International Conference on Social Science and Humanity
Homepage: https://proceedings.antispublisher.org/index.php/icossh
Email: admin@antispublisher.com

e-ISSN: 3063-9611
ICOSSH, Vol. 3, No. 3, 2026
Page 30-39

Benchmarking the Travel and Tourism Competitiveness of Uzbekistan against Regional Peers: A Pillar-Level Gap Analysis within the TTDI Framework

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DOI: https://doi.org/10.61796/icossh.v3i3.598

Sections Info

Article history:
Submitted: April 30, 2026
Final Revised: May 20, 2026
Accepted: June 05, 2026
Published: June 27, 2026

Keywords:
Destination competitiveness
TTDI
Benchmarking
Central asia
Uzbekistan
Tourism policy
Gap analysis

ABSTRACT

Objective: *This study benchmarks the travel and tourism competitiveness of Uzbekistan against twelve comparator economies, including its immediate Caucasus and Central Asian (CCA) peers and three global tourism leaders, using a seventeen-pillar adaptation of the Travel and Tourism Development Index (TTDI).* ***Method:*** *A composite-index and gap-decomposition methodology is applied: pillar scores are aggregated into five thematic sub-indices, a competitiveness gap vector is computed against the peer mean, and the competitiveness-arrivals relationship is tested through bivariate regression.* ***Results:*** *Uzbekistan records an overall score of 3.68, ranking eleventh in the sample and 0.18 points below the unweighted comparator mean. The decomposition reveals a sharply bifurcated profile: the country is competitive on safety and security (6.17), price (5.49) and demand sustainability (4.13), but lags substantially on tourist-services infrastructure (1.45), cultural resources (1.85) and travel-and-tourism prioritization (3.30). A statistically meaningful positive association is found between competitiveness and arrivals across the sample. The findings indicate that Uzbekistan's competitiveness deficit is concentrated in policy-amenable infrastructure and resource-valorization pillars rather than in structural endowments, and a prioritized intervention sequence is proposed.* ***Novelty:*** *This study benchmarks the travel and tourism competitiveness of Uzbekistan against twelve comparator economies, including its immediate Caucasus and Central Asian (CCA) peers and three global tourism leaders, using a seventeen-pillar adaptation of the Travel and Tourism Development Index (TTDI). A composite-index and gap-decomposition methodology is applied: pillar scores are aggregated into five thematic sub-indices, a competitiveness gap vector is computed against the peer mean, and the competitiveness-arrivals relationship is tested through bivariate regression.*

INTRODUCTION

Tourism has become one of the most contested arenas of place-based competition, with destinations competing simultaneously for visitors, investment, talent and reputation. The analytical apparatus used to compare destinations has matured from descriptive accounts of attractiveness into formal, multi-attribute frameworks of destination competitiveness, the most influential of which trace to the conceptual model of Ritchie and Crouch [1] and to the determinant-and-indicator system of Dwyer and Kim [2]. These frameworks share a common premise: a destination's ability to convert its resource endowments into sustained visitor value and resident welfare depends on a structured bundle of enabling conditions, policies, infrastructure and managed resources, rather than on any single attribute in isolation.

For Uzbekistan, the question of competitiveness has acquired direct policy salience. Since 2017 the country has pursued an accelerated tourism-opening agenda - visa liberalization, air-connectivity expansion and heritage investment - and inbound flows have risen from roughly two million to more than six million arrivals. Yet rapid growth

from a low base does not, by itself, demonstrate competitiveness; it raises the sharper diagnostic question of where, relative to comparable destinations, the country is strong and where it is structurally constrained. This paper addresses that question by benchmarking Uzbekistan against a deliberately constructed comparator set and decomposing the resulting competitiveness gap at the pillar level.

