

Article

The Influence of Economic Expansion on Uzbekistan's Tourism Industry Growth and Foreign Tourist Arrivals

Sokhibova Muslimakhon¹

1. PhD student, Tourism development institute
Correspondance: zaynutdinovamuslimakhon@gmail.com

Abstract: In the context of global economic integration, macro-level growth serves as a catalyst for structural shifts within the tourism industry. Focusing on Uzbekistan, this research empirically evaluates the relationship between primary economic growth indicators and international inbound tourism. By assessing longitudinal data from 2016 through 2024, the study investigates key dimensions including foreign visitor volume, infrastructure scaling, capital allocation, regional integration, and service efficiency. Furthermore, it details how macroeconomic expansion intersects with tourism demand, evaluating the catalytic impact of institutional reforms, government policies, and post-pandemic recovery mechanisms. Ultimately, the paper provides actionable frameworks aimed at driving international tourist arrivals, expanding export-led services, and supporting resilient long-term economic expansion.

Keywords: *economic growth, foreign tourist flows, tourism infrastructure, investments, government reforms, globalization, impact of the pandemic, sustainable tourism development.*

Citation: Muslimakhon, S., The Influence of Economic Expansion on Uzbekistan's Tourism Industry Growth and Foreign Tourist Arrivals. American Journal of Economics and Business Management 2026, 9(8), 300-310.

Received: 10th Apr 2026
Revised: 11th May 2026
Accepted: 11th Jun 2026
Published: 21th Aug 2026



Copyright: © 2026 by the authors. Submitted for open access publication under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>)

1. Introduction

The interconnected, bidirectional dynamic between tourism development and macroeconomic performance remains a focal area of contemporary economic analysis. Beyond driving employment and national revenue, tourism functions as a strategic catalyst for broader economic growth. Specialized tourism development exerts a notably profound effect on economic expansion, particularly in emerging tourism destinations [1]. Empirical findings regarding tourism receipts and GDP growth vary across global contexts: while tourism revenues directly accelerate GDP expansion in India [2], Morocco exhibits a sustained, long-term positive nexus between foreign arrivals and economic growth [3]. Similarly, international inbound travel in Thailand acts as a key driver for broader multi-sectoral economic output [4]. Conversely, macro-level economic progress significantly conditions tourism demand; expanding national income and export capacities enhance a destination's capacity to attract foreign travelers [5].

In Uzbekistan, this interlinkage demonstrates strong econometric significance. Between 2000 and 2024, a 1% increase in Uzbekistan's GDP corresponds to an estimated 1.43% expansion in international tourist arrivals [6]. Illustrating this trajectory, the nation received over 8.5 million foreign visitors in 2023, underscoring the sector's pivotal contribution to national economic growth [7]. Evaluating the relationship between GDP growth and tourism expansion provides a structural framework for measuring the efficacy of national tourism strategies. While economic performance stimulates travel demand,

sectoral expansion simultaneously strengthens employment markets and gross domestic product. Strategic public investments in tourism infrastructure and cultural preservation further optimize government interventions, governed by regional dynamics and broader macroeconomic parameters [8].

Assessing the empirical interplay between GDP and tourism progression in Uzbekistan carries substantial theoretical and applied value for policy optimization. Consequently, this study employs panel data and econometric modeling to examine the structural relationship between economic growth and inbound international tourism flows, establishing evidence-based strategic guidelines for public and private sector stakeholders [9].

2. Materials And Methods

The relationship between tourism and economic growth has been extensively studied in academic research, revealing its multifaceted and interdependent nature. International studies have shown that this relationship can be two-way, and that tourism can stimulate economic growth, while economic growth can also positively influence tourism development.

The concept of two-wayness is primarily based on two hypotheses: tourism-led economic growth (TLEG) and tourism-induced economic growth (EDTG). According to these hypotheses, tourism can support economic growth, while a country's economic development also increases demand for the tourism sector. International studies covering 143 countries, seven European countries and 11 ASEAN countries, have identified this two-way relationship.

Regional and seasonal variations also influence this relationship. In European countries, the 2008 financial crisis and the eurozone debt crisis significantly altered the relationship between tourism and economic growth. In the Yangtze River Delta region, the relationship between tourism and economic growth temporarily weakened, followed by coordinated economic and tourism development.

