

## A Temporal Analysis of Tourist Inflow Dynamics in Varanasi District, U.P., India

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### Abstract

Tourism plays a pivotal role in regional economic development, particularly in culturally and religiously significant destinations such as Varanasi, one of India's famous pilgrimage centres. This study analyses the temporal dynamics of tourist inflow in Varanasi district during 1998–2023 using secondary data obtained from official publications of the Uttar Pradesh Tourism Department. The findings indicate a sustained long-term upward trend in tourist inflow, with domestic tourism forming the dominant component of total arrivals throughout the study period. The regression results confirm a positive time trend demonstrating overall growth despite notable annual fluctuations. A pronounced disruption occurred during the COVID-19 period (2020–2021), causing a sharp decline in tourist arrivals, followed by a rapid recovery. The year 2022 marks a structural break in the tourism time series, indicating the shift to post-pandemic tourism recovery. High coefficients of variation reveal considerable instability, particularly in domestic arrivals, indicating that growth has been accompanied by significant year-wise variability. In contrast, foreign tourist arrivals, although smaller in magnitude, exhibited relatively moderate proportional fluctuations. The Wilcoxon test further establishes a statistically significant difference between domestic and foreign tourist inflow, confirming

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the structural dominance of domestic tourism. Overall, the study highlights both the expansionary trend and the dynamic variability of tourism in Varanasi, underscoring the need for stability-oriented and sustainable tourism management strategies.

**Keywords:** Temporal Analysis; Tourist Inflow; Domestic Tourism; Foreign Tourist; Tourism Stability.

## 1. INTRODUCTION

Tourism has emerged as one of the most significant sectors, contributing to economic development, employment generation, and cultural exchange worldwide. In developing countries like India, tourism plays a vital role in promoting regional development, particularly in areas endowed with rich cultural, religious, and historical heritage. Religious and pilgrimage tourism forms a major segment of the Indian tourism industry, attracting millions of domestic and foreign tourists annually. Varanasi district, located in the eastern part of Uttar Pradesh, holds a unique position in India's cultural and religious landscape. Known as Kashi, the city is revered as one of the oldest living cities in the world and a major centre of Hindu spirituality. The presence of the River Ganga, numerous Ghats, the Kashi Vishwanath Temple, and the nearby Buddhist site of Sarnath make Varanasi a multi-dimensional tourism destination. Over the years, the district has witnessed substantial growth in tourist inflow, driven by religious faith, cultural festivals, improved connectivity, and government initiatives aimed at heritage and spiritual tourism development. Tourist inflow in Varanasi has not remained uniform over time but has exhibited considerable temporal variations influenced by seasonal cycles, religious festivals, infrastructural development, government initiatives, and socio-economic factors. Events such as major religious congregations, cultural festivals, and policy-driven interventions in heritage conservation and urban redevelopment have contributed to fluctuations in tourist arrivals. Additionally, unprecedented disruptions such as the COVID-19 pandemic have significantly altered tourism dynamics, leading to sharp declines followed by gradual recovery in subsequent years. The study seeks to identify growth phases, seasonal variations, and the impact of major events on tourism dynamics.

## 2. LITERATURE REVIEW

Tourism inflow dynamics and temporal variations in visitor arrivals have gained increasing attention in tourism geography and destination planning due to their importance in understanding growth patterns, seasonality, and sustainable management strategies. Several scholars have examined tourism development in religious destinations, highlighting the need for long-term analysis to identify structural changes and growth trajectories. In the context of

