

Tourism's Macroeconomic Contribution and Post-Pandemic Resilience: GDP and Employment Dynamics, 2015-2025, with Projections to 2030

B. Sobirov

“Silk Road” International University of Tourism and Cultural Heritage, Uzbekistan



DOI : <https://doi.org/10.61796/icossh.v3i3.602>



Sections Info

Article history:

Submitted: March 07, 2026
Final Revised: April 26, 2026
Accepted: May 08, 2026
Published: June 30, 2026

Keywords:

Tourism economics
GDP contribution
Employment
Resilience
COVID-19
Recovery
Forecasting

ABSTRACT

Objective: The COVID-19 pandemic delivered the sharpest contraction in the modern history of tourism, providing a natural experiment in the sector's macroeconomic weight and resilience. **Method:** This study analyses the trajectory of tourism's contribution to global gross domestic product and employment over 2015-2025 and projects it to 2030. **Results:** Tourism's GDP share, stable at about 10.3 percent on the eve of the pandemic, collapsed to 5.5 percent in 2020 - a 47 percent contraction - before recovering to 10.3 percent by 2025; its employment share fell more modestly, from 10.3 to 8.4 percent (a 18 percent contraction), and recovered to 10.9 percent. The asymmetry between the deep, V-shaped output contraction and the shallower, more persistent employment adjustment is the study's central empirical finding, indicating substantial labour retention and a slower but ultimately fuller employment recovery. Trend projection points to continued expansion of both shares through 2030. **Novelty:** The results quantify tourism's macroeconomic significance, characterize its resilience profile, and inform counter-cyclical and workforce policy.

INTRODUCTION

Few sectors reveal their macroeconomic importance as starkly in contraction as in expansion, but tourism is one of them. The COVID-19 pandemic halted international mobility almost overnight, and the resulting collapse in tourism activity offered an unintended but revealing measurement of how much of the world economy depends on travel. The episode, and the recovery that followed, make the decade spanning 2015 to 2025 an unusually informative window on two questions: how large is tourism's contribution to aggregate output and employment, and how resilient is that contribution to a severe exogenous shock.

This paper addresses both questions using annual series on tourism's share of global gross domestic product and of global employment from 2015 through 2025, and projects the series to 2030. The pre-pandemic years establish a baseline contribution; the 2020 trough measures the depth of the shock; and the subsequent recovery reveals the sector's resilience and the speed with which output and labour returned to and exceeded their previous peaks. The juxtaposition of the output and employment series is central, because the two need not move together: output can collapse while employment is retained, or employment can shed faster than output falls, and which pattern obtains has direct implications for policy.

The contribution of the paper is to provide an integrated, quantitative account of tourism's macroeconomic footprint and its resilience profile across the pandemic cycle,

and to translate the observed recovery dynamics into a forward projection. The analysis is descriptive and projective rather than structural, and is intended to characterize magnitudes and dynamics that subsequent causal work can explain. The paper follows the IMRAD structure.

Literature review

The proposition that tourism is a meaningful engine of aggregate economic activity is well established. Balaguer and Cantavella-Jorda [1] provided early cointegration evidence for the tourism-led growth hypothesis, and the extensive subsequent literature, synthesized by Brida and colleagues [2], finds broad though conditional support for a causal contribution of tourism to growth. Ivanov and Webster [3] developed methods to isolate the tourism component of growth, while Webster and Ivanov [4] showed that the conversion of tourism activity into economic benefit is mediated by destination characteristics. This body of work establishes that tourism's measured macroeconomic share is economically, not merely accounting, significant.

The pandemic generated a distinct literature on tourism shock and resilience. Gossling and colleagues [5] provided an early and influential rapid assessment of COVID-19's impact on tourism, documenting the unprecedented scale of the contraction and framing the recovery as both a challenge and an opportunity for structural change. Subsequent panel work, including Albaladejo and colleagues [6] and the homogeneous-panel evidence cited herein, situates tourism within broader growth dynamics and confirms that the sector's relationship with the economy is heterogeneous across country groups. The present study contributes to this literature by quantifying the global contraction-and-recovery profile and its output-employment asymmetry.

Methodologically, the projection component draws on the tourism-forecasting tradition reviewed by Witt and Witt [7] and Song and Li [8], in which trend extrapolation provides a transparent benchmark whose assumptions are clear to policymakers, and which the comparative evidence of Athanasopoulos and colleagues [9] shows to be competitive at annual frequency. The measurement of sectoral shares connects to the composite-indicator methodology of Mendola and Volo [10]. Together these literatures justify the descriptive-projective design adopted here.

