key studies on Bihar and other comparative regions, highlighting trends relevant to the development of cultural and pilgrimage tourism.

**Mishra & Pal (2009)** conducted a focused study on the Sultanganj region of Bhagalpur, Bihar, analysing tourists' satisfaction with cultural and pilgrimage destination attributes. Their findings revealed variations in satisfaction levels, underlining the need for targeted improvements in infrastructure and service delivery at religious sites. **De & Devi (2010)** examined nature-based tourism in Meghalaya. The study emphasised the influence of seasonal tourist inflows, drawing attention to the socio-economic benefits of tourism in ecologically sensitive regions. **Francois (2011)** indicates that tourism, both domestic and foreign, plays a significant role in the economic stimulus programme, particularly in times of economic hardship. **Mishra (2012)** discusses that eco-tourism provides a high scope for rural tourism and a degree of alternative employment to the local communities. **Mowforth & Munt (2015)** discuss the potential of tourism to promote sustainable development in Bihar. **Kumar (2018)** analysed foreign tourist arrivals in India, reporting an 8.23% annual growth from 1999 to 2015 and highlighting seasonal variations as key to shaping tourism policy and infrastructure planning. **Singh & et al. (2020)** studied the seasonal dynamics of tourist inflow in Bihar, significant growth in both domestic and foreign tourist arrivals, highlighting the need for infrastructure expansion and capacity building to handle the seasonal surge effectively. **Roy (2022)** analysed trends in tourist arrivals in Bihar from 2010 to 2019. The study highlighted fluctuations

over the decade, pointing toward both opportunities and challenges in the state's tourism sector. **Arora (2023)** developed a tourism forecasting model by analysing trends and seasonality in tourist arrivals in Kullu district, Himachal Pradesh, and emphasised the importance of predictive modelling in tourism planning, especially in regions highly sensitive to climatic and seasonal fluctuations. **Pandey & et al. (2023)** explored the Bihar Tourism Management System's web interface, focusing on its utility in assisting travellers with lodging and vacation planning. The study revealed the growing role of digital infrastructure in enhancing tourist experience and accessibility to services. **Kushwaha (2024)** investigated tourism development at Buddhist pilgrimage sites in Uttar Pradesh and Bihar. The study revealed significant disparities in infrastructure and visitor experiences, underscoring the urgent need for cohesive planning and sustainable advancement to enhance tourist satisfaction. **Bihar Saras Mela (2025)** studied consumer behaviour at a cultural fair, identifying product quality and pricing as key factors influencing purchasing decisions.

## OBJECTIVES

The primary aim of this study is to examine the seasonal dynamics of tourist inflow in Bhagalpur district with specific reference to the Sharavani Mela. The specific objectives are:

1. To analyse the seasonal variation in tourist inflow associated with the Sharavani Mela in Bhagalpur district.
2. To compare tourist volumes during the Mela period and the non-Mela period over a multi-year timeframe (2010–2024).
3. To identify the implications of observed tourist inflow trends for tourism planning, infrastructure development, and crowd management in the region.

## Formulation of Hypothesis

The core hypotheses are as follows:



- The number of tourists visiting Bhagalpur district significantly increases during the Sharavani Mela period compared to the non-Mela period.

**DATA AND METHODOLOGY**

This research is grounded entirely in secondary data, drawing upon annual tourist inflow statistics from 2010 to 2024, sourced from the Bihar State Tourism Department, Bhagalpur District Statistical Handbooks, and local government tourism bulletins. For each year, the total number of tourists during the Mela period (July–August) and the non-Mela period (the remaining months) was entered into SPSS. A new variable, diff, was computed to capture the year-wise difference between Mela and non-Mela tourist counts. To assess whether this difference followed a normal distribution, both the Kolmogorov–Smirnov and Shapiro–Wilk tests were conducted; with significance values below 0.05, normality was rejected. Given the non-normal distribution of the paired differences, the Wilcoxon

Signed-Rank Test was employed, a non-parametric alternative to the paired t-test that ranks absolute paired differences and tests if their median deviates significantly from zero. This approach enabled the determination of whether tourist inflow during the Mela significantly differed from the rest of the year, without relying on parametric assumptions. To visualise the data through maps and diagrams, software tools such as QGIS, Paint, and MS Excel were employed for their respective purposes.