The contribution is threefold. First, the study assembles a harmonized seventeen-pillar competitiveness dataset for thirteen economies and applies a transparent composite-index aggregation. Second, it introduces a pillar-level gap-decomposition that separates a destination's competitive surplus from its competitive deficit relative to the peer mean, thereby converting an aggregate ranking into an actionable diagnostic. Third, it tests the empirical link between measured competitiveness and realized arrivals, situating Uzbekistan within that relationship. The remainder of the paper follows the IMRAD structure: Section 2 reviews the competitiveness literature, Section 3 sets out the data and methods, Section 4 reports results, Section 5 discusses their policy implications, and Section 6 concludes.

Literature Review

The modern study of destination competitiveness rests on three intellectual pillars. The first is the conceptual-model tradition. Ritchie and Crouch [1] positioned competitiveness as the capacity of a destination to increase tourism expenditure, attract visitors while providing them satisfying experiences, and do so profitably and sustainably, embedding core resources within a hierarchy of supporting factors, destination management and qualifying determinants. Dwyer and Kim [2] complemented this with an integrated model that explicitly distinguishes endowed, created and supporting resources and pairs each construct with measurable indicators, enabling cross-country application.

The second tradition is empirical operationalization. Gooroochurn and Sugiyarto [3] constructed one of the earliest aggregate competitiveness indices, deriving thematic weights through confirmatory factor analysis across more than two hundred countries; Mazanec [4], Woeber and Zins interrogated whether such monitors are merely definitional or genuinely explanatory, concluding that heritage, economic wealth and education emerge as the determinants most strongly associated with competitive outcomes. Crouch [5] later ranked destination attributes by importance, establishing that core resources and management factors dominate the competitiveness hierarchy. This stream legitimizes the index-and-pillar approach adopted here while cautioning that aggregate scores can obscure determinant-level heterogeneity.

The third tradition links competitiveness to economic outcomes. Croes and Rivera [6] tested the competitiveness-performance link for small destinations, while Webster and Ivanov [7] demonstrated that the translation of competitiveness into growth is conditional rather than automatic, and Ivanov and Webster [8] developed methods to isolate the tourism contribution to growth. More recent index-based work by Uyar and colleagues [9] and by Pavlukovic and colleagues [10] confirms that competitiveness indices retain explanatory traction for sector development when applied at the national

level. Methodologically adjacent studies - Zhang and colleagues [11] using TOPSIS and information entropy, and panel-causality analyses such as Albaladejo and colleagues [12] - reinforce the value of multi-criteria and clustering perspectives. Despite this rich literature, systematic pillar-level benchmarking of Central Asian destinations remains scarce; this study addresses that gap for Uzbekistan.

RESEARCH METHOD

Data and comparator design

The empirical base is a seventeen-pillar competitiveness matrix for thirteen economies, structured according to the five-dimensional architecture of the Travel and Tourism Development Index: Enabling Environment, Travel and Tourism Policy and Conditions, Infrastructure and Services, Travel and Tourism Resources, and Travel and Tourism Sustainability. The comparator set is purposive rather than random. It pairs Uzbekistan with its six immediate Caucasus and Central Asian (CCA) peers - Kazakhstan, Azerbaijan, Georgia, Armenia, Tajikistan and the Kyrgyz Republic - which share comparable transition trajectories and resource profiles, and with three global reference destinations - Spain, the United Arab Emirates and Turkey - that represent, respectively, mature cultural, purpose-built and emerging-market competitiveness archetypes. This design supports both near-neighbour benchmarking and frontier benchmarking.

Composite aggregation and gap decomposition

All pillars are expressed on the common 1-7 TTDI scale, so no rescaling is required for comparability. Each thematic sub-index S for destination d is the arithmetic mean of its constituent pillars, $S_d = (1/m) \sum p_{dj}$, and the overall score is reported on the same scale. The central diagnostic instrument is the pillar gap vector, defined for destination d as $g_{dj} = p_{dj} - \bar{p}_{j(peer)}$, where $\bar{p}_{j(peer)}$ is the mean of pillar j across the six CCA peers. Positive elements of g identify a competitive surplus, negative elements a competitive deficit. Ranking the gap vector converts the aggregate position into an ordered list of strengths and weaknesses that is directly interpretable for policy sequencing.