RESEARCH METHOD

Data

The analysis uses two annual series for the period 2015-2025: tourism's share of global gross domestic product and tourism's share of global employment, each expressed in percentage points. The series capture the sector's direct and associated weight in the two principal macroeconomic aggregates and span the pre-pandemic plateau, the 2020 trough and the post-pandemic recovery, providing a complete shock-and-recovery cycle within a single, internally consistent dataset.

Resilience metrics

Three resilience metrics are computed for each series. The shock depth is the percentage contraction from the 2019 peak to the 2020 trough, $(x_{2020} - x_{2019})/x_{2019}$. The recovery is assessed by the year in which the series returns to its 2019 level and by the 2025 value relative to that benchmark. To make the two series comparable despite their different levels, each is additionally indexed to its 2019 value (2019 = 100), so that the relative depth of contraction and the relative speed of recovery can be read directly. The contrast between the GDP and employment trajectories on this common index constitutes the core of the resilience analysis.

Projection

Forward values for 2026-2030 are obtained by linear trend extrapolation fitted to the recovery phase (2020-2025), which captures the post-trough growth tendency while excluding the structural break of the contraction itself. The projection is presented as an indicative continuation of the recovery trajectory rather than as a structural forecast, consistent with the conditional, continuity-dependent nature of extrapolative projection emphasized in the forecasting literature.

RESULTS AND DISCUSSION

Results

The pre-pandemic baseline and the shock

Figure 1 presents the two series over 2015-2025. In the pre-pandemic years, tourism's GDP share rose gently from 10.0 to 10.3 percent and its employment share from 9.5 to 10.3 percent, establishing a stable contribution of roughly one-tenth of global output and employment. The 2020 shock was severe and asymmetric: the GDP share collapsed to 5.5 percent, a contraction of 47 percent from the 2019 peak, while the employment share fell to 8.4 percent, a contraction of only 18 percent. The output series thus absorbed the shock far more violently than the employment series.

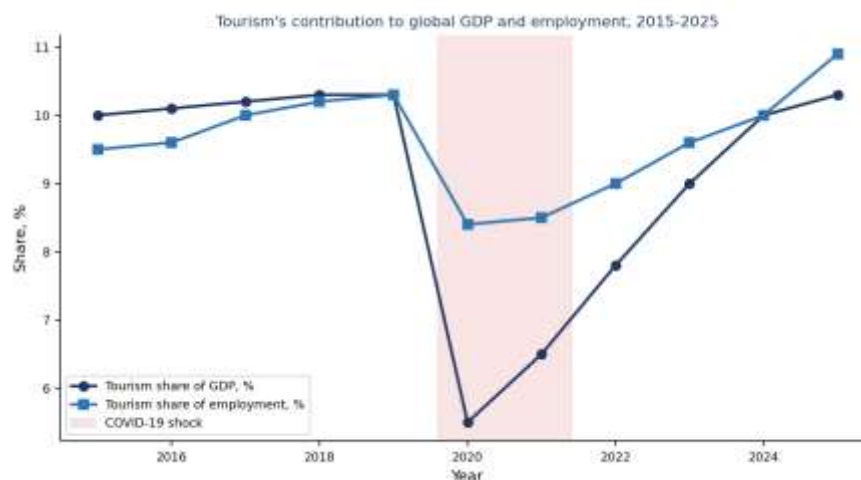


Figure 1. Tourism's share of global GDP and employment, 2015-2025, with the COVID-19 shock period shaded.

Table 1. Tourism's share of global GDP and employment, 2015-2025.

Year	GDP share %	Employment share %
2015	10.0	9.5
2016	10.1	9.6
2017	10.2	10.0
2018	10.3	10.2
2019	10.3	10.3
2020	5.5	8.4
2021	6.5	8.5
2022	7.8	9.0
2023	9.0	9.6
2024	10.0	10.0
2025	10.3	10.9

The output-employment asymmetry

Figure 2 indexes both series to their 2019 peak. The divergence is striking: the GDP-share index fell to 53 in 2020 while the employment-share index fell only to 82, a gap of nearly thirty points. This asymmetry is the study's central finding. It indicates that the labour attached to tourism was retained far more than the output it produced - a pattern consistent with widespread furlough, job-retention support and the fixed, relationship-specific nature of much tourism employment. Output, by contrast, is realized only when services are consumed, and so fell in proportion to the near-total suspension of travel.

