

Exploring the Impact of Seasonality in Northeast India and South Korea: A Study based on Economic and Strategic Prospects

A. S. Sochipem Zimik* and Shin-Won Kang*

Abstract

Tourism has proven to be pivotal for economic sustenance in Northeast India and South Korea. Such recognition needs to be translated into informed analysis by examining the seasonal tourist inflow in the region from 2018 to 2024. Statistical approaches such as the Gini index, ARIMA, and SARIMA analysis would redefine the tourist's valuable information for the investor, scholar contribution, and management that accounts for the tourist's attraction and expectations. This study provides robust and evidence-based insights, validated through statistical methodologies, to inform the strategy, competence, and awareness of policymakers and stakeholders. The seasonality index determination would highlight the best and most authentic information on tourism in the region. The study seeks to portray a significant information gap that has not been examined seriously through various statistical methodologies. One of the main takeaways of the study would be informative suffices, which has never been contributed and direct the tourist to identify the best favorable season to visit, and stakeholder to be conscious and competent with a strategic and efficient work for economic sustenance.

Keywords: Gini Index, Seasonal Index, ARIMA, SARIMA, Strategies.

1. Introduction

Northeast India and South Korea have emerged as significant tourist destinations in Asia and on the global stage (Zimik & Barman, 2021; Kizi *et*

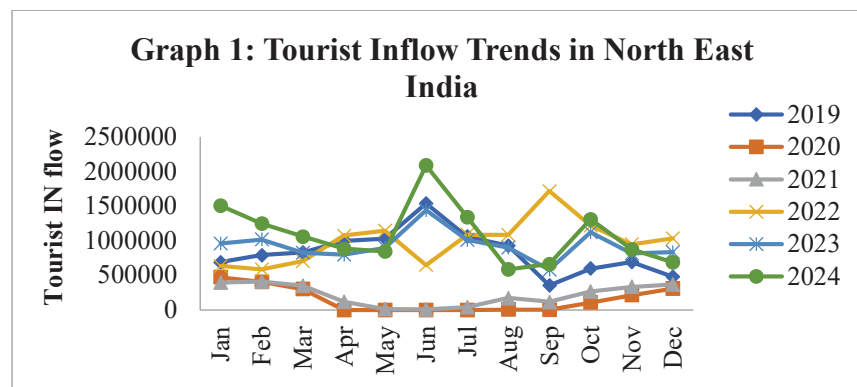
* Department of Social Welfare, Sunchon National University, South Korea,
scpzimik@gmail.com; swkang@scnu.ac.kr

al., 2025). The strategic locations and diverse tourism offerings in both regions have attracted considerable attention. Despite this, systematic research on the tourism industry in these areas remains limited. While several studies have examined economic benefits, tourist flow patterns, and sectorial challenges (Akhtar & Anjum, 2023), there is a notable lack of in-depth research specifically investigating the factors influencing destination choice within these regions. This study addresses this gap by proposing a comprehensive investigation of regional tourism, aiming to generate actionable insights for policymakers and stakeholders. A distinctive feature of this research is its comparative analysis of tourist inflow trends in South Korea and Northeast India, which enhances the validity and relevance of the findings. The economic impact of tourism is recognized as a critical determinant of destination appeal in both regions (Hudson & Ritchie, 2006). Moreover, emerging concepts such as tourism satellites have highlighted the importance of data-driven planning and information assessment (Liu *et al.*, 2022). Prior research assessing infrastructure and its influence on tourism in Northeast India has emphasized the need for informed, competent, and pragmatic approaches by stakeholders (Barman & Zimik, 2021). In contrast, South Korea's advanced infrastructure offers valuable lessons in resource management and visitor-experience enhancement. Investments in technology and infrastructure are critical, underscoring the necessity for strategic action (Zimik & Barman, 2024; Dam, 2015). Furthermore, the integration of marketing strategies with empirical research in South Korea illustrates the importance of combining data-driven insights with strategic planning (Waitt, 1996; Jang *et al.*, 2025; Ryu & Kwon, 2021). Before examining rapid transformations within the tourism industry, this study first reviews current scholarly trends and evaluates their applicability to the regional contexts of Northeast India and South Korea.

1.1. Study Background

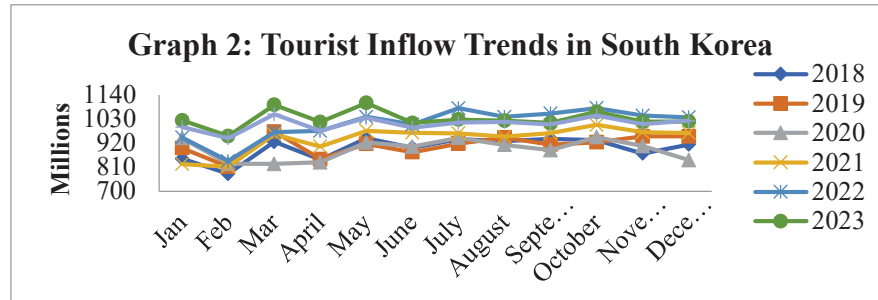
The study goes beyond analyzing the pandemic's decline and recovery rates, offering a broader perspective on regional development in Northeast India. In contrast, South Korea exhibits consistent tourist inflows with minimal fluctuations, resulting in a significantly lower Gini index compared to Northeast India. This highlights the need to redefine the tourism industry from the tourists' perspective while simultaneously implementing destination-level strategies to ensure sustainability and long-term growth. The introduction of a constructed environment provides an opportunity to evaluate tourist destinations from the viewpoints of both tourists and other stakeholders (Zimik & Barman, 2024). Graph 1 illustrates tourist flow in the region, presenting the first visual representation of tourism trends in Northeast India during the