**RESULTS & DISCUSSION**

• **Tourist Inflow Data**

The study is based on secondary data of tourist inflow to the Bhagalpur district during both the Mela period (July–August) and the non-Mela period (rest of the year). The data spans 15 years from 2010 to 2024 and is presented in the table below:

**Table 2: Tourist Inflow in Bhagalpur District during Mela and Non-Mela Periods(2010–2024)**

Sl. No.	Years	Tourist Inflow (Mela Period)	Tourist Inflow (Non-Mela Period)
1.	2010	260510	453660
2.	2011	1631376	1317458
3.	2012	311155	1997001
4.	2013	1623750	758050
5.	2014	2564449	931347
6.	2015	2898093	1036121
7.	2016	2908149	1193062
8.	2017	3167553	1068091
9.	2018	3545214	1063191
10.	2019	4443319	558525
11.	2020	0	108295
12.	2021	66	3455
13.	2022	2528717	183253
14.	2023	7708195	1469890
15.	2024	11303920	1828915

*Source: Bihar Tourism Official Website (bihartourism.gov.in/data.html)*

The data from 2010 to 2024, shown in Table 1, illustrates a seasonal pattern in tourist inflow in Bhagalpur district, with significant spikes during the Sharavani Mela period in most years. While the early years (2010–2012) show modest or even lower Mela inflow compared to non-Mela months, from 2013 onward, the Mela period consistently attracts a much higher number of visitors. Notably, the years 2019, 2023, and especially 2024 show dramatic increases, with over 11.3

million tourists recorded during the Mela in 2024. The COVID-19 pandemic severely impacted inflows in 2020 and 2021, nearly halting pilgrimage activity. Post-pandemic recovery is evident, with tourist numbers surging again. Overall, the data highlights the strong cultural draw of the Mela and its growing role in driving seasonal tourism in Bhagalpur.