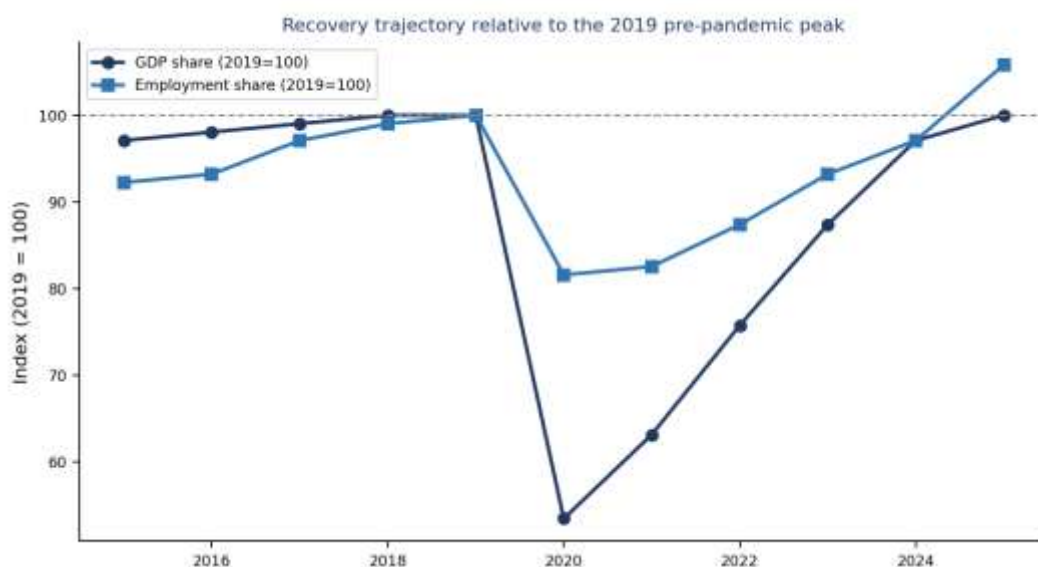


Figure 2. GDP and employment shares indexed to the 2019 peak (2019 = 100).

Recovery and overshoot

Figure 3 contrasts the peak, trough and 2025 values. Both series recovered fully: the GDP share returned to its 2019 level of 10.3 percent by 2025, while the employment share not only recovered but exceeded its pre-pandemic peak, reaching 10.9 percent. The output recovery was therefore a return to baseline, whereas the employment recovery was an overshoot. The combination - a V-shaped output path that retraces its peak and an employment path that surpasses it - signals a sector that has restored its economic weight while expanding its labour footprint, plausibly reflecting both pent-up demand and the labour-intensity of the recovery's composition.

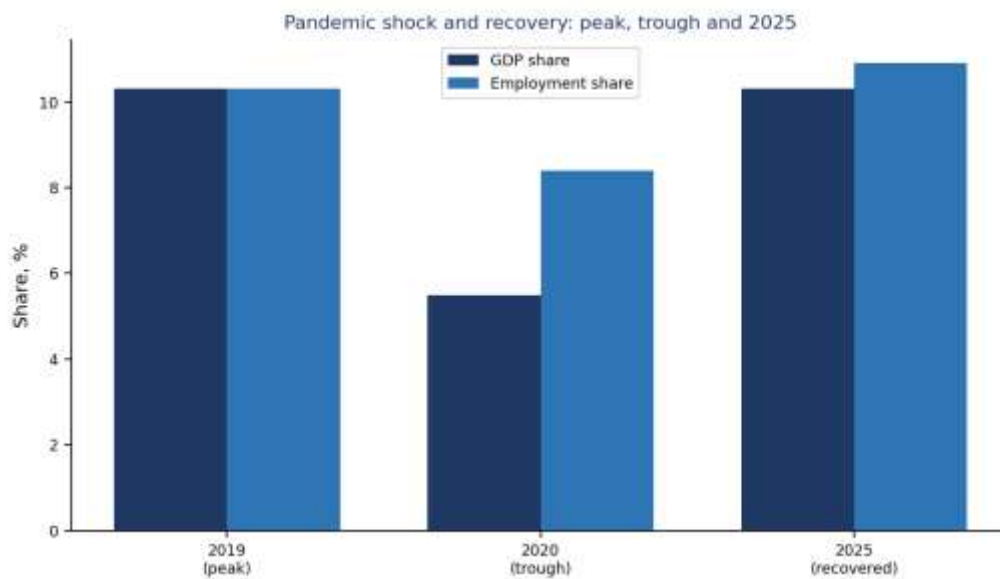


Figure 3. Peak (2019), trough (2020) and recovered (2025) shares of GDP and employment.