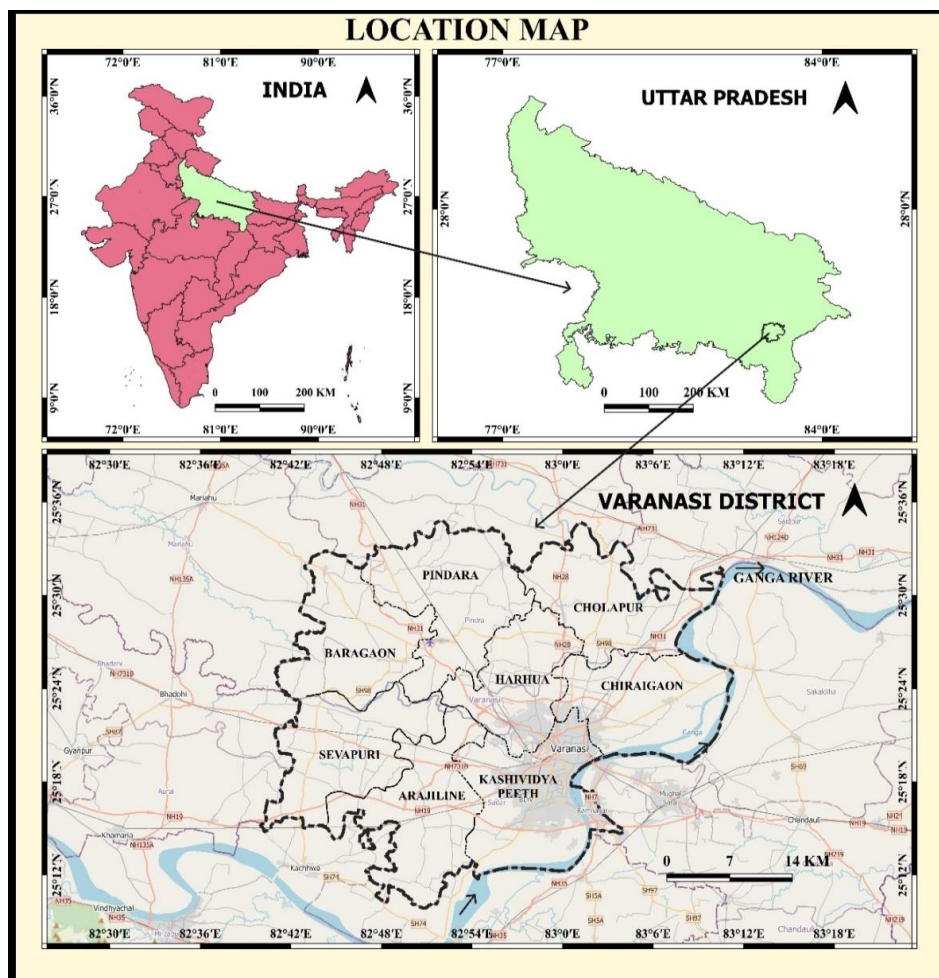
Varanasi, research by **Das et al. (2007)** emphasised destination attractiveness, identifying cultural heritage, spiritual ambience, and sacred landscapes as key determinants of tourist motivation, while **Das and Sharma (2009)** explored the economic impacts of tourism, demonstrating its role in employment generation and local business growth. However, these studies primarily focused on qualitative or economic dimensions rather than examining temporal trends in tourist arrivals. Broader studies on tourism development in India, such as **Malik and Nusrath (2014)**, identified domestic tourism as a major driver of sectoral growth, while **Kumar (2018)** highlighted the importance of seasonal variations and growth patterns in shaping tourism planning strategies. Comparative temporal analyses in other regions, including **Arora (2023)**, demonstrated the usefulness of statistical tools such as annual growth rate and trend analysis for understanding tourism evolution, yet pilgrimage destinations like Varanasi remain under-explored from a comprehensive temporal perspective. Research focusing on tourism trends in Bihar (**Singh et al., 2020; Roy, 2022**) indicated significant fluctuations influenced by infrastructure development and socio-economic factors, but lacked long-term statistical examination of stability and variability. Recent studies, including **Chatterjee and Pal (2025)**, emphasised the increasing dominance of domestic tourism in shaping tourism dynamics in Varanasi, though they relied mainly on qualitative approaches without a detailed quantitative assessment. Existing literature also highlights the vulnerability of tourism systems to external disruptions and the relatively faster recovery of domestic tourism compared to international arrivals, yet empirical analyses integrating long-term datasets with statistical evaluation remain limited. Therefore, despite substantial research on religious tourism and destination attractiveness, there remains a significant gap in comprehensive temporal analysis examining growth patterns, variability, and structural differences between domestic and foreign tourist inflow, which the present study seeks to address.

