EVALUATING THE EFFECTIVENESS OF MARKETING STRATEGIES IN THE TOURISM SERVICES MARKET BASED ON SEASONAL FLUCTUATIONS IN TOURIST DEMAND

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Abstract

The thesis examined the seasonal pattern of foreign tourist demand in Uzbekistan and its implications for marketing strategy. Monthly arrivals for 2023-2025 were reconstructed from official cumulative statistics, and seasonal indices were calculated by the ratio-to-moving-average method together with the Gini coefficient, the coefficient of variation and the peak-to-trough ratio. Arrivals grew from 6,626.3 thousand in 2023 to 11,679.6 thousand in 2025, with August as the peak month and February as the trough. The Gini coefficient rose from 0.070 to 0.096, which showed that growth was concentrated in spring and autumn. A season-based framework was proposed that linked yield management, event and MICE marketing, and off-season niche products with separate effectiveness indicators.

Keywords: tourism seasonality, tourist demand, seasonal index, Gini coefficient, marketing strategy, yield management, event tourism, Uzbekistan.

Annotatsiya

Tezisda O‘zbekistonga xorijiy turistlar talabining mavsumiy tuzilishi va uning marketing strategiyasi uchun ahamiyati o‘rganilgan. 2023-2025-yillardagi oylik tashriflar rasmiy jamlanma statistikadan tiklangan, mavsumiy indekslar sirg‘aluvchi o‘rtacha usulida hisoblangan, Jini koeffitsiyenti, variatsiya koeffitsiyenti va eng yuqori va eng past oy nisbati aniqlangan. Tashriflar soni 2023-yildagi 6 626,3 ming kishidan 2025-yilda 11 679,6 ming kishiga yetgan, eng yuqori oy avgust, eng past oy fevral bo‘lgan. Jini koeffitsiyenti 0,070 dan 0,096 ga oshgani o‘sish asosan bahor va kuz oylariga to‘g‘ri kelganini ko‘rsatgan. Daromadni boshqarish, tadbirlar va MICE marketingi hamda mavsumdan tashqari davr uchun tor yo‘nalishli mahsulotlarni alohida samaradorlik ko‘rsatkichlari bilan bog‘lovchi mavsumiy yondashuv taklif etilgan.

Kalit so‘zlar: turizm mavsumiyligi, turistik talab, mavsumiy indeks, Jini koeffitsiyenti, marketing strategiyasi, daromadni boshqarish, tadbirlar turizmi, O‘zbekiston.

Аннотация

В тезисе исследована сезонная структура спроса иностранных туристов в Узбекистане и её значение для маркетинговой стратегии. Помесячные прибытия за 2023-2025 годы восстановлены по официальной нарастающей статистике, сезонные индексы рассчитаны методом отношения к скользящей средней, определены коэффициент Джини, коэффициент вариации и отношение пикового месяца к минимальному. Число прибытий выросло с 6 626,3 тыс. человек в 2023 году до 11 679,6 тыс. в 2025 году, пиковым месяцем был август, минимальным - февраль. Рост

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коэффициента Джини с 0,070 до 0,096 показал, что прирост пришёлся в основном на весну и осень. Предложен сезонный подход, связывающий управление доходностью, событийный и MICE-маркетинг и нишевые продукты межсезонья с отдельными показателями эффективности.

Ключевые слова: сезонность туризма, туристический спрос, сезонный индекс, коэффициент Джини, маркетинговая стратегия, управление доходностью, событийный туризм, Узбекистан.

INTRODUCTION

Tourism in Uzbekistan has become one of the fastest-growing service markets in the region. According to the national statistics service, 6.6 million foreign citizens entered the country for tourism purposes in 2023, 8.0 million in 2024 and 11.7 million in 2025. Growth of this size changes the questions that hotels, tour operators, airlines and regional tourism offices have to answer. When rooms and seats are scarce in some months and half-empty in others, the same marketing budget gives very different returns depending on when it is spent.