COVID-19 pandemic and highlighting patterns in tourist movement. Despite the geographical distance between NER (North East Region) and South Korea, the growing influence of the Korean Wave (Hallyu), social media, and shared cultural elements has stimulated increasing interest in understanding their tourism industries. A distinctive contribution of this study lies in its focus on seasonality, a critical yet often underexamined factor that shapes how tourism providers can better serve visitors. This aspect is frequently overshadowed by broader discussions of industry challenges, constraints, and opportunities. The study emphasizes that determining the seasonality index (SI) is essential, as it significantly influences tourists' decision-making processes when selecting and finalizing travel plans. In addition, it offers forward-looking insights by proposing practical, data-driven strategies. These recommendations aim to guide travelers in identifying the most suitable time to visit, enabling them to experience destinations at their peak and fully appreciate their aesthetic appeal.



Source: Authors Compilations

This is to say that there is a variation in tourism inflow which is further verified in Graph 2 below. A thorough investigation into the causes and effects of the variations in the study has yet to be conducted. To provide a more robust rationale, our aim is to generate and analyze data that goes beyond simple trend analysis. While various statistical tests offer valuable insights, our study aims to go beyond the conventional analysis and uncover groundbreaking information. Trends such as the rise of K-drama culture and the seamless blend of tradition and modernity have made South Korea a top destination for tourists (Parc & Moon, 2013; Longkumer, 2024; Fortunata & Utami, 2021).



Source: Authors Compilations

The "Korean Wave" (Hallyu) branding and marketing strategies have further enhanced its appeal, making it a preferred choice for visitors (Jin *et al.*, 2024). These factors, combined with South Korea's infrastructure advancements and overall development, have made it an even more attractive destination.

2. Literature review

Building on previous studies, this research investigates and maps scholarly contributions in the tourism domain using a robust and systematic approach. Leveraging technological tools, including VOSviewer, we analyzed publications indexed in the Scopus database from 2011 to the present, ensuring precision and quality in assessing research trends. The analysis focused on contributions related to tourism from the perspectives of tourists and seasonality. Major thematic areas were visualized using color-coded clusters: yellow bubbles represent natural seasonality (e.g., forecasting, SARIMA models); green indicates ecosystem-related studies (e.g., ecotourism, environmental protection, pollution concerns); blue reflects perceptions (e.g., production, spatial planning, traffic management); red corresponds to destination-related factors (e.g., accessibility, visitor experience, business); violet denotes ecological aspects of destinations (e.g., disease, pandemics, wildlife health); and light blue and orange highlight leisure and peak-season tourism (Tripathi, 2021). Despite the distinct thematic areas identified in Figure 1, the analysis reveals strong interconnections between these contributions, highlighting the integrated nature of research in the tourism domain.

volume and visibility. This underscores the need for targeted, high-quality scholarly contributions in these regions.

Table 1: The top contributors by rank in tourism and seasonality research study

Rank	Country (Continent)	No of Articles	Rank	Authors (Year)	Times Cited
1	China (Asia)	77	1	Berdalet et al. (2016)	421
2	Spain (Europe)	50	2	Mocanu et al. (2013)	228
3	Italy (Europe)	31	3	Cheer et al. (2019)	193
4	US (N. America)	28	4	Joo et al. (2019)	161
5	Brazil (S. America)	17	5	Tsai et al. (2018)	155
6	Greece (Europe)	17	6	Gascoin et al. (2015)	151
7	Croatia (Europe)	16	7	Bury et al. (2011)	150
8	India (Asia)	15	8	Soares et al. (2018)	120
9	Australia (Oceania)	14	9	Becken (2014)	120
10	Indonesia (Asia)	11	10	Kosmas et al. (2014)	119

Source: Author construct from the Scopus Database

It is therefore inferable that there is no evidence of research carried out on the seasonality of tourists with details information on the study regions. Taking this into account, we have designed the study with a more pragmatic orientation, aiming to deliver rational, evidence-based insights to readers and contribute to the identified research gap.

2.1. Objectives

Given the research gap identified, our study focuses on two major objectives as follows:

- To determine the distribution of tourist inflows in Northeast India and South Korea using the Gini index and seasonality index
- To forecast tourist inflow in the region using ARIMA and SARIMA models

3. Methods

To date, limited empirical evidence has been available regarding tourism preferences and detailed spatial-temporal analysis of tourist inflows in the study regions. This gap underscores the significance of the present research

in contributing systematic and data-driven insights into the tourism industry. As noted by Wang (2024), comprehensive assessments of industry performance and variations are facilitated by the availability of detailed and well-structured data.

Accordingly, this study emphasizes the need to examine the annual distribution of tourist inflows, seasonality patterns, and future tourism forecasts. To address these objectives, seasonal data on tourist inflows were collected from individual states in Northeast India. Due to ongoing regional disturbances, data from certain states, such as Manipur, were unavailable; therefore, the most recent reliable data (2023) were used for analysis. Supplementary data were obtained through field visits across selected states, with Mizoram, Assam, and Tripura assessed based on tourism growth rates between 2022 and 2023. For South Korea, official tourism statistics were sourced from relevant government departments, and additional qualitative information on major tourist destinations was collected through interactions with representatives of prominent tourism sites.