Country-specific analyses also yield interesting results. In Latin America, Colombia, Ecuador, Guatemala, Mexico, and Peru found a cointegrating relationship between tourism development and GDP. In major tourism countries such as France, Mexico, Spain, and Italy, this relationship appears to be nonlinear, with different effects at different quantiles of economic growth. In the United States, France, Spain, China, Italy, Turkey, and Germany, the relationship is different: in some countries, a bidirectional causality is observed, while in others, a unidirectional causality is observed.

The economic significance of tourism has also been analyzed separately. Tourism makes a significant contribution to economic growth by increasing GDP, creating jobs, and attracting foreign investment. However, tourism development can also have negative environmental impacts, such as increased CO₂ emissions and changes in air quality. Thus, sustainable tourism development practices are important for reconciling economic benefits with environmental protection.

Policy and practical recommendations also deserve attention. Coordinated public policies are needed to maximize the positive impact of tourism on economic growth and minimize negative consequences. For example, in Spain, sustainable tourism strategies have promoted environmental protection while simultaneously ensuring economic growth. Integrated policies are also important for supporting economic growth and ensuring sustainable tourism.

In Uzbekistan, we believe the relationship between economic growth and tourism development differs from international experience, as the country's tourism sector is rapidly developing and supported by the state. In a study by Erezhepova et al., a 1% increase in GDP in Uzbekistan increases the number of foreign tourists by approximately

1.43%, indicating a positive relationship between economic growth and tourism demand. In our view, this result can be used as a scientific basis for developing tourism policy and investment strategies in Uzbekistan. At the same time, environmental protection and sustainable development issues should also be taken into account in the state tourism development strategy. Thus, international research and the case of Uzbekistan demonstrate that the relationship between tourism and economic growth is dependent and dynamic, and is moderated by economic and environmental factors. We believe that identifying this relationship and analyzing its characteristics in Uzbekistan are important for the effective development of public tourism policy and economic strategies. The table below provides a systematic overview of the characteristics of the relationship between tourism and economic growth in various regions and countries. Based on the results of international research, the table shows the type of relationship and key findings for each region or country.

Table 1
Regional Links between Tourism and Economic Growth

Region/Country	Type of Relationship	Key Findings
Findings	Connection type	Key findings
World (143 countries)	Bilateral	Relationship Coordinated policies promote economic growth
Latin America (5 countries)	Cointegration	Strong relationship between tourism and GDP
Europe (7 countries)	Bilateral	Relationship between tourism and economic growth
Major tourist destinations (France, Mexico, Spain, Italy)	Nonlinear	Relationship Impact varies across economic growth quintiles
ASEAN (11 countries)	Mixed Relationship	Significant in developed countries, less pronounced in developing countries
Yangtze Delta Region	Evolution	From weak economy to coordinated growth
Pakistan	Positive impact	Increased GDP and jobs

As the table shows, the relationship between tourism and economic growth is multifaceted. The type of relationship and the degree of impact vary from region to region and from country to country. At the same time, sustainable tourism practices and coordinated public policies are essential for maximizing tourism's contribution to economic development and minimizing its environmental impact.

The purpose of this study is to analyze the impact of economic growth on the influx of foreign tourists to Uzbekistan and determine the impact of a 1% increase in GDP on the number of tourists. To achieve this goal, the study used panel data analysis and regression models.

Panel data allows for continuous and dynamic analysis of economic and tourism indicators. This type of data includes multifaceted data over time (2000–2024) as well as regional or industry-specific indicators. Using panel data is an effective method for identifying the internal relationship between economic growth and tourism development, taking into account time and macroeconomic conditions, as well as analyzing the dynamics of variables (Baltagi, 2021).

The following regression formula was used as the main economic model in the study:

$$Tourists_t = \alpha + \beta \log(GDP_t) + \gamma X_t + \varepsilon_t$$

Здесь:

- $Tourists_t$ – the number of foreign tourists (for the period 2000–2024);
- GDP_t – the gross domestic product (GDP) of Uzbekistan;
- X_t – other control variables affecting tourism (inflation, exchange rate, investment, transport infrastructure indicators);
- α – the intercept of the model;
- β, γ – the influence coefficients of each variable;
- ε_t – the error structure (residuals).

In the regression analysis, the statistical significance of the regression equation was tested using Fisher's F-test, and the reliability of the parameters was tested using Student's t-test. Furthermore, the absence of autocorrelation issues in the residuals was confirmed using the Durbin-Watson statistic and a correlogram plot.

