

# Global Competitive Positioning of Uzbekistan's Tourism Sector: A Distance-to-Frontier Diagnosis Across Thirteen Development Pillars

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## ABSTRACT

**Objective:** Aggregate competitiveness rankings indicate a destination's overall standing but not where, and by how much, it falls short of attainable global performance. **Method:** This study applies a distance-to-frontier methodology to position Uzbekistan's tourism sector against the world best-in-class on each of thirteen Travel and Tourism Development Index pillars, using Uzbekistan's 2024 global ranks and pillar indices benchmarked to the highest-scoring economy on every pillar. **Results:** Uzbekistan attains an overall index of 3.76 (global rank 78), but the pillar-level diagnosis reveals that its largest absolute shortfalls fall not on its lowest-ranked relative weaknesses alone but on its resource pillars: the gap to the frontier is widest for cultural resources (3.19 points, versus Italy), natural resources (3.03, versus Mexico) and tourist-services infrastructure (2.80, versus Cyprus). Conversely, the smallest distances arise on human resources, environmental sustainability and price, where the global frontier is itself comparatively compressed. **Novelty:** The analysis reframes the competitiveness agenda from closing relative peer gaps to valorizing under-exploited resource endowments and upgrading service infrastructure toward attainable international benchmarks, and it supplies a transparent, pillar-specific target-setting instrument.

## INTRODUCTION

A destination's overall competitiveness rank answers a single question - how it stands relative to all others - but it is silent on the two questions that matter most for policy: on which dimensions is the destination furthest from what is attainable, and how large is the achievable improvement on each. Answering these requires shifting from relative ranking to a frontier perspective, in which every pillar is benchmarked not against an average or a peer group but against the best-performing economy in the world on that pillar. This is the logic of distance-to-frontier analysis, and it is the approach adopted here for Uzbekistan.

Uzbekistan offers a compelling case for such a diagnosis. Its overall position in the global Travel and Tourism Development Index - an index value of 3.76 and a global rank of 78 - places it in the middle tier of assessed economies, neither among the leaders nor at the bottom. A middling aggregate position of this kind is precisely the situation in which a pillar-level frontier diagnosis is most informative, because the aggregate conceals a heterogeneous profile of relative strengths and severe shortfalls whose policy treatment differs sharply.

This paper makes three contributions. First, it constructs a complete distance-to-frontier profile for Uzbekistan across thirteen competitiveness pillars, pairing each pillar

with the identity and score of the world leader on that pillar. Second, it distinguishes between relative weakness, measured by global rank, and absolute shortfall, measured by distance to the frontier, showing that the two diverge in policy-relevant ways. Third, it converts the diagnosis into a priority map that orders pillars by both their current level and their improvement headroom. The paper follows the IMRAD structure.

### **Literature review**

The conceptual foundations of destination competitiveness were established by Ritchie and Crouch [1] and by Dwyer and Kim [2], whose models organize the determinants of competitive performance into resources, supporting factors and management. The operationalization of these models into composite indices is the subject of a substantial methodological literature: Gooroochurn and Sugiyarto [3] pioneered weighted aggregation, Mazanec and colleagues [4] interrogated the explanatory content of competitiveness monitors, and Mendola and Volo [5] systematized the construction of composite indicators in tourism, cautioning that aggregate scores must be decomposed to be actionable. The present study heeds that caution by working exclusively at the pillar level.

The frontier concept itself has a strong pedigree in tourism analysis. Assaf and Josiassen [6] brought frontier and efficiency methods into mainstream tourism research, demonstrating that benchmarking against best-attainable performance yields sharper diagnostic insight than comparison against means, and that the determinants of tourism performance can be identified and ranked through such methods. Crouch's [7] ranking of determinant attributes and Cracolici and Nijkamp [8]'s analysis of regional attractiveness similarly emphasize that competitiveness is decomposable into determinants whose relative importance and attainability differ. This study extends the frontier logic from efficiency estimation to pillar-level gap measurement against the global best-in-class.

A complementary strand links measured competitiveness to outcomes. Uyar and colleagues [9] and Pavlukovic and colleagues [10] confirm that competitiveness indices retain explanatory traction for sector development, while Webster and Ivanov [11] and Ivanov and Webster [12] show that the translation of competitiveness into economic benefit is conditional. These findings motivate the present paper's policy framing: closing frontier gaps is valuable only insofar as the targeted pillars are those that bind realized performance. Systematic distance-to-frontier benchmarking of a Central Asian economy has not previously been published, and this study addresses that gap.