The study primarily relies on secondary data obtained from official tourism departments, complemented by information from academic journals, books, government reports, and reputable online sources to enhance data reliability. A descriptive research methodology was adopted in alignment with the study objectives. Quantitative analyses included the computation of the Gini index to assess the concentration of tourist inflows, seasonal indices to examine seasonality patterns, and ARIMA and SARIMA models to forecast future tourism trends for both Northeast India and South Korea. The analysis highlights critical patterns in tourist distribution, seasonal preferences, and projected growth trajectories, generating important research questions related to tourism demand dynamics. These findings offer meaningful insights for tourists, policymakers, stakeholders, and investors, supporting evidence-based decision-making and promoting efficient resource management and supply-chain alignment within the tourism industry.

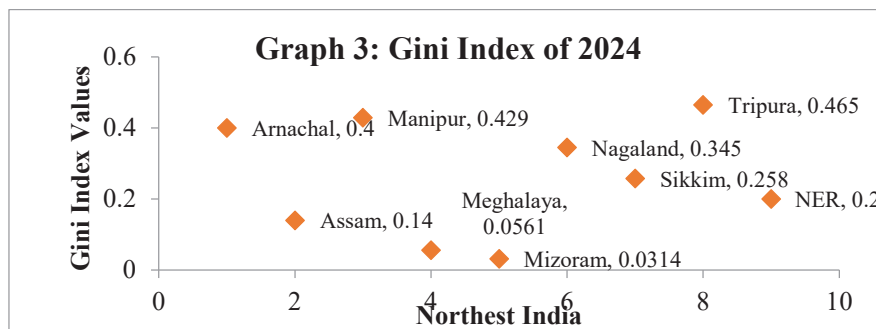
4. Findings

The study proceeds by identifying data trends and processing them further to derive meaningful findings with minimal residual error. We propose to examine whether the flow trends follow a uniform distribution. For this purpose, the Gini index is determined. Based on this, further analysis is carried out depending on the study's requirements.

4.1. Why Gini Index?

To date, no study has applied the Gini Index (GI) to analyze the

distribution of tourist inflows in the study region. The GI provides empirical evidence of the degree of uniformity or concentration in tourist flows throughout the year (Zhu *et al.*, 2023). The index ranges from 0 to 1, where values closer to 0 indicate a more uniform monthly distribution of tourists, while values closer to 1 reflect higher levels of concentration and seasonality. In this study, Graph 3 is scaled from 0 to 0.5 to enhance visual clarity. Among the states analyzed, Tripura records the highest Gini index value (0.465), followed by Manipur (0.429), indicating relatively high seasonal concentration. In contrast, Mizoram exhibits the lowest Gini index value (0.0314), suggesting a highly uniform distribution of tourist inflows. The overall Gini index for the region is 0.22, reflecting a moderate level of seasonality in tourist distribution.



Source: Report from statistic department

Working Formula:

$$\text{Gini Index (GI)} = 1 - \sum (p_i)^2$$

Where p_i stand for probability of tourist flowing on monthly basis in 2024

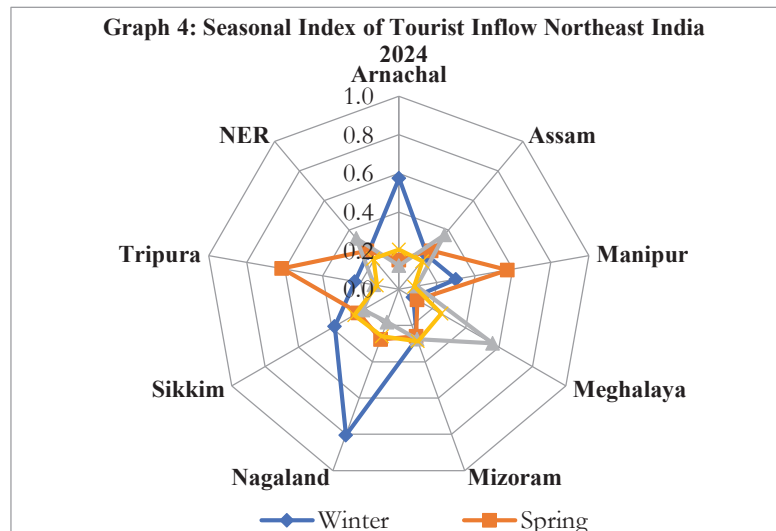
In the case of South Korea, the Gini index values are consistently close to zero, indicating a high degree of uniformity in tourist inflows throughout the year. Visitor numbers exhibit minimal fluctuation, which may be attributed to the country's relatively homogeneous cultural practices and well-integrated tourism infrastructure. In contrast, India offers a wide spectrum of cultural and experiential diversity, enabling tourists to engage with distinct regional identities under varying contexts. As illustrated in Graph 2, tourist inflows in Northeast India—at both regional and state levels—demonstrate considerable variability, reflecting a non-uniform distribution across the region. These variations underscore the need to identify and quantify specific patterns of fluctuation in tourist flows. Consequently, analyzing trends in tourist inflows becomes particularly important, with seasonality emerging as a key explanatory parameter. Seasonality is a widely recognized and market-relevant concept, readily understood by planners, developers, stakeholders, investors, local

communities, and host populations (Zimik & Barman, 2023). Unlike many other industries, tourism products are co-created by tourists themselves, as demand and satisfaction play a central role in shaping the final experience (Smith, 1994). This dynamic places significant responsibility on stakeholders to understand tourist behavior and preferences, or alternatively, to strategically influence demand through appropriate information and service design. These considerations raise important research questions regarding the nature of tourist inflows across different tourism segments prevalent in the region, including ecotourism, adventure tourism, heritage and cultural tourism, leisure tourism, and festival-based tourism. Building on the empirical evidence provided by the Gini index analysis, this study therefore proceeds to a detailed examination of seasonal indices to further elucidate patterns of tourism demand.