### 3. STUDY AREA

Varanasi district is located in the eastern part of Uttar Pradesh, India, between approximately 25°14'N to 25°23'N latitude and 82°56'E to 83°03'E longitude. Geographically, the district lies along the left bank of the River Ganga and forms an integral part of the Middle Ganga Plain, which is characterised by fertile alluvial soil, flat topography, and dense human settlement. The location of Varanasi along the sacred River Ganga has historically contributed to its development as one of the most significant religious and cultural centres in India. The district is bounded by Jaunpur district to the north, Ghazipur to the east, Chandauli to the south, and Mirzapur to the west, placing it within a region of strong cultural and economic interactions. Climatically, Varanasi experiences a subtropical monsoon climate marked by hot summers, moderate winters, and a well-defined rainy season during the southwest monsoon.

Varanasi city, the administrative and cultural core of the district, is widely recognised as one of the oldest continuously inhabited cities in the world. Known historically as Kashi, it holds immense religious significance in Hinduism and also serves as an important centre for Buddhist and Jain heritage due to its proximity to Sarnath, where Lord Buddha delivered his first sermon. Major attractions include the Kashi Vishwanath Temple, the iconic river Ghats, ancient temples, cultural festivals, and traditional arts and crafts, which collectively enhance its appeal as a multi-dimensional tourism destination. The district's well-developed transport connectivity, including road, rail, and air networks, facilitates accessibility for both domestic and international visitors. Continuous infrastructure development, heritage conservation initiatives, and religious tourism promotion have further strengthened its tourism potential.

**Figure 1: Location Map of Study Area**



#### 4. OBJECTIVES

- To analyse the long-term temporal trends of tourist inflow in Varanasi district over the selected study period.
- To examine the growth pattern and year-wise fluctuations in tourist arrivals in the study area.
- To evaluate the magnitude and stability of tourist inflow in Varanasi district during the study period.

#### 5. HYPOTHESIS

- There is a significant difference between domestic and foreign tourist arrivals in Varanasi district.

#### 6. DATA SOURCES AND METHODOLOGY

The present study is based on secondary data and adopts a descriptive and analytical research design to examine temporal trends, growth patterns, magnitude, stability, and statistical differences in tourist inflow in Varanasi district. Year-wise data on domestic (Indian) and foreign tourist arrivals for the period 1998–2023 were collected from reliable published sources, including reports of the Uttar Pradesh Tourism Department. The data were compiled and organised using Microsoft Excel, while statistical analysis was performed using SPSS software.

The long-term temporal trends were analysed through graphical representation of regression and descriptive examination of annual tourist inflow. The growth pattern and year-wise fluctuations were evaluated using **the Annual Growth Rate (AGR)**, calculated using the following formula:

$$AGR = \frac{(Current\ Year - Previous\ Year) * 100}{Previous\ Year}$$

- To evaluate the magnitude of tourist inflow, the mean (average) was calculated as:

$$Mean = \frac{\sum X}{N}$$

Where;

**X** denotes individual observations and

**N** represents the total number of years.

The stability and variability of tourist inflow were assessed using standard deviation (SD) and coefficient of variation (CV).

- **Standard deviation was calculated as:**

$$S = \sqrt{\frac{\sum (X - \bar{X})^2}{N}}$$

where  $S$  = the standard deviation of a sample,  
 $\Sigma$  means "sum of,"  
 $X$  = each value in the data set,  
 $\bar{X}$  = mean of all values in the data set,  
 $N$  = number of values in the data set.