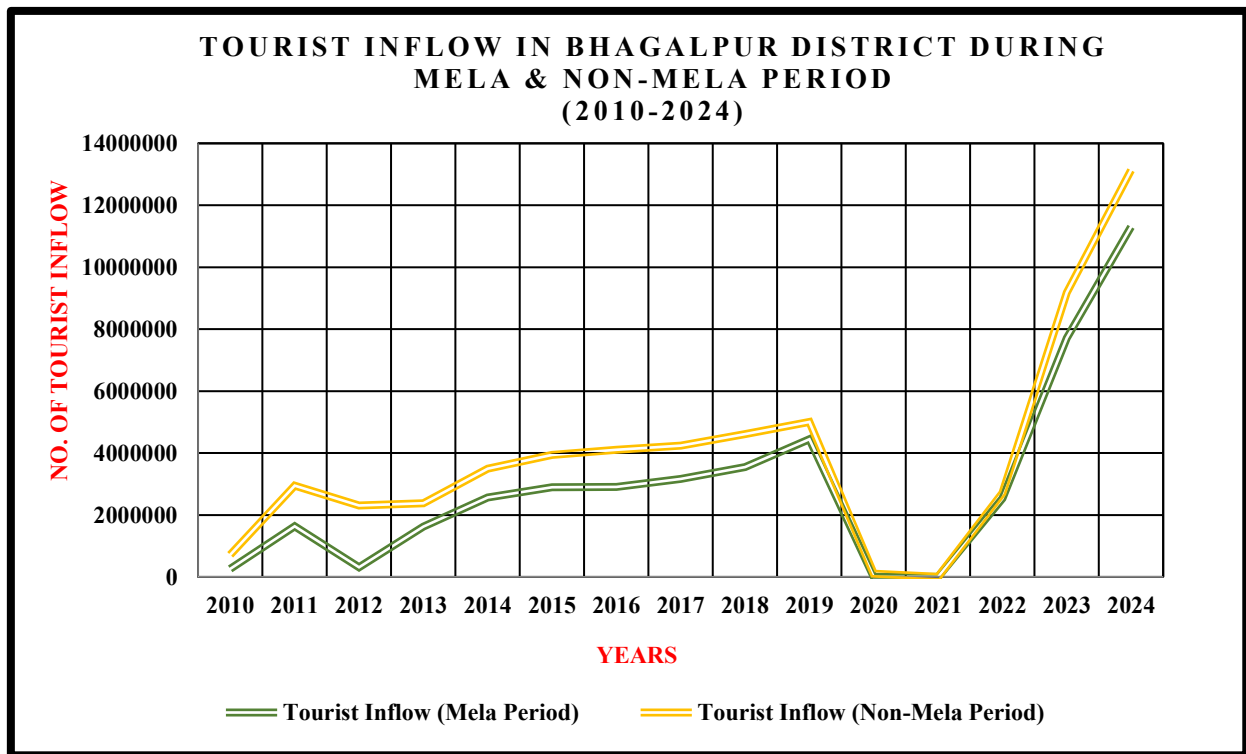


Figure 2

• **Normality Test & Selection of Statistical Method**

The descriptive statistics show that the mean of the variable "difference between mela period and non-mela period (Diff.)" is approximately 2,061,610.13, with a large standard deviation (2,789,191.10) and a wide range (11,160,851.00), suggesting high variability in the data. The median (1,715,087.00) is lower than the mean, and the skewness value of 1.505 indicates a positively skewed distribution.

Additionally, kurtosis of 2.787 suggests a leptokurtic distribution, meaning the data have heavier tails and a sharper peak than a normal distribution. The normality tests (Kolmogorov–Smirnov and Shapiro–Wilk) both returned significant p-values (0.020 and 0.033, respectively), which are less than 0.05. This confirms that the variable "(Diff.)" is not normally distributed. Therefore, instead of a parametric test, the Wilcoxon Signed-Rank Test, a non-parametric test, was applied to test the hypothesis.

Table 3: Summary of Normality and Skewness

Test/Statistic	Value	Interpretation
<b>Skewness</b>	1.505	Positively skewed
<b>Kurtosis</b>	2.787	Leptokurtic (heavy-tailed)
<b>Kolmogorov–Smirnov</b>	Sig. = 0.020	Not normally distributed
<b>Shapiro–Wilk</b>	Sig. = 0.033	Not normally distributed

Source: IBM Statistics version 27.0.

• **Hypothesis Testing Results**

1. **Null Hypothesis (H<sub>0</sub>):** There is no significant difference in the number of tourists visiting Bhagalpur during the Sharavani Mela and non-Mela period.

2. **Alternative Hypothesis (H<sub>1</sub>):** There is a significant increase in the number of tourists during the Sharavani Mela compared to the non-Mela period.

To test this hypothesis, the **Wilcoxon Signed-Rank Test** was applied to assess whether there is a statistically significant difference in tourist inflow between the Mela

and non-Mela periods. This non-parametric test was chosen due to the paired nature of the data and potential deviations from normality. The test was conducted on a sample of 15 paired observations, representing tourist inflows during Mela and non-Mela periods over consecutive years. The analysis yielded the following results:



**Table 4: Summary of Wilcoxon Signed-Rank Test**

Result	Value
Test Statistic	13.000
Z-value	-2.669
Asymptotic Significance (2-tailed)	0.008

Source: IBM Statistics version 27.0.

The Wilcoxon Signed-Rank Test revealed a statistically significant difference between the Mela period and non-Mela period conditions. Since the p-value is below the 0.05 threshold, we reject the null hypothesis. This indicates that there is a **significant increase in the number of tourists visiting Bhagalpur during the Sharavani Mela** as compared to the non-Mela period.

### FINDINGS

The analysis demonstrates a significant seasonal shift in tourist inflow patterns in Bhagalpur district, with a notable surge during the **Sharavani Mela** period. This observation aligns with the cultural and religious importance of the Kanwar Yatra, where lakhs of devotees congregate in Sultanganj to begin their pilgrimage to Deoghar. The computed difference in tourist numbers, supported by a statistically significant Wilcoxon Signed-Rank Test, confirms that the Mela period consistently attracts a higher number of visitors compared to the non-Mela months. Notably, years like **2023** and **2024** exhibited exceptionally high Mela inflows (exceeding 7 million and 11 million, respectively), likely due to improved infrastructure, promotion by the Bihar Tourism Department, and post-COVID recovery in domestic pilgrimage tourism. These findings reinforce that religious events act as **temporal tourism magnets**, transforming the flow of visitors and temporarily overburdening infrastructure such as roads, sanitation systems, accommodation, and health services. While this surge offers economic opportunities for vendors and local businesses, it also raises concerns regarding sustainable crowd management, environmental pressure, and administrative preparedness.