Seasonality is the oldest and most persistent problem of tourism management. R. Butler described it as a temporal imbalance in tourist flows that shows up in visitor numbers, spending, traffic, employment and admissions to attractions, and showed that it has both natural and institutional causes [1]. N. Koenig-Lewis and E. Bischoff, reviewing three decades of research, concluded that seasonality cannot simply be eliminated, yet it can be managed, and that measurement should come before any strategic response [2]. A marketing plan that ignores the shape of the seasonal curve is likely to overspend in months that would be full anyway and underspend in months where demand really can be moved.

Uzbekistan's tourism policy treats year-round demand as a development goal. The Decree of the President No. PF-5611 of 5 January 2019 approved the Concept for the development of tourism in 2019-2025 and set tasks for diversifying tourism products, including pilgrimage, medical, ecological and business tourism [3]. Resolution No. PQ-348 of 19 November 2025 raised the targets further: the share of tourism in GDP is to grow from 3.5% to 7%, and the number of foreign tourists is to reach 20 million by 2030 [4]. Meeting these targets with the existing hotel and transport capacity depends on filling the quieter months, not only on adding more visitors at the peak.

The aim of this thesis is to measure the seasonal pattern of foreign tourist demand in Uzbekistan for 2023-2025 on official monthly data, to check whether seasonality has softened as arrivals grew, and to propose a season-based framework for choosing marketing strategies and evaluating their effectiveness.

LITERATURE REVIEW

Measurement of tourism seasonality has a well-developed toolkit. S. Lundtorp compared the most common indicators, namely the coefficient of variation, the seasonality ratio and the Gini coefficient, and showed that the Gini coefficient is the most robust single measure because it uses the whole distribution of monthly flows rather than the peak alone [5]. A. Fernández-Morales went further and decomposed the Gini coefficient by market segment, which makes it possible to see which source markets add to concentration and which ones smooth it [6]. This point matters for Uzbekistan, where neighbouring countries supply most visitors and long-haul markets behave differently.

Empirical studies also show that seasonality is not a fixed property of a destination. T. Cuccia and I. Rizzo found that in Sicily cultural attractions helped spread demand across the year, while seaside tourism kept it concentrated in summer [7]. S. Jang treated the question as a portfolio problem: a destination can combine market segments with different seasonal profiles so that total demand becomes more even, at a

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known cost in risk and return [8]. In marketing terms, this means that the choice of target segment for each season is itself a strategic decision.

METHODOLOGY

The study uses monthly arrivals of foreign citizens who entered Uzbekistan for tourism purposes. Annual totals were taken from the SIAT open data platform [9]. Monthly values were obtained as differences between cumulative January-to-month figures published in the press releases of the national statistics service for 2023, 2024 and 2025 [10]. Where the release gave only the cumulative value for the current year and the growth rate, the previous year's value was recovered from that rate. The December value of each year was set so that the twelve months sum to the official annual total. The resulting monthly figures agree with independent statements of the Tourism Committee, for example that April 2025 was the first month with more than 1 million foreign tourists.

Because arrivals grew by almost half in 2025, the share of each month in the annual total mixes seasonality with growth: later months look stronger partly because the market was larger. To separate the two effects, seasonal indices were calculated by the ratio-to-moving-average method:

$$S_m = \frac{100}{K}\sum_{k=1}^{K}\frac{Y_{m,k}}{CMA_{m,k}} \quad (1)$$

where S_m is the seasonal index of month m; $Y_{m,k}$ is the number of arrivals in month m of year k; $CMA_{m,k}$ is the centred 12-month moving average for the same month, which captures the trend; K is the number of years for which the ratio is available. The indices are scaled so that they sum to 1,200, so a value of 100 means an average month, a value above 100 marks a month with demand above trend.