- **The coefficient of variation, which indicates relative stability, was computed using:**

$$CV = \frac{SD}{Mean} \times 100$$

For hypothesis testing, domestic and foreign tourist arrivals were treated as paired observations. The normality of paired differences (domestic minus foreign tourist arrivals) was tested using the Shapiro–Wilk test. Since the assumption of normality was violated ( $p < 0.05$ ), the non-parametric Wilcoxon signed-rank test was applied. The Wilcoxon test evaluates whether the median difference between paired observations is significantly different from zero by ranking the absolute differences and analysing their signed ranks. Statistical significance was assessed at a 5 per cent level ( $\alpha = 0.05$ ).

## 7. RESULTS AND DISCUSSION

### 7.1. Long-Term Temporal Trends of Tourist Inflow in Varanasi District

The temporal analysis of tourist inflow in Varanasi district reveals a long-term upward trend characterised by gradual growth, structural disruptions, and rapid recovery phases as shown in Table 1. During the pre-COVID period (1998–2019), total tourist arrivals increased steadily from approximately 2.62 million in 1998 to about 6.79 million in 2019. This steady growth reflects the increasing significance of Varanasi as a major religious and cultural tourism destination in India. The ongoing increase in visitor arrivals has been largely attributed to the growth of domestic pilgrimage tourism, enhanced transportation links, infrastructure development, and promotion of heritage and spiritual tourism. Domestic tourists made up the majority of all visitors during this time, but overseas tourist numbers grew moderately but steadily. During 2020–2021, there was a significant structural disruption as visitor arrivals fell precipitously from over 6.79 million in 2019 to roughly 0.98 million in 2020. The COVID-19 epidemic, which severely restricted travel, including

nationwide lockdowns, suspension of international flights, closure of houses of worship, and limitations on public meetings, is consistent with this abrupt fall. Since tourism in Varanasi is largely pilgrimage-oriented and dependent on religious congregations, these restrictions significantly reduced visitor inflow. Foreign tourist arrivals experienced a particularly sharp decline due to international travel restrictions, while domestic tourism began to show partial recovery in 2021 as travel restrictions gradually eased. Tourist arrivals significantly increased in 2022 and 2023, surpassing pre-pandemic levels, indicating a robust recovery in the post-pandemic period. This sharp rise is a result of the resiliency of the tourism industry, the resurgence of pilgrimage activities, and the increased demand for travel once the pandemic restrictions were lifted. In December 2021, the Kashi Vishwanath Dham Corridor was inaugurated, which significantly improved the destination's appeal and accessibility and added to the influx of tourists. As a result, 2022 can be seen as a structural break in the tourist time series, signifying a shift from the disruption caused by the pandemic to a swift recovery following it. Changes in tourism reporting methodology, which now include pilgrim foot traffic at significant religious sites, may also be responsible for the notable increase.