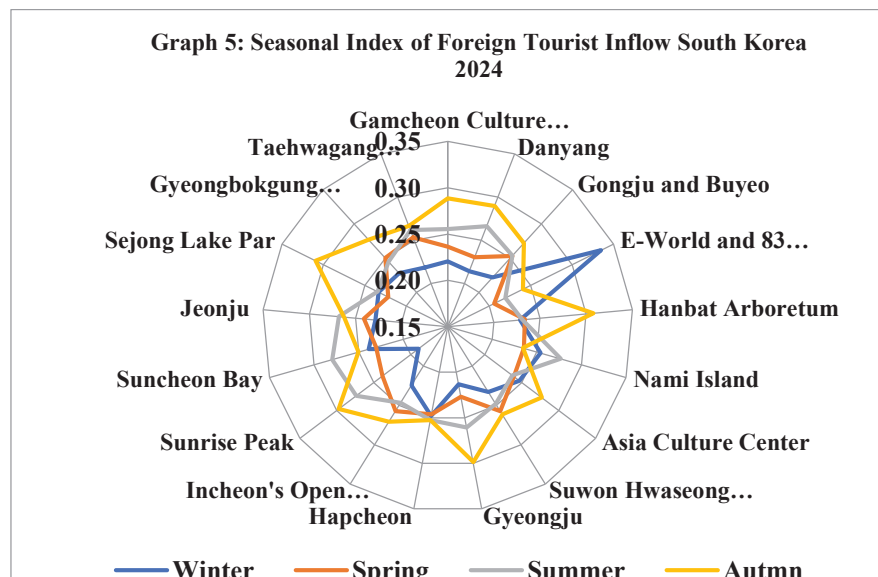
4.2. Seasonality Index (SI)

From a sustainability perspective, variation in tourist inflow can be argued to be one of the natural phenomena that control and balance the use of exhaustible resources. Paradoxically, there is a clear need to assess the SI, as it offers a multi-faceted approach addressing several stakeholder concerns: managing resources for the future, supporting investors in formulating strategies for economic sustenance, and assisting policymakers in framing affordable opportunities (Zimik, 2025). From Graph 4, it is evident that winter proves to be the most favorable for the visitor followed by spring, and summer. The overall analysis of the study region gives the result that all the states show equal SI values of 0.2. In saying this, Arunachal Pradesh and Nagaland account for the SI values of 0.6 and 0.8 respectively. Festival tourism (Hornbill, Monastery, Sela Pass, and Ziro Valley) is enriched by displays of unique culture and tradition, and combined with strategic marketing efforts, has attracted tourists during the winter seasons. Considering the climatic conditions, the spring season makes Manipur a more favorable destination, with the indigenous Shirui Lily in bloom and the Sangai deer drawing the attention of tourists worldwide. A remarkable feature of Tripura as a tourist destination is that all the major tourist locations are situated within the city, making them easily accessible — unlike many other destinations. Culturally and religiously, most festivals fall in spring, and coupled with favorable weather and climatic conditions, this makes the season ideal for tourists to visit (Kuniyal & Negi, 2022). The SI data illustrate the need to understand tourist influx and indicate that stakeholders should respond through investment, marketing strategies, and infrastructure development of the destinations. The study provides clear information to readers and offers valuable insight for policymakers in framing policies for tourism development. One of the major contributions that can be

understood is the tourist inflow trends of the states and the region. This has raised the issue of the need to work on a collaborative effort to channel the tourists to explore the region, with the data identified.



Source: Tourism department



Source: Authors Data Analysis

Working Formula of SI:

In the light of the seasonality, we propose four seasons as follows:

- **Winter:** November, December, and January (of the same year)
- **Spring:** February, March, and April
- **Summer:** May, June, and July
- **Autumn:** August, September, and October

Determination of SI of Northeast India:

SI of 2024 spring season

$SI = (\text{Tourist visiting recorded in 2024 spring}) / (\text{Total number of tourist visiting the region in the year 2024})$