The concentration of demand within each year was measured by the Gini coefficient of seasonality, following [5] and [6]:

$$G = \frac{2}{n}\sum_{i=1}^{n} i \cdot s_{(i)} - \frac{n+1}{n} \quad (2)$$

where n = 12 is the number of months, $s_{(i)}$ is the share of the i-th month in annual arrivals after the months are ranked from the smallest to the largest. G equals 0 when every month receives the same number of visitors and approaches 1 when all arrivals fall into a single month. The coefficient of variation, the peak-to-trough ratio and the seasonality ratio (peak month divided by the monthly mean) were computed alongside it. All calculations were done in Python.

RESULTS AND DISCUSSION

Monthly arrivals and the resulting seasonal indices are given in Table 1.

Table 1

Monthly foreign tourist arrivals in Uzbekistan and seasonal indices, 2023-2025[1]

Month	2023, thousand	2024, thousand	2025, thousand	Monthly index 2025 (mean = 100)	Seasonal index, ratio-to-moving-average	Season type
January	423.7	520.2	678.7	69.7	85.7	off-season
February	447.0	454.0	656.6	67.5	76.4	off-season

[1] Source: author's calculations based on the Statistics Agency (National Statistics Committee) of the Republic of Uzbekistan cumulative monthly releases [10] and the annual SIAT series [9].

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Month	2023, thousand	2024, thousand	2025, thousand	Monthly index 2025 (mean = 100)	Seasonal index, ratio-to-moving-average	Season type
March	616.9	545.1	767.2	78.8	88.1	off-season
April	531.8	610.4	1,015.1	104.3	104.8	shoulder
May	569.8	707.7	1,086.5	111.6	113.7	peak
June	526.0	693.4	1,052.4	108.1	108.2	shoulder
July	565.2	712.1	1,062.6	109.2	104.6	shoulder
August	639.1	797.6	1,197.3	123.0	115.9	peak
September	587.4	692.2	1,045.5	107.4	102.5	shoulder
October	638.5	764.0	1,170.0	120.2	110.3	peak
November	599.4	795.9	1,017.4	104.5	105.8	shoulder
December	481.5	664.6	930.3	95.6	84.0	off-season
Total	6,626.3	7,957.2	11,679.6	1,200.0	1,200.0	-

Note: the ratio-to-moving-average index uses the 24 months from July 2023 to June 2025 for which a centred 12-month average can be computed. Season type: peak - index 110 and above; shoulder - 95 to 110; off-season - below 95.

Table 1 shows that monthly demand rose in every month of the year. In 2025 the busiest month was August with 1,197.3 thousand arrivals, while February, the quietest, received 656.6 thousand. Compared with 2024, April arrivals grew by 66.3% and May arrivals by 53.5%, while January grew by 30.5%. The trend-adjusted indices give a clear calendar. May (113.7), August (115.9) and October (110.3) are peak months; April, June, July, September and November form a long shoulder; December, January, February and March are the off-season, with February at only 76.4. In other words, an average February brings about a quarter fewer visitors than the trend would suggest, while an average August brings 16% more.

The summary measures of seasonal concentration are presented in Table 2.

Table 2

Measures of seasonal concentration of foreign tourist arrivals, 2023-2025[2]

Indicator	2023	2024	2025
Foreign tourist arrivals, thousand	6,626.3	7,957.2	11,679.6
Coefficient of variation of monthly arrivals, %	12.5	15.9	17.7
Gini coefficient of seasonality	0.070	0.088	0.096
Peak-to-trough ratio	1.51	1.76	1.82

[2] Source: author's calculations based on Table 1 using formula (2).