Projection to 2030

Extrapolating the recovery-phase trend (Figure 4) points to continued, gradual expansion of both shares through 2030, with the employment share advancing somewhat faster than the GDP share in line with the overshoot already observed by 2025. The projection should be read as an indicative continuation conditioned on the absence of a further systemic shock; its value lies less in its precise endpoint than in its direction, which indicates that tourism's macroeconomic weight is set to consolidate above its pre-pandemic level rather than merely to have recovered it.

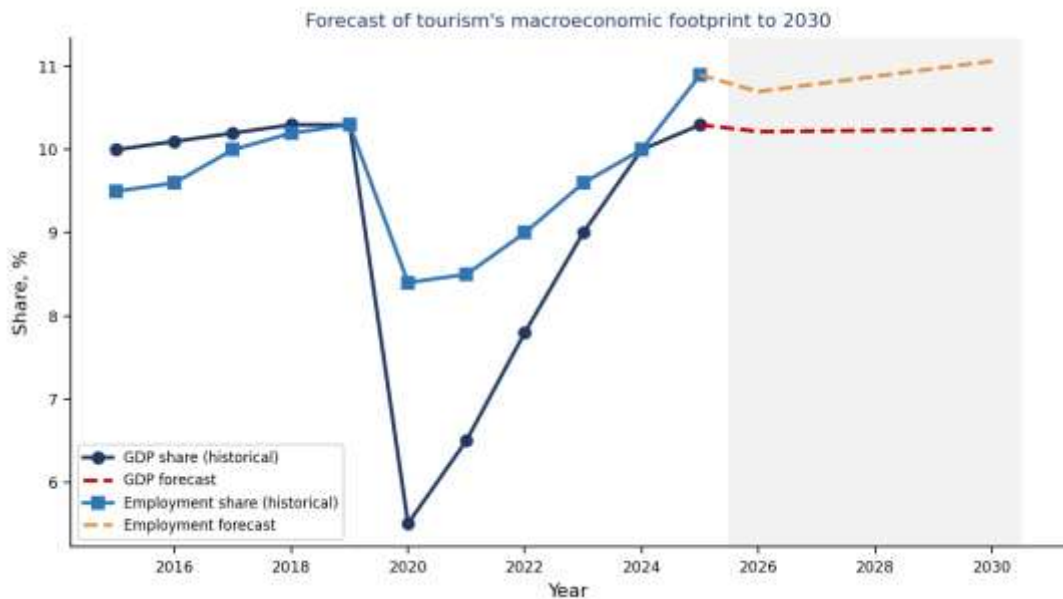


Figure 4. Trend projection of tourism's GDP and employment shares to 2030.

Discussion

The output-employment asymmetry carries the principal policy lesson. That employment contracted far less than output, and recovered to exceed its peak, suggests that the labour-market interventions deployed during the pandemic - job retention and furlough schemes prominent among them - succeeded in preserving the sector's human capital through the trough, allowing a rapid and full recovery once demand returned. The episode thus offers evidence on the value of counter-cyclical labour support in a highly shock-exposed, labour-intensive service sector, and supports the case for pre-committed contingency mechanisms ahead of future disruptions of the kind Gossling and colleagues [5] anticipate.

The full recovery of the output share, and the overshoot of the employment share, also speak to the tourism-led growth debate. The sector's demonstrated capacity to retrace and exceed its pre-pandemic macroeconomic weight within five years is consistent with the resilient, structurally embedded contribution to growth documented by Balaguer and Cantavella-Jorda [1] and synthesized by Brida and colleagues [2]. At the same time, the conditional-benefit findings of Webster and Ivanov [4] caution that a rising aggregate share need not translate uniformly into welfare gains across destinations, a qualification that the global aggregates analysed here cannot address.

For forward policy, the projection's message is one of consolidation rather than mere restoration. If tourism's macroeconomic weight settles above its pre-pandemic level, the sector's exposure to systemic shocks becomes a more significant macroeconomic, not merely sectoral, concern, strengthening the case for resilience-oriented planning - diversified source markets, flexible capacity and protected workforce skills. For tourism-dependent emerging economies in particular, the asymmetry

observed globally implies that protecting sector employment through downturns is both feasible and macroeconomically valuable.