## **RESEARCH METHOD**

### **Data**

The analysis draws on Uzbekistan's 2024 Travel and Tourism Development Index profile, comprising its overall index and global rank and its index value and global rank on thirteen pillars spanning the enabling environment, policy conditions, infrastructure, resources and sustainability. The frontier values are the highest pillar scores recorded

among all assessed economies, together with the identity of the leading economy on each pillar - for example, Cyprus on tourist-services infrastructure, Italy on cultural resources, Mexico on natural resources and Singapore on several enabling pillars. All scores are expressed on the common 1-7 index scale, so no rescaling is required.

### **Distance-to-frontier measure**

For each pillar  $j$ , the distance to frontier is defined as  $D_j = F_j - x_j$ , where  $x_j$  is Uzbekistan's index on pillar  $j$  and  $F_j$  is the global best-in-class score on that pillar.  $D_j$  is expressed in index points and measures the absolute improvement required to reach the global frontier. Because all pillars share the 1-7 metric, the  $D_j$  are directly comparable across pillars, and their ordering identifies where the largest attainable improvements lie. The measure is deliberately absolute rather than normalized, since the policy-relevant quantity is the magnitude of the performance shortfall, not its ratio.

### **Relative versus absolute weakness and the priority map**

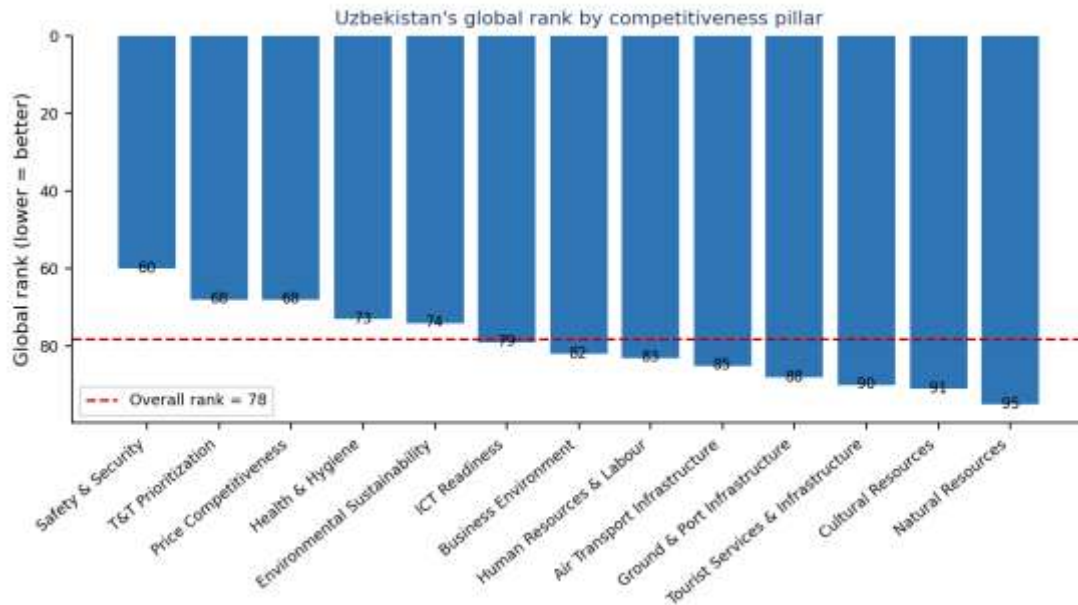
The study distinguishes two complementary notions of weakness. Relative weakness is captured by the global rank, which locates a pillar in the international distribution. Absolute shortfall is captured by the distance to frontier, which measures headroom against the best attainable. These can diverge: a pillar may rank moderately yet sit far below a high frontier, or rank poorly yet lie close to a compressed frontier. To integrate the two, each pillar is plotted in a priority map with its current index level on one axis and its distance to frontier on the other, yielding an interpretable quadrant structure for target-setting.

## **RESULTS AND DISCUSSION**

### *Results*

#### **Overall position and the rank profile**

Uzbekistan's overall index of 3.76 corresponds to a global rank of 78. Figure 3 disaggregates this aggregate into thirteen pillar ranks, which range from 60 on safety and security to 95 on natural resources. The rank profile shows that Uzbekistan's relative position is most favourable on safety, price competitiveness and travel-and-tourism prioritization, and least favourable on natural resources, cultural resources and tourist-services infrastructure. No pillar ranks inside the global top third, confirming that the country's competitiveness challenge is broad-based in relative terms even where individual pillars are comparatively stronger.