**Table 1: Annual Growth Rate of Tourists in Varanasi District (1998-2023)**

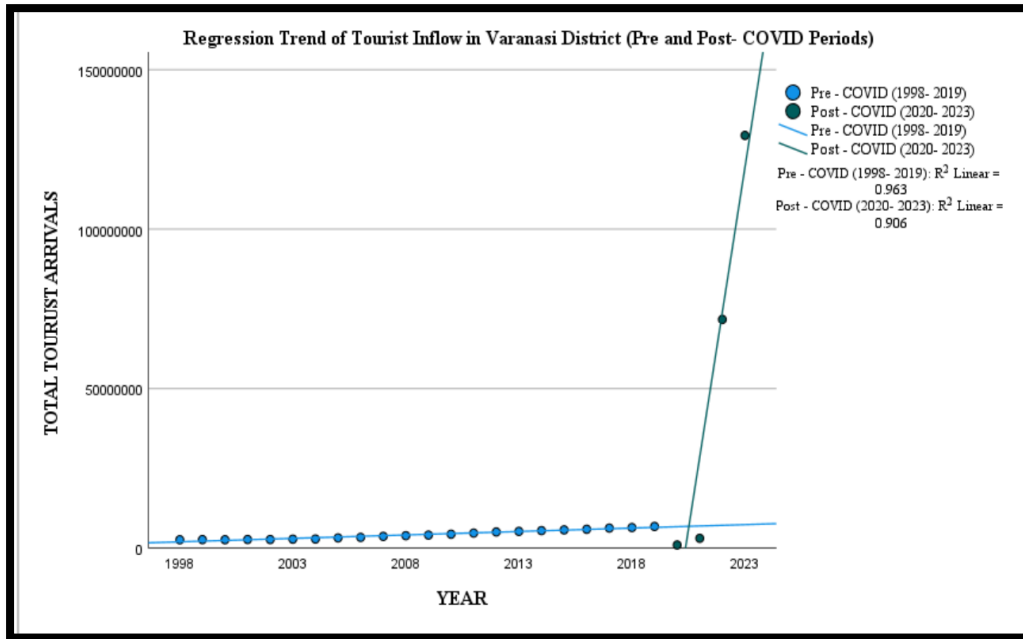
Year	Domestic Tourists	Annual Growth Rate (%)	Foreign Tourists	Annual Growth Rate (%)	Total Tourists	Annual Growth Rate (%)
1998	2490439	—	130261	—	2620700	—
1999	2506595	0.65	163811	25.76	2670406	1.90
2000	2507527	0.04	125982	-23.09	2633509	-1.38
2001	2582845	3.00	127044	0.84	2709889	2.90
2002	2588178	0.21	98765	-22.26	2686943	-0.85
2003	2701716	4.39	108017	9.37	2809733	4.57

<b>2004</b>	2809422	<b>3.99</b>	141328	<b>30.84</b>	2850750	<b>1.46</b>
<b>2005</b>	3049980	<b>8.56</b>	143993	<b>1.89</b>	3193973	<b>12.04</b>
<b>2006</b>	3204244	<b>5.06</b>	153099	<b>6.32</b>	3357343	<b>5.11</b>
<b>2007</b>	3506991	<b>9.45</b>	169964	<b>11.02</b>	3676955	<b>9.52</b>
<b>2008</b>	3713809	<b>5.90</b>	178396	<b>4.96</b>	3892205	<b>5.85</b>
<b>2009</b>	3898557	<b>4.97</b>	188853	<b>5.86</b>	4087410	<b>5.02</b>
<b>2010</b>	4139785	<b>6.19</b>	219088	<b>16.01</b>	4358873	<b>6.64</b>
<b>2011</b>	4466972	<b>7.90</b>	245660	<b>12.13</b>	4712632	<b>8.12</b>
<b>2012</b>	4783012	<b>7.08</b>	278573	<b>13.40</b>	5061585	<b>7.40</b>
<b>2013</b>	4966161	<b>3.83</b>	285252	<b>2.40</b>	5251413	<b>3.75</b>
<b>2014</b>	5202236	<b>4.75</b>	287761	<b>0.88</b>	5489997	<b>4.54</b>
<b>2015</b>	5413927	<b>4.07</b>	302370	<b>5.08</b>	5716297	<b>4.12</b>
<b>2016</b>	5600146	<b>3.44</b>	312519	<b>3.36</b>	5912665	<b>3.44</b>
<b>2017</b>	5947355	<b>6.20</b>	334708	<b>7.10</b>	6282063	<b>6.25</b>
<b>2018</b>	6095890	<b>2.50</b>	348970	<b>4.26</b>	6444860	<b>2.59</b>
<b>2019</b>	6447775	<b>5.77</b>	350000	<b>0.30</b>	6797775	<b>5.48</b>
<b>2020</b>	876303	<b>-86.41</b>	106189	<b>-69.66</b>	982492	<b>-85.55</b>