The study's limitations follow from its design. The series are global aggregates and therefore mask substantial cross-country heterogeneity in both shock depth and recovery speed; a panel disaggregation would reveal which economies drove the global pattern. The resilience metrics are descriptive and do not identify the mechanisms - policy, demand composition, or sectoral structure - behind the output-employment asymmetry. And the projection is extrapolative and blind to future structural breaks. Each defines a clear direction for subsequent research.

The pandemic decade reveals tourism to be both macroeconomically substantial and, ultimately, resilient. The sector's contribution of roughly one-tenth of global output and employment collapsed sharply in 2020 - output far more than employment - yet both aggregates had fully recovered by 2025, with employment surpassing its pre-pandemic peak. The deep, V-shaped output contraction set against the shallower, more persistent and ultimately overshooting employment path is the episode's defining signature, pointing to effective labour retention as a source of resilience. Projected forward, tourism's macroeconomic weight is set to consolidate above its pre-pandemic level, making the sector's shock resilience a matter of macroeconomic, and not merely sectoral, policy importance.

Foundational and applied contributions to destination-competitiveness measurement further underpin the present framework, including [11], [12], [13], [14], [15], [16], [17].

The study's quantitative orientation is additionally informed by the tourism demand-forecasting literature, notably [18].

The wider literature on tourism-led growth, economic contribution and sector resilience also frames this study, including [19].

Evidence on the infrastructure-tourism relationship also bears on the analysis, including [20].

CONCLUSION

Fundamental Finding: The pandemic decade reveals tourism to be both macroeconomically substantial and, ultimately, resilient. The sector's contribution of roughly one-tenth of global output and employment collapsed sharply in 2020 - output far more than employment - yet both aggregates had fully recovered by 2025, with employment surpassing its pre-pandemic peak. The deep, V-shaped output contraction set against the shallower, more persistent and ultimately overshooting employment path is the episode's defining signature, pointing to effective labour retention as a source of resilience. **Implication:** Projected forward, tourism's macroeconomic weight is set to consolidate above its pre-pandemic level, making the sector's shock resilience a matter of macroeconomic, and not merely sectoral, policy importance. Evidence on the infrastructure-tourism relationship also bears on the analysis. **Limitation:** Funding. This

research received no specific grant from any funding agency in the public, commercial or not-for-profit sectors. Data availability. The macro-level (Travel and Tourism Development Index) and meso-level regional datasets analysed in this study are derived from the author's Doctor of Science (DSc) dissertation research and are available from the author upon reasonable request. Conflicts of interest. The author declares no conflict of interest. Author contributions. The single author conceived the study, assembled and analysed the data, and wrote the manuscript. **Future Research:** Foundational and applied contributions to destination-competitiveness measurement further underpin the present framework. The study's quantitative orientation is additionally informed by the tourism demand-forecasting literature. The wider literature on tourism-led growth, economic contribution and sector resilience also frames this study.