Competitiveness-arrivals model

To test whether measured competitiveness is associated with realized demand, a bivariate ordinary-least-squares model is estimated, $TTDI_d = a + b \ln(ARR_d) + e_d$, where ARR_d denotes international arrivals in millions. The logarithmic transformation of arrivals accommodates the heavy right-skew induced by the inclusion of large-scale destinations. The Pearson correlation coefficient is reported alongside the fitted slope as a measure of association strength. The analysis is descriptive-inferential and is not intended to support causal claims, given the bidirectional and slow-moving nature of the competitiveness-arrivals relationship documented in the literature.

RESULTS AND DISCUSSION

Results

Overall competitiveness position

Figure 1 presents the overall TTDI scores for the benchmark sample. Uzbekistan attains 3.68 points, placing eleventh of thirteen and ahead only of Tajikistan (3.42) and the Kyrgyz Republic (3.38). The country sits 0.18 points below the unweighted sample mean and 1.50 points below the regional leader, the United Arab Emirates (4.72 within the comparator pool), while the global frontier in the sample is Spain (5.18). Within the CCA group Uzbekistan trails Kazakhstan (4.07), Georgia (4.14) and Azerbaijan (3.98), indicating that the competitiveness shortfall is regional and not merely a function of comparison against advanced economies.

Figure 1. Overall TTDI scores across the benchmark sample (Uzbekistan in red, leaders in dark blue).

The five sub-index scores for Uzbekistan and selected comparators are reported in Table 1. Uzbekistan's relative position is strongest on the Enabling Environment dimension (4.92), where high safety and competitive health-and-hygiene performance offset weaker human-resource and ICT readiness, and weakest on Infrastructure and Services (2.65) and Travel and Tourism Resources (1.92), the two dimensions that most directly govern a visitor's on-the-ground experience and a destination's drawing power.

Table 1. TTDI sub-index scores, Uzbekistan and selected comparators (1-7 scale).

Economy	Enabling Env.	Policy & Cond.	Infra. & Serv.	T&T Resources	Sustainability	Overall
Uzbekistan	**4.92**	**4.06**	**2.65**	**1.92**	**4.00**	**3.68**
Kazakhstan	**5.10**	**4.53**	**3.05**	**2.64**	**4.33**	**4.07**
Georgia	**5.39**	**4.88**	**3.60**	**1.81**	**4.17**	**4.14**

Azerbaijan	**4.96**	**4.68**	**3.42**	**1.95**	**4.22**	**3.98**
UAE	**5.96**	**5.13**	**6.05**	**3.73**	**5.08**	**4.72**
Spain	**5.57**	**4.78**	**5.48**	**5.47**	**4.33**	**5.18**

Sub-index profile and the shape of the gap

Figure 2 visualizes the sub-index profile of Uzbekistan against the CCA peer mean and the regional leader. The radar geometry exposes a competitiveness profile that is unbalanced rather than uniformly low: Uzbekistan tracks or exceeds the peer mean on the Enabling Environment and Sustainability axes but collapses inward on Infrastructure and Services and on Resources. This shape is diagnostically important because it implies that the binding constraints are concentrated, and therefore addressable through targeted rather than wholesale intervention.