### Recommendations

Based on the findings, the following policy suggestions are proposed to improve tourism management during the Sharavani Mela:

- Strengthen Infrastructure and Services:** Enhance roads, temporary shelters, medical facilities, and sanitation services in and around Sultanganj to handle peak-season crowds.
- Crowd Management Systems:** Implement digital crowd-monitoring tools, emergency response units, and regulated pedestrian routes to reduce congestion and risks.
- Promotion of Off-Season Tourism:** Develop strategies to attract tourists in non-Mela periods by promoting Bhagalpur's silk industry, Vikramshila ruins, and river-based eco-tourism.
- Sustainable Tourism Practices:** Encourage eco-friendly measures, such as proper waste management, water conservation, and reducing the use of single-use plastics, during the Mela.

### CONCLUSION

This study examined the **seasonal dynamics of tourist inflow** in Bhagalpur district, with a specific focus on the impact of the **Sharavani Mela** from 2010 to 2024 using secondary data. The results conclusively demonstrate that the Sharavani Mela leads to a **statistically significant increase** in tourist numbers during the Mela period compared to the non-Mela period. The findings highlight the central role of religious festivals in shaping local tourism patterns and emphasise the need for strategic planning to accommodate seasonal fluctuations.

### REFERENCES

- Arora. Venus (2023). *Temporal Study of Trend Analysis of Tourism Flow in Kullu District, Himachal Pradesh, from 2008-2022 and its Seasonality for Tourism Forecasting. International Journal for Multidisciplinary Research.*
- De, Utpal Kumar. & Devi, Amrita (2010). *Nature-Based Tourism, Seasonal Variation and Its Impact on Employment and Income: Evidence from Meghalaya. Journal of Environmental Management and Tourism, (1) (1), pp 116-131.*
- Directorate of Tourism, Govt. of Bihar (2022). *Tourist Attractions of Bihar, Published Article.*
- Francois. V (2011). *The Indirect Impact of Tourism: An Economic Analysis, Toulouse University – TED AFL, Report of the third meeting of T20 Tourism Ministers, Paris, France.*
- Government of Bihar (2009). *Department of Tourism, Bihar Tourism Policy-2009 for accelerated tourism growth of the state. Patna, Bihar.*
- Kumar, D.S. (2018). *Foreign Tourists Arrival in India: An Analytical Study on Seasonal Variations of Tourist Arrival and its Impact on the Growth of Foreign Exchange Earnings. African Journal of Hospitality, Tourism and Leisure, (7) (2).*
- Kushwaha, S.K. (2024). *Bridging Heritage: A Comparative Analysis of Tourism Development at Buddhist Pilgrimage Sites in the U.P. & Bihar. EPRA International Journal of Multidisciplinary Research (IJMR).*
- Mishra, Rajiv K. and Pal, Kulwinder (2009). *An Analytical Study on Tourists' Satisfaction at the Cultural/Pilgrimage Sites of Sultanganj Region of Bhagalpur in Bihar. Indian Journal of International Tourism & Hospitality Research, (III) (1), pp 41-56.*
- Mishra. Joysingha (2012). *Evolution of Rural Tourism and Its Prosperity. Indian Journal of Applied Research, 1(X).*
- Mowforth, M., & Munt, I. (2015). *Tourism and Sustainability. Environmental Science, Business.*
- Pandey. Vishal & et al. (2023). *Bihar Tourism Management System. Galgotias University, Published Article.*
- Roy. Abhishek (2022). *A Case Study on Tourist Arrival in the State of Bihar from 2010 to 2019. International Journal of*



*Scientific Research in Engineering and Management, 06(04), pp 01-09*

13. Singh. Kumar Ajit & et al. (2020). *An Empirical Evolution of Tourist Arrival in the State of Bihar, India. Journal of Critical Reviews, 7(5).*
14. Saras Mela, B. (2025). *A Study on Consumer Behaviour Towards the Products of Micro-Entrepreneurs and Micro Enterprises in Saras Mela, Bihar. International Research Journal on Advanced Engineering and Management (IRJAEM).*

#### WEB SOURCES

1. <https://www.researchgate.net/>
2. <https://www.angika.com>
3. <https://tourism.bihar.gov.in>
4. <https://bstdc.bihar.gov.in>
5. <https://deoghar.co/>
6. <https://angdesh.co/>