<b>2021</b>	3075913	<b>251.01</b>	2566	<b>-97.58</b>	3078479	<b>213.33</b>
<b>2022</b>	71612127	<b>2228.16</b>	89689	<b>3395.28</b>	71701816	<b>2229.13</b>
<b>2023</b>	129182767	<b>80.39</b>	222953	<b>148.58</b>	129405720	<b>80.48</b>

*Sources: Calculated by authors from the Regional Offices of the Department of Tourism, U.P. (1998-2023)*

**Figure 2** illustrates the regression trend of tourist inflow in Varanasi district during the pre- and post-COVID periods. During the pre-COVID period (1998–2019), the regression results indicate a strong positive relationship between time and tourist arrivals, with a high coefficient of determination ( $R^2 = 0.963$ ). This implies that during this time, tourism inflow followed a continuous and consistent upward trend, reflecting the region's growing tourism industry and pilgrimage travel's sustained rise. In contrast, the post-COVID phase (2020–2023) demonstrates a sharp recovery and dramatic surge in tourist inflow. The regression results for this period also show a strong positive relationship ( $R^2 = 0.906$ ), indicating rapid growth following the pandemic disruption. When the entire period (1998–2023) is considered, the regression model shows moderate explanatory power ( $R^2 = 0.224$ ). However, when the dataset is divided into pre-COVID and post-COVID periods, the regression fit becomes much stronger. The unusually steep increase observed after 2021 reflects the revival of tourism activities, pent-up travel demand, and improved tourism infrastructure. The development of the Kashi Vishwanath Dham Corridor and the reopening of religious and cultural events significantly contributed to the remarkable increase in tourist arrivals during this phase. Overall, the regression analysis shows that there was a structural break in the tourism trend, where a protracted period of steady growth was cut off by the pandemic shock and then rapidly recovered and expanded.



**Figure 2: Regression Trend of Tourist Inflow in Varanasi District (Pre- and Post-COVID Periods)**

## 7.2 Analysis of Growth Pattern and Year-wise Fluctuations in Tourist Arrivals

The analysis of annual growth rates (AGR) for tourist arrivals, shown in Table 1, reveals significant insights into the growth pattern and year-wise fluctuations in tourism activity in the Varanasi district during the period 1998–2023. The temporal behaviour of tourist inflow demonstrates a multi-phase growth trajectory characterised by steady expansion, moderate fluctuations, sudden disruptions, and rapid recovery. During the initial phase (1999–2004), the AGR values indicate moderate yet uneven growth. Domestic tourist arrivals grew relatively steadily, with AGR values remaining low but consistently positive, suggesting a gradual strengthening of internal tourism demand. In contrast, foreign tourist arrivals exhibited higher volatility, as reflected by alternating positive and negative growth rates, indicating sensitivity to external economic and geopolitical factors. Consequently, total tourist arrivals showed mild year-wise fluctuations during this period, without major structural deviations. The period from 2005 to 2019 represents a phase of sustained and stable expansion. AGR values for domestic and total tourist arrivals remained largely positive, generally ranging between approximately 3% and 9%, indicating consistent growth and increasing tourism attractiveness of the study area. Although minor fluctuations occurred annually, the overall trend remained upward, reflecting