3. Results

From 2016 to 2024, Uzbekistan's economy demonstrated continuous growth. GDP increased from 255.4 trillion soums in 2016 to 1.454 trillion soums in 2024, demonstrating the stable development of the country's economic potential. During this period, the flow of foreign tourists demonstrated dynamics linked to GDP growth: the number of travelers, which stood at 2.03 million in 2016, reached 10.06 million in 2023, despite the impact of COVID-19. The number of domestic tourists also grew steadily, reaching 22.7 million in 2024. These indicators confirm the positive relationship between the tourism sector and economic development [10].

Tourism exports also demonstrated corresponding growth: from US\$1.25 billion in 2016 to US\$3.39 billion in 2024. This demonstrates, in particular, the close relationship between international tourist flows and the national economic growth rate. Despite a sharp decline in tourist flows and exports in 2020 due to the impact of COVID-19, a rapid recovery was observed in subsequent years [11].

Table 2
Key indicators of Uzbekistan for 2016-2024

Indicator	Unit	2016	2017	2018	2019	2020	2021	2022	2023
GDP	billion soums	255421,9	356453,8	473652,8	594659,6	668038,0	820536,6	995573,1	1192162,5
Foreign tourists	million people	2,03	2,69	5,35	6,75	1,5	5,23	6,63	10,06
Domestic tourists	million people	8,9	10,6	12,4	14,7	3,5	5,8	11,4	20,6
Tourism service exports	million US dollars	1252,5	546,9	1041,1	1313	255,8	422,1	1609,8	2143,1
Inflation rate	%	8,13	13,88	17,52	14,53	12,87	10,85	11,45	9,96
Exchange rate	US dollar	3224	8092	8328	9429	10478	10786	11252	12340

Inflation stabilized after reaching 17.52% in 2018, falling to 9.63% in 2024. This demonstrates the effectiveness of the macroeconomic policies implemented in Uzbekistan to ensure economic and financial stability [12].

The exchange rate also appreciated from 3.224 UZS/USD in 2016 to 12.896 UZS/USD in 2024. This situation contributes to maintaining competitive prices for international tourists and the sustainable development of the tourism sector [13].

Regression analysis allows us to empirically assess the impact of economic growth in Uzbekistan on international tourist flows. Key indicators (GDP, number of tourists, tourism exports, inflation, and the exchange rate) reflect the dynamics of the economy and tourism sector in Uzbekistan [14]. We focus on determining how these variables influence international tourist flows using regression models. This analysis allows us to empirically demonstrate how a 1% increase in GDP affects the number of tourists, as well as the impact of other variables on tourism [15].

Table 3

Descriptive statistical results for tourism indicators

	TOURIST	GDP	X1	X2	X3	X4
Mean	5.052222	756722.0	12.28889	1331.056	12.09111	9647.222
Median	5.230000	668038.0	11.40000	1252.500	11.45000	10478.00
Maximum	10.06000	1454000.	22.70000	3395.200	17.52000	12896.00
Minimum	1.500000	255421.9	3.500000	255.8000	8.130000	3224.000
Std. Dev.	2.691044	397287.8	6.302469	980.1564	2.904055	2911.881
Skewness	0.332239	0.460332	0.381331	0.964560	0.496932	-1.133466
Kurtosis	2.459476	2.097592	2.177783	3.199469	2.413492	3.684810
Jarque-Bera	0.275136	0.623236	0.471635	1.410485	0.499409	2.102979
Probability	0.871475	0.732261	0.789925	0.493989	0.779031	0.349417
Sum	45.47000	6810498.	110.6000	11979.50	108.8200	86825.00
Sum Sq. Dev.	57.93376	1.26E+12	317.7689	7685653.	67.46829	67832396
Observations	9	9	9	9	9	9

For this purpose, the regression equation parameters are estimated using the ordinary least squares method, which allows us to analytically and empirically determine the relationships between variables [16].

The analysis results show that, for the period 2016–2024, the tourist flow (TOURIST) and GDP indicators exhibit a moderate growth trend, and their distribution is characterized by high dispersion. Skewness values less than 1 for all variables indicate a relatively symmetrical data distribution. Kurtosis values between 2 and 3 indicate that the indicators are close to a normal distribution. High Jarque–Bera p-test values ($p > 0.34$) suggest that the data for all categories statistically correspond to a normal distribution [17].