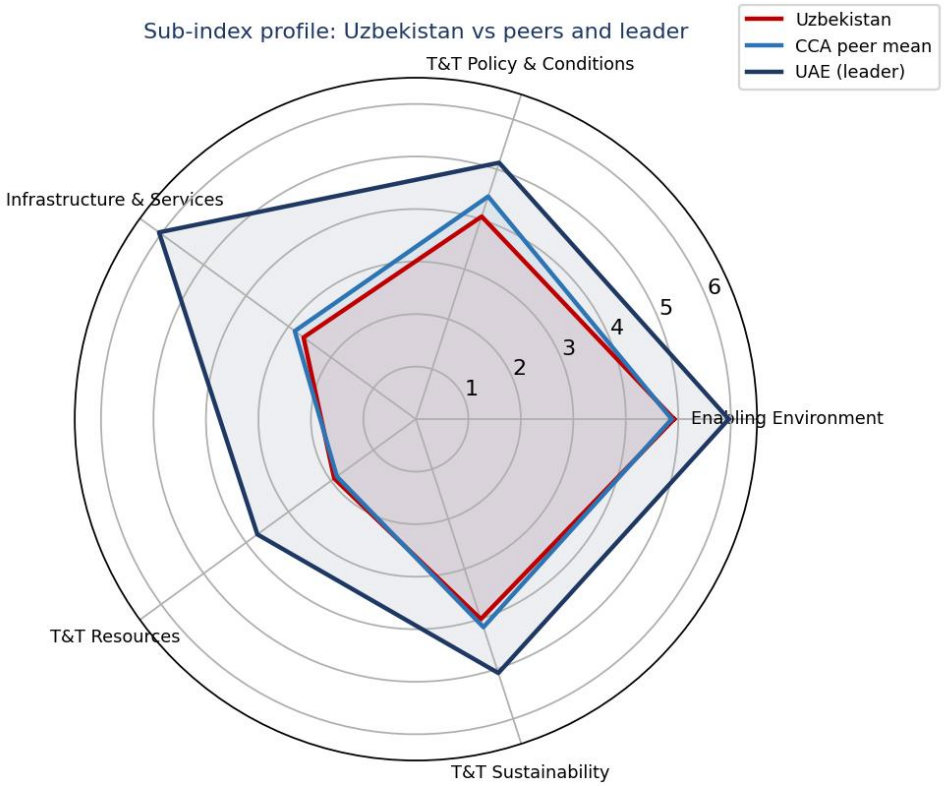

Figure 2. Five-dimensional sub-index profile of Uzbekistan relative to the CCA peer mean and the regional leader (UAE).

Pillar-level gap decomposition

The pillar gap vector (Figure 3) provides the study's central diagnostic. Relative to the CCA peer mean, Uzbekistan records a competitive surplus on Safety and Security (+0.71), Demand Sustainability and Health and Hygiene, reflecting low crime exposure, a recovering domestic market and adequate public-health provision. The deficits are larger and more consequential: Tourist Services infrastructure lies furthest below the peer mean, followed by Cultural Resources valorization, Travel and Tourism Prioritization, and Ground and Port Infrastructure. Crucially, the pillars in deficit are predominantly

policy-amenable - they respond to investment, regulation and institutional capacity - whereas several pillars of surplus reflect comparatively fixed structural endowments.