improved infrastructure, enhanced accessibility, and growing religious and cultural tourism. Foreign tourist arrivals also showed positive growth during this phase, but remained comparatively more variable, confirming the more dynamic nature of international tourism flows. A major structural fluctuation is observed in 2020, with AGR values declining sharply across all categories, and total tourist arrivals recording an extreme negative growth rate. This abrupt decline represents a significant disruption in the tourism growth pattern, highlighting the sector's vulnerability to external shocks affecting travel mobility. The following year (2021) shows an uneven recovery pattern, characterised by a strong rebound in domestic tourism reflected in exceptionally high positive AGR values, while foreign tourist arrivals continued to decline drastically, indicating a delayed recovery in international tourism. The post-2021 period shows extraordinary year-to-year fluctuations, particularly in 2022 and 2023, when AGR values increased dramatically. A particularly dramatic change is observed in 2022, when the annual growth rate of tourist arrivals increased extraordinarily. This sharp rise does not represent normal incremental growth but reflects a structural recovery phase following the severe decline caused by the COVID-19 pandemic during 2020–2021. With the removal of travel restrictions, reopening of religious sites, and restoration of transportation services, tourism activity resumed rapidly. Moreover, the inauguration of the Kashi Vishwanath Dham Corridor in December 2021 significantly enhanced pilgrimage infrastructure and accessibility, attracting a massive influx of domestic pilgrims. As a result, tourist arrivals increased substantially in 2022 and continued to grow in 2023. Therefore, the exceptionally high AGR values during this period should be interpreted as a post-pandemic rebound effect rather than a typical year-to-year growth pattern. **These exceptionally high growth rates are primarily the result of the base effect, as tourist arrivals in 2020–2021 were unusually low due to the pandemic.** Such unusually high growth rates suggest a structural shift in tourism dynamics rather than normal incremental growth. Overall, the study shows that there is considerable annual variability even though the long-term growth pattern of tourist arrivals is still positive. This shows how resilient and sensitive tourism development is to external socio-economic and global issues. Annual Growth Rate of Tourist Inflow in Varanasi District (1998-2023) showing a sharp decline during the COVID-19 period and a strong post-pandemic recovery.

### **7. 3. The Magnitude and Stability of Tourist Inflow in Varanasi District**

The evaluation of the magnitude and stability of tourist inflow in Varanasi district provides important insights into the structural behaviour and temporal consistency of tourism development during the study period. The magnitude of tourist inflow, assessed through mean values, indicates that domestic tourists constitute the dominant segment, with an average annual arrival of approximately 11.28 million visitors. In comparison, foreign tourist arrivals

show a significantly lower mean value of around 196,761 tourists, reflecting the primarily domestic nature of tourism in the study area. The mean value for total tourist arrivals (11.47 million) further confirms the overwhelming contribution of domestic tourism to the overall tourism volume.

The stability of tourist inflow was examined using standard deviation and coefficient of variation (CV), which measure the extent of variability relative to the mean. The results indicate that domestic tourist arrivals exhibit a very high coefficient of variation (243.75%), suggesting substantial fluctuations over time and indicating low stability despite high magnitude. Similarly, total tourist arrivals exhibit an extremely high CV (239.65%), indicating significant year-to-year variability in overall tourism inflow. These high variability levels suggest that while tourism volume has expanded considerably, it has been accompanied by irregular growth patterns and pronounced fluctuations. The exceptionally high standard deviation values indicate structural shifts or extreme changes in certain years that have significantly influenced long-term stability. This high coefficient of variation is largely influenced by the extraordinary increase in tourist arrivals during 2022 and 2023, which represent structural outliers in the time series following the post-pandemic tourism surge. In contrast, foreign tourist arrivals show a comparatively lower coefficient of variation (47.21%), indicating moderate variability and relatively greater stability compared to domestic tourism when measured proportionally. This suggests that although foreign tourist numbers are smaller in magnitude, their relative fluctuations are less extreme than those observed in domestic tourism during the study period. Overall, the analysis indicates that tourism in Varanasi district is characterised by high magnitude but low stability, primarily driven by substantial fluctuations in domestic tourist inflow. The findings highlight the dynamic nature of tourism development, where strong growth trends coexist with significant temporal variability, reflecting both opportunities for expansion and challenges related to maintaining consistent tourism performance.