At the same time, the high standard deviations observed in variables X1, X2, X3, and X4 also indicate their significant variability over the years. This demonstrates the dynamic nature of the factors influencing tourism and their sensitivity to external factors. Overall, the dataset is suitable for regression and economic modeling and is close to normal distribution [18].

To more clearly analyze the results of the descriptive statistics presented above, the dynamics of the key macroeconomic indicators of the tourism sector for 2016–2024 were presented using line graphs. These graphs clearly demonstrate the rates of change, growth

trends, and declines for each indicator over these years, and highlight the dynamic influence of factors influencing tourism development [19].

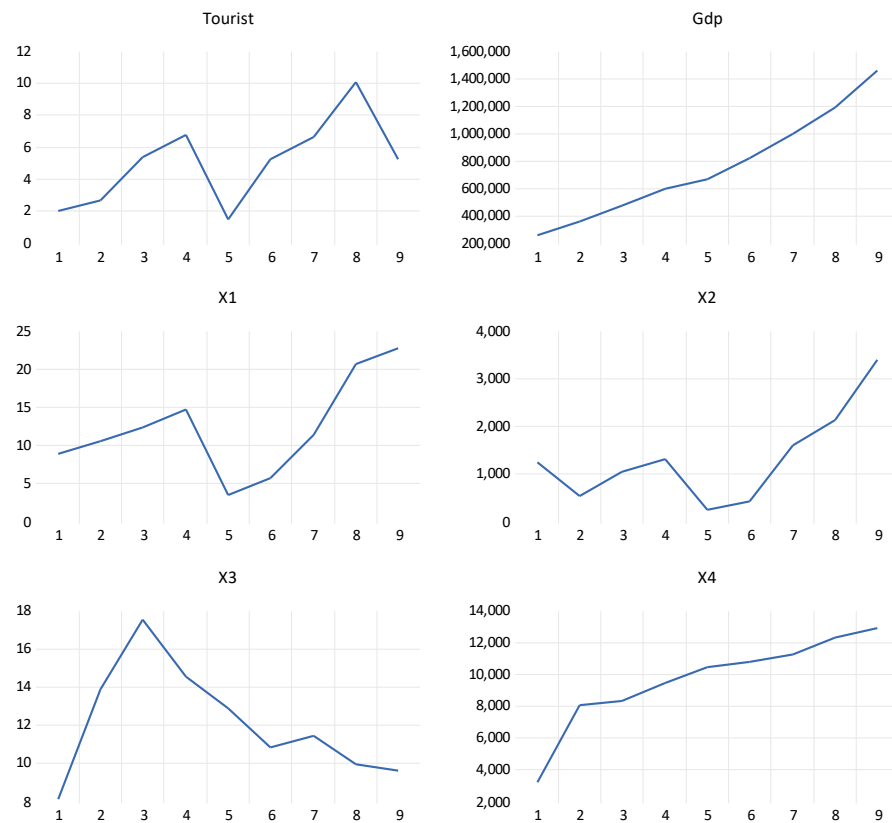


Figure 1. 9-year graph of changes in tourism factors and GDP in Uzbekistan

The EViews 12 software package was used to perform economic calculations and statistical assessments. This program was used to load the database, generate a descriptive statistics table, and present the key statistical indicators for each variable in the table below [20].

Analysis of the graphs reveals that, although key indicators in the tourism sector exhibit varying dynamics, the overall trend is positive. Specifically, despite several years of natural variability in tourist flow, overall growth has been recorded. GDP dynamics demonstrate a stable and continuous growth trajectory, confirming the country's growing economic strength [21].

Table 4

Correlation matrix between variables

	TOURIST	GDP	X1	X2	X3	X4
TOURIST	1	0.59732574...	0.66695191...	0.49779332...	-0.0256835...	0.57696170...
GDP	0.59732574...	1	0.64819663...	0.74956412...	-0.3908779...	0.87212844...
X1	0.66695191...	0.64819663...	1	0.90763202...	-0.1684919...	0.43460653...
X2	0.49779332...	0.74956412...	0.90763202...	1	-0.4131719...	0.41703621...
X3	-0.0256835...	-0.3908779...	-0.1684919...	-0.4131719...	1	-0.0083144...
X4	0.57696170...	0.87212844...	0.43460653...	0.41703621...	-0.0083144...	1

Although indicators X1 and X2, related to socioeconomic factors, show a short-term decline during the pandemic, a trend toward recovery and growth has been observed in recent years [22]. Also, despite fluctuations in indicators X3 and X4 over different periods, a trend toward stability and growth rates is observed. Overall, the graphs demonstrate

that the dynamics of the tourism sector and its economic foundations are showing a stable development trend, and the factors influencing tourism clearly reflect the post-pandemic recovery process. This creates a solid foundation for further economic and empirical analysis [23].