REFERENCES

- [1] J. Balaguer and M. Cantavella-Jorda, "Tourism as a long-run economic growth factor: The Spanish case," *Appl. Econ.*, vol. 34, no. 7, pp. 877-884, 2002, doi: <https://doi.org/10.1080/00036840110058923>
- [2] J. G. Brida, I. Cortes-Jimenez, and M. Pulina, "Has the tourism-led growth hypothesis been validated? A literature review," *Curr. Issues Tourism*, vol. 19, no. 5, pp. 394-430, 2016, doi: <https://doi.org/10.1080/13683500.2013.868414>
- [3] S. Ivanov and C. Webster, "Measuring the impact of tourism on economic growth," *Tourism Econ.*, vol. 13, no. 3, pp. 379-388, 2007, doi: <https://doi.org/10.5367/000000007781497773>
- [4] C. Webster and S. Ivanov, "Transforming competitiveness into economic benefits: Does tourism stimulate economic growth in more competitive destinations?" *Tourism Manage.*, vol. 40, pp. 137-140, 2014, doi: <https://doi.org/10.1016/j.tourman.2013.06.003>
- [5] S. Gossling, D. Scott, and C. M. Hall, "Pandemics, tourism and global change: A rapid assessment of COVID-19," *J. Sustain. Tourism*, vol. 29, no. 1, pp. 1-20, 2020, doi: <https://doi.org/10.1080/09669582.2020.1758708>
- [6] I. P. Albaladejo, M. I. Gonzalez-Martinez, and M. P. Martinez-Garcia, "A new look to the tourism and economic growth nexus: A clustering and panel causality analysis," *World Econ.*, vol. 46, no. 8, pp. 2305-2328, 2023, doi: <https://doi.org/10.1111/twec.13459>
- [7] S. F. Witt and C. A. Witt, "Forecasting tourism demand: A review of empirical research," *Int. J. Forecast.*, vol. 11, no. 3, pp. 447-475, 1995, doi: [https://doi.org/10.1016/0169-2070\(95\)00591-7](https://doi.org/10.1016/0169-2070(95)00591-7)
- [8] H. Song and G. Li, "Tourism demand modelling and forecasting-A review of recent research," *Tourism Manage.*, vol. 29, no. 2, pp. 203-220, 2008, doi: <https://doi.org/10.1016/j.tourman.2007.07.016>
- [9] G. Athanasopoulos, R. J. Hyndman, H. Song, and D. C. Wu, "The tourism forecasting competition," *Int. J. Forecast.*, vol. 27, no. 3, pp. 822-844, 2011, doi: <https://doi.org/10.1016/j.ijforecast.2010.04.009>
- [10] D. Mendola and S. Volo, "Building composite indicators in tourism studies: Measurements and applications in tourism destination competitiveness," *Tourism Manage.*, vol. 59, pp. 541-553, 2017, doi: <https://doi.org/10.1016/j.tourman.2016.08.011>
- [11] J. R. B. Ritchie and G. I. Crouch, *The Competitive Destination: A Sustainable Tourism Perspective*. Wallingford, U.K.: CABI Publishing, 2003, doi: <https://doi.org/10.1079/9780851996646.0000>

- [12] G. I. Crouch, "Destination competitiveness: An analysis of determinant attributes," *J. Travel Res.*, vol. 50, no. 1, pp. 27-45, 2011, doi: <https://doi.org/10.1177/0047287510362776>
- [13] L. Dwyer and C. Kim, "Destination competitiveness: Determinants and indicators," *Curr. Issues Tourism*, vol. 6, no. 5, pp. 369-414, 2003, doi: <https://doi.org/10.1080/13683500308667962>
- [14] N. Gooroochurn and G. Sugiyarto, "Competitiveness indicators in the travel and tourism industry," *Tourism Econ.*, vol. 11, no. 1, pp. 25-43, 2005, doi: <https://doi.org/10.5367/0000000053297130>
- [15] R. Croes and M. A. Rivera, "Testing the empirical link between tourism and competitiveness: Evidence from Puerto Rico," *Tourism Econ.*, vol. 16, no. 1, pp. 217-234, 2010, doi: <https://doi.org/10.5367/000000010790872114>
- [16] A. Uyar, C. Kuzey, M. A. Koseoglu, and A. S. Karaman, "Travel and tourism competitiveness index and the tourism sector development," *Tourism Econ.*, vol. 29, no. 5, pp. 1238-1264, 2023, doi: <https://doi.org/10.1177/13548166221080357>
- [17] A. G. Assaf and A. Josiassen, "Identifying and ranking the determinants of tourism performance: A global investigation," *J. Travel Res.*, vol. 51, no. 4, pp. 388-399, 2012, doi: <https://doi.org/10.1177/0047287511426337>
- [18] H. Song, S. F. Witt, and G. Li, "Tourism forecasting: A review of methodological developments over the last decade," *Tourism Econ.*, vol. 25, no. 3, pp. 469-492, 2019, doi: <https://doi.org/10.1177/1354816618796829>
- [19] S. Hosseini et al., "Modeling the link between tourism and economic development: Evidence from homogeneous panels of countries," *Humanit. Soc. Sci. Commun.*, vol. 11, art. 326, 2024, doi: <https://doi.org/10.1057/s41599-024-02826-8>
- [20] J. Khadaroo and B. Seetanah, "The role of transport infrastructure in international tourism development: A gravity model approach," *Tourism Manage.*, vol. 29, no. 5, pp. 831-840, 2008, doi: <https://doi.org/10.1016/j.tourman.2007.09.005>

* **B. Sobirov (Corresponding Author)**

"Silk Road" International University of Tourism and Cultural Heritage, Uzbekistan