Tourist Category	N	Mean (X) Tourist Arrivals	Standard Deviation (SD)	Coefficient of Variation (CV %)
Domestic Tourists	26	11283487.38	27503552.69	243.75
Foreign Tourists	26	196761.96	92893.60	47.21
Total Tourists	26	11476403.19	27503301.35	239.65

**Table 2: Magnitude and Stability of Tourist Inflow in Varanasi District**

- **Hypothesis Testing**

Since the normality test indicated that the distribution of paired differences deviated significantly from normality ( $p < 0.05$ ), the non-parametric Wilcoxon signed-rank test was applied instead of the paired samples t-test. The Wilcoxon test is appropriate for analysing paired data when the assumption of normality is violated.

**Table 3: Wilconson Signed-RankTest**

Test Statistics	
<b>Z</b>	<b>-4.457</b>
<b>Asymp. Sig. (2-tailed)</b>	<b>0.000</b>

The Wilcoxon signed-rank test revealed a statistically significant difference between domestic and foreign tourist arrivals ( $Z = -4.457$ ,  $p < 0.001$ ). The negative Z value indicates that domestic tourist arrivals are substantially higher compared to foreign tourist arrivals across the study period. Since the significance value ( $p < 0.001$ ) is less than the chosen significance level of 0.05, the null hypothesis is rejected. The findings confirm that tourist arrivals in the study area differ significantly between domestic and foreign tourists. The results indicate a strong dominance of domestic tourism in overall tourist inflow patterns, highlighting the importance of internal tourism demand in shaping tourism dynamics in the region. This significant difference reflects structural characteristics of tourism development, where domestic visitors form the primary component of tourist inflow.

## 8. SUGGESTIONS

Based on the findings, it is suggested that tourism planning in the Varanasi district should focus on strengthening sustainable and balanced development strategies. Since domestic tourism dominates overall tourist inflow, efforts should be made to diversify tourism by promoting international tourism through improved marketing, enhanced connectivity, and better visitor services. Infrastructure development, including transportation, accommodation, sanitation, and crowd management systems, should be prioritised to manage increasing tourist volumes effectively. Additionally, sustainable tourism practices and heritage conservation measures should be implemented to ensure long-term environmental and cultural preservation. Developing crisis management strategies and enhancing digital tourism initiatives can further

improve resilience against external disruptions and support stable tourism growth in the future.

## 9. CONCLUSION

The present study analysed the temporal dynamics, growth patterns, magnitude, stability, and comparative structure of tourist inflow in Varanasi district over the period 1998–2023. The findings reveal that tourism development in the study area has followed a multi-phase trajectory characterised by gradual expansion, sustained growth, sudden disruption, and rapid recovery. The long-term temporal analysis indicates a predominantly upward trend in tourist arrivals, driven largely by domestic tourism associated with religious, cultural, and pilgrimage activities. The growth patterns and annual fluctuations demonstrate that tourist inflow has experienced periods of stable expansion interspersed with significant variability. Moderate and steady growth was observed during the early and middle phases, followed by an abrupt decline during external disruptions, and an extraordinary surge in recent years. These fluctuations highlight the sensitivity of tourism systems to external socio-economic and global factors, while also demonstrating the resilience and recovery potential of the tourism sector. The magnitude and stability further confirm that domestic tourists constitute the dominant component of tourist inflow, contributing significantly to overall tourism volume. However, the high coefficient of variation indicates substantial instability and year-wise fluctuations, suggesting that rapid growth has been accompanied by irregular patterns. In contrast, foreign tourist arrivals, although smaller in magnitude, exhibited relatively moderate variability. Hypothesis testing using the Wilcoxon signed-rank test confirmed a statistically significant difference between domestic and foreign tourist arrivals, highlighting the structural dominance of domestic tourism in Varanasi district. Overall, the findings emphasise that while tourism in the study area demonstrates strong growth potential, maintaining stability and balanced development remains a key challenge.

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