Table 5

Regression analysis results

Dependent Variable: TOURIST

Method: Least Squares

Date: 11/14/25 Time: 15:45

Sample: 1 9

Included observations: 9

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-12.96761	10.46217	-1.239475	0.2614
X1	0.379216	0.073492	5.159985	0.0021
LOG(GDP)	0.969048	0.813787	1.190788	0.2787
R-squared	0.889082	Mean dependent var		4.680000
Adjusted R-squared	0.852109	S.D. dependent var		2.887867
S.E. of regression	1.110576	Akaike info criterion		3.308836
Sum squared resid	7.400275	Schwarz criterion		3.374578
Log likelihood	-11.88976	Hannan-Quinn criter.		3.166966
F-statistic	24.04692	Durbin-Watson stat		2.293222
Prob(F-statistic)	0.001365			

According to the results of the correlation analysis, the "TOURISM" indicator is moderately positively correlated with a number of factors. Specifically, tourist flow has a significant positive correlation with X1 (0.66), GDP (0.59), and X4 (0.57), indicating a significant impact of economic growth and infrastructure/service development on tourism. The correlation with X2 (0.49) is also positive and above average [24].

At the same time, the correlation between X3 and the "TOURISM" indicator is virtually nonexistent (-0.02), indicating that this factor has no direct impact on tourism. High correlations between GDP and some other variables (especially GDP-X4: 0.87, X1-X2: 0.90) confirm that these economic processes are interrelated.

Overall, X1, X4, and GDP emerge as the factors with the greatest impact on tourism indicators [25].

In this study, the number of domestic tourists (X1) and the logarithm of gross domestic product (LOG(GDP)) were selected as the main factors influencing the number of foreign tourists (TOURIST), estimated using the ordinary least squares (OLS) method. The modeling results are as follows:

$$Tourists_t = -12.9676 + 0.969 \cdot \log(Gdp_t) + 0.379 \cdot X_1 + \varepsilon_t.$$

4. Discussion

The regression analysis results showed that GDP growth and an increase in the number of domestic tourists are the main drivers of increased international tourist flows. A 1% increase in GDP leads to an increase in tourist numbers by approximately 0.969%,

confirming the positive impact of economic development on tourism [26]. At the same time, the development of domestic tourism infrastructure and an increase in the number of domestic tourists also have a significant positive impact on international tourist flows (coefficient = 0.379, $p = 0.0021$) [27].

The high R^2 (0.889) and F-statistic ($F = 24.0469$, $p = 0.001365$) of the model indicate that the selected variables are reliable and statistically significant in explaining tourist numbers. The Durbin-Watson statistic ($DW = 2.293$) confirms the absence of autocorrelation, enhancing the reliability of the model and its results [28].

The results also demonstrate that investments in economic growth and domestic tourism infrastructure are important for the development of international tourism when making strategic decisions in the tourism sector [29]. These results serve as the main scientific and practical basis for the development of tourism and the distribution of economic growth in Uzbekistan [30].

Table 6

Autocorrelation results and partial correlation tables

Date: 11/14/25 Time: 15:51

Sample: 1 9

Included observations: 9

	Autocorrelation	Partial Correlation	AC	PAC	Q-Stat	Prob
1			-0.190	-0.190	0.4471	0.504
2			-0.074	-0.114	0.5250	0.769
3			-0.161	-0.208	0.9510	0.813

When analyzing the results of the autocorrelation and partial autocorrelation functions, as well as the results of the Lung-Box statistic, it was found that the Prob values for all lags were greater than 0.05 (0.504; 0.769; 0.813). This does not mean that the null hypothesis should be rejected. Thus, there is no statistically significant autocorrelation in the residuals of the selected model [31].