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Indicator	2023	2024	2025
Seasonality ratio (peak month / monthly mean)	1.16	1.20	1.23
Peak month / trough month	Aug / Jan	Aug / Feb	Aug / Feb
Share of January-March in annual arrivals, %	22.4	19.1	18.0
Share of June-October in annual arrivals, %	44.6	46.0	47.3

Table 2 shows that seasonality in Uzbekistan is moderate: the Gini coefficient stayed below 0.10, and even in 2025 the busiest month received less than twice as many visitors as the quietest one. The main reason is the structure of the market. In January-June 2025, visits to relatives and friends accounted for 3,596.8 thousand of 5,256.2 thousand arrivals, or 68.4%, and such trips are spread more evenly over the year than holidays [10]. At the same time, concentration has not fallen as the market grew. The Gini coefficient rose from 0.070 in 2023 to 0.096 in 2025, the peak-to-trough ratio from 1.51 to 1.82, and the share of January-March in annual arrivals fell from 22.4% to 18.0%. Part of this rise is a growth effect, but the trend-adjusted ratios confirm the direction: the April ratio went up from 97.5 in 2024 to 110.8 in 2025, while February stayed near 75-77. Our reading is that new demand has so far arrived mainly in spring and autumn, the months when Uzbekistan's heritage cities are most comfortable to visit.

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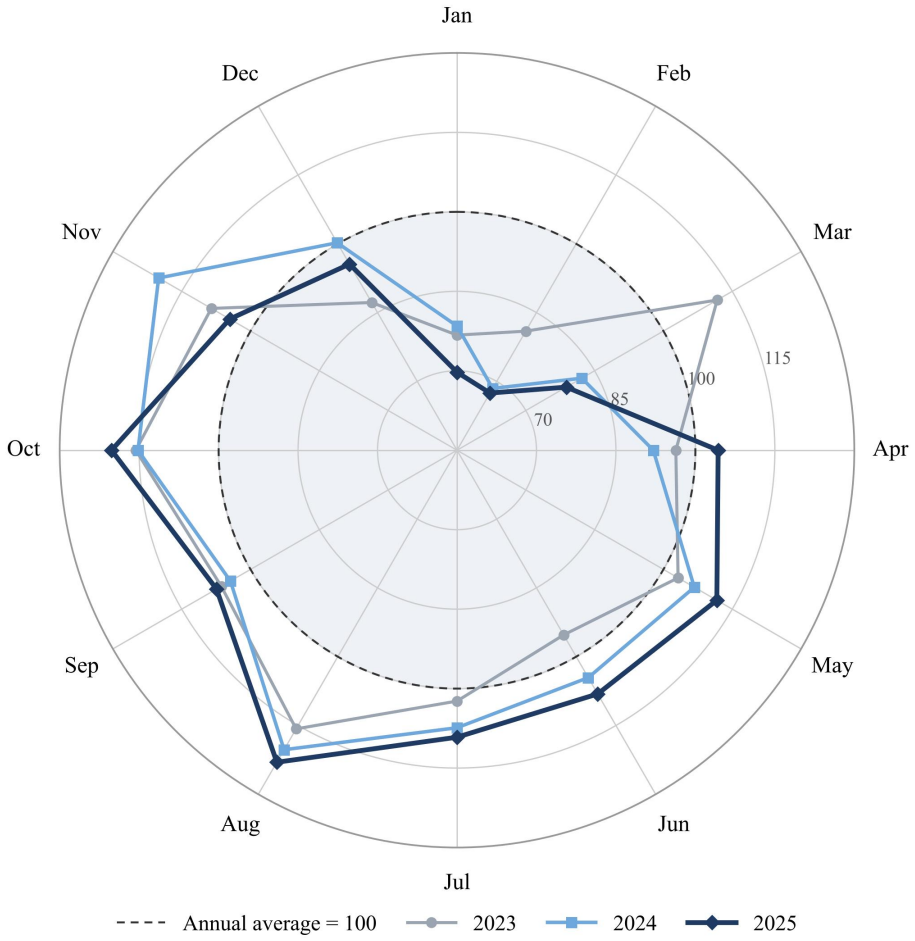


Figure 1. Monthly arrivals index by year (annual monthly mean = 100)[3]

Note: each line shows monthly arrivals divided by the average month of the same year; the shaded area marks values below the annual average.