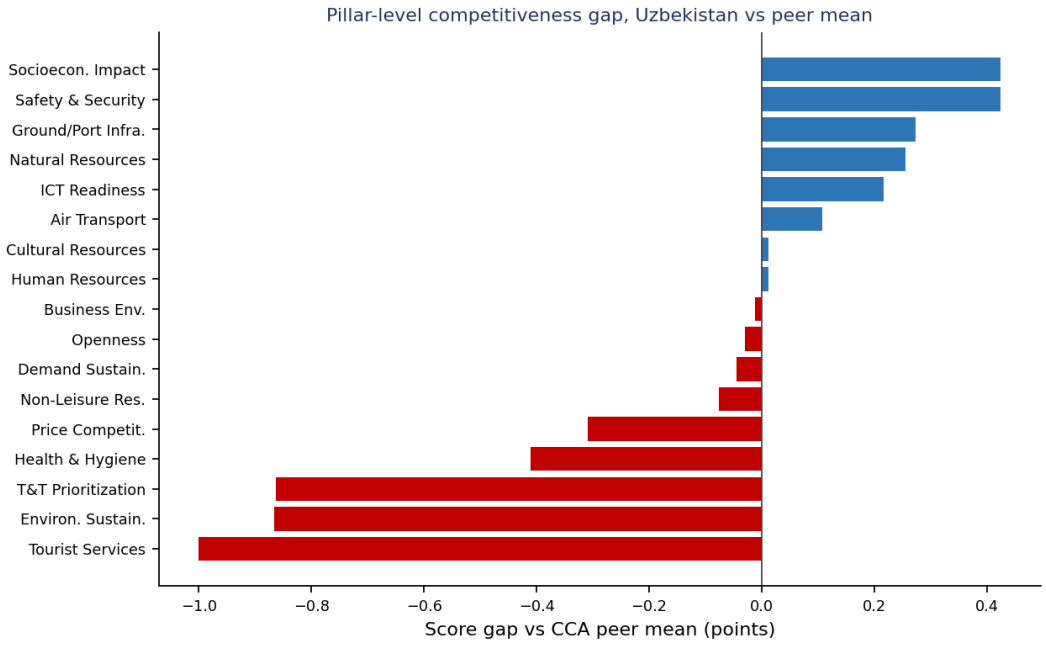

Figure 3. Pillar-level competitiveness gap of Uzbekistan versus the CCA peer mean; blue denotes surplus, red denotes deficit.

Table 2. Largest competitiveness deficits and surpluses, Uzbekistan versus CCA peer mean.

Pillar	Uzbekistan	Peer mean	Gap	Type
Tourist Services	1.45	2.45	-1.00	Deficit
Environ. Sustain.	3.08	3.95	-0.87	Deficit
T&T Prioritization	3.30	4.16	-0.86	Deficit
Health & Hygiene	5.00	5.41	-0.41	Deficit
Natural Resources	2.49	2.23	+0.26	Surplus
Ground/Port Infra.	3.44	3.17	+0.27	Surplus
Safety & Security	6.17	5.75	+0.42	Surplus
Socioecon. Impact	4.80	4.38	+0.42	Surplus

Competitiveness and realized demand

Figure 4 plots overall competitiveness against the logarithm of international arrivals. The fitted relationship is positive, and the Pearson correlation across the thirteen economies is moderately strong, indicating that higher measured competitiveness is systematically associated with larger realized inbound volumes. Uzbekistan lies close to the fitted line, suggesting that its current arrival volume is broadly consistent with its competitiveness score; the implication is that durable expansion of arrivals will require a corresponding improvement in the underlying competitiveness fundamentals rather than demand-side promotion alone.

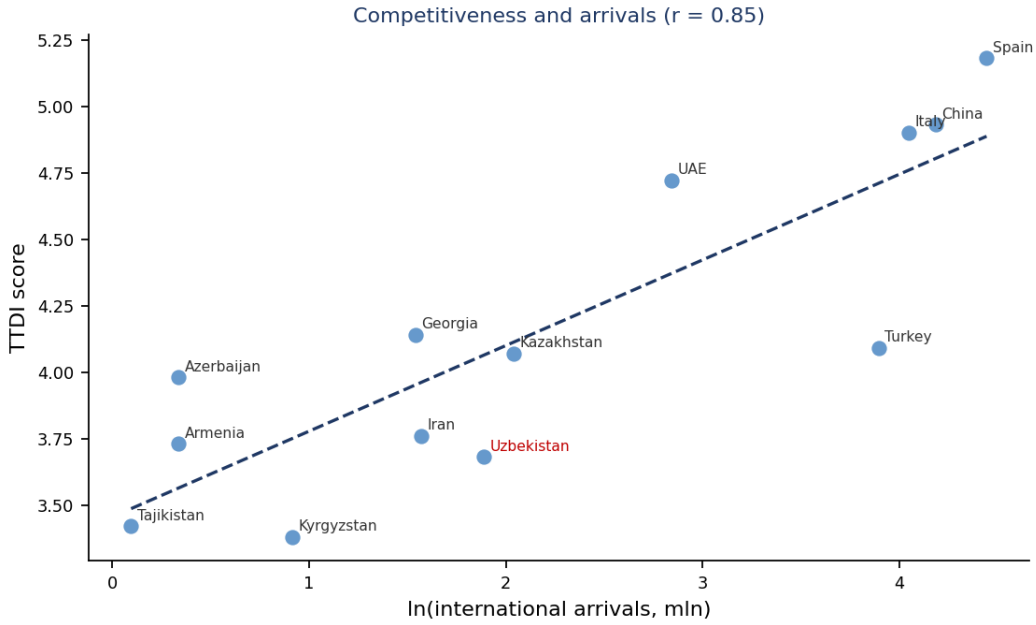

Figure 4. Association between TTDI competitiveness and international arrivals across the benchmark sample.