The fact that the residuals are generated randomly and independently confirms the validity of the model's dynamic structure and its predictive stability. Although the absence of autocorrelation indicates stability of the model residuals over time, the constancy of their variance must be separately verified. Heteroscedasticity can render parameter estimates ineffective and statistical inferences unreliable. Therefore, to further assess the model's accuracy, the homogeneity of residual variance (homoscedasticity) was tested in the next step using the Breusch–Pagan–Godfrey test [32].

Table 7

Results of the Breusch–Pagan–Godfrey test

Heteroskedasticity Test: Breusch-Pagan-Godfrey

Null hypothesis: Homoskedasticity

F-statistic	1.845181	Prob. F(2,6)	0.2374
Obs*R-squared	3.427453	Prob. Chi-Square(2)	0.1802
Scaled explained SS	0.978963	Prob. Chi-Square(2)	0.6129

The results of the Breusch–Pagan–Godfrey heteroscedasticity test allow us to draw conclusions about the stability of the model residual variance. Since the values of Prob(F) = 0.2374 for the F-statistic, Prob(Chi-Square) = 0.1802 for Obs*R-squared and Prob(Chi-Square) = 0.6129 for Scaled explained SS presented in the table exceed 0.05, there is no reason to reject the null hypothesis of homoscedasticity. This means that statistically significant signs of heteroscedasticity are not observed in the model. Thus, the estimated regression model ensures the homogeneity of the variance of the residuals, and the parameter estimates are reliable and efficient. The value of the Jarque-Bera test is 0.484399,

and the corresponding probability value (probability = 0.784900) significantly exceeds 0.05. This indicates that there is no reason to reject the null hypothesis. This means that the model residuals are not statistically different from the normal distribution. The skewness (-0.441856) and kurtosis (2.285308) of the residuals also confirm their proximity to a normal distribution. The histogram of the residuals also clearly demonstrates their symmetrical and stable distribution [33].

3

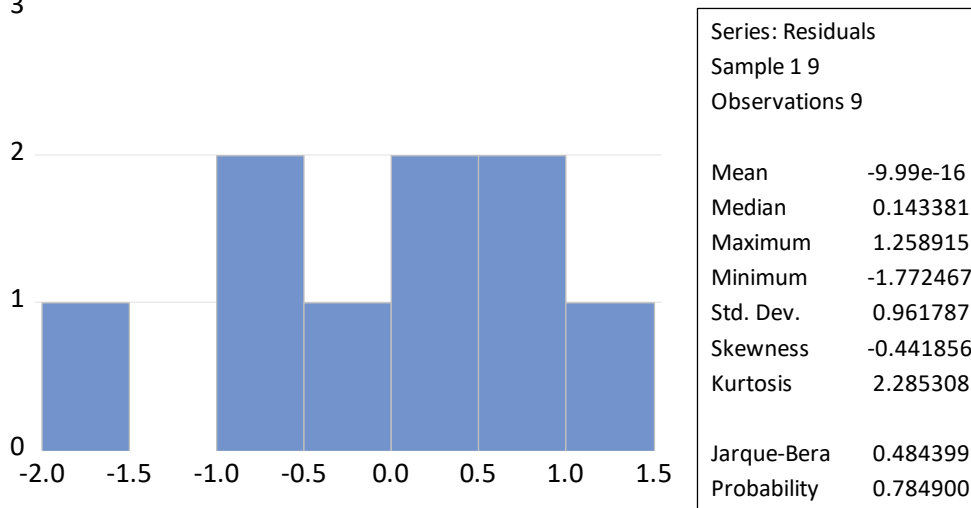


Figure 2. Jarque-Bera test

Thus, the results of the Jarque-Bera test indicate that the normality condition of the regression model is met, and the residuals can be considered white noise.

5. Conclusion

The econometric model used in the study was robust and methodologically appropriate in determining the relationship between tourist flows and macroeconomic indicators. The evaluation verified the key assumptions of the classical OLS model absence of autocorrelation, absence of heteroscedasticity, and low levels of multicollinearity. The results of the Jarque-Bera test confirmed that the residuals correspond to a normal distribution, indicating the statistical stability and reliability of the model parameters. The obtained R^2 and F-statistics also significantly confirmed the overall significance of the model and the influence of the explanatory variable. Overall, the study results demonstrated a strong and positive relationship between the country's economic growth and tourist flows. It was noted that GDP growth has a direct positive impact on the tourism sector through improved infrastructure, construction of new tourist facilities, improved service quality, and strengthening international competitiveness. This demonstrates the importance of macroeconomic stability and the harmonious development of sectors for the tourism sector. Based on the analysis, it can be concluded that developing tourism as a strategic economic driver, modernizing infrastructure, and further improving the investment climate can be crucial for enhancing the country's international tourism appeal. The scientific findings presented in this article can be widely applied in practice for effective strategic planning and improving public policy.