Figure 1 makes the change in shape visible. The 2023 profile is almost round, with a single bump in March. By 2025 the curve is stretched towards April-May and August-October, and the winter segment from December to March sits well inside the average circle. There is also an encouraging signal. Preliminary data for 2026 show 2,872.5 thousand arrivals in January-March, 36.6% more than a year earlier, while arrivals for the whole first half of the year grew by 24.9% [10]. The off-season, therefore, grew faster than spring in early 2026, which suggests that winter demand responds when the offer and the promotion are in place.

These results lead to a practical conclusion: one marketing strategy for the whole year is not effective in this market. We propose a season-based framework in which the objective, the instruments and the key performance indicators (KPIs) change with the seasonal index.

In the peak months (index above 110) the task is not to attract more visitors but to earn more from limited capacity and protect service quality. S. Kimes showed that yield management works best in exactly

[3] Source: author's calculations based on Table 1.

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such conditions, where capacity is fixed, demand fluctuates and the product can be sold in advance [11]. Practical tools are dynamic room and tour pricing, minimum-stay rules on peak dates, early booking discounts that move part of demand to the shoulder, and visitor flow management at the main monuments of Samarkand, Bukhara and Khiva. The KPIs here are revenue per available room, average daily rate, average length of stay and visitor satisfaction scores, rather than the number of arrivals.

In the shoulder months (index 95-110) the task is to lengthen the season at its edges. Events and business tourism suit this well. D. Getz showed that planned events give destinations a reason to visit at a chosen date and can be used deliberately to fill low-demand periods [12]. Festivals, sports events, conferences, exhibitions and corporate incentive trips can be scheduled for April, June, September and November. KPIs include the number of event-related visitors, the share of MICE groups in hotel occupancy and the growth of shoulder-month arrivals relative to the peak.

In the off-season (index below 95) the task is to create demand from segments with a different calendar, which is the portfolio logic of S. Jang [8]. Three groups look most promising. The first is domestic tourists and residents of neighbouring countries who travel on short city breaks and during public holidays. The second consists of niche products that are not tied to warm weather: medical and wellness stays, winter mountain recreation, and pilgrimage routes to the shrines of Bukhara, Samarkand and the Fergana Valley. The third is digital targeted campaigns in markets where winter is a holiday season, built on search and booking data and offering bundled flight-and-hotel packages. The KPIs are off-season occupancy, the seasonal index of the weakest months, cost per booking and the share of repeat visitors.

The effectiveness of the whole strategy is evaluated at the destination level with the same indicators used in this study. If the marketing mix works, the Gini coefficient and the peak-to-trough ratio should go down while total arrivals keep growing, and the seasonal index of February should move closer to 100. By our estimate, raising the index of the four off-season months to 90 would have added roughly 471.1 thousand arrivals in 2025 without any extra peak-month capacity.

CONCLUSION AND SUGGESTIONS

The analysis showed that foreign tourist demand in Uzbekistan has a moderate but stable seasonal pattern. In 2025, 11,679.6 thousand foreign tourists arrived, with August as the peak month and February as the trough. The Gini coefficient of seasonality rose from 0.070 in 2023 to 0.096 in 2025, and the trend-adjusted index of February stayed at about 76, which means that rapid growth has so far favoured spring and autumn. Early 2026 data, with first-quarter arrivals up 36.6%, show that the winter months have room to grow.

Based on the results, the following recommendations are made:

1) to plan tourism marketing budgets by season, using the ratio-to-moving-average index to classify each month as peak, shoulder or off-season and to set separate objectives for each group;

2) in the peak months, to shift the focus from attracting visitors to yield management, dynamic pricing and visitor flow control, measuring results by revenue per available room and visitor satisfaction;

3) to build an annual calendar of events and MICE activities concentrated in April, June, September and November, and to promote medical, wellness, winter mountain and pilgrimage products with digital targeted campaigns for December-March;

4) to evaluate the effectiveness of these strategies each year by the Gini coefficient of seasonality, the peak-to-trough ratio and the February seasonal index, and to publish monthly arrivals as a ready time series on the SIAT platform so that businesses can use the same indicators.