$SI = (1258255 + 1070994 + 894999) / 12464331$

$SI = 3224247 / 12464331$

$SI = 0.259$

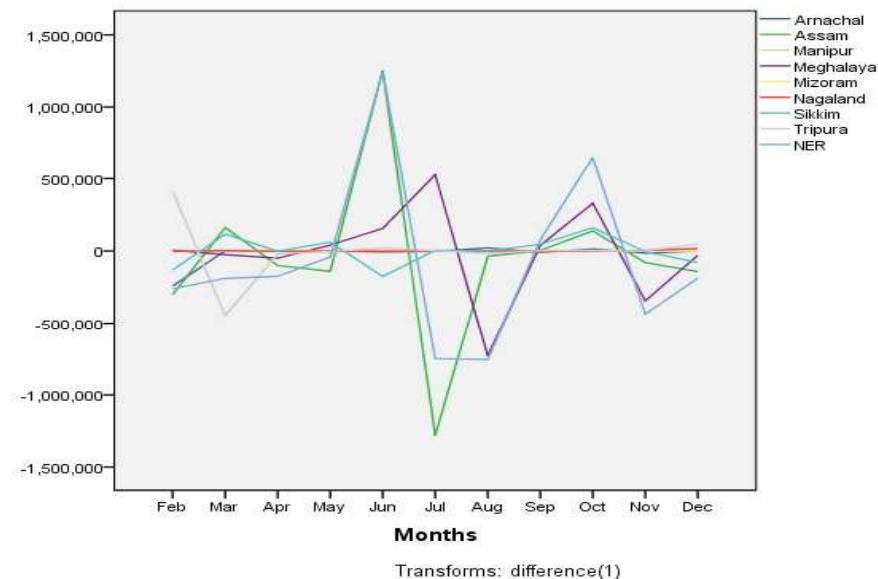
These findings underscore the importance of coordinated action among stakeholders and policymakers to achieve optimal tourism outcomes. Located along the southern coastline of South Korea, Gamcheon Culture Village has emerged as a major tourist destination, offering a distinctive combination of natural scenery and cultural heritage, particularly during the autumn season, as illustrated in Graph 5. Alongside prominent attractions such as Hanbat, Gyeongju, Sunrise Peak, and Sejong Lake, the village appeals to visitors seeking both visual appeal and cultural immersion. During the winter season, tourist inflows remain moderate, with destinations such as E-World and the 83 Tower attracting substantial visitor interest. Overall, tourist inflows in South Korea display a high degree of consistency, with relatively even spatial and seasonal distribution across regions. Both summer and winter months exhibit moderate and stable tourist volumes, reflected in an average Seasonal Index (SI) value of approximately 0.25. In contrast, for Northeast India, winter emerges as the most favorable season for tourism, followed sequentially by spring, summer, and autumn. This finding highlights the importance of accurate forecasting in guiding evidence-based policy formulation. The SI results provide a rational basis for projecting future tourist inflows and support the application of time-series forecasting techniques. Accordingly, ARIMA and SARIMA models are proposed to capture cyclical trends and seasonal variations, as evidenced by the graphical analyses presented above. These methodological approaches can assist policymakers in designing targeted strategies to manage seasonality and optimize resource allocation.

4.3. ARIMA Analysis

The oscillations observed in the review gives a strong indication of the tourist inflow of 2025. With the basic fundamentals of the models as (1, 1, 1). Arithmetic regression values; integrated values; and moving average

as “1” respectively. The positive fluctuation in Graph 6 indicates that the series shows a positive regression, with an increase in comparison to last year's same months. Assam, Tripura, and northeast India show remarkable high-frequency fluctuations. The statistical model enables the analysis and forecasting of time series data for stakeholder insight information, while the tourists are communicated to deliver the maximum trends of tourist flow. Incorporating the ARIMA model to observe data in policymaking would reflect an ideal and rational orientation that supports sustainability. Most states in Northeast India fall within neutral ranges, indicating ARIMA values close to zero, suggesting stable or minimal growth trends. In contrast, South Korea demonstrates a significant potential for growth in its forecasting, showcasing a more promising outlook.

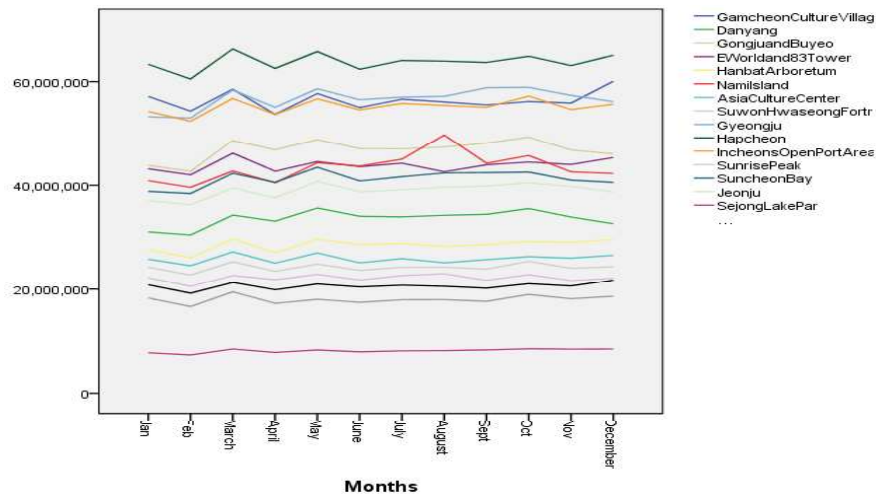
Graph 6: Autoregressive Integrated Moving Average (ARIMA) of 2025 of Tourist visiting in Northeast India



The positive ARIMA values suggest a possible increase, potentially exponential, with rising values over time. It is most likely that there is a high degree of possibility of unpredictable or forecasting of tourist inflow with the help of this approach as shown in Graph 7. Furthermore, the lack of control over tourist inflow trends clearly highlights the need for further research. Such information lacuna serves as the ideal for modifying the model by incorporating seasonality (set to 12, representing the months of the year) into the analysis. The result obtained could not give significant confidence to the policymakers, stakeholders, local community, investors,

and tourists. This generally underscores the true meaning of seasonality consideration, which is the theme of the study urges to investigate and examine for enhancing the information exploration and research contribution. To date, no clear application of the ARIMA model has been documented in the study regions. Furthermore, clear debacles are witnessed. However, evidence of dark tourism strongly highlights certain cases and issues, including overcrowding, traffic congestion, and poor hospitality experiences.