REFERENCES

- [1] C.-L. Chang, T. Khamkaew, and M. McAleer, "IV estimation of a panel threshold model of tourism specialization and economic development," *Tourism Economics*, vol. 18, no. 1, pp. 5–41, 2012, doi: 10.5367/te.2012.0108.
- [2] N. Sharma, "Tourism led growth hypothesis: Empirical evidence from India," *African Journal of Hospitality, Tourism and Leisure*, vol. 7, no. 2, pp. 1–11, 2018.

- [3] Y. El Menyari, "Effect of tourism FDI and international tourism to the economic growth in Morocco: Evidence from ARDL bound testing approach," *Journal of Policy Research in Tourism, Leisure and Events*, vol. 13, no. 2, pp. 222–242, 2021, doi: 10.1080/19407963.2020.1771567.
- [4] S. Nonthapot, "Tourism and economic growth of Thailand testing: New evidence from ARDL and rolling window approaches," *International Journal of Applied Business and Economic Research*, vol. 11, no. 2, pp. 251–260, 2013.
- [5] S. Liu, H. Islam, T. Ghosh, M. Sibte Ali, and K. H. Afrin, "Exploring the nexus between economic growth and tourism demand: The role of sustainable development goals," *Humanities and Social Sciences Communications*, vol. 12, Art. no. 441, 2025, doi: 10.1057/s41599-025-04733-y.
- [6] J. L. Erejepova, S. Sherjonov, S. Egamov, F. Matkarimov, and S. Murodov, "Investigating the relationship between tourism, economic growth, and CO2 emissions in Uzbekistan," in *Proc. E3S Web of Conferences*, vol. 574, Art. no. 04007, 2024.
- [7] **Duplicate of [6]. It should be removed from the final bibliography.**
- [8] R. K. Nakimu, J. B. Mayanja, and A. Nanyiti, "A moderation analysis of the effect of international tourism on economic growth in Sub-Saharan Africa," *Cogent Economics & Finance*, vol. 13, no. 1, Art. no. 2559043, 2025, doi: 10.1080/23322039.2025.2559043.
- [9] J. I. Pulido-Fernández and P. J. Cárdenas-García, "Analyzing the bidirectional relationship between tourism growth and economic development," *Journal of Travel Research*, vol. 60, no. 3, pp. 583–602, 2021, doi: 10.1177/0047287520922316.
- [10] T. Dogru and U. Bulut, "Is tourism an engine for economic recovery? Theory and empirical evidence," *Tourism Management*, vol. 67, pp. 425–434, 2018.
- [11] F. Fan and V. T. Ha, "Tourism-led growth or economy-driven tourism growth in Southeast Asian countries," *Humanities and Social Sciences Communications*, vol. 12, no. 1, 2025.
- [12] V. Chirilă, G. I. Butnaru, and C. Chirilă, "Spillover index approach in investigating the linkage between international tourism and economic growth in Central and Eastern European countries," *Sustainability*, vol. 12, no. 18, Art. no. 7604, 2020.
- [13] N. Antonakakis, M. Dragouni, and G. Filis, "How strong is the linkage between tourism and economic growth in Europe?" *Economic Modelling*, vol. 44, pp. 142–155, 2015.
- [14] X. B. Ma, J. H. Zhang, and L. Y. Zhou, "Spatial and temporal identification and mechanism analysis of the allometric relationship between regional economy and tourism scale in Yangtze River Delta," *Geographical Research*, vol. 42, no. 11, pp. 2984–3002, 2023.
- [15] W. G. D. Munévar, "Tourism and economic growth through panel data cointegration for Latin American countries," 2023. **[Incomplete source metadata—journal/institution, volume, pages, DOI or URL should be added if available.]**
- [16] R. Benkraiem, A. Lahiani, A. Miloudi, and M. Shahbaz, "A new look at the tourism development and economic growth nexus: International evidence," *Tourism Economics*, vol. 27, no. 8, pp. 1707–1735, 2021, doi: 10.1177/1354816620938482.
- [17] C. Işık, T. Doğru, and E. S. Türk, "A nexus of linear and non-linear relationships between tourism demand, renewable energy consumption, and economic growth: Theory and evidence," *International Journal of Tourism Research*, vol. 20, no. 1, pp. 38–49, 2018.
- [18] A. Khan, S. Bibi, L. Ardito, J. Lyu, H. Hayat, and A. M. Arif, "Revisiting the dynamics of tourism, economic growth, and environmental pollutants in the emerging economies—Sustainable tourism policy implications," *Sustainability*, vol. 12, no. 6, Art. no. 2533, 2020.
- [19] A. Khan, S. Bibi, A. Lorenzo, J. Lyu, and Z. U. Babar, "Tourism and development in developing economies: A policy implication perspective," *Sustainability*, vol. 12, no. 4, Art. no. 1618, 2020.
- [20] F. Manzoor, L. Wei, M. Asif, M. Z. U. Haq, and H. U. Rehman, "The contribution of sustainable tourism to economic growth and employment in Pakistan," *International Journal of Environmental Research and Public Health*, vol. 16, no. 19, Art. no. 3785, 2019.
- [21] V. Baena and J. Cerviño, "The role of sustainability in shaping international tourism: A comprehensive case study of Spain," in *Proc. Int. Conf. Tourism, Technology and Systems*, Singapore, 2024, pp. 351–359.
- [22] J. Li, Y. Yang, and Y. Ye, "Rural tourism, economic growth, and environmental sustainability: Empirical evidence based on county-level data in China," *Sustainability*, vol. 17, no. 20, Art. no. 9215, 2025.