**Figure 1.** Uzbekistan's global rank by competitiveness pillar; the dashed line marks the overall rank (78).

### Distance to the global frontier

The distance-to-frontier profile (Figure 2 and Table 1) tells a different and more pointed story than the rank profile. The largest absolute shortfalls fall on the resource pillars: cultural resources lie 3.19 points below the world leader (Italy), natural resources 3.03 points below the leader (Mexico), and tourist-services infrastructure 2.80 points below the leader (Cyprus). These are followed by ground-and-port infrastructure (2.69 below Singapore), ICT readiness (2.65 below Denmark) and air transport (2.62 below the United Arab Emirates). The smallest distances arise on human resources (1.79 below Switzerland), environmental sustainability (1.97 below Luxembourg) and price competitiveness (2.15 below Malaysia), where either Uzbekistan performs comparatively well or the frontier itself is lower.

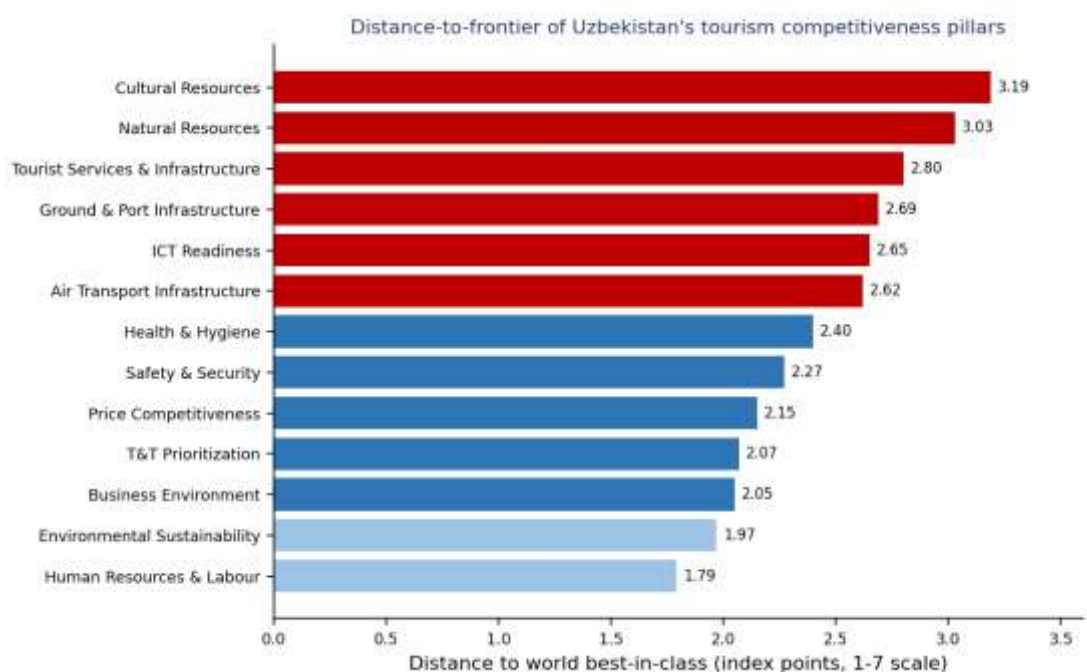


Figure 2. Distance to the world best-in-class by pillar; red bars denote the widest gaps.

Table 1. Uzbekistan's pillar indices, global ranks and distance to the world best-in-class.

Pillar	UZ index	UZ rank	Frontier leader	Frontier	Gap
Cultural Resources	3.55	91	Italy	6.74	3.19
Natural Resources	3.40	95	Mexico	6.43	3.03
Tourist Services & Infrastructure	3.70	90	Cyprus	6.50	2.80
Ground & Port Infrastructure	3.85	88	Singapore	6.54	2.69
ICT Readiness	3.95	79	Denmark	6.60	2.65
Air Transport Infrastructure	3.90	85	UAE	6.52	2.62
Health & Hygiene	4.60	73	Austria	7.00	2.40
Safety & Security	4.55	60	Singapore	6.82	2.27
Price Competitiveness	4.05	68	Malaysia	6.20	2.15
T&T Prioritization	4.05	68	Turkiye	6.12	2.07
Business Environment	4.10	82	Singapore	6.15	2.05

Pillar	UZ index	UZ rank	Frontier leader	Frontier	Gap
Environmental Sustainability	4.20	74	Luxembourg	6.17	1.97
Human Resources & Labour	3.80	83	Switzerland	5.59	1.79

### The frontier gap versus the rank gap

Figure 3 (lollipop) visualizes Uzbekistan's index against the frontier for every pillar, making the divergence between relative and absolute weakness explicit. Cultural and natural resources rank worst and also exhibit the largest frontier gaps, so for these pillars the two notions of weakness coincide. For safety and price, however, Uzbekistan's comparatively favourable ranks coexist with still-substantial frontier gaps, because the global leaders on these pillars score very highly. The implication is that a strong relative rank does not equate to proximity to the attainable best, and that target-setting based on rank alone would understate the improvement available on Uzbekistan's nominal strengths.