REFERENCES

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1. Butler R.W. Seasonality in tourism: Issues and implications // Baum T., Lundtorp S. (eds.) Seasonality in Tourism. - Oxford: Pergamon, 2001. - pp. 5-21. DOI: 10.1016/B978-0-08-043674-6.50005-2
2. Koenig-Lewis N., Bischoff E.E. Seasonality research: The state of the art // International Journal of Tourism Research. - Vol. 7, No. 4-5, 2005. - pp. 201-219. DOI: 10.1002/jtr.531
3. Decree of the President of the Republic of Uzbekistan No. PF-5611 of 5 January 2019 “On additional measures for the accelerated development of tourism in the Republic of Uzbekistan”. https://lex.uz/docs/4143188
4. Resolution of the President of the Republic of Uzbekistan No. PQ-348 of 19 November 2025 “On measures to organise the activities of the Tourism Committee and to accelerate the development of the tourism sector”. https://lex.uz/docs/7851788
5. Lundtorp S. Measuring tourism seasonality // Baum T., Lundtorp S. (eds.) Seasonality in Tourism. - Oxford: Pergamon, 2001. - pp. 23-50. DOI: 10.1016/B978-0-08-043674-6.50006-4
6. Fernández-Morales A. Decomposing seasonal concentration // Annals of Tourism Research. - Vol. 30, No. 4, 2003. - pp. 942-956. DOI: 10.1016/S0160-7383(03)00090-2
7. Cuccia T., Rizzo I. Tourism seasonality in cultural destinations: Empirical evidence from Sicily // Tourism Management. - Vol. 32, No. 3, 2011. - pp. 589-595. DOI: 10.1016/j.tourman.2010.05.008
8. Jang S. Mitigating tourism seasonality: A quantitative approach // Annals of Tourism Research. - Vol. 31, No. 4, 2004. - pp. 819-836. DOI: 10.1016/j.annals.2004.02.007
9. Statistics Agency under the President of the Republic of Uzbekistan. The number of foreign persons who entered the Republic of Uzbekistan for tourism purposes, 2012-2025. SIAT. https://api.siat.stat.uz/media/uploads/sdmx/sdmx_data_1038.pdf
10. National Statistics Committee of the Republic of Uzbekistan. Press releases on foreign citizens who entered Uzbekistan for tourism purposes, 2023-2026. https://stat.uz/en/press-center/news-of-committee/37812-tu2ristik-maqsadlarda-o-zbekistonga-tashrif-buyurgan-chet-el-fuqarolari-soni-4 ; https://aholi.stat.uz/en/64-news-eng/4605-o-zbekiston-respublikasiga-turistik-maqsadlarda-kelgan-chet-el-fuqarolari-necha-nafarni-tashkil-etdi-5 ; https://stat.uz/en/press-center/news-of-committee/63136-o-zbekistonga-turistik-maqsadlardagi-tashriflar-soni-1-7-mln-nafarga-oshdi-3 ; https://stat.uz/en/press-center/news-of-committee/67827-3-ojda-zbekistonga-2-8-mlndan-orti-turist-tashrif-buyurdi-4
11. Kimes S.E. Yield management: A tool for capacity-constrained service firms // Journal of Operations Management. - Vol. 8, No. 4, 1989. - pp. 348-363. DOI: 10.1016/0272-6963(89)90035-1
12. Getz D. Event tourism: Definition, evolution, and research // Tourism Management. - Vol. 29, No. 3, 2008. - pp. 403-428. DOI: 10.1016/j.tourman.2007.07.017

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