Graph 7: Autoregressive Integrated Moving Average (ARIMA) of 2025 of Tourist visiting in South Korea



Source: Author calculation in SPSS

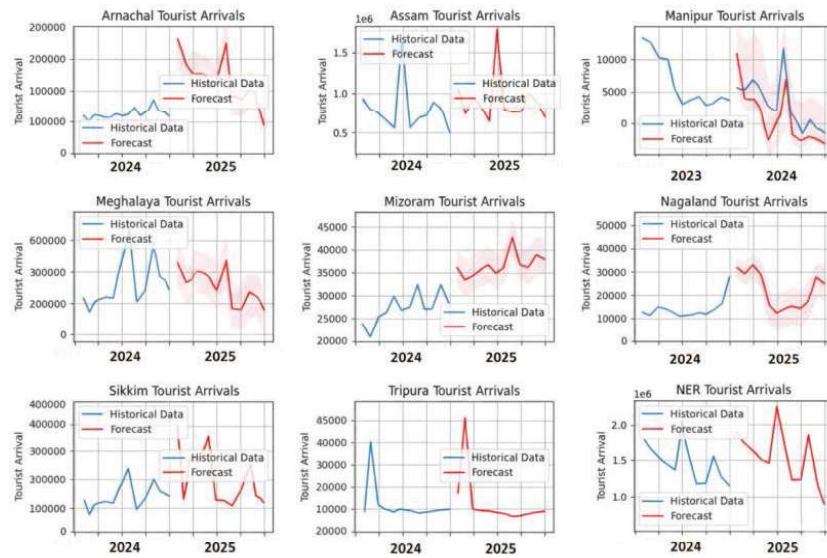
This being said, the study strongly recommends the need for a substantial increase of research contribution. Information from the ARIMA reports would indicate the need for a swift response and competence to align toward the balance of demand and supply.

4.4. SARIMA Analysis

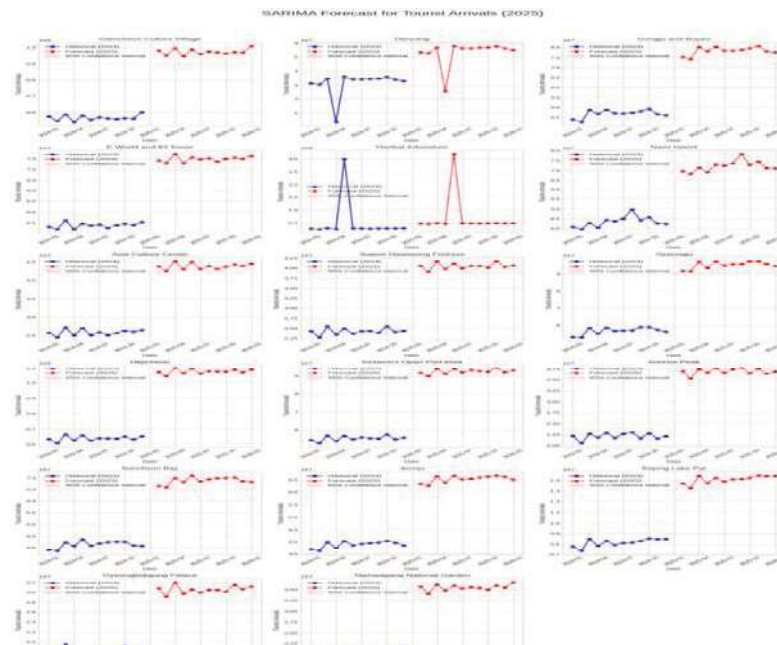
Following the seasonality and Gini index determination has strongly recommend considering the importance of seasonal parameters of (P, D, Q, S), where "S" refers to the seasonal factors. Considering the need for seasonality of the industries, we propose a methodological approach with the same logical approach of (1, 1, 1) and seasonality "S" as 12 (considering the months of the year). The model strongly favors better accuracy by incorporating seasonality as a major factor. Graphs 8 and 9 represents the forecast of tourist flow in the region for the year 2025 with the SARIMA approach handling the seasonality explicitly. Adopting the SARIMA