- [23] O. T. Astanakulov, "Ўзбекистон иқтисодий ўсишида туризмнинг ўрни: асосий омиллар таъсири," *Economics and Innovative Technologies*, vol. 13, no. 6, pp. 133–145, 2025.
- [24] J. L. Erejepova, S. Sherjonov, S. Egamov, F. Matkarimov, and S. Murodov, "Investigating the relationship between tourism, economic growth, and CO2 emissions in Uzbekistan," in *Proc. E3S Web of Conferences*, vol. 574, Art. no. 04007, 2024.
- [25] J. I. Pulido-Fernández and P. J. Cárdenas-García, "Analyzing the bidirectional relationship between tourism growth and economic development," *Journal of Travel Research*, vol. 60, no. 3, pp. 583–602, 2021, doi: 10.1177/0047287520922316.
- [26] W. G. D. Munévar, "Tourism and economic growth through panel data cointegration for Latin American countries," 2023. **[Incomplete metadata.]**
- [27] T. Doğru and U. Bulut, "Is tourism an engine for economic recovery? Theory and empirical evidence," *Tourism Management*, vol. 67, pp. 425–434, 2018.
- [28] R. Benkraiem, A. Lahiani, A. Miloudi, and M. Shahbaz, "A new look at the tourism development and economic growth nexus: International evidence," *Tourism Economics*, vol. 27, no. 8, pp. 1707–1735, 2021, doi: 10.1177/1354816620938482.
- [29] F. Fan and V. T. Ha, "Tourism-led growth or economy-driven tourism growth in Southeast Asian countries," *Humanities and Social Sciences Communications*, vol. 12, no. 1, 2025.
- [30] X. B. Ma, J. H. Zhang, and L. Y. Zhou, "Spatial and temporal identification and mechanism analysis of the allometric relationship between regional economy and tourism scale in Yangtze River Delta," *Geographical Research*, vol. 42, no. 11, pp. 2984–3002, 2023.
- [31] F. Manzoor, L. Wei, M. Asif, M. Z. U. Haq, and H. U. Rehman, "The contribution of sustainable tourism to economic growth and employment in Pakistan," *International Journal of Environmental Research and Public Health*, vol. 16, no. 19, Art. no. 3785, 2019.
- [32] O. Astanakulov, M. E. Balba, K. Khushvakt, and M. Muslimakhon, "IoT innovations for transforming the future of tourism industry: Towards smart tourism systems," *Journal of Intelligent Systems & Internet of Things*, vol. 14, no. 2, 2025.
- [33] Macrotrends, "Uzbekistan inflation rate (CPI)," *Macrotrends*, n.d. [Online]. Available: <https://www.macrotrends.net/datasets/global-metrics/countries/uzb/uzbekistan/inflation-rate-cpi>. Accessed: Aug. 21, 2026.