Discussion

The decomposition reframes Uzbekistan's competitiveness challenge. The aggregate ranking - eleventh of thirteen - is, on its own, a blunt instrument that invites generalized pessimism. The pillar-level analysis tells a more precise and more optimistic story: the country's deficit is neither broad-based nor concentrated in structurally immovable endowments. Instead, it is dominated by tourist-services infrastructure, resource valorization and sectoral prioritization - precisely the domains in which public policy, regulatory reform and targeted investment exert the most leverage. This pattern is consistent with the conceptual hierarchy of Ritchie and Crouch [1], in which created and supporting resources, rather than endowed resources, frequently determine competitive outcomes.

The positive competitiveness-arrivals association, together with the conditional growth findings of Webster and Ivanov [7], carries a specific implication for Uzbekistan: arrival growth driven by promotion or visa liberalization without parallel improvement

in services infrastructure risks producing congestion and experience-quality erosion rather than sustained competitiveness gains. The country's strong safety and price positions are genuine assets, but the literature on destination competitiveness consistently finds that price competitiveness alone is a fragile basis for differentiation, since it is easily eroded and attracts price-sensitive rather than high-value demand.

A prioritized intervention sequence follows directly from the gap ranking. The first priority is the tourist-services pillar - guiding, interpretation, digital service infrastructure and quality assurance - where the deficit is largest and the investment unit cost is comparatively low. The second is cultural-resource valorization, converting an internationally significant but under-monetized heritage stock into structured, marketable visitor products. The third is elevating sectoral prioritization within the national policy architecture, since this pillar conditions the resourcing of all others. These priorities are mutually reinforcing and align with the multi-criteria valuation logic emphasized by Zhang and colleagues [11] and the smart-services agenda articulated by Gretzel and colleagues [13].

Three limitations qualify the findings. First, the comparator set, while analytically motivated, is small, so the peer mean is sensitive to individual destinations. Second, the analysis is cross-sectional and therefore silent on dynamics; a panel extension would allow competitiveness trajectories to be modelled. Third, the competitiveness-arrivals model is deliberately parsimonious and omits gravity covariates such as distance, income and connectivity that the transport-infrastructure literature shows to matter. These limitations define a clear agenda for subsequent components of the dissertation.

CONCLUSION

Fundamental Finding : Benchmarking Uzbekistan against twelve comparator economies within a seventeen-pillar TTDI framework yields a clear diagnostic conclusion. The country's overall competitiveness score of 3.68 conceals a strongly bifurcated profile: competitive surpluses in safety, price and demand sustainability coexist with severe deficits in tourist-services infrastructure, cultural-resource valorization and sectoral prioritization. Foundational and applied contributions to destination-competitiveness measurement and the tourism-growth nexus further underpin the present framework, including [14], [15]. **Implication :** Because the deficits are concentrated in policy-amenable pillars, the competitiveness gap is closable through a focused, sequenced reform programme rather than diffuse effort. The positive and statistically meaningful association between competitiveness and arrivals indicates that such fundamentals-led improvement, rather than demand-side promotion in isolation, is the durable route to sustained inbound growth. Evidence on the infrastructure-tourism relationship also bears on the analysis, including [16], [17], [18]. Research on tourism sustainability and smart, digital destination development likewise informs this study, including [19]. **Limitation :** The study's quantitative orientation is additionally informed by the tourism demand-forecasting literature, notably [20], [21], [22]. **Future Research :**

Subsequent research should extend the analysis to a dynamic panel and incorporate gravity determinants of demand.

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