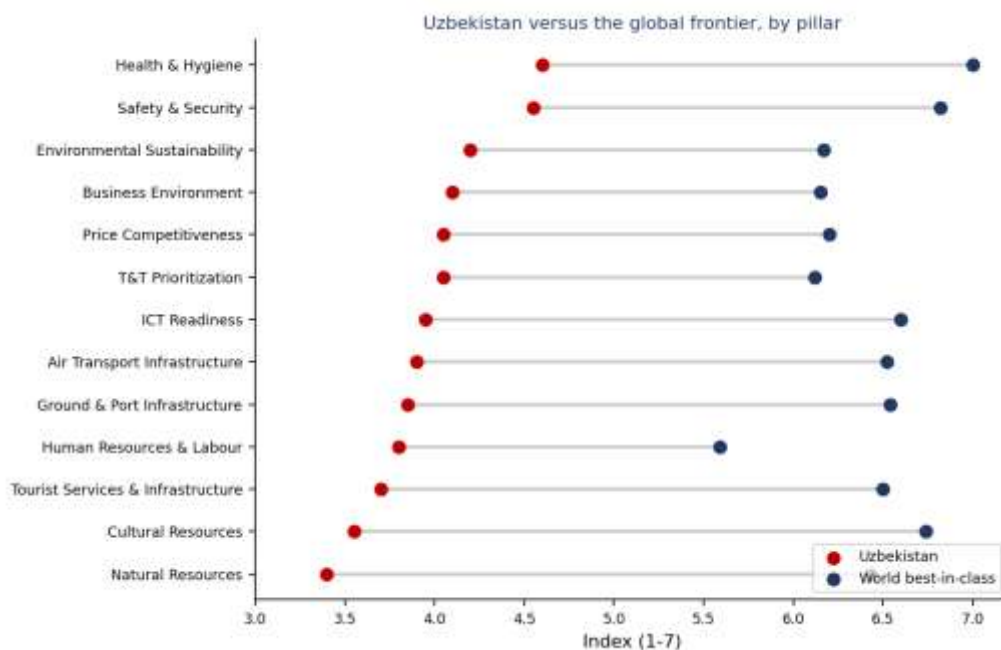


Figure 3. Uzbekistan's pillar indices (red) versus the world best-in-class (navy).

### The priority map

Figure 4 positions each pillar by its current index level and its distance to frontier. The upper-left quadrant - low level and wide gap - contains the resource and tourist-services pillars and identifies the highest-priority targets, where Uzbekistan is both weak in absolute terms and far from the attainable best. The lower-right region - higher level and narrower gap - contains safety, price and prioritization, pillars that are comparatively

consolidated and require maintenance rather than transformation. The map thus orders the reform agenda by combining where the country stands with how much it can gain.

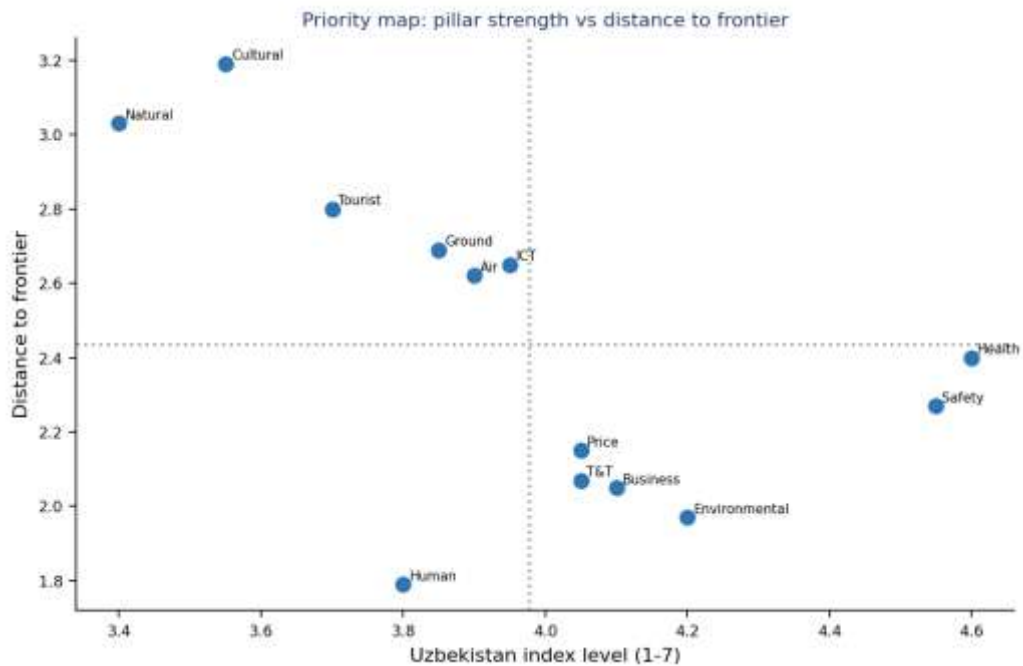


Figure 4. Priority map of pillars by current index level and distance to frontier.