model is strongly recommended for forecasting monthly tourist arrivals, as it proves to be a better choice than the ARIMA model. The x-axis represents the months of 2024 and 2025 for each of the individual states of the region. Depending on the number of tourist inflow recorded, we propose the y-axis in the form of thousand and million digits. The data obtained are processed and transformed using a natural logarithm and first difference. With the help of a distinctive color, each of the region's tourist inflow considering the seasonality trends is represented in graph 8. This indicates the forecast of tourist inflow in the region, with Manipur as a special case; where the data for 2023 were obtained from 2022 with a proportionate percentage of increase. This further implies deducing the data till 2023 to avoid any possible error, making it presume the forecast values of tourist inflow in the region of 2024, which contradicts another forecast for 2025. The blue curve indicates the tourist flow trend of the year 2024 for each of the states and regions. While the red curve indicates the forecast of monthly tourism flowing considering the SARIMA model of the year 2025. Making rationality of the study findings need to focus more on the red margin, which is the major focus point of the study with the y-axis indicating the tourist inflow and the x-axis indicating the month. Till date it has been brought to the notice that no distinctive information on the nature of the tourist inflow with seasonality factor consideration has ever been produced. Considering the seasonality factors indicates a slight shift of the curve, unlike the predecessor model highlighting only the trends of the future forecast with just improvement or decline, while ignoring the exact number of predictions. This has been the ideal information required for the management and policymakers to strategize with its marketing strategies, investments, and proper planning. One of the interesting features of the study is to comprehend the fluctuation of the curve for the well-being of the industries in the region. Tagiya & Mara (2024), uncover the issues in the region by recommending the improvement of tour guide facilities in the region. Interestingly, it is to be noted that there is a strong motion of support from the government to improve the industries with the policy formulations (Desk, 2025). It can further be encouraged to know that the increase of tourist inflow is more likely in the early months of the year, this curve suggests to gives more strategies during the peak seasonal, while the off-season sends a strong marketing effort, right after the peak season, to prolong the peak seasons. Graph 9 clearly illustrates the tourism forecasts for South Korea, highlighting significant development projected for 2025 based on the SARIMA analysis. In contrast to other destinations in Northeast India, South Korea shows a marked improvement and growth in tourist inflows.

Graph 8: Seasonality Autoregressive Integrated Moving Average (SARIMA) of 2025 of Tourist visiting in Northeast India



Graph 9: Seasonality Autoregressive Integrated Moving Average (SARIMA) of 2025 of Tourist visiting in South Korea



Source: Authors calculation in Python

Data for Manipur is unavailable for 2023 and 2024 due to ongoing conflict and the 2024 forecast is estimated from the available 2023 data

All destinations, except Hanbat Arboretum, demonstrate consistent performance comparing with the 2024 result. The report of SARIMA in Assam shows a gradual increase in the forecast as compared to the historical data. Although a significant increase in tourist inflow is recorded, it should be noted that the tourist inflow in the state is more compared with other states constituting 56 percent of the total tourist inflow in the study regions. From Graph 6, it can be noted that the region shows a positive forecast for tourism industries in the spring season. This may be strongly related to the Behu festivals and coupled with the climatic conditions that favor the region for exploring all the heritage sites. Another interesting feature of the states is the medical facilities, it has been well-recognized internationally (Das, 2023; Desk, 2023). Other interesting destinations are tea tourism, eco-tourism, and festivals, has proven to be the main drivers of tourism industries, which fall in the spring season (Banerjee & Tyagi, 2024). It is pertinent to know that the region has proven to be a major city for academic excellence and commerce. Especially study has to be made for the Manipur forecast, which can be conceptualized as an opportunity loss. An interesting study among all other states. This can be noted as 2024 shows positive growth in the tourism industry. This is again seen in the spring seasons which are due to the eco-tourism industries coupled with the support of the state with the state flower festivals, Shirui Lily Festivals. While the state is known for Sangai deer, which has brought serious attention in the global arena of tourism industries. Spring season is again favored with the cultural and religious festivals associated. Meghalaya and Tripura show less growth in tourism industries, however, this is not due to the lack of festivals and heritage sites. Autumn and winter for Meghalaya and early spring for Tripura have been considered the most favorable season for visiting. Mizoram, Nagaland, and Sikkim show exponential growth in 2025. This is as evident from Graph 8. Nagaland usually shows great progress in the forecast during the winter season; this is generally featured due to the Hornbill Festival's international festivals along with the follow-up of Christmas and New Year's festivals. Credits should be given to make the event close to the general celebration of the region. It is further pertinent to leverage the momentum of the peak season to develop other unexplored channels within the tourism industry.

Mizoram has shown significant growth throughout the years, with the peak seasons in the autumn season. Sikkim shows significant growth in the tourist inflow during the spring and winter seasons. The findings of the paper could be based on tourist satisfaction, feedback, and challenges faced by the tourists. Another pertinent to work on is the need to work on the

4A's (Accommodation, Accessibility, Attraction, Amenities) of the destinations. Another intriguing aspect to work on is the need to make the destination well accessible from the infrastructure, as tourists are more interested in continuing to linger in social life and digital transactions (Zimik & Barman, 2021). Another interesting feature is to work on the expectations and revisit the intention of the tourist (Zimik et al., 2022). This information thus serves the stakeholder well to perceive the interest and visit flow expectations.

5. Results and Discussion

The authentic data obtained from various respective state departments from 2018 to 2024 gives a clear visual with a rational research approach. Hence, the study further proposes a tentative route map for tourists by identifying the best and most feasible season to visit the study region. This attracts tourists and encourages them to visit other regions with minimal additional investment. The graphical representation coupled with the tabulation can be used as a compendium by both the tourist and stakeholders, with the scientific evidence using the index and models for visitor while exploring North East India and South Korea. Notably, the study delivers a strong and compelling message through a rational, evidence-based approach that enhances stakeholder awareness and strategic intuition, supporting effective decision-making and competent policy formulation—particularly in Northeast India, where resource availability and capacity are more constrained compared to South Korea. By portraying the tourist in flux and further determination of various indicators index, the study leaves strong interpretations to the policymakers in understanding the tourist psychology and behaviors, and react with the marketing strategies, management of funds, exhaustible resources management, and effective planning for both the study regions. A key concern for the region is the potential rise of dark tourism in northeast India, an issue that could be mitigated by enhancing hospitality and services—areas where South Korea surpasses Northeast India. This highlights the importance of local engagement, political stability, ethical practices, and disaster management as crucial factors in fostering a positive tourism environment. Moreover, future serious research work based on a systematic literature review of the seasonal nature of tourists is strongly recommended, along with its potential for further futuristic research.