### Discussion

The central finding reframes Uzbekistan's competitiveness agenda. A reading based on relative rank would direct attention to the same resource pillars, but a reading based on distance to frontier sharpens the diagnosis in two ways. First, it quantifies the prize: closing the cultural-resources gap to the Italian frontier represents more than three index points of attainable improvement, the single largest opportunity in the profile, and the natural-resources and tourist-services gaps are of comparable magnitude. For a country whose cultural and natural endowments are internationally significant yet evidently under-scored, this points to a valorization deficit - the assets exist but are not converted into measured competitive performance - rather than an endowment deficit.

Second, the frontier perspective corrects a complacency risk embedded in rank-based assessment. Uzbekistan's relatively favourable ranks on safety and price could invite the inference that these pillars are settled. The distance-to-frontier measure shows otherwise: the global leaders on these pillars score so highly that meaningful headroom remains. This matters because the competitiveness literature consistently finds price-based positioning to be fragile, so even a comparatively strong price rank is not a durable basis for differentiation. The frontier leaders also offer concrete learning targets - Cyprus and Iceland on tourist services, Denmark and Korea on digital readiness - converting abstract gaps into identifiable best-practice models.

For sequencing, the priority map argues for concentrating effort on the upper-left quadrant: valorizing cultural and natural resources through product development, interpretation and access, and upgrading tourist-services and transport infrastructure

toward attainable international standards. These are the pillars where Uzbekistan is simultaneously weakest and furthest from the frontier, and where the measured competitiveness return to investment is therefore largest. The compressed-frontier pillars - human resources, environmental sustainability - warrant continued attention but offer smaller measured gains per unit of effort.

The analysis has limitations. Distance to frontier measures the gap to a single best performer and is therefore sensitive to that performer's score; a robustness check against a top-five frontier average would temper this sensitivity. The pillar indices are point estimates without disclosed uncertainty, and the measure is static, so it captures the gap at one moment rather than the trajectory toward or away from the frontier. A temporal extension tracking gap dynamics, and a decomposition of the resource gaps into their sub-indicators, are natural next steps.

Benchmarking Uzbekistan against the global best-in-class on each of thirteen competitiveness pillars converts a middling aggregate rank into a precise, actionable diagnosis. The country's largest attainable improvements lie not where its relative rank is merely poor but where its absolute distance to the frontier is widest - on cultural resources, natural resources and tourist-services infrastructure, each more than two-and-a-half index points below the world leader. The divergence between relative rank and absolute shortfall cautions against complacency on nominal strengths such as safety and price, where the frontier remains distant. By ordering pillars in a priority map of current level against improvement headroom, the distance-to-frontier framework supplies Uzbekistan with transparent, pillar-specific and internationally anchored targets for its tourism-competitiveness strategy.

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

The study's quantitative orientation is additionally informed by the tourism demand-forecasting literature, notably [16].

The wider literature on tourism-led growth, economic contribution and sector resilience also frames this study, including [17], [18].

Evidence on the infrastructure-tourism relationship also bears on the analysis, including [19].

Research on tourism sustainability and smart, digital destination development likewise informs this study, including [20].

## CONCLUSION

**Fundamental Finding:** Benchmarking Uzbekistan against the global best-in-class on each of thirteen competitiveness pillars converts a middling aggregate rank into a precise, actionable diagnosis. The country's largest attainable improvements lie not where its relative rank is merely poor but where its absolute distance to the frontier is widest - on cultural resources, natural resources and tourist-services infrastructure, each more than two-and-a-half index points below the world leader. The divergence between

relative rank and absolute shortfall cautions against complacency on nominal strengths such as safety and price, where the frontier remains distant. **Implication:** By ordering pillars in a priority map of current level against improvement headroom, the distance-to-frontier framework supplies Uzbekistan with transparent, pillar-specific and internationally anchored targets for its tourism-competitiveness strategy. **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:** 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. Research on tourism sustainability and smart, digital destination development likewise informs this study.

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