6. Conclusion

This study highlights the urgent need for enhanced collaborative efforts among the eight states of Northeast India to strengthen tourism development through a coordinated, inter-state approach. Based on the

empirical evidence, tourism activities in the region should be conceptualized as interconnected and transboundary rather than isolated state-level initiatives. In contrast, South Korea demonstrates effective utilization of tourism data to attract visitors through integrated planning, advanced infrastructure, and data-driven decision-making. A critical gap identified in Northeast India is the limited coordination among departments responsible for infrastructure development, destination management, and service delivery. These challenges require immediate attention, alongside issues related to linguistic accessibility and the adoption of sustainability principles. The findings also reveal that, beyond policy announcements and tourist inflow statistics, there has been limited application of empirical evidence to guide tourism planning in many developing regions. A systematic review of the Scopus database further confirms the absence of coherent, data-aligned strategies for tourism policy and marketing in such contexts. In contrast, South Korea effectively leverages technology, artificial intelligence, and favorable economic conditions to transform tourism data into actionable strategies that support industry growth. To address these shortcomings, this study strongly advocates a smarter and more pragmatic approach to tourism planning, grounded in the systematic use of statistical indices and forecasting models such as ARIMA and SARIMA.

Table 2: Seasonal and Economic Enhancement

Particular	SI		% of Tourist increase in 2025	
	NER	SK	NER	SK
Winter	0.2	0.26	1.34	17.18
Spring	0.3	0.24	3.25	20.47
Summer	0.3	0.25	3.48	27.38
Autumn	0.2	0.25	0.96	-1.94

Source: The Tourism Departments of North East India and The Public Data Portal of South Korea

Table 2 indicates that the seasonality index (SI) differs significantly between NER and South Korea, a finding consistent with the Gini Index (GI) determinations. The non-uniform distribution of SI in NER highlights the need for further development within its tourism industry, particularly in improving the management and distribution of tourist flows. In contrast, South Korea's relatively uniform SI supports greater predictability in tourist arrivals and facilitates more efficient planning and maintenance of tourism services. However, the concentration of tourist activity in South

Korea also raises concerns related to over tourism, which may increase the risk of unsustainable practices, including the emergence of dark tourism dynamics. At the same time, this concentration reflects the country's strong potential for revenue generation within the tourism sector. Another notable insight from the table is the projected percentage increase in tourist inflows for 2025. When considered alongside factors such as investment, promotion, and forecasting models like ARIMA and SARIMA, this growth suggests promising prospects for future revenue generation. Overall, South Korea demonstrates a more advanced stage of tourism industry development, likely supported by superior infrastructure and the integration of artificial intelligence in tourism management.

Strategic Enhancement

To enhance the performance and sustainability of the tourism industry, significant infrastructure development is required, supported by a strategic approach that incorporates the study's key findings. The following recommendations are proposed:

1. Collaboration between NER and South Korea:

Strengthening institutional and industry-level collaboration between the two regions can create mutually beneficial outcomes. South Korea's global cultural influence, particularly through the Korean Wave (Hallyu), provides a valuable model for international branding and promotion. NER can draw lessons from South Korea's approaches to resource management, investment strategies, and the development of smart and aesthetically appealing destinations. In this context, public-private partnerships can play a vital role in enhancing the global image and competitiveness of both regions.

2. Enhancing Stakeholder Competence:

Effective tourism development depends on the competence and active engagement of stakeholders. Policymaking should be aligned with evolving tourist expectations and experiences. In South Korea, stakeholders may further emphasize experiential dimensions such as aesthetics and self-actualization. In contrast, the NER region requires a stronger focus on building stakeholder capacity, particularly in infrastructure development and service delivery.

3. Integration of Advanced Technologies:

The adoption of advanced technologies, including artificial intelligence, is essential for optimizing resource use and improving service quality. Investing in smart tourism systems can enhance operational efficiency,

provide personalized visitor experiences, and strengthen destination management.

4. Efficient Resource Management:

A central focus of this study is the relationship between tourist flow patterns and resource allocation. Insights from seasonality trends and forecasting models highlight the importance of managing resources effectively during peak and off-peak periods. These findings provide stakeholders with a data-driven basis for planning. South Korea demonstrates strong practices in this area, particularly through the effective use of local resources and products.

5. Memoranda of Understanding (MoUs) and International Cooperation:

While academic collaborations already exist, there is considerable scope for expanding partnerships into cultural exchange and joint research and development initiatives. Establishing formal agreements and co-hosting tourism events on international platforms can enhance visibility and contribute to the long-term sustainability of the tourism industry in the NER region

By employing the most reliable and relevant data available, the study contributes robust empirical evidence that enables accurate assessment of tourist flow patterns and future demand. These insights are intended to support policymakers in developing informed, proactive, and adaptive tourism strategies, while guiding planners and developers in enhancing destination appeal through efficient resource management. Overall, the study provides clear, validated, and actionable evidence through rigorous statistical methodologies, strengthening the strategic awareness, competence, and confidence of policymakers and stakeholders. This evidence-based approach supports proactive policy formulation and promotes sustainable tourism practices, ultimately contributing to improved performance and long-term resilience of the tourism industry in both Northeast India and